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PSYCHOLOGY OF EMOTIONS, MOTIVATIONS AND ACTIONS

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WAYFINDING THROUGH LIFE'S CHALLENGES: COPING AND SURVIVAL

KATHRYN M. GOW
AND
MAREK J. CELINKSI
EDITORS

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Our Earthly Condition
Is Essentially That of Wayfarers,
of Incompleteness
Moving Towards Fulfillment
And Therefore of
Struggle

Yves Conger
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While our first book in this trilogy on resilience, resourcefulness, coping and recovery is focused more on the positivist outlook on life’s challenges, and the third book walks us through the heavy going of surviving trauma, this book focuses more on the ‘know how’, intra and inter psychically, about particular events that occur in life and how and why individuals react to them in different ways.

Whether it is about internal resources (e.g., coping, hardiness, self-efficacy, open-mindedness, ego strength, political skill), or knowing how to tap into external resources (e.g., ‘mateship’, preparedness for new and demanding challenges), or how we determine that we are on the right path in life (e.g., sense of coherence, value congruence, well-being, spirituality), the editors bring you some interesting ideas and studies in the field of coping and survival.

All chapters in this book were submitted to a peer review process in order to meet international research standards for academic research publications.
Photograph by Annette Skipper, Brisbane Australia, 2010

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Stand throughout life firm as a rock in the sea,
Undisturbed and unmoved by its ever-rising waves.

Hazrat Inayat Khan 1882-1927
Chapter 1

OVERVIEW

Kathryn M. Gow¹ and Marek J. Celinski²
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²Private Practice, Canada

“Wayfinding Through Life’s Challenges: Coping And Survival” is the second book in a trilogy of books on the resourcefulness, resilience and coping abilities of people when faced with a range of problems in their lives, from the grinding daily hassles through the inevitably difficult, and sometimes frightening challenges in life.

So what does wayfinding mean? Gharani and Delavar (2008) consider that wayfinding is characterized as route knowledge acquired via procedural rules. Generally, it is considered to
be about movement from where one is now to where one wants to be and this normally follows a predetermined route. That is not always the case in real unchartered life, as often we have only a vague knowledge of how to get to a goal end state and have to weave our way through a series of obstacles that we did not know were there, until we meet them along the way. Interestingly, when Gharani and Delavar (2008) adopt a qualitative perspective, they consider that people on a journey “find their way without aid of maps or navigators in a space that is too large to be perceived at once”. Additionally, the way that Rieser, Guth and Hill (1982) conceptualise wayfinding is appealing in this text: travelling “between the origin and a known destination, without knowledge of the actual path” to take, because Life is not as simple as following a well laid out map; it if were, there would be fewer problems and heartaches. Thus wayfinding is an ongoing process in which we utilize a vast range of knowledge, intuition and aptitudes to navigate from one place to another place, or through time.

Indeed, while wayfinding is often perceived as a challenge, it can also be seen instead as a path of hardships or the “school of hard knocks”; your ‘elasticity’ depends on how old you are, how strong you are physically and psychologically and on the resources that you have (e.g., a stable optimistic outlook, but a realistic attitude) and how well you have learned to bounce again after setbacks.

So from the cradle to the grave, we utilize a store of internal and external resources to help us find our way through most of life’s challenges. Coupled with that, some people have a bountiful supply of resilience – they just keep bouncing back like the generations born before the 1920s. There are others who just ‘get on with it’ and hope that better days will come again soon, and then there are yet others whose resilience just seems to ebb when they need it most. Without that energy, they forget how powerful their inner resources are and they do not have the drive to seek other external resources.

Sometimes of course, it is wise to stop, to pause, to regroup, to regenerate, such as after a period of burnout at work, or illness, or marriage failure, or a burdensome job. It is especially wise to pause when you have expended all of your inner resources after a major trauma, or serious injury, when loss is all around you, or you have been involved in, or witnessed, mass disasters of any kind. On the whole, most of us would agree with William Barlow¹ who noted that ‘we fall down and we get up, we fall down and we get up’ throughout our life. It is not always traumatic, but in these times of great change and challenge to survive financially, the waves of stressors and heavy duty survival battles are relentless and can wear down our natural resilience and tax our resources.

Some of the chapters in this book address those falls and the process of getting up again; others outline how we learn not to fall in the future so often, if at all; while others train people not to fall so heavily or so often, and how to get up quicker and with less pain. Like the boxer who drags himself up off the floor of the ring and goes back into the fray/fight, we try again; but we may not always bounce back. Nevertheless, even then, when we feel depleted psychologically or physically, our ordinary routine may save us – being regulated into normality and hence safe predictability.

¹William Barlow is author of the book “Intent Only on Life”.

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OVERVIEW OF CHAPTERS

This book, consisting of 29 chapters, is divided into 5 sections:

- Part 1: A Closer Look at Some of the Concepts and Measures Relating to Coping and Resilience
- Part 2: How Humans Cope and Survive in a Wide Variety of Life’s Challenges
- Part 3: How Humans Cope When All Hell Breaks Loose
- Part 4: Surviving Work Pressures and Organisational Life
- Part 5: Wayfinding through Education and Learning Challenges

Part 1 provides the keys to understanding many of the constructs that are dealt with in both the research chapters and the applied chapters that follow. While the overarching theme of the book is about coping and surviving, the underpinning theories span the gamut of resilience theory, while the concept of resourcefulness is reinforced in the breadth of the topics covered by the authors.

Underpinnings in Theory and Measurement

Vladimír Kebza and Iva Šolcová give us an excellent overview of the wide range of factors that have been investigated in the research fields within the wider ‘coping’ framework. Their chapter (2) “Trends in Resilience Theory and Research” lead us through many of the concepts related to coping, such as sense of coherence, resilience, locus of control, ego strength, self-efficacy, ego-resilience, hardiness, and flow.

A comprehensive framework on salutogenesis, explaining health and a good life, is presented by Monica Eriksson and Bengt Lindström in Chapter 3 (“Life Is More Than Survival: Exploring Links between Antonovsky’s Salutogenic Theory and the Concept of Resilience”). A pictorial overview of all the concepts referred to in the chapter are contained within the model called the “Salutogenic Umbrella” created by Monica Eriksson.

In their chapter (6) “Measuring Coping Vs Symptom Intensity: Implications for Clinical Practice”, Douglas Salmon and Marek Celinski present us with information about how to determine (through the use of the R-SOPAC - Rehabilitation Survey of Problems and Coping) whether or not a person’s coping has improved, even when the intensity of their symptoms has not lessened significantly. They alert us to a fact that we often overlook, that once clients use up all their coping skills to get through and recover from injury, illness and trauma, and even though their functional activity levels may improve, those same individuals may exhaust their adaptive coping resources and then eventually reduce their activity level.

Then in Chapter 7 (“Use of ‘R-SOPAC’ In Cases of Physical and Psychological Trauma and Stress”), Salmon and Celinski give us a unique entre into the clinical world of measurement, and show us how interpretations of the ‘R-SOPAC’ for unemployed adults compared to employed, and for clinical populations can aid in their treatment. They show how clinicians can distinguish adaptive ‘copers’ from those clients with poor resilience and resourcefulness.
Burnout is a feature in different sections of this book and researchers have contributed their findings on various aspects of burnout. For instance, in “Personality Characteristics Related To Resilience: Seeking For A Common Core” (Ch. 5), Iva Šolcová and Vladimír Kebza examine sense of coherence, hardiness, locus of control, and self-efficacy in relation to burnout, and distinguish between resilient behavior (high competence-control, high vitality/well-being) and non-resilient behavior (low competence-control, low vitality/well-being). Again practitioners and researchers are alerting us to the fact that there is a lot more to know about the complexity of some of these measures and concepts.

Obviously social and emotional intelligences are needed on our path throughout life; that is, if we want to have a smoother pathway through our endeavours, or to succeed in reaching our goals. This topic on social and emotional intelligences and their links to resilience and resourcefulness is explored by Anna Palucka, Marek Celinski, Douglas Salmon, Jr., and Peter Shermer in their chapter (4) “Social and Emotional Intelligence: Contributors to Resilience and Resourcefulness”.

General Applications

And what about the type of coping skills for managing chronic pain? Angela Dougall and Robert Gatchel, in their chapter (8) “The Role Of Coping In The Development And Treatment Of Chronic Pain” remind those who treat such patients, that it is those people who lack adaptive coping skills for managing stressful situations who are generally more likely to develop chronic pain after an acute pain episode, and that treatment programs to help them in managing such pain must teach those patients how to handle such stressful situations.

In the normal course of life, people go through crises and difficult times and one of these is marital separation. Sandra Sacre and Kathryn Gow, in their chapter (12) “The Relationship between Ego Strength, Coping Style and Adjustment to Marital Separation”, ask if there are differences in a person’s responses to the separation, if they vary in ego strength, coping style, and perhaps more obviously, who initiated the separation?

While Prue Millear and Poppy Liossis speak about the spill over effect from work to home and vice versa, Thania Siauw and Sandra Sacre (Ch. 10: “Life’s Stressors, Personality Strength and Nightmares”) alert us to the reality of the spillover from daytime to night time, with respect to dreams and nightmares. They present us with important information about the role of boundary thickness and ego strength in protecting the person from the infiltration of the day’s stressors into our night world; they tell us something about who is more likely to experience seepage from conscious worries into unconscious absorption.

One does not really associate a study on burnout with elite athletes; normally people in the prime of life and at peak fitness are regarded as being very satisfied with their well being. Angela Christie and Kathryn Gow (Ch. 11: “Coping, Stress and Anxiety in Elite Athletes”) conclude that too much pressure and stress and dysfunctional perfectionism can potentially lead to burnout in elite athletes, confirming the findings of other researchers in the field.

Is it possible that one’s religious belief systems could not only assist people in times of duress and trouble, but also that certain kinds of attitudes about religion, combined with certain personality characteristics, might be detrimental to one’s wellbeing? Gow, Separovitch and colleagues explore these questions in Chapter 9 “Religious Orientation and its relation to well-being and open-close mindedness across different religious groups”.

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Hell and Something Like It

There are examples of people undergoing some of life’s most difficult and traumatic experiences, and we examine, within those populations, whether internal resources such as age makes a difference to our resilience (i.e., Lurie-Beck’s work with holocaust survivors), or if personality attributes and beliefs in individuals assist them in times of natural disasters (see Pritchard and Gow’s exploration with flood victims).

As external resources assist the resilience of people under duress, we ask if external resources like mateship (see Gouws’ treatise on men at war), and support and preparation for extreme challenges assist men and women in combat (c.f., Cohn and colleague’s chapter on the ADF) and whether understanding the culture of emergency service workers, as outlined by Shakespeare-Finch (Ch. 16), might help the person to cope better with extreme challenges.

It is possible that age may make a difference in our resiliency, in terms of vulnerability. Even when horrible things happen to people on mass, it does seem that age may play a part in recovery. Indeed, Janine Beck and colleagues in Chapter 13 (“Factors Influencing Differential Resiliency among Holocaust Survivors”), in a detailed examination of previous studies and Lurie-Beck’s own recent study, did ascertain that vulnerability to post-war symptomatology increased, rather than decreased, with age. This may mean that children are more resilient, perhaps for a range of associated reasons.

Natural disasters are a unique occurrence happening more frequently (see Gow 2008), although it is hotly contested as to its activation (vis a vis climate change, Gow, 2009). When something bad happens with natural phenomena, it is conceived as being outside one’s area of personal resourcefulness, so what other factors assist us in coping through psychological, and generally financially damaging, disasters? Pritchard and Gow ask if religion makes a difference in their Chapter (14) “Exploring Coping Factors on Psychological Distress of Practising Religious Flood Victims” and the answer is that it depends on the type of religiosity and type of coping strategies that are utilised.

Three of the chapters in this section relate to people who serve in war and peace zones or who serve as emergency services officers.

Jacques Gouws, in Chapter 15 (“A Soldier’s Tale: Resilience as a Collective, rather than an as Individual, Response to Extreme Challenge”), uses narrative to give us examples of how some soldiers thrive and others fail to thrive in military life. He explores how cohesion among the soldiers (mateship in civilian terminology) assists in resilient responses; his treatise on the purpose in life of the soldier is akin to what John Masters (in Barlow, 1990) referred to as the spirit of the regime.

In Chapter 16 (“How Emergency Service Workers Cope With, and Grow From, Work-Related Stress and Trauma”), Jane Shakespeare-Finch considers that most people in emergency services are resilient to the potential stress and trauma they face and that many develop and grow as a person both in spite of, and because of, their exposure to hardship and horror. Evidence is presented that supports this assertion and Shakespeare-Finch describes some of the ways in which people and their organisations can promote the likelihood of successful adaptation.

In “Psychological Resilience Training in the Australian Defence Force” (Ch. 17), Andrew Cohn and colleagues describe how ideas such as this have been put into action in the ADF with the introduction of a psychological resilience training program called BattleSMART. This program aims to encourage emotional and behavioural outcomes in
personnel when they encounter adverse events. One of the underlying intentions is to bolster the individual’s inner resources and strengths in order to prevent problems and to enhance adjustment in the future.

The World of Work

Having trained people at home, at school, and in the community, do we need to prepare them to move into the world of work? Their wayfinding skills in this regard are generally extremely poor. One of the things we need to prepare new workers for is the amount of stress and strain they may encounter in the modern workplace. The workplace can be a very stressful environment and has become more so in the past fifteen years, with more and more employees complaining about stress conditions including that of burnout.

In their chapter (21) on “Stress and Stress Resilience, Emotional Intelligence, and Perfectionism in an Australian Workplace Sample”, Margot Crowther and Richard Hicks address the problem of organisational stress and how organisations can institute and maintain practices that reduce stress on the job and thus increase the overall wellbeing of their employees and consequently their resilience. In another chapter (19) in this section, (“Coping Strategies and Health among Call Centre Operators”), Richard Hicks and Verity Stoker-Biersteker investigate what type of coping strategies call centre operations use and whether these strategies differ between work and home.

Deborah Farrell and Kathryn Gow in Chapter 20 (“Employee Perceived Workplace Stress: Examining Core Self-Evaluations, Political Skill, Coping Strategies and Support”) determined that men and women differ in what stresses them at work. They detected that supervisor informational support, core self-evaluations, task-oriented coping, and emotion-oriented coping predicted perceived stress for men; whereas role conflict, emotion-oriented coping, supervisor emotional support, and co-worker emotional support were significant predictors of perceived stress for women.

One of the hotly contested syndromes is that of burnout and so is the extent to which organisational and individual factors and type of work can lead more quickly to burnout. Suzanne Robertson’s research (Ch. 22) “How Burned Out Employees Perceive Work Stress and Organisational Burnout” gives us an in-depth view of what is going on inside the people who are run down and burned out at work, while Tim Klein (Ch. 24) “Workplace Spirituality and Burnout among Human Service Workers” asks and answers questions about the role of workplace spirituality in moderating the effects of stress on human service employees.

But working life is not always stressful, or at least not for the whole of our time at work. There are obviously years in our life which are the achieving times and we feel good about ourselves and familiar with all the necessary ways of coping and thriving. In their chapter (23) “Reframing Work-Life Interface Stressors as Challenges”, Prue Millear and Poppy Liossis paint a tapestry of people who are often parents and who have both work and family responsibilities to manage, and show us examples about how people really can thrive on the challenges that life presents them with, even if that involves a conflict between their private/family lives and their work lives.

Tamera Schneider and colleagues wondered if by studying simulations of mixed-culture teams, they could assist employers in the selection and training of team members. Thus in their chapter (18) “Predicting Adaptability in Mixed-Culture Teams in an airport simulation”,

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they believe that their results both complement and expand on the construct of learned resourcefulness, as certain cognitive and affective components facilitate a person’s adaptation to novel stressors.

**Education and Training**

Education and training is very important for success in life, whether that instruction be found or inferred, as conscious or unconscious learning. Without such instruction, we would find it more difficult to find our way through life, not knowing about the pitfalls or how to avoid them, and not understanding the potential peaks that we could climb or how to achieve success in general.

In the section on Education and Training, Frank Lucatelli, in his chapter (25) “Personality Modes Drive Growth in Living and Learning”, calls on us to understand and apply some simple basic facts about how people process information and learn, according to a range of personality modes based on doing, feeling and learning; he takes us on a journey of archetypes through which we can readily identify which roles we play in our lives. He believes that by understanding these modes as resources, we can become more resilient, and that such understanding is essential to successful training and education.

The role of parents in assisting their children in wayfinding through the pathways of life is not always recognized, and one area where parents will admit to being deficient is when their children go to university, as many parents did not face this challenge themselves, or if they did are not able to extract their learnings from their own experience, in a way that can assist their own children who will most likely be enrolling in courses from different fields; some will send their children to countries far away from home in order to complete their university education. Thus without such external resources from parents, the child at a university age, will most likely automatically be governed unconsciously by the effects of actual parenting styles. Abby McCann and Richard Hicks in “Resilience in University Students: Academic Success, Recollected Parental Style, and Coping Strategies” (Ch. 27) explain how authoritative parenting styles are the most proficient in assisting their children to succeed at higher education pursuits.

In this text, it is not only McCann and Hicks who remind us of the importance of Authoritative parenting styles in building resourcefulness and resilience in children; so too does Kumpfer. Karol Kumpfer and colleagues (Ch. 26) demonstrate that education and training does not start and end in the classroom and that in these troubled times, concerted efforts have to be made in the community to coach families in a better way of responding to life’s challenges, which in turn will influence their own communities; this is occurring across the world through Kumpfer’s remarkable work and that of leaders in other similar community based programs.

In Chapter 28 “Transition to University: How Individual Characteristics Can Affect Students' Satisfaction”), Kathryn Gow and Kirsten McKenzie attempted to find out what were some of the factors that helped university students survive the first year in their studies. They analysed personality traits, motivational levels, learning strategies, previous academic performance levels, and grade expectations that they considered might affect the students’ overall course satisfaction in the first year at university; but not all of their expectations were verified.

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It is possible that value incongruence in university students might lead to troubled emotions that affect a student’s life satisfaction, optimism, and self-esteem. Andrew Hall and colleagues in Chapter 29 (“Do Chronic Moral Emotions Mediate between Value Congruence and Psychological Wellbeing in University Students?”) outline a model of the possible relations between degree of strength of character, chronic moral emotions, and psychological illness and well-being and then report on the outcomes of the operationalised model in research with students.

Postscript

As several of the authors in this text have highlighted, it is the forging of the steel through the fire of life (a most unlikely metaphor for burnout where the metaphor of melting might be more apt) that makes the person more resilient. As hard as this is for people who, for example, have suffered from burnout, to believe during this draining time in their life, it does appear that most people eventually learn from these burnout experiences about life’s lessons about preservation of the self. Indeed, like others in untenable positions, they are forced to evaluate their values and beliefs and time priorities, even though it is an extremely difficult approach for them to adopt. Generally, these people were the ones who believed they could change the world, who saw the needs of others and wanted to respond; who were idealistic and held very high standards of service to others and dedication to the completion of their set tasks. Their bounce does not come easily, as the modern positive thinkers would have us believe. It comes at the cost of emotional, physiological, mental and psychological depletion, recovery time and restoration of the original self.

What is interesting in the burned out, injured, and even traumatised cases is that, while the depleted individuals eventually ran out of their own resources in dealing with the overwhelming demands of work, life, or pain, they had just enough courage to reach outwards for assistance and inwards for renewal. They found other basic resources which were always there, but needed to be tapped with clear and single minded purpose – that innate instinct for survival.

REFERENCES


PART 1:

A CLOSER LOOK AT SOME OF THE CONCEPTS AND MEASURES RELATED TO COPING AND RESILIENCE
TRENDS IN RESILIENCE THEORY AND RESEARCH

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ABSTRACT

The first prototypical models of resilience, which emerged from early philosophical and psychological thinking, are represented by voluntarists who emphasized strength of will as a distinct human quality. Later, it turned out that relations of far greater complexity are involved, in that besides will and motivation, personality characteristics, aptitudes and situational variables play a role. Freud created the concepts of ego strength and ego-defence mechanisms. In alignment with Freud’s approach, in the second half of the 1990’s, Block promoted the concept of ‘ego-resilience’. Further prototypical models of resilience include Heider’s causal attribution theory whose frequently cited approach refers to Rotter’s concept about locus of control and Bandura’s concept of self-efficacy. In relation to adult resilience, the main concepts refer to the sense of coherence developed by Antonovsky, Strümpfer’s model of fortigenesis, Kobasa’s concept of hardiness, and Csikszentmihalyi’s concepts of optimal experience and flow. In this chapter, these concepts of resilience are compared with developments in resilience theory and research in Czech.

Keywords: Prototypical Resilience Concepts, Self-Efficacy; Ego-Resilience, Hardiness, Flow

INTRODUCTION

This chapter presents theories and research findings about resilience, including an overview of both prototypical and primary concepts of resilience in adults. Definitional issues are raised as to the exact understandings of the concept of ‘resilience’. The term ‘resilience’

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means, in current English terminology, resistance, flexibility, elasticity, persistent indefatigability, steadfastness, strengthening or stamina (although it was not always like that, see later section). The etymological root of resilience can be related to the Latin words ‘salire’ (to spring, jump up, emerge, but also to grow up fast) and ‘resilire’ (to rebound, bounce back). Figuratively, resilience can thus be understood as the ability to regain one’s strength, to recover or quickly return to one’s original shape (Davidson et al., 2005). In a broader sense, resilience refers to a personality aptitude affecting an individual’s capacity to resist stressful impacts, while in a more specific but narrower sense, it refers to specific kinds of resilience such as ‘hardiness’ (see next section for details).

Some authors aim to achieve a greater terminological accuracy. This effort includes an interesting proposal to distinguish between the concepts of ‘resilience’ and ‘resiliency’ (Luthar, Cicchetti, and Becker, 2000); in line with this, it would seem appropriate to use ‘resilience’ wherever an outcome or competency to resist adversities is being referred to, while ‘resiliency’ should only be used where a specific personality trait is concerned. However, this proposal also raises many issues: firstly, whether it makes sense to differentiate between competencies and personality traits, because as resilience is definitely a holistic construct representing both components, any attempt at their hypothetical separation would diminish its significance and the potential breadth of research.

Moreover, not all researchers in the field of resilience support such a distinction. Some adhere to only one aspect (i.e., resilience or resiliency), while others combine both without remarking on the difference. A review of the literature indicates that the usage of the term ‘resilience’ predominates; of the 153 relevant literary sources we found, the terms ‘resilience’ or ‘resiliency’ are used in the titles of papers in 46 instances, with ‘resilience’ being used forty-three times, and ‘resiliency’ only three times. The literature also presents a number of instances where the terms are used interchangeably; for example, Brooks and Goldstein (2004) used the term resilience in reference to personality traits, whereas Henderson, Benard and Sharp-Light (1999) used the concept of resiliency, which may be interpreted as personal competencies.

From around the mid 1970s until now, a variety of definitions of resilience have been formulated (Ungar, 2004, 2005). Nevertheless, until today, as in the case of many other psychological and interdisciplinary constructs, there has not been a broadly accepted understanding of resilience; earlier such definitional distinctions could have established a frame of reference and could have been used for comparative research and application strategies (Maclean, 2004). A large part of resilience research published so far has frequently interpreted its meaning as an individual’s ability to adapt in the face of risk (Arrington and Wilson, 2000).

Some authors point out that resilience does not always mean ‘invulnerability’ (Anthony and Cohler, 1987), and in addition to reflecting an individual quality and aptitude, it is also a process often developing as the result of interactions of a complex nature between personality traits on one hand and social and situational, usually risk-involving variables, on the other (Bartelt, 1994; Luthar, 2003; Roosa, 2000; Smokowski, Reynolds and Bezruckzko, 1999; Stepleman, Wright and Bottonari, 2009; in Czech literature, Kebza, 2005; Kebza, 2008; Kebza and Šolcová, 2008; Křivohlavý, 2001; Šolcová, 2009).

Recently an extensive discussion has been going on in the literature concerning definitions of resilience as a universal concept, especially regarding its breadth and meaning, in contrast to the prospect that resilience is shaped by specific environments, cultures etcetera.

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Trends in Resilience Theory and Research

(Kaplan, 1999; Luthar and Cushing, 1999; Luthar, Cicchetti and Becker, 2000). Generally, there is agreement that resilience represents a multifactorial and multidimensional phenomenon, characterized by a global aptitude which enables an individual to develop and strengthen their competences in unfavourable life conditions (Gordon, 1985; Gordon, and Coscarelli, 1996). Resilience developing processes involve complex interactions and external factors stemming primarily from an individual’s personality engaging with environmental factors (Kumpfer, 1999). There is further agreement that research in resilience today embraces numerous formulations, employing many different methods that identify levels of resilience which, in fact frequently, only partially or marginally, relate to naturally-occurring resilience; this diversity causes problems in comparing the results, as pointed out by Friborg et al. (2005).

As previously mentioned (Kebza, 2005), some authors differentiate between what is called actual or authentic resilience based on the intrapsychological (personality) and interpersonal (social) conditions and aptitudes, and seeming resilience, or pseudoresilience; the latter term refers to the shaping of behavior in a calculated manner to display some specific desirable characteristics (manliness, toughness, strength, bravery, etc.) and in accordance with real (or perceived as such) requirements of various socio-cultural environments.

Numerous studies take inspiration from different concepts of resilience (Egeland, Carlson, and Stroufe, 1993; Garmezy, 1993; Strümpfer, 1999, 2000; Wang and Gordon, 1994). In addition to the already outlined views of resilience, other researchers focus on the nature of the positive workings of the human mind and coping because of the foundation of one’s hardiness in difficulties and problems (e.g., Egeland, Carlson and Stroufe, 1993; Garmezy, 1993; Masten, 1994). With respect to difficult situations and problems, with only limited possibilities of resolution, Antonovsky (1987) and Cohler (1987) noted that, even when the current conditions and problems cannot be solved completely, each partial success on the way toward their resolution has an encouraging effect on the individuals involved.

Research on resilience has also been enriched by studies of conditions promoting recovery following an illness, accident or a demanding period of coping with crisis situations (e.g., Frankl, 1967, 1986; Gordon and Song, 1994; Murphy and Moriarty, 1976). Feedback derived from relationships may further enhance this process by labelling as ‘resilient behavior’ instances of efficient handling of difficult situations; in this context, Kumpfer (1999) speaks of ‘resilient reintegration’.

An important source of knowledge about the nature of resilience has also been an extensive field of research about coping with strain and stress. The ‘first generation’ studies on stress, which were completed before the publishing of the collection of papers ‘Psychological Stress’ (Appley and Trumbull, 1967), shared the goal of defining resilience as a more or less permanent personality trait. This includes constructs such as stress tolerance, stress threshold, frustration tolerance, individual tolerance, etcetera. The general factor of resilience was not successfully defined, and analogies with factors of intelligence were not established.

Within the next phase of research on resilience, the major works of the ‘second generation’ were summarized by the same authors in the 1980s (Appley and Trumbull, 1985), when an emphasis was placed on the interaction between the situational variables and an individual. From an individual’s perspective, a decisive variable is named by different authors as adaptive capacity, load capacity, system capacity, carrying capacity, coping resources,
et cetera. Nevertheless, its basic meaning is essentially the same: resilience represents what is available to an individual at the point of confrontation with a stressor.

In the course of the 1980s, studies began to provide evidence that psychosocial stress—those stressors related to work-related problems, as well as those outside work,¹ may have serious pathological effects on the immune system² (McKinnon et al., 1989; Ursin et al., 1984), along with the musculo-skeletal (Feuerstein, 1987; Okun et al., 1988), cardiovascular (Frankenhaeuser, 1985; Manuck, Kaplan, and Clarkson, 1983; Rosenman, 1982) and human central nervous systems (Barrett, 1979; Sauter et al., 1990). These effects are mediated by neuroendocrinical reactions in the organism with a potentially harmful impact on every organ and every system in the body. Along with this knowledge, a new outlook on stress also evolved: it is no longer understood as an episodic harmful event, but as an unavoidable part of life and as a process during which humans act and react, while changing themselves and their environment (Schenck, 1985).

With a growing recognition of the importance of health and the negative effects of stress on health, the ‘third generation’ resistance studies began investigating variables that could mitigate or remove the negative impact of stress on health (La Greca, 1985; Levi, 1982; Kobasa, Maddi, and Kahn, 1987; Rosenman, 1982). For resistance interpreted in this way, the term resilience was introduced that formerly had almost exclusively been reserved for use in connection with the resistance of plants or materials. Apart from resilience to stressful situations, this new meaning of the term includes flexibility and adaptability, which also refer to the restoration of the system to its original form or condition.

Regarding the relationship between stress and personality, their intrinsic connectiveness is determined by two main reasons: (i) a postulate that, in psychology, there is no point in formulating general laws without considering individual differences (Eysenck, 1983); and (ii) the concept of stress itself that cannot be understood without a concrete individual experiencing a specific stressful situation.

Besides personality, the second basic source of resistance to stress consistent with ‘resilience’ is the social sphere. The third source is undoubtedly the somatic area, referred to as being ‘in good shape’ or physically fit, etcetera.

The main factors supporting resilience - (dispositional) optimism, spirituality (with religious as well as non-religious roots) and physical fitness - are recognized in descending order (for more details, see Blatný, Dosedlová, Kebza, and Šolcová, 2005; Kebza, and Šolcová, 2003; Šolcová 1994).

There are two major mechanisms through which resilience acts as a buffer or shows its ‘salute-protective’ characteristics: (1) through a direct influence on physiological processes.

¹ Psychosocial stress in employment is related to its social environment, organization aspects and content of the job, as well as certain operational aspects of the performed task (Sauter et al., 1990). In the area of non-work stress, investigations focus primarily on the issue of the adverse impact of chronic hassles and life events. Psychosocial factors, however, do not respect borders between work and life: although it has been proven that relation of non-work, as well as work stress to health are independent (health risks), excessive requirements and stress producing conditions in both areas are mutually overlapping (Klitzman et al., 1990).

² Interest in psychosocial impact on immunity apparatus is currently growing (certainly in the context of AIDS). The importance of the immunity system lies in the fact that it is part of a broad homeostatic system and that it is a sensor for aversive stimuli that the CNS cannot register. It was discovered that stress decreases resistance against infection, increases susceptibility to oncogenic viruses and weakens response to tumor antigens (Schreiber, 1985). It has also been proven that immunosuppression is related to the hypothalamus-hypophysis axis, not to the adrenergic axis. According to the latest results, it is necessary to differentiate between acute stress and chronic stress: simply said, a long-term stressor leads to immunosuppression (Evans et al., 1997).
and their working as a mediator; and (2) indirectly through cognitive assessment and choice of offsetting strategies and acting as a moderator.

In essence, resilience as psychological resistance to stress is a complex construct consisting of personality characteristics and ways of thinking, along with socially and somatically based sources, lifestyles, social connectiveness and relationships, competence, fitness, etcetera; some of them are central to resilience, while others are rather marginal or may, at the same time, belong also with other psychological constructs.

**SOME PROTOTYPICAL FORMULATIONS OF RESILIENCE**

One of the common ‘points of departure’ in the different approaches to the personality-grounded sources of resilience is the effort to learn more about the conditions and circumstances resulting in an individual’s outlook on the world and their place in it; this also refers to the individual’s views regarding the factors that have had the greatest influence on forming such an outlook.

Initial models of resilience, which were gradually developed in the course of early philosophical and psychological thinking, can be credited to the efforts of voluntarists who emphasized strength of will as the decisive quality of humans; they assumed that a strong-willed individual would be able to overcome all the difficulties and pitfalls emerging on their journey through life. Later it turned out that relations of far greater complexity are involved, when it was discovered that, besides will and motivation, a whole complex of personality qualities, aptitudes and situational variables play a role.

As pointed out earlier, within a dynamic psychology context, Freud created the concept of *ego strength*, including the empirical part of the psyche, individual feelings and experiences which acts as an important source of mental strength and resilience, along with the protection of ego-defensive mechanisms. In relation to this approach of Freud, Block, in the second half of the 1990s, proposed the concept of ‘ego-resilience’ (see more details below). Further prototypical models of resilience include causal attribution theory (Heider, 1958) which focuses on the circumstances influencing people’s opinions about the nature of their own actions and the actions of others, and on identifying the causes of their own actions and the actions of other persons.

**Locus of Control**

Another of the most frequently referenced approaches is the concept of locus of control (LOC) postulated by Rotter (1966), which holds that people differ also in their generalized expectations and beliefs, depending on how they perceive the determinants of their behavior and its consequences. People with an external locus of control believe that their life is primarily determined by external circumstances and that they themselves cannot significantly influence its development. People with an internal locus of control believe that the course of their life primarily depends on their own abilities, efforts and activities, and that they have their life relatively under their control. It has been verified by a number of studies that this categorization is relatively stable over time and, in the case of internal locus of control,
enables people to take an active, independent, confident and effective approach to coping with demanding life situations.

Numerous authors, among them Frankenhaeuser (1979) and Karasek (1979), point to the importance of control over the development of a situation as the key to coping with demanding situations. The concept of control is part of many other approaches, including learned helplessness which is regarded as loss of control (Seligman, 1975) and which was later revised using the findings about attribution theory by Abramson, Seligman and Teasdale (1978), self-efficacy by Bandura (1977, 1989, 1991, 1997), and controllability by Glass and his co-workers (1973). The element of control is also included in probably two of the most wide-spread concepts of resilience - the sense of coherence by Antonovsky and hardiness by Kobasa and her co-workers.

Self-Efficacy

Self-efficacy is one of the main concepts of Bandura’s theory of social learning, later reworded as social cognitive theory (Bandura, 1977, 1989, 1991, 1997). Through this theory, the author endeavors to interpret human behavior as resulting from the interactions of three main groups of factors (behavior, personality aptitude, and external environment). Self-efficacy is understood as confidence in one’s own abilities or, as stated by J. Janoušek (1992), as ‘self-fulfilment’ which, according to Bandura, activates other determinants of behaviour. Further to Bandura’s theory, acknowledgement of self-efficacy has a positive impact on thinking patterns, individually performed activities, as well as emotionality particularly in the context of general emotional activation and arousal. A sense of self-efficacy can be derived from four types of information: the most important source regards the authentic experience of handling a task; the second source is the demonstration of results from other people’s activities which represents modeling of successful functioning; the third source is based on persuading people that they have the needed abilities, knowledge and skills; and the fourth source is information about one’s state of health.

The concept of self-efficacy was created with the aim of mediating perceptions of an individual’s goal-oriented efforts to achieve something and, at the same time, for measuring the intensity of people’s beliefs about their abilities. For this purpose, a questionnaire was developed consisting of a set of self-evaluating scales; the questionnaire is currently broadly utilized, having been validated in cross-cultural studies and being useful for promoting good health (i.e. by giving up smoking, maintaining proper nutrition, undertaking physical activities or coping with stress). Bandura and his collaborators provided further evidence of the universality of this construct in relation to various cultures (Schwarzer, 1994; Schwarzer and Born, 1997; Scholz et al., 2002).

German researchers have contributed much to studies of resilience in relation to health. Schwarzer and his colleagues published a monograph on the main issues of health psychology (Schwarzer, Schüz and Ziegelmann, 2006). On a similar subject, the same publishing house (Springer), in the same year, released another extensive work by German authors Renneberg and Hammelstein (2006).
PRIMARY CONCEPTS OF RESILIENCE

The primary understanding of resilience originated with the aim of articulating protective factors involved in the complex feedback interactions between personality and situational variables.

Sense of Coherence

Antonovsky proposed the concept of Sense of coherence (SOC) which, together with the concept of hardiness (Kobasa, 1982), expands on the ideas provided by existential and humanistic psychology. Antonovsky (1979, 1987) used personal accounts of experiences of people incarcerated in German concentration camps to examine the essential features which enabled them to face these extreme conditions; he postulated three main components constituting this sense of cohesion (Antonovsky, 1979):

- Comprehensibility, which expresses the predisposition to understand the world and one's place in it as a comprehensible, knowable, and ordered unity that operates logically and rationally, and with a relatively high degree of predictability.

- In addition to comprehensibility and ‘knowability’, also essential is the ability to affect, verify and manage life roles and goals in the world; this is called manageability.

- Meaningfulness completes the sense of cohesion regarding one's position in life and activities as being worth the effort to understand and actively cope with it; it is an expression of one's existence. If the world is comprehensible and manageable, human existence, behavior, experience, and relationships with others should also be perceived as meaningful.

Antonovsky's conceptualization inspired a broad range of studies focused on relationships of mental dispositions to health. Numerous studies largely verified the sense of coherence formulations using versions of Antonovsky's original SOC scale, consisting of 29 items (Antonovsky, 1987, 1993); only when the original SOC-29 was reduced to SOC-3, did its reliability suffer due to poor internal consistency resulting from the low number of items (Lundberg, Nyström and Peck, 1995; Schumann et al., 2003).

Strümpfer (1999, 2000) further developed Antonovsky's concept of resilience in his model of psycho-social resilience in adults. Resilience is understood as a dynamic process affected by individual intra-psychic sources and by numerous external life contexts, circumstances, and opportunities. The main components of Strümpfer's model represent active coping with excessive demands: appraisal, motive, setting of goals and an individual’s resilient behavior. Another part of the model consists of five personality predispositions related to resilience: three are based on Antonovsky's model of SOC (comprehensibility, manageability, meaningfulness); the fourth is the hope that one’s goals will be successfully achieved; and the fifth is the actual instrumental activity. The author also adds two types of

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social support - sought and received, which, according to him, substantially strengthen resilience. The final section of the model consists of three outputs: positive feelings together with three outputs of personal growth, personal resources and coping skills, and improvement in interpersonal relations. Strümpfer created a projective technique with a scoring system for diagnosing the level of resilience. The author does not consider this to be a test and instead he calls it a Resilience Exercise for Adults.

In addition to Antonovsky’s basic concepts, Strümpfer’s model was also inspired by self-assessment approaches to resilience described by Block and Kremen (1996) and also by the research on motivational predisposition and search for motivational determinants in thematic apperception studied by Atkinson (1982) and McClelland (1987). As a result, Strümpfer assembled a series of story-based sentences to be completed by respondents. In the creation of the stories, respondents are requested to elaborate on the experience, and on behavioral and social characteristics of the persons involved. The stories are assessed using a detailed scoring system. The method can be administered individually and in groups, and the author has also prepared an electronic version. Strümpfer’s model represents an original approach to the development of measures of resilience.

Antonovsky’s SOC conception has also been frequently reflected in the Czech literature. Hošek (2003), for example, found higher SOC values in students who care about their physical shape, who exercise regularly and who are less often ill. However, Vašina (1999) notes the lower reliability of the Czech version of the SOC questionnaire compared to the PVS questionnaire version by S. Kobasa. Nevertheless, the international comparison of results of the SOC national versions is a useful addition to the knowledge base.

**Hardiness**

Hardiness, in the context of resilience, originated in the Chicago and Boston schools by Kobasa and her collaborators. The major focus of their research was on the identification and development of personality predispositions which would increase resistance to illness. This concept also continues the tradition of existential and humanist psychology (as it is understood as a combination of human competences, skills and behavior that supports the well-being of people in stressful situations, and enhances their coping strategies). According to Kobasa and colleagues (Kobasa, 1979, 1982; Kobasa, Maddi, and Kahn, 1982; Kobasa and Pucetti, 1983), hardiness is a summary disposition, consisting of three major components:

1. Challenge, which is an ability to perceive the pressure of everyday demands not as a destructive load or stress, but rather as an opportunity to compete, as in sports.

2. Identification (with something), responsible passion (for something) and commitment; loyalty to oneself and one’s principles represents a major prerequisite of resilient engagement in all activities.

3. The third component of hardiness is the ability to control and manage; that is, the ability to keep events under control, even if the situations and events take a wrong turn.
Identification of these components of hardiness is based on the existential tradition (founded by Kierkegaard, Nietzsche, and later developed by Husserl, Heidegger, Jaspers, Sartre, Marcel, Camus, Merleau-Ponty etc.), but it is also empirical: Applying hardiness conceptualizations Kobasa and colleagues documented the resilience of managers who had gone through numerous stressful life events, but did not become ill, and compared them to those who had also gone through similar events, but were frequently ill. They differed according to the higher activity level with which they engaged in work and extra-work roles, and also in their perception of external pressures as a challenge to compete or as an opportunity rather than a threat; they also had a stronger conviction that they could make a difference (Kobasa, 1979). However, there were questions regarding whether poor managers’ and good managers’ health resulted from their attitude, or whether pre-existing poor health was the reason for their lower ability to fully engage and actively seek control of the situation. This led Kobasa’s team to initiate a longitudinal study focusing on the identification of relevant personality features of the managers in the period before the onset of the potential threats. For two years, the investigation monitored illness indexes and the level of stressors. The results of the study confirmed that the employees with the previously identified personal characteristics were less frequently ill (Kobasa, Maddi and Kahn, 1982). The Personal Views Survey (Kobasa, 1985) was created to diagnose these personality predispositions and situation-applied skills. These results have also been confirmed by further studies conducted on females (see Wiebe and, McCallum, 1986).

Regarding the question as to whether hardiness could be increased through special training, various research conducted since the middle of the 1980s at the Hardiness Institute\(^3\) has indicated a very positive relationship between an increasing level of hardiness and a reduction in the risk of cardiovascular disease, as well as of some other chronic non-infectious diseases. This promising outcome, however, has not been confirmed so far by other independent studies utilizing strict controls of some of the pertinent variables.

In Czech literature, the dimension of ‘commitment’ in relation to hardiness is close to novelty seeking, which is the opposite of learned helplessness. It is a tendency towards active and optimistic searching for a possible solution, despite an unfavourable course of events (Směkal, 2002).

Global, as well as Czech, literature has confirmed the role of resilience in terms of hardiness in coping with stress and subjectively perceived health, in that people with higher levels of hardiness considered themselves as being in better health (Parkes, 1990; and in Czech literature Mohapil, 1992; Vašina, 1999) and enjoyed better social support (Šolcová and Kebza, 2003) etcetera.

Within our earlier studies (Šolcová and Kebza, 1996), we found significant differences in the general level of hardiness in relation to its challenge component in the American and Czech samples with the challenge component being higher in Americans. As an interpretation of possible causes, we considered, among other factors, possible effects of culturally based philosophies of families along with school education. It was deduced that Anglo-Saxons, and particularly Americans, are prepared from childhood onwards for the reality of everyday interpersonal comparisons, for the purpose of excelling, achieving success and being the best; by contrast, Central Europeans, and especially Czechs, emphasize ‘being like others’ and not thinking of themselves as better than others. However, this value system, together with an

\(^3\) http://www.hardinessinstitute.com/Hardi_health.htm.

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emphasis on courtesy and consideration for other people, is disadvantageous when facing the challenges of life. Individuals capable of responding to adversity, as a self-mobilizing challenge, are better prepared for possible failures and losses, and for finding personal strength compared to others, which in turn creates opportunities to be ‘winners’ next time. Therefore, athletes who engage in sports competitively, and consider less satisfactory outcomes as a challenge could eventually achieve better results by persistent involvement in repeated preparations, training and competitions; for them, a singular loss or failure is not regarded as a disaster, but as a clue about what needs to be improved, so that they will be able to succeed in the next race or game.

The concept of resilience in relation to hardiness has inspired and influenced a number of other researchers throughout the world, as well as in the Czech Republic and Slovakia (such as Křivohlavý, Vašina, Krátký, Hrachovinová and Selko).

**Ego-Resiliency**

As indicated earlier in the chapter, yet another conceptualization of resilience was presented by Block (1996) as ‘ego-resiliency’; this construct refers to both inter- as well as intra-individually adaptability capacity for building adequate adaptation to the impacts of external and internal stressors. It is put forward as a personality trait which offers an individual the possibility of eliciting behaviors that could lead to useful adaptations, as required by a particular environment (Block, 1996).

**Flow**

From the non-ego perspective, there is a concept of ‘optimal experience’, which refers to achieving specific goals in the most natural harmonious manner; this is associated with an extremely strong emotional experience of enthusiasm and enjoyment. The American psychologist of Hungarian origin, Csikszentmihalyi, called this state of mind and process ‘flow’. Although flow is not a conceptualisation of resilience in itself, it includes protective features which enhance the ability of an individual to cope with the hampering effects of the environment. Experience of flow is determined by personality aptitudes and skills on the one hand, and by matching requirements of the task, on the other. However, too many requirements and challenges may produce just as detrimental an effect as their lack (Csikszentmihalyi, 1990, 1997; Csikszentmihalyi and Csikszentmihalyi, 1988). Csikszentmihalyi assumes that ‘optimum experience’ promotes personality growth. The term ‘flow’ manifests a deep engagement in an activity, creating an impression of flowing into the activity, and a supreme, even ecstatic feeling associated with reaching the desired goals as a result of the performed activity.

After analysis of interviews with thousands of people who were asked about the circumstances accompanying their passionate interest and about achieving maximum satisfaction from their activities, Csikszentmihalyi concluded that the common characteristics of ‘flow’ are as follows:
Positive emotions, cheerfulness and ecstasy are mostly mentioned retrospectively, since momentary absorption in an activity eliminates emotions.

Csikszentmihalyi measured the frequency of absorption within randomly chosen periods of time during the day and evening. For this, he used pagers and, at their signal, subjects recorded everything about the character of the activity being performed, including their depth of interest. In this way, over a million responses on the performed activities and their characteristics were collected from large samples. Csikszentmihalyi concluded that the ability to become deeply interested in a performed activity produces a storage of internal strength, a ‘psychological capital’ from which individuals may benefit in the near, as well as in the more distant, future.

In Czech literature, Mikšík (1973) created instruments to detect people’s susceptibility to psychological failure. The original IHAVEZ questionnaire, which identifies basic components of resilience and variability of personality, was very extensive (300 items); its shortened variant (200 items) is known in the literature as SPIDO, or SPARO. Mikšík’s concept of resilience is based on the constellation of cognitive liveliness, stable emotions, a high level of self regulation, and low (uneasy) situational adaptation (Mikšík, 1980, 1985).

Apart from these main concepts of resilience and frequently reflected various diagnostic tools, other methods of determining resilience have been published. Based on analyses of various concepts of resilience, Connor and Davidson - American researchers at the Duke Medical Center in North Carolina - created the CD-RISC (Connor Davidson Resilience Scale). This scale consists of 25 items assessed on a five point scale and, according to the authors, has very sound psychometric properties. Sensitivity of the scale was tested with a group of patients diagnosed with post-traumatic stress disorders; ANOVA analysis revealed a relationship between increased CD-RISC scores and improvements following pharmacological treatment. The scale can thus be used not only to determine the level of resilience, but possibly to measure also the effectiveness of treatments of post-traumatic stress disorders (Connor and Davidson, 2003).

Another team dealing with the issues pertaining to resilience is the group of Norwegian psychologists, including Hjemdal from the Norwegian University of Science and Technology in Trondheim, Friborg and Martinussen from the University of Tromso, and several others. These authors designed a questionnaire to determine the level of resilience in adults (Friborg et al., 2003) and they also worked on the verification of a similar method for children and adolescents. Their questionnaire for adults includes 33 items which concentrate on several main factors of resilience, such as personal strength, social competence, structured style, family cohesion and social resources.

The authors of this chapter regard the definition of resilience as a multidimensional phenomenon conditioned by multiple factors, and find it useful to understand resilience as a  

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complex construct (a fuzzy set) consisting of personal, social, and physical resources. It appears that understanding resilience solely in salutogenic terms has produced a great number of variable insights and practical recommendations, and now research attention has shifted to identification of:

- factors enhancing resilience;
- specific characteristics of resilience in adults as well as in children and adolescents;
- focus on the family role;
- emphasis on enhancing resilience that offers better prospects for future generations;
- Preparing for current challenges associated with prospects of potential and actual terrorist attacks, natural and technical disasters, peace missions, etcetera.

**CONCLUSION**

While the definitions differ, the core of resilience remains largely the same. Resilience is a holistic construct representing two components: a state, based on personality characteristics and the human capacity to cope with stress and unfavourable conditions, and also a dynamic process, flowing into dynamic personality styles that support active adaptation towards adversity and trauma. The personality characteristics include, amongst others, a high level of self-esteem, optimism, control, meaningfulness, manageability, openness to new experiences, and a set of competences to assist in facing life’s adversities.

These complex characteristics create opportunities not only for researchers, but also for promotion by educators, parents, helping professionals, organizations and various levels of government to use such knowledge, skills and competence for practical applications in everyday life events.

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Chapter 3

LIFE IS MORE THAN SURVIVAL: EXPLORING LINKS BETWEEN ANTONOVSKY’S SALUTOGENIC THEORY AND THE CONCEPT OF RESILIENCE

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ABSTRACT

This chapter aims to explore, and to some extent, clarify the relationships between the salutogenic theory and the core concept sense of coherence by Antonovsky and the concept of resilience. Since 2003, the authors have conducted an extensive global synthesis of current salutogenic research (1992-2009) based on approximately 900 papers and doctoral theses. In addition, we had the opportunity to discuss the salutogenic model of health with Antonovsky before he died. Both authors co-operated closely with Antonovsky's colleagues and the inner circle of salutogenic research. The evidence base for the salutogenic research is presented in this chapter and in particular relates to the concept of resilience. Each concept has its unique and distinctive feature. The “Salutogenic Umbrella” is presented here as a framework including some other related concepts explaining health and a good life.

Keywords: Sense of Coherence, Salutogenesis, Resilience, Antonovsky, Health Promotion

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INTRODUCTION

There are many similarities between the framework of resilience and salutogenesis. According to Antonovsky, the core of salutogenesis stems from stress research while scientists involved in resilience research always refer to risk and adversities. Second, neither the sense of coherence nor the concept of resilience are seen as personal characteristics, but rather as a process. Third, both concepts emphasize resources: the salutogenic framework talks about Generalised Resistance Resources, while resilience research uses the word protective factors. Fourth, they both consider the maintenance and development of health as a process in a continuum. Fifth, both Sense of Coherence and resilience can be applied at the individual, group (including families) or societal level. The two concepts differ when it comes to the adjustment process where the resilience concept is connected always with risk factors. However, salutogenesis has a much broader perspective beyond just the measurement of the sense of coherence.

THE ROLE OF SALUTOGENIC THEORY IN HEALTH AND WELLBEING

The main focus of this section is to describe some preconditions for a positive development of health and wellbeing, that is, we shift attention from risk and weakness to strength and resources by describing the essence of the salutogenic theory and its core concepts Sense of Coherence (SOC) and General Resistance Resources (GRR) which were developed by the medical sociologist Aaron Antonovsky (1979, 1987). The salutogenic theory is related mainly to the concept of resilience and to some extent to the concept of resourcefulness (Rosenbaum, 1990). The authors are currently undertaking a systematic and analytical review of salutogenic research at the Folkhälsan Research Centre at The Health Promotion Research Programme in Helsinki, Finland. In addition, personal communication between Lindström and Antonovsky at the beginning of the 1990’s supported by the experiences from chairing the IUHPE Global Working Group on Salutogenesis and discussions with Antonovsky’s research colleagues form the considerations and conclusions in this chapter.

This book emphasizes in its title resources as responses to challenges. Human development requires challenges. Based on salutogenic theory, to be exposed to severe strain can be experienced as a challenge. Strain forces us to find meaning and motivation to solve problems, and reduce tension and stress where SOC and GRRs serve as the essential coping resources. In resilience research, challenges are related to at-risk situations and adversities. Here the protective factors are essential for a positive outcome. The main focus of this section is on how to deal with challenges and stress and still stay well, in other words salutogenesis. How do we create societies where people, especially children, do not need to be exposed to serious adversities and need to prove they can survive? In order to explain this, we have to differentiate between challenges and stress. Challenges are stimulating factors leading to positive development, but challenges moving to prolonged overload and stress are factors that damage our health. Rutter talks about a so called “steeling” effect, meaning that the experience of stress or adversity sometimes strengthens resistance to stress later in life (Rutter, 2006, p. 2).

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The descriptions of the salutogenic theory and the concept of resilience follow the outline in Table 1.

### Table 1. An Overview of Similarities and Differences between Salutogenesis and the Concept of Resilience

<table>
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<th>The Frameworks</th>
<th>Salutogenesis (Antonovsky)</th>
<th>Resilience (Garmetzy et al.)</th>
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<td>Contextual, situational, systems</td>
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<td>Orientation</td>
<td>Life orientation, a dynamic process in a continuum of ease/dis-ease Health promotion</td>
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<td>Resources, abilities, capacities, potentials, assets</td>
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<td>The core question</td>
<td>The origin of health, what creates health? Who are the people staying well? What can their experience tell us about health resources?</td>
<td>Why do some people stay healthy and others do not, regardless of severe hardships and adversities?</td>
</tr>
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### The Theoretical Foundation

| Definition | The original definitions of salutogenesis and the sense of coherence (Antonovsky) are generally accepted. Salutogenesis is a much broader concept than only the measurement of the SOC. There are many other theories and concepts with salutogenic elements available for explaining health (see The Salutogenic Umbrella in Figure 1) | Hard to get a hold of the complete content of resilience. Many different definitions of the concept, because of different available applications on different levels. However, across the definitions, a general consensus of community resilience has emerged. |
| Key Concepts | Sense of Coherence (SOC), multidimensional construct | Resilience, “bouncing back”, beating the odds, multidimensional construct |
| Elements | Comprehensibility, Manageability, Meaningfulness | |
| Status | Coherent theoretical framework, extensively and empirically examined, systematically and analytically synthesized, evident | Lack of a coherent theory base, many theories depending on the level and dimensions explored; Conceptually diffuse, “slippery” concept, principle, evidence |

### The Operationalisation

| The measurement | The Orientation to Life Questionnaire The original SOC-29 and SOC-13 item-scales, some modified versions with the same questions but with differing scoring alternatives | Different questionnaires with different items depending on the level and dimensions explored |
| Outcome | Good perceived health (mental, physical, social) and Quality of Life (spiritual health) | Survival, perceived good health and Quality of Life |
| Evaluation | The key concepts of salutogenesis, the sense of coherence | No clear way to evaluate dependent on the lack of a sound theory base |
| Effectiveness | The global evidence base proves the health model works | Lack of coherent and comprehensive evidence |
The Frameworks

Thirty years have passed since Aaron Antonovsky introduced the salutogenic theory as a global orientation to view the world. The origin of the theory derives from interviews with Israeli women, conducted during an epidemiological study of the problems that women, from different ethnic groups in Israel, experience during menopause (Antonovsky, 1979, 1987). One of these groups shared a common experience – they had survived the concentration camps of World War II. To his surprise, he discovered that some of these women had the capability of maintaining good mental health and living a good life, in spite of all they had been through. He claimed that the way people viewed their life would have a positive influence on their health. Antonovsky also stated that salutogenesis was not limited by the disciplinary boundaries of one profession, but rather that an interdisciplinary approach was needed between disciplines to produce better health outcomes. Further, he maintained that salutogenesis was not just about the individual, but an interaction between people and the structures of society, that is, the human resources and the conditions of the living context. This led to his model of health based on “what creates health?” rather than “what causes diseases?” Note that the focus was on life, not death and disease.

The concept of resilience was in use already in the nineteenth century. In a historical review of the construct Tusae and Dyer (2004), two main tracks emerged; the physiological aspects of coping and the psychological aspects of stress. The physiological aspect started from a view of life as a balance and homeostasis, continued by discussions on emotional stress and morbidity in the 1950s, the issue of brain plasticity and psycho-neuro-immunology in the 1970s-1980s, and finally ended up with the construct of resilience in the 1990s. The psychological track is based on a discussion of subconscious defense mechanisms (1800s-1950s), coping as a conscious process in the 1960s, a focus on protective/risk factors in the 1980s, and ends with the concept of resilience in the 1990s. In the early stages of resilience research, much of the focus was on the vulnerability of children, living in at-risk conditions, still being invincible (Garmetzy and Rutter, 1988, Garmetzzy, 1991, Rutter, 1993). Rutter (1987) centers on four main processes in resilience: (i) reduction of risk impact, (ii) reduction of negative chain reactions, (iii) establishment and maintenance of self-esteem and self-efficacy, and (iv) the opening up of opportunities. There is a common agreement that resilience emerges when individuals, faced with negative life events or strains, have the capacity to mobilize protective factors or internal and external resources and stay well.

An Asset Approach Focusing on Resources

Health is created where we live, love, learn, work and play (WHO, 1986). This is clearly stated in the Ottawa Charter, the WHO core principle document for health promotion. This means that research should focus on people in the context of the here and now. The approach of the salutogenic theory is to focus on the interaction between the individual and the group, that is, families and the environment. The salutogenic theory of health is derived from the assumption that human nature is heterostatic rather than homeostatic. This means that we are affected by stress and daily hassles continuously in our everyday life. Confronting a stressor results in a state of tension which one has to deal with. Whether the outcome will be pathological, neutral, or salutary, depends on one’s capability to manage tension.
Antonovsky’s salutogenic theory, this was formulated as the Sense of Coherence (SOC) and Generalized Resistance Resources (GRR).

The basis for homeostatic theories, that is Lazarus’ cognitive theory on stress and coping and life event research, was a life in balance (Antonovsky, 1987). According to a pathogenic view of life, a disruption was assumed to damage the balance and to damage health and wellbeing. Stressors, according to Antonovsky’s thinking, are seen as challenges instead of something that damage your life. Challenges are more open-ended, initiating an interaction between the individual and the immediate environment. Individuals with a strong SOC are able to invest energy to solve problem, and are able to construct and reconstruct the immediate environment to make it understandable. The assumption is that the things you understand become more manageable. Furthermore, the traditional theories on stress and coping are mainly focused on the concept of control. In the salutogenic theory, the emphasis is on the person’s ability to use available GRRs, both internal and external, to manage stressful situations. The core of the salutogenic theory and philosophy is how to manage the situation that life cannot be controlled. The salutogenic view on stress and coping is that one should be able to live in chaos.

Life Orientation and Processes

Fundamental to the salutogenic theory is that health is considered as a position on a health ease/dis-ease continuum and the movement is in the direction towards health, rather than a dichotomy between health and illness. This means that we need to focus on discerning what conditions give us good health. This approach makes a difference to the outcome. It is a dynamic process-oriented construct, meaning that we are always, to some extent, healthy independent of an ongoing illness or disease. Antonovsky (1993a) emphasized that the SOC concept was a dispositional orientation, rather than a personality trait or a specific coping strategy. Having a strong SOC means that the person is flexible and able to use different strategies in different situations to solve problems. In other words, it reflects a person’s capacity to respond to stressful situations.

The concept of resilience as a global construct is much more complicated. Findings from a thorough review of the literature by Vanderbilt-Adriance and Shaw (2008) support the conceptualization of resilience as a dynamic process that varies within and across time, rather than as a stable, static trait. It appears to be uncommon at the highest levels of risk (multiple risks, low SES, poverty).

The Question is More Important than the Answer

It is essential that we are clear about how the way that research questions are posed impacts on what is being explored. Therefore, we must focus on what is a salutogenic question. Both scientists investigating resilience and salutogenesis pose the question why some people, regardless of severe hardships, stay healthy and others do not. In line with the concept of resilience, the salutogenic theory focuses on people’s capabilities, competencies, potentials, resources for health and a good life - in other words an asset approach (Fonagy, Steele, Steele, Higgitt and Target, 1994, Luthar, 2003; Luthar and Cicchetti, 2000). While
research on resilience is mainly related to a state of adversities and risk for a negative outcome of health and well-being, salutogenesis always focuses on the positive end of a health continuum.

A Lifelong Development of the SOC

The SOC seems to be relatively stable over time, but not as stable as Antonovsky initially assumed. He stated that the SOC develops until the age of 30, and then is stable until retirement, after which it decreases. This assumption has not been empirically supported. Findings show that the SOC develops through the whole life span. Several longitudinal studies have demonstrated evidence of the stability of the SOC (Eriksson and Lindström, 2005). The variation in means over time shows small differences. From a life orientation perspective, salutogenesis seems to be a rather stable entity; therefore, it is not surprising that the SOC is quite stable and resumes its stability after experiencing stressors, as compared to other short term phenomena.

One way to look at the development of the SOC over time is to explore the findings from studies using the original SOC-scales (29 and 13 items) on different samples of general (healthy) populations in different age groups (mean age). The optimal position would be to follow the same population through life; however, until such a study is conducted, we have to rely on other techniques and comparisons to obtain an answer. Figures 1 and 2 demonstrate the tendency of the development of the SOC over time through the use of mean SOC scores and mean age on general populations, as variables in the time period of 1992-2008. The tendency is that, independent of some fluctuations, the SOC does increase with age.

![Figure 1. A Lifespan Approach of the Development of the SOC (29 items).](image)
The stability over time for the SOC and the concept of resilience is interesting. Stability can be considered as a lack of SOC or resilience. According to Coleman and Hagell (2007), the concept of resilience can change over the life span. “It may not be apparent at one stage, but may then develop at another stage because of the availability of protective factors” (p. 167). In contrast to this view, Rutter (2006, p. 9) considers that the concept of resilience is limited regarding the stability over time. Findings from a follow-up study of children from profoundly deprived residential institutions in Romania, who were adopted into families in the United Kingdom, showed remarkable persistence of continued adverse effects after more than seven years. The implication seems to be that the pervasively depriving circumstances took some months to have an effect, but when they lasted beyond the age of 6 months, they tended to have effects that endured many years.

The Theoretical Foundation

Salutogenesis stems from the Latin salus (health) and the Greek genesis (origin) meaning the origin of health. It is the opposite of the pathogenic concept where the focus is on obstacles and deficits. The salutogenic theory was formulated by Antonovsky as a conclusion of his analysis of interviews with women under severe stress. He realized that health research had been looking in the wrong direction, towards pathogenesis, and developed an instrument for measuring health (the SOC) which has since been extensively tested in empirical studies across the world, and analyzed and synthesized in a large-scale systematic review. This has shown that the salutogenic theory is sound. Regardless of what term - theory, concept, principle or model - is used, two characteristics are important. Firstly, the ability to generalize across settings and populations is fundamental; and secondly, it has the ability to test and thus establish the validity of a theory which will distinguish it from other systems of beliefs and ideas (van Ryn and Heaney, 1992).
In contrast to the salutogenic theory, the concept of resilience is a construct, not a single theory. In a critical review of the concept of resilience, Atkinson, Martin and Rankin (2009, p. 139) state that “resilience is an important concept but the current state of knowledge in terms of theoretical models and clinical as well as practical application remains very much a work in progress.” In resilience research, varying theories are used depending on what level is studied.

Definitions of the Concepts

Salutogenesis is defined as the movement in a continuum between total ill health (disease) and total health (ease) (Antonovsky, 1993a). The SOC is defined as follows: “Sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that: (1) the stimuli from one’s internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement” (Antonovsky, 1987, p. 19). This capacity is a combination of people’s ability to assess and understand the situation they are in, to find a reason to move in a health promoting direction, and also having the capacity to do so. These are the core dimensions of the SOC: comprehensibility, meaningfulness and manageability.

In the salutogenic theory, the GRRs give the prerequisites for life experiences which in turn maintain and strengthen a positive development of health. At least three life experiences seem to be relevant in the development of a strong SOC; consistency, emotional load balance and a sense of belonging (Sagy and Antonovsky, 1996). Further research has shown that the most relevant childhood experience related to the adult SOC is participation in shaping outcomes (Sagy and Antonovsky, 2000). In research on resilience, the so called protective factors serve as prerequisites for a good outcome. A GRR is “a physical, biochemical, artifactual-material, cognitive, emotional, valued-attitudinal, interpersonal-relational or macro socio cultural characteristic of an individual, primary group, subculture or society that is effective in avoiding and/or combating a wide variety of stressors” (Antonovsky, 1979, p. 103). The GRRs can be found within people as resources bound to their person and capacity, but also in their immediate and distant environment, as of both material (money, housing, food, clothes) and non-material (health and social services, social support, social integration). At least four of the GRRs have to be available to enable the development of a strong SOC: meaningful activities, existential thoughts, contact with inner feelings and social relations.

There are three key aspects of salutogenesis. Using Antonovsky’s vocabulary: first the focus is on problem solving/finding solutions; second, it identifies generalized resistance resources that help people to move in the direction of a positive outcome; and third, it identifies a global and pervasive sense in individuals, groups, populations, or systems that serves as the overall mechanism or capacity for this process - the sense of coherence (Lindström and Eriksson, 2006). Using the SOC questionnaire is not the same as being guided by the salutogenic perspective. Salutogenesis, that is the perspective on resources, means that this is a much broader concept than simply the measurement of the SOC. This is an important point to bear in mind as we proceed through the chapter and in other readings on the concept and questionnaire.
The concept of resilience is a somewhat more complex to grasp. Resilience is defined in different ways depending on which specific disciplinary framework is used. The core theoretical foundation has emerged from a convergence of psychological, psychoanalytical and social cognitive theories of child development. Garmezy and his colleagues were among the first to emphasize the importance of examining protective factors in high-risk populations (Garmezy and Rutter, 1988). Their research created the basis for the resilient approach. Some view the concept as a personality trait (Werner and Smith, 1982, 2001), or as the ability to bounce back from a crisis and overcome life’s challenges (Walsh, 2006), while others describe resilience as the adjustment and recovery from adversities and as a process in a continuum at an individual, group or societal level (Carver, 1998; McCubbin et al., 1998). Luthar (2000, p. 858) defines resilience “as a dynamic developmental process reflecting evidence of positive adaptation despite significant life adversity.” At its core, “…a resilient individual is one who exercises the most resourceful response when faced with an environmental demand. This requires the capacity to choose from an availability of personal resources… to problem solving, processing two or more stimuli, or even flight if the circumstance demands” (Goodyer, 1995, p. 443). In addition, Coleman and Hagell (2007) talk about a “slippery” concept referring to the complexity of a construct describing both a process and an outcome (p. 166).

However, across the definitions, a general consensus has emerged for the concept of community resilience, a relatively new term. Community resilience is defined as “a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance” (Norris et al., 2008, p. 130). Across the separate definitions, there is consensus on two points: first, resilience is better conceptualized as an ability or process than as an outcome, and second, it is better conceptualized as adaptability than as stability.

The Operationalisation

The strength of salutogenesis stems from its empirical and qualitative approach in the analysis of the narratives of the survivors of the Holocaust. Based on the narratives, a valid and reliable instrument, the Orientation to Life Questionnaire, was constructed (i.e., the Sense of Coherence scale). The SOC instrument has been empirically tested in several countries on general populations and on different samples based on age groups, professional groups, and patient groups over the past 30 years.

Its strength has been presented in a systematic research synthesis on the SOC between 1993 and 2003. This evidence base demonstrates the effectiveness of the salutogenic theory, and how it can be applied in research as a positive and health-promoting construct (Eriksson, 2007, Eriksson and Lindström, 2005, 2006, 2007). The SOC scale seems to be a multi-dimensional construct, rather than a single construct consisting of one general factor with the three dimensions, all interacting with each other. The concept of resilience, like the SOC construct, is multi-dimensional rather than uni-dimensional (Luthar, Doernberger and Zigler, 1993).

The original version of the SOC questionnaire consists of 29 items and the shorter form of 13 items. To date, the SOC questionnaire has been widely tested in Western countries and in countries such as South Africa, China, Eritrea (Eriksson and Lindström, 2005, Almedom, Tesfamichael, Mohammed, Mascie-Taylor and Alemu, 2005), Korea (Han et al., 2006).
Taiwan and Sudan (Tang, Li and Chen, 2008) - at least in 40 countries in more than fifty languages. In addition to the original SOC questionnaire, there is an array of alternative instruments. At least 15 different versions exist with different scoring alternatives, including two versions of the family sense of coherence scale, a questionnaire especially adjusted for children and the sense of school coherence instrument (Eriksson and Lindström, 2005). The number of items range from 3 to 29 including modified scoring alternatives. However, the questions are the same as in the original versions of the Orientation to Life Questionnaire (SOC). The SOC scale seems to be a reliable, valid, and cross culturally applicable instrument measuring how people manage stressful situations and stay well (Eriksson and Lindström, 2005).

The Implementation

Does the salutogenic construct, SOC, and the theory have any use in practice? In our opinion, they do. The salutogenic approach is relevant for health promotion, because health promotion has lacked a strong theoretical foundation. The SOC can be applied at individual, group and societal levels; however to date, most of the salutogenic research has been applied at the individual level. However, in Antonovsky’s view, a collective (family) SOC also exists, (Antonovsky and Sourani, 1988, Sagy and Antonovsky, 1992). The idea behind the SOC as a group property is that the collective SOC is more than the sum of the individual SOCs. In a similar manner as the SOC concept, resilience can be considered as a group property focusing on families (Black and Lobo, 2008; McCubbin, Thompson, Thompson and Futrell, 1999).

Based on a review of family research and conceptual literature, Black and Lobo identified the prominent factors of resilient families as: positive outlook, spirituality, family member accord, flexibility, family communication, financial management, family time, shared recreation, routines and rituals, and support networks. All these factors can easily be related to the core concepts of the salutogenic theory, the SOC and the GRRs.

A collective SOC at a societal level (communities) is much less explored. The potential of the salutogenic theory on a societal level has been rather neglected. In an article “Complexity, conflict, chaos, coherence, coercion and civility”, Antonovsky (1993b) formulated his thoughts about how the SOC can be applied within a systems theory approach in societies. Knowing Antonovsky was a medical sociologist, it is easy to understand that salutogenesis stems from a sociological framework. The sociological character of the SOC construct “lies not only in its structural sources. In its emphasis on resources and flexible coping tactics, … it opens the way for inclusion, in studying the stress process… collective coping and macro variables, often disregarded in this psychology dominated field” (Antonovsky 1993b, p. 972). Complexity refers to the level of organization of systems, providing both sets of problems and potential for the interaction between the individual and the environment (Antonovsky 1993b, p. 969). Conflict here refers to internal tensions of being a human being, tension between individuals and between the individual and the supra systems. The greater the complexity, the greater are the possibilities for choice, flexibility, adaptive change or reorganization of the system (Antonovsky 1993b, p. 970).

Some attempts have been made to explore the use of the SOC at a societal level, through two case studies on how to create a salutogenic society (Eriksson, Lindström and Lilja, 2007, Lindström and Eriksson, 2009). A separate questionnaire aiming to measure the community
SOC is under development. However, at present, studies have only been carried out in Israel showing that the questionnaire has to be further improved, before it comes to general use (Personal communication between Monica Eriksson and Professor Shifra Sagy, Ben-Gurion University of the Negev, Israel, Oct. 22, 2009).

The Evidence Base of Salutogenesis

There seems to be different effects of the SOC concept on various dimensions of health. The SOC appears to be strongly associated with perceived good health, especially mental health, at least among people with a strong sense of coherence. This relationship is manifested in study populations regardless of age, sex, ethnicity, nationality and study design (Eriksson and Lindström, 2006). Further, SOC seems to have a main, moderating or mediating role in the explanation of health. In addition, the SOC seems to be able to predict health. The very strong correlation with determinants of mental health, especially with positive emotions and opposing negative affectivity, raises the question if SOC is a parallel expression of mental health. At least, it means that someone with a strong SOC can cope with stressful situations and stay well better than a person with a low SOC.

Kouvonen and colleagues (2008) showed that, among adult Finns, a strong SOC was associated with about 40 percent decreased risk of psychiatric disorder during a 19-year follow-up period. This association was not accounted for by mental health-related baseline characteristics, such as sex, age, marital status, education, occupational status, work environment, risk behaviours or psychological distress.

One area of research where the potential of both the salutogenic framework and the concept of resilience becomes apparent is around the adjustment to life events. Research on how major life events, such as the death of a family member, divorce, serious illnesses and unemployment, may impact on the individual and the family is extensive and impressive both in resilience and salutogenic research. McCubbin et al. (1999, preface) describe resilient adaptation and creation of meaning in families facing unexpected life events and changes such as health-related crises. Without using the salutogenic terms, SOC and Generalized Resistance Resources (GRRs), the findings from this qualitative study reflect salutogenic theory, especially with regards to the dimension of meaningfulness. Moreover, findings from salutogenic research on life events have shown that higher levels of the SOC are associated with lower levels of self-reported psychopathology among young men (Ristikari, Sourander, Rönning, Nikolakaros and Helenius, 2008), and that the SOC can act as a moderator of the effects of life events on health (Richardson and Ratner, 2005), and also that it is a factor in modifying inadequate coping related to life events (Bergh, Baigi, Fridlund, and Marklund, 2006).

In resilience research, some attention has been given to the negative impact of life events in the form of disasters and trauma related to terrorism, especially after September 11th. In their review, Williams, Alexander, Bolsover and Bakke (2008) gave recent evidence for a model of psychosocial care of children after disasters. They conclude that a resilient model of care should include the principles of good service design, which integrates responses to the psychosocial needs of children and adolescents, works with families rather than individual children, and focuses resources on increasing the capabilities of the community to provide assistance and support for families. The salutogenic framework has the potential for enabling
the management of stress by creating a sense of coherence out of chaos. Further, an ambition to create a salutogenic society, where people do not need to go to the limit of survival, becomes fundamental in healthy public policy (Lindström and Eriksson, 2009).

The “Salutogenic Umbrella”

Salutogenesis is a much broader perspective than only the measurement of the sense of coherence. The “Salutogenic Umbrella” is a framework which includes other related concepts and convergent theories for the explanation of health and a good life as shown in Figure 3.

![Salutogenic Umbrella](image)

**Figure 3. The Salutogenic Umbrella – Convergent Concepts and Theories Contributing to Explanations of Health and Quality of Life.**

There are similarities and differences between the salutogenic theory based on its core dimension Sense of Coherence and some of the theories and concepts shown in the figure above. All the listed theories and concepts include salutogenic elements and dimensions. Some concepts are shown, but a closer examination of the literature could further extend the umbrella. However, the focus here is on resources for health and Quality of Life. Quality of Life is a multidimensional concept and somewhat difficult to capture because of its complexity. The definitions are as many as there are scientists. However, a salutogenic interpretation of the concept is applied here. This means approaching life as a whole, combining the global, external, interpersonal and the personal resources at an individual,
group or society level (Lindström, 2001. Some of the theories can be applied at an individual
and at a group level (i.e., hardiness, self-efficacy, learned resourcefulness, learned
hopefulness, connectedness, action competence, will to meaning, locus of control), whereas
others are related to system theories (cultural capital, social capital, the ecological health
theory, interdisciplinarity). A detailed description of the concepts and how they differ from
the salutogenic theory is not possible within the space of this chapter (see Eriksson and
Lindström, 2010 for further details).

From Learned Resourcefulness to Healthy Learning

Finally, the concept of “learned resourcefulness” has to be recognised (Rosenbaum,
1990) in terms of healthy learning, and linking personal and specific personal characteristics
with repertoires of self-controlling skills. Rosenbaum was clearly inspired by cognitive
behavioural theory and the concept of self-efficacy (Bandura, 1997). He asks the same
question, as in resilience research, about why some people stay healthy despite exposure to
risk factors and others do not. In contrast to the salutogenic theory, the concept of learned
resourcefulness stresses the control dimension of human behaviour, thereby differing from,
more than resembling, the SOC (for a full description and discussion on healthy learning see
Lindström and Eriksson, 2010).

CONCLUSION

To conclude, it is possible to identify several unique and distinctive features of both
resilience and salutogenesis. First, Antonovsky referred to stress, whilst resilience researchers
referred to risk and adversities. Second, neither the SOC measure nor the concept of resilience
is a personal characteristic, but a process. Third, both concepts emphasize resources: called
General Resistance Resources in the salutogenic framework and protective factors in the
resilience framework. Fourth, they both consider the maintenance and development of health
as a process in a continuum. Fifth, both the Sense of Coherence and resilience concepts can
be applied at the individual, group (i.e. families) or societal level. The two concepts differ
when it comes to the adjustment process, because the resilience concept is always connected
with risk factors. Rutter (1987, p. 329) concludes that “The phenomenon of resilience is due
in part to vulnerability and protection processes by which there is a catalytic modification of a
person’s response to the risk situation”. If Rutter’s conceptualization of resilience is seen
through salutogenic eyes, the development of a strong SOC would serve as such a catalytic
converter in buffering the stress of young people exposed to adversities through the life span.

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Life is More Than Survival


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Chapter 4

SOCIAL AND EMOTIONAL INTELLIGENCE: CONTRIBUTORS TO RESILIENCE AND RESOURCEFULNESS

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ABSTRACT

In this chapter, we discuss how social and emotional intelligence contribute to a person’s resilience and resourcefulness and assists in adaptive functioning and effective negotiation of the social, as well as personal, world. Such explorations should help us understand how individuals adapt and cope successfully with life’s demands, challenges and pressures. Applications to clinical conditions (characterized by impairments in abilities associated with social and emotional intelligence) such as personality disorders, autism and acquired brain injury, are discussed. As well, approaches to the measurement of social and emotional intelligence and psychometric instruments that can be used in applied settings are briefly addressed. We also report promising results from our studies of the utility of a paper and pencil measure of social intelligence (Social Intelligence Test-Revised) for neuropsychological evaluation of traumatic brain injury. The test refers to practical applications of executive functioning in the social context and our findings indicate that it is sensitive to the severity of traumatic brain injury.

Keywords: Social Intelligence, Emotional Intelligence, Resilience, Resourcefulness, Adaptability
INTRODUCTION

One of the topics that this book deals with is the subject of resilience and resourcefulness, constructs that are useful in explaining individual differences in the ability to face and overcome the impact of adverse and traumatic events and demonstrate how people cope and survive life’s traumas.

Concepts of Resilience and Resourcefulness

In this chapter, we will treat resilience as cognitive and emotional mechanisms that act as a protective shield that mediates (lessens) the impact of adverse or traumatic events and prevents disorganization and disintegration of the self (Celinski and Gow, 2005; Celinski and Pilowsky, 2008; Freud, 1920, 1961). Resourcefulness, on the other hand, refers to the ability to access and employ internal and external resources to deal with the impact of the adverse or traumatic event (after being psychologically affected by it) and as such is linked with the concept of recovery in the literature on posttraumatic conditions (Celinski and Gow, 2005).

What makes one individual fall apart in the face of adversity while another is minimally affected, or if affected is able to recover? A number of pre-traumatic personal characteristics, as well as environmental factors, have been proposed to account for individual differences in response to adversity and trauma. These include personality and coping styles, religious/spiritual beliefs, personal values, locus of control, attributional style/cognitive schemas, social support, family instability (for recent review of studies, see Celinski and Pilowsky, 2008). The relative significance of these factors will likely depend on the nature of the event (natural disasters, military combat, sexual assault, motor vehicle accident, etc.) and the severity of the trauma and associated loss.

In this chapter, we would like to propose that social intelligence and emotional intelligence are important for effective adaptability in general, and for effective dealing with adversity and trauma in particular.

SOCIAL AND EMOTIONAL INTELLIGENCE

Constructs of Social and Emotional Intelligence

While constructs of social and emotional intelligence have been long recognized as important in understanding individual differences, and while the qualities subsumed by these constructs are easily recognized in many facets of life, there are significant definitional problems and difficulties in empirically differentiating social (and emotional) intelligence from related constructs (Kihlstrom and Cantor, 2000; Silvera, Martinussen and Dahl, 2001). Over the years, different definitions of social intelligence have been put forward, each emphasizing different components of what is now clearly understood as a multifaceted construct. Thus, some researchers stress the cognitive aspects, that is, the ability to understand social situations or knowledge of social rules, while others focus on the behavioral/performance component, that is, the ability to deal effectively with other people. Many other
researchers, however, take a more comprehensive approach that includes several aspects of social intelligence such as social insight, perception, and knowledge, perspective taking, and ability to interact successfully with other people (Jones and Day, 1997; Kosmitzki and John, 1993; Silvera, Martinussen and Dahl, 2001; Wong, Day, Maxwell and Mera, 1995). Those abilities reflect what many authors would now refer to as personal resources.

The concept closely related to social intelligence is emotional intelligence. Originally, emotional intelligence, defined as the ability to discriminate, monitor and manage feelings in oneself and others and to use that knowledge to solve problems, was viewed as part of social intelligence (Greenspan, 1989; Salovey and Mayer, 1990). In contrast, in his well known book, *Emotional Intelligence*, Goleman (1995) described, emotional intelligence as a distinct construct. Gardner (1993) attempted to combine the two constructs in his conceptualization of personal intelligences. He identified intrapersonal (emotional) intelligence which he defined as knowledge of one’s internal world and interpersonal (social) intelligence which he defined as the ability to determine other people’s emotions and intentions.

The most recent theories stress the interconnectedness of the two constructs (Bar-On and Parker, 2000; Goleman, 2006). Bar-On (2000, 2006) argues for a single construct of emotional-social intelligence (ESI) that is composed of a number of “interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands” (Bar-On, 2006, p. 3). Among these, he identified five main domains: self-awareness and self-expression, social awareness and interpersonal relationship, emotional management and regulation, change management, and self-motivation. Goleman (2006) proposes a heuristic model of social intelligence that explicitly encompasses emotional intelligence. In this model, abilities that are subsumed under social intelligence fall into two broad categories: *social awareness* and *social facility*. Social awareness refers to a spectrum that runs from instantaneously sensing another person’s inner state, to understanding their feelings and thoughts, to comprehending complicated social situations, and includes primary empathy, attunement, empathic accuracy and social cognition. Social facility builds on social awareness to allow smooth effective interactions and includes synchrony (interacting smoothly at the nonverbal level), self presentation, influence and concern (caring about others’ needs and acting accordingly).

Looking at the abilities that are encompassed by the various definitions of social and emotional intelligence, we can appreciate how they can contribute to a person’s resilience and resourcefulness. Whether seen as interrelated abilities or different components of the same construct, they clearly combine to facilitate adaptive functioning and effective negotiation of the personal, as well as the social, world and equip a person to face the challenging psychosocial, environmental and societal conditions that are part of life. They guide an individual in: (a) how to express and manage emotions in ways that do not damage or destroy relationships or lead to self-destructive behaviours; (b) how to implement one’s goals and persist in face of frustration and adversity, and (c) how to cope in ways that are flexible and promote personal growth and development. Additionally, when a person is confronted with a life altering situation, they help that person to find an inner strength through faith, religion, personal values and/or commitments to face the challenge.

The understanding of the rules of social exchange and of who we are, in relation to other people, is critical for gaining social support and cooperation that then allows us to achieve our goals and manage life’s challenges. The positive presence of other people in our life, and the
support that they offer, as well as a sense of connectedness and belonging, have long been recognized as important protective and curative factors in mental health research. For instance, recent reviews of empirical literature on resilience in children and adolescence (Bernat and Resnick, 2006; McLean, et al., 2008) indicate that social connectedness is one of the main protective factors against high risk behaviours including suicidal thoughts and behaviours, and problematic substance abuse in young people. Social and emotional skills were found to mediate resilience with respect to low tested intelligence in a group of inner-city boys (Vaillant and Davis, 2000). Resilient children with low IQ who grew up to achieve the same income levels and have children as well-educated as those in the high IQ group, were more likely to enjoy warm relations with other people, to take responsibility for the development of the next generation (e.g., as a coach, leader) and to use mature defenses. In a recent study, Friborg, Barlaug, Martinussen, Rosenvinge and Hjemdal (2005) found a positive relationship between measures of resilience and social intelligence in a group of applicants for the military college.

In summary, social and emotional intelligence relate to the ability to “effectively manage personal, social and environmental change by realistically and flexibly coping with the immediate situation, solving problems and making decisions. To do this, we need to manage emotions so that they work for us and not against us and we need to be sufficiently optimistic, positive and self-motivated” (Bar-On, 2006, p. 4).

Linking Constructs to Clinical Conditions

To appreciate the significance of social and emotional intelligence for effective adaptation in a world that is by nature social and interpersonal, we can look into conditions in which these abilities become impaired, either during the developmental period such as autism or intellectual disability, or characterological (personality) disorders, or later in life, as a result of an illness or injury to the brain.

Impairment in social interactions and ability to relate to other people is the defining characteristic of autism spectrum disorders (DSM-IV-TR, 2000). These neuro-developmental disorders are probably the most evident example of how disabling and incapacitating social deficits can be, even in the presence of normal or above normal intellectual abilities, such as is the case in Asperger Disorder (DSM-IV-TR, 2000). In effect, these deficits not only make it difficult for a person with ASD to understand, appreciate and navigate the complexities of human interactions that, in turn, constitute a source of considerable stress and frustration, but they also prevent a person from using the connection with other people for practical and emotional support, guidance and coping. This is further compounded by difficulties with understanding one’s own and other people’s emotional states and problems with communication. Not surprisingly, behavioural disturbance in a form of self-injurious behaviours, aggression or severe temper tantrums is not uncommon in individuals with ASD, and they are at a significant risk of developing mental health problems, particularly anxiety and depression (Howlin, 2004).

Personality disorders also give us an insight into how critical the intrapersonal and interpersonal competencies are for personal wellbeing and successful negotiation of the social world (DSM-IV-TR, 2000). Inability to assert one’s needs and regulate and modulate emotions particularly in relation to other people may result in significant dysfunction or a

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complete breakdown of significant relations (as often seen in borderline personality disorder; Kernberg, 1975). Deficits in social and emotional reciprocity (as observed in narcissistic and antisocial personality disorders) may lead to behaviours or actions that are clearly asocial, disregard the wellbeing of others, or are even criminal (Blair, Colledge, Murray, and Mitchell, 2001; Goleman, 2006).

Psychosocial problems and difficulties with social integration following traumatic brain injuries (TBI), and in particular those with frontal lobe involvement, provide us with another example of how important social awareness and competence are for effective posttraumatic adjustment. Deficits in social competence in patients with TBI were associated with dependence on institutional and personal care, and decreased quality of life and sense of well-being (McGann, Werven and Douglas, 1997). Warshchausky, Cohen, Parker, Levendoosky and Okun (1997) reported that children with TBI were impaired in social problems solving, as they generated fewer total solutions on the social problem solving measures. Spiers, Pouk and Santoro (1994) discerned that the head-injured subjects were unable to take the perspective of the prototypical others, and instead they used themselves as a reference point; such approach reflects egocentric thought, the over-evaluation of ability, and poor flexibility in problem solving.

**Measurement of Social and Emotional Intelligence**

“Social intelligence shows itself abundantly in the nursery, on the playground, in barracks and factories and salesrooms, but it tends to elude the formal standardized conditions of the testing laboratory” (Thorndike, 1920, p. 231). Measurement of social intelligence, particularly in applied/clinical settings, continues to be challenging as there are very few measures available. The existing instruments that purport to assess social intelligence (or aspects of social intelligence such as social perception, social problem solving, emotion recognition, or mentalizing ability) include self-report measures, paper and pencil performance measures and experimental/observational tasks. Some of the recently developed, or revised, commercially available and research instruments are described below.

The Tromso Social Intelligence Scale (TSIS: Silvera, Martinussen and Dahl, 2001) is a 21-item self-report measure of social intelligence with a three factor structure: social information processing, social skills, and social awareness. Respondents rate, on a Likert scale, the degree to which each statement describes them (e.g., “I fit in easily in social situations”). The scale is very brief, takes little time to complete and is easy to administer, but, as a self-report measure, it is open to potential significant bias towards socially desirable responding. The scale has been used as a research instrument in a number of European studies, the results of which suggest that it has acceptable psychometric properties (Friborg et al., 2005; Gianluca, 2006; Vasilova and Baumgartner, 2005).

The Awareness of Social Inference Test (TASIT; McDonald, Flanagan, Rollins, and Kinch, 2003) was developed to assess emotion recognition, theory of mind (ToM) judgments, and social inference making as they occur in everyday settings. The test utilizes videotaped conversational exchanges and the subject is asked to judge the speakers’ emotions, the speakers’ beliefs (first-order theory of mind), what speakers intended their conversational partners to believe (second-order theory of mind) and what they meant by remarks that were
sincere or literally untrue (a lie or sarcastic retort). Since this is a performance-based test, it could be particularly valuable in assessing clinically compromised populations such as individuals with a suspected brain injury, learning disability or autism spectrum disorder. The test is commercially available.

The Social Intelligence Test-Revised (SIT-R: Celinski, Salmon and Allen, 2006) is a revised and re-standardized version of Moss, Hunt, Omwake and Woodward, 1955 George Washington Social Intelligence Test. The SIT-R is a paper and pencil measure with four subtests which assess problem-solving in social situations, attributing emotions and motives to people’s behaviour, understanding social rules, and applying a sense of humour by finding the most humorous ending for jokes (See the Appendix for item samples). The SIT-R was recently revised with regard to item content and re-evaluated on student and brain-injured patient populations (Celinski et al., 2006; Palucka et al., 2007); the findings from these studies will be presented in the section below.

There are also a growing number of measures of emotional intelligence, particularly those developed by proponents of specific models that also encompass some aspects of social intelligence/competence.

Bar-On (1997) developed an Emotion Quotient Inventory (EQ-i) which is a measure of emotionally and socially competent behaviour that is a reflection of emotional and social intelligence. The EQ-i is a 133-item self-rating scale that assesses emotional-social characteristics and traits in five main areas: Intrapersonal (comprising self-regard, emotional self-awareness, assertiveness, independence, and self-actualization), Interpersonal (comprising empathy, social responsibility, and interpersonal relationships), Stress Management (comprising stress tolerance, and impulse control), Adaptability (comprising reality testing, flexibility, and problem solving) and General Mood (comprising optimism and happiness). As a non-skills based self report measure, the EQ-i is open to bias and has been found to be susceptible to social desirability bias (Day and Carroll, 2008).

The Emotional Intelligence Test (MSCEIT; Mayer, Salovey and Caruso, 2002) is modeled on ability-based IQ tests; it assesses four aspects of emotional intelligence: perceiving, using, understanding and managing emotions through 141 emotion-based problem-solving items (e.g., “Indicate how much of each emotion is present in this picture: happiness, fear, sadness, surprise”). Central to the model is the notion that Emotional Intelligence requires attunement to social norms and the test is scored in a consensus fashion: this means that unlike typical ability tests, the items do not have objectively correct responses; instead, an individual’s answers are compared to the answers of a broad sample of respondents; a higher score indicates a higher overlap between the answers of the individual and the normative sample. The test can also be expert-scored, in which case an individual’s answers are compared to those of a group of ‘emotion’ researchers. The test has been criticized for its claim to be an ‘ability’ measure, on the grounds that a consensus scoring approach, by definition, does not allow the inclusion of increasingly difficult items that can only be solved by fewer and fewer respondents, as is the case in ability tests. The test is available commercially in a paper and pencil form, or on-line, and has been widely used, particularly in business and academic settings; however, issues have been raised with regard to psychometric properties of several test items (Follesdal and Haqvet, 2009).

The Emotional and Social Competency Inventory (ESCI) (Boyatzis, 2007) is based on Goleman’s model of emotional competencies (Goleman, 2006) and is an extension of the earlier measure, the Emotional Competency Inventory (Goleman, 1999). The ESCI assesses
Social and Emotional Intelligence

12 emotional and social competencies organized into 4 clusters: (i) self-awareness (emotional self-awareness), (ii) self-management (achievement orientation, adaptability, emotional self-control, positive outlook), (iii) social awareness (empathy, organizational awareness) and (iv) relationship management (conflict management, coach and mentor, influence, inspirational leadership, teamwork). The ESCI is a 360 format tool that is used for assessment in organizations and provides individuals with feedback from several sources (e.g., manager, direct reports, peers). The ESCI requires formal training and accreditation for use from the test developer (Hay Group, www.haygroup.com).

Another approach to assessment is to use experimental/observational measures. The exploding interest in autism spectrum conditions has led to a development of research paradigms that focus on specific areas of impairments in socio-emotional functioning, such as joint attention, theory of mind tasks, and emotion recognition (Baron-Cohen, Blakemore and Frith, 2003; Happe, 1994; Leslie and Frith, 1985; Muris, et al., 1999; Ross, McDuffie, Weism and Gernsbacher, 2008) and more recently, these include video-based tests (“Movie for the Assessment of Social Cognition”; Dziobek et al., 2006; “The Reading the Mind in Films Task”; Golan, Baron-Cohen, Hill and Golan, 2006). This type of approach could certainly be expanded to include other clinical groups or assessment contexts.

Recent Studies on Social Intelligence with Clinical Populations

What is the research evidence that the constructs of social and emotional intelligence are useful for our understanding of individual differences in adaptability and successful coping with life’s demands, challenges and pressures? There is a general revival of interest in this area, particularly in the field of autism, and new methodologies for investigating social and emotional deficits are being developed (as discussed above). However, because of the definitional and measurement issues discussed earlier (lack of agreed upon definition of social intelligence, multifaceted nature of the construct, measures being either time consuming and difficult to administer or, conversely, assessing only a very specific aspect of the construct), research on social and emotional competence in applied and clinical settings is still limited.

It is recognized that psychosocial adjustment and community re-integration, following a traumatic brain injury (TBI), is a primary task (McGann, Werven and Douglas, 1997), as well as a major challenge in post-traumatic rehabilitation (Morton and Wehman, 1995). Limited studies on social adaptability after TBI indicate significant impairments in social competence, particularly for those with significant frontal lobe injuries. MacDonald, Flanagan, Rollins and Kinch (2003) concluded that subjects with TBI were poorer at judging emotions, had problems recognizing neutral items as well as fear, disgust and sarcasm, but had no problem with understanding sincere statements. In another study, McDonald and Flanagan (2004) demonstrated deficits in social perception (emotion recognition, mentalizing ability and social communication) after severe TBI. Most specifically, they found that the participants had marked difficulty judging most facets of social information and could recognize speakers’ beliefs only when this information was explicitly provided. A recent study (Turkstra, Williams, Tonks and Frampton, 2008) determined that adolescents with TBI are likely to have impairments in emotion recognition and mental state attributions that might not be identified on standardized tests and which have implications for social interactions.
and development and maintenance of personal relationships, in a very important developmental period.

We have recently obtained promising results using initially the George Washington Social Intelligence Test (Moss, Hunt, Omwake, and Woodward, 1955) and subsequently, its recent revision, the Social Intelligence Test-Revised (Celinski et al., 2006), for a neuropsychological evaluation of traumatic brain injury. The test refers to practical applications of executive functioning to explicitly formulated social information, that is, the ability to engage effectively in social perception and social problem solving. Our results indicate that the test is sensitive to the severity of traumatic brain injury.

Table 1. Contingency Table: Brain Injury Severity by Predicted Brain Injury Severity

<table>
<thead>
<tr>
<th></th>
<th>Low Severity</th>
<th>High Severity</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>33</td>
<td>14</td>
<td>47</td>
</tr>
<tr>
<td>Total %</td>
<td>36.67*</td>
<td>15.26</td>
<td>52.22</td>
</tr>
<tr>
<td>Column %</td>
<td>67.35</td>
<td>34.15</td>
<td></td>
</tr>
<tr>
<td>Row %</td>
<td>70.21</td>
<td>29.79</td>
<td></td>
</tr>
<tr>
<td>High Severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>16</td>
<td>27</td>
<td>43</td>
</tr>
<tr>
<td>Total %</td>
<td>17.78</td>
<td>30.00*</td>
<td>47.78</td>
</tr>
<tr>
<td>Column %</td>
<td>32.65</td>
<td>65.85</td>
<td></td>
</tr>
<tr>
<td>Row %</td>
<td>37.21</td>
<td>62.79</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>49</td>
<td>41</td>
<td>90</td>
</tr>
<tr>
<td>Total %</td>
<td>54.44</td>
<td>45.56</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: * p < 0.05. Correct predictions based on the overall measures model (36.67% + 30% = 66.67%). Bold font indicates correct predictions. Count = number of predicted cases; Total % = predictions as % of the total sample; Column % = predictions as % of the predicted brain injury severity level; Row % = predictions as % of actual brain injury severity level.

In the first study (Celinski et al., 2004), a group of 98 workers with a head injury, sustained in an industrial accident, underwent neuropsychological assessment which also included the Social Intelligence Test (SIT; the 1955 version). The workers were split into two groups based on the severity of the brain injury that was defined in terms of the reported length of post-traumatic amnesia (PTA); PTA up to 3 hours (n = 48) and PTA greater than 3 hrs (n = 50). The groups were balanced with respect to age and education. The findings indicate that the SIT alone was a good predictor of membership in relative severity groups (more than 66% accuracy was achieved). Adding two subtests from the WAIS-R (Comprehension and Similarities) and the Category Test score increased the prediction of
accuracy of membership in the groups only by 12% (see Tables 1 and 2). These results suggest that the SIT might be a useful tool, both from the diagnostic perspective and for assessment of social adaptability.

Tables 1 and 2 show the counts of correct and erroneous predictions and their respective percentages of the total sample size (total %), of the predicted brain injury severity level (column %), and of the actual brain injury severity level (row %).

### Table 2. Contingency Table: Brain Injury Severity by Predicted Brain Injury Severity

<table>
<thead>
<tr>
<th></th>
<th>Low Severity</th>
<th>High Severity</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Severity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
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<td>4</td>
<td>19</td>
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<td>Total %</td>
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<td>41.30</td>
</tr>
<tr>
<td>Column %</td>
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<td>16.00</td>
<td></td>
</tr>
<tr>
<td>Row %</td>
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<td>21.05</td>
<td></td>
</tr>
<tr>
<td><strong>High Severity</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
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<td>45.65*</td>
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</tr>
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<td>Column %</td>
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<td></td>
</tr>
<tr>
<td>Row %</td>
<td>22.22</td>
<td>77.78</td>
<td></td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>21</td>
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<td>46</td>
</tr>
<tr>
<td>Total %</td>
<td>45.65</td>
<td>54.35</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: * p <0.05. Correct predictions based on three SIS subscales, WAIS-R Comprehension and Similarities and the Category Test (32.61% + 45.65% = 78.26%). Bold font indicates correct predictions. Count = number of predicted cases; Total % = predictions as % of the total sample; Column % = predictions as % of the predicted brain injury severity level; Row % = predictions as % of actual brain injury severity level.

A subsequent study (Celinski et al., 2006) compared responses of the same group of patients and two groups of psychology students from Canada and the USA. For each subscale, as well as the total test, the correlations between the two groups of students were higher than those between the students and patients; thus the test enabled differentiation between the normative sample and the brain injured group.

A third study (Palucka et al., 2007) was conducted to establish the reliability for the recently revised and modified version of the Social Intelligence Test - the Social Intelligence Test-Revised (SIT-R; 2006) - and to obtain normative data. While the overall test reliability was less than expected (Cronbach alpha coefficient of 0.57), the reliability of each individual subtest was satisfactory (Cronbach alpha coefficients ranged from 0.66 to 0.79). In this study, the responses on the SIT-R were compared for psychology students, injured workers without
a brain injury, and two new groups of patients with posttraumatic amnesia (PTA). The PTA criterion for severity of brain injury in this study was more sensitive than in the first study, as the groups were based on PTA less than, or more than, 30 seconds. The results (Table 3) indicate increased sensitivity and specificity of the updated SIT-R subtests, with an overall prediction rate of 83%. In addition, the findings indicate that the SIT-R allows for assessment of different aspects of social competency using individual subtests. The study found no difference between the students and injured workers without a brain injury, suggesting that either group can be used as a normative reference.

<table>
<thead>
<tr>
<th></th>
<th>PTA &lt; 30 sec</th>
<th>PTA &gt; 30 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTA &lt; 30 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.00b*</td>
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<td>77.78</td>
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<tr>
<td>Count</td>
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<td>17</td>
</tr>
<tr>
<td>Total %</td>
<td>51.43</td>
<td>48.57</td>
</tr>
</tbody>
</table>

Note: * p < 0.05. Correct predictions based on the overall model (40.00% + 42.86% = 82.86%). Bold font indicates correct predictions. Count = number of predicted cases; Total % = predictions as % of the total sample; Column % = predictions as % of the predicted brain injury severity level; Row % = predictions as % of actual brain injury severity level.

As with Tables 1 and 2, Table 3 shows the counts of correct and erroneous predictions and their respective percentages of the total sample size (total %), of the predicted brain injury severity level (column %), and of the actual brain injury severity level (row %).

In summary, a number of recent studies assessed social intelligence in clinical populations with a traumatic brain injury. The results indicate the usefulness of the measures for assessing deficits in various aspects of social competence following a traumatic brain injury as well as differentiating between the degrees of severity of the injury. These findings highlight the importance of including social intelligence in the assessment of clinical conditions. Further research is clearly needed with different clinical and non-clinical populations and in different assessment contexts.

CONCLUSION

In this chapter, we discussed the usefulness of the constructs of social and emotional intelligence for our understanding of individual differences with regard to the ability to respond effectively and adapt to life challenges. In its very essence, the concept of social intelligence...
intelligence is arguably distinct from cognitive and emotional intelligence (although it is often regarded as closely related to the latter). It reflects an intuitive social awareness that helps determine the right, or most effective, way of responding to a given social situation which represents the best integration of one’s personal needs and personal agenda and the needs of others. Social intelligence underlines a broad spectrum of human activities, such as the ability to function in a social group, to secure social advancement, to achieve work satisfaction, or to enter and maintain an intimate relationship or friendship.

The abilities subsumed by the construct of social intelligence are important aspects of personal resilience and resourcefulness. They can be thought of as a form of social ‘wisdom’ that allows the person to navigate the social world in a way that leads to optimal adjustment in changing circumstances.

Despite the recognition of the importance of social (and emotional) intelligence for effective functioning and psychological health, deficits in social intelligence constitute the aspect of psychopathology that is not always investigated in clinical settings, because there is no adequate methodology to assess all aspects that are potentially relevant. There is a particular need for psychometrically sound measures that can be used in applied, clinical and rehabilitative settings.

We presented promising findings from our research with the Social Intelligence Test-Revised which indicate the usefulness of the measure for neuropsychological evaluation of traumatic brain injury, particularly frontal lobe dysfunction. The measure is easy to use and is quite unique in its inclusion of humour that requires attunement to subtleness. Certainly, more research is needed with this measure on different normative and clinical populations.

Appendix: Sample of Items from the Social Intelligence Test-Revised (SIT-R)

Test 1. Judgment In Social Situations

Instructions: Four possible answers are offered for each of the questions in this section. Please provide a separate and ordered ranking using all four of the four possible answers to each question. To do this, first place a “1” in front of the answer that you believe is most correct or appropriate. After that, place a “2” in front of the answer that you judge to be the next best alternative, a “3” in front of the third best choice, and a “4” in front of the answer that you think is least appropriate.

Imagine that you have a new job with a large company. The best way to establish pleasant and friendly relations with your business associates would be to:

- Avoid noticing and correcting the errors they make
- Always speak well of them to the boss
- Be interested and cooperative in your work
- Ask to be allowed to do those tasks which you can do better than they can

An acquaintance is conversing with you about his/her hobby – but you are bored. It would be best to:

Complimentary Contributor Copy
- Listen with a polite but bored attention
- Listen with feigned interest
- Tell them frankly that the subject does not interest you
- Look at your watch impatiently

Test 2. Observation of Human Behaviour

_Instructions:_ Answer each question using the rating scale below, by writing a number in front of it. If you are unsure please give the best answer you can.

1. Strongly False
2. More False than True
3. More True than False
4. Strongly True

- One of the surest methods of bringing a person to your point to view is by engaging in argument.
- All people who become wealthy or famous must be either bright or hard-working

Test 3. Recognition of the Mental State of the Speaker

1. Ambition
2. Despair
3. Determination
4. Loneliness
5. Disgust
6. Envy
7. Hypocrisy
8. Indecision
9. Scorn
10. Regret
11. Range
12. Love
13. Fear
14. Disappointment
15. Hate

_Instructions:_ For each statement below, identify the mental state of the person making the statement using the words listed above. Some mental states listed above may not fit with any of the statements, while some of the words may be the _best answer for more than one_ statement below. To do this, first write the number of the word above, that best describes the mental state of the person making the statement, in the left-most column. Second, write the number of a _different_ word from the ones above, as your second-best answer (in the 2nd
Social and Emotional Intelligence

column), if you think it is also a pretty good description (descriptive word). Third, write the number of another word from the list above that you judge to be the next best answer - if you believe that any other word in the list is also a reasonable descriptor. Use your judgment as to whether or not you should give second and third choices for each statement below.

1st 2nd 3rd

And to think I had looked forward to this party for days!

Drink as much wine as you please but preach the benefits of pure water.

Test 4. Sense of Humour

Instructions: The questions in this section deal with humor. For each numbered joke started below, please select the most humorous answer that creates the best possible joke. Mark this answer using a “1”. Next, please mark the response that is the least funny using the number “4”. Each question should thus have two responses, a 1 and a 4.

Physician while taking case history asks, “Are you married?” Patient:

- "Yes, but I pay the bills."
- "That was twenty years ago."
- "My partner chooses his/her own doctor."
- "No, the reason I look this way is because I’m sick."

REFERENCES


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PERSONALITY CHARACTERISTICS RELATED TO RESILIENCE: SEEKING FOR A COMMON CORE

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1Institute of Psychology, Czech Academy of Sciences, Prague
2National Institute of Public Health, and Charles University, Prague

ABSTRACT

The purpose of the present study was to explore the relationships among the four widely studied constructs related to personality resilience: sense of coherence, hardiness, locus of control, and self-efficacy. Despite the prominence of these traits and rather obvious associations between them, relatively few investigations have explicitly considered their relationships. This study focused on these traits in reference to engagement and burnout among 168 university undergraduate students. The correlational analysis showed that there had been good reasons for assuming that the analyzed traits were interrelated. Two factors were extracted by principal components method; the first factor was labeled Competence-Control and the second factor was labeled Vitality/Well-being. We concluded that personality resilience might indeed comprise two factors; the first factor being represented by control over one’s individual life, personal and professional efficacy, and competency. The second factor appears to be represented by energy, involvement, dedication, and commitment. If the factors represent two orthogonal dimensions, it should be possible to distinguish between resilient behavior (high competence-control, high vitality/well-being) and non-resilient behavior (low competence-control, low vitality/well-being). We believe that the constellation of these two factors may bring greater understanding to our current knowledge about resilient behavior.

Keywords: Resilience, Sense of Coherence, Hardiness, Locus of Control, Self-Efficacy, Burnout

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INTRODUCTION

Resilience is defined variously by different authors and to date, no consensus definition of resilience is available (Luthar, Cicchetti and Becker, 2000; Šolcová, 2009). A broader definition of resilience is provided by Grotberg (1997) who defines resilience as a universal capacity which allows a person, group, or community to prevent, minimize, or overcome the damaging effects of adversity.

Historically, the research on the topic of resilience in adults originated from the studies that investigated the impacts of stressful event on people (Antonovsky, 1987; Kobasa, 1982). These studies were seeking characteristics and constellations of characteristics that identify people capable of better withstanding the impact of stressful events. Such characteristics /constellations of characteristics were assumed to buffer, transfer, or negate, the potential harmful impact of aversive events. Among the most prominent of these factors are self-efficacy (Bandura, 1977; 16, 915 results in recent search of the PsychINFO database), locus of control (Rotter et al., 1966; 17, 222 results in PsychINFO database), hardiness (Kobasa, 1982; 953 + 6,822 results in PsychINFO database), and sense of coherence (Antonovsky, 1987; 1,506 results in PsychINFO database). These studies focused on the strengths in people, while not ignoring potential harm and pathology issues.

Burnout is viewed as a psychological strain representing a process of the depletion of personal coping resources in reaction to prolonged exposure to stress at work (Shirom and Melamed, 2006). In the majority of the studies, burnout and resilience are treated as independent and entirely separate variables. Moreover, resilience is often found to have negative correlations with burnout (e.g., Menezes de Lucena Carvalho et al., 2006; Naude and Rothmann, 2006; Van der Colff and Rothmann, 2009).

Nevertheless, Strümpfer (2003) reports the results of several South African researchers (e.g. Basson and Rothmann, 2002; Levert et al., 2000; Rothmann and Jansen van Vuuren, 2002; Wissing, De Waal and De Beer, 1992, as cited in Strümpfer, 2003) who found significant negative correlations between burnout measures and sense of coherence scores in various samples. Wissing et al. (1992, as cited in Strümpfer, 2003) suggested that their findings indicated that sense of coherence and burnout may represent two poles of one dimension.

On the basis of these findings, we decided to address the question of possible relationships between resilience variables and burnout/engagement variables.

CHARACTERIZATION OF SELECTED RESILIENCE CONSTRUCTS

In the following section, locus of control, self-efficacy, sense of coherence, hardiness, and burnout will be briefly outlined.

Locus of control represents generalized expectancies for internal versus external control of events (Rotter, 1966). Internal locus of control refers to the degree to which people expect...
that an outcome of their behavior is contingent on their own behavior or personal characteristics. External locus of control refers to the degree to which people expect that an outcome is a function of chance, luck, or fate, or is under the control of powerful others, or simply unpredictable. Locus of control refers to people’s very general, cross-situational belief about what determines their lives. Accordingly, people can be classified along a continuum from very internal to very external, rather than being assigned to just one or the other.

Self-efficacy represents a core concept in Bandura’s theory of social learning (Bandura, 1977, 1982). Perceived self-efficacy is defined as people's beliefs about their capabilities to produce desirable levels of performance (Bandura, 1997, p. 3). Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. "Perceived self-efficacy is a judgment of one’s capability to organize and execute given types of performances..." (Bandura, 1997, p. 17).

According to Bandura (1994, p. 71), a strong sense of efficacy enhances accomplishments and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered, rather than threats to be avoided. They set themselves challenging goals and maintain strong commitment to them, heighten and sustain their efforts in the face of failure, quickly recover their sense of efficacy after failures or setbacks, attribute failure to insufficient effort or deficient knowledge and skills, which can be acquired, and approach threatening situations with assurance that they can exercise control over them. Such an approach produces personal accomplishments, reduces stress and lowers vulnerability to depression.

In contrast, people with low self-efficacy shy away from difficult tasks, because they view them as personal threats. They have low aspirations and weak commitment to the goals they choose to pursue. When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter, and other adverse outcomes, rather than concentrating on how to perform successfully; they weaken in their efforts and give up quickly in the face of difficulties, and are slow to recover their sense of efficacy following failure or setbacks. Because they consider failure as a deficiency, it does not require much for them to lose faith in their capabilities and thus they can become prone to being stressed and depressed (Bandura, 1994, p.71).

Sense of coherence is the global orientation that the world is comprehensible, manageable, and meaningful (Antonovsky, 1987). Comprehensibility is the degree to which individuals perceive the world as predictable, ordered, and explicable; manageability is the degree to which individuals believe that they have the personal and social resources to handle the demands; and meaningfulness is the belief that demands are challenges which are worthy of investment and commitment. Sense of coherence is the ability to use resources to cope with stressful events (Antonovsky’s 1979 concept of General resistance resources – GRRs proposes that such generalized resistance resources help the individual to develop a strong sense of coherence and serve as coping resources that protect an individual from the negative impacts of stressors. Generalized resistance resources protect people from the negative impact of stressful events and provide people with life experiences from which a sense of coherence can be constructed. The main arguments, according to Antonovsky (1987), are that: (1) experiences of consistency in life form the basis for comprehensibility; (2) life experiences which reinforce an individual’s belief that resources are available to meet life's demands (an underload-overload balance of stimuli) form the basis for manageability; and (3) life
experiences of playing an active role (participation in shaping outcomes) form the basis for meaningfulness.

Antonovsky (1987) viewed meaningfulness as the most important of the three components of sense of coherence, because it provides the individual with the motivation to search for order in the world, use the resources available, and seek out new resources for managing the demands.

A strong sense of coherence increases the chances that a person will mobilize available resources and actively seek out new resources to handle stressors. In this way, the sense of coherence is not a specific coping style. Rather, people with a strong sense of coherence, who believe that they understand a problem and see it as a challenge, are more likely to select the most appropriate coping behavior for a specific problem (Antonovsky, 1987).

Kobasa (1979) introduced the concept of hardiness when examining the relationship between personality, stress and health. She has suggested that hardiness moderates the relationship between stressful life events and illness. Hardiness comprises three components: (a) a commitment to oneself and work, (b) a sense of personal control over one's experiences and outcomes, and (c) a perception that change represents challenge, and thus should be treated as an opportunity for growth, rather than as a threat. Individuals high in hardiness are hypothesized to be able to better withstand the negative effects of life stressors and, consequently, are less likely to become ill, compared to individuals who are low in hardiness.

This resistance of highly hardy individuals might presumably result from perceiving life changes as less stressful (Kobasa, 1979) and/or having more resources at their disposal to cope with life's changes (Kobasa, 1982). Our own studies provide evidence for both assumptions (Šolcová and Sýkora, 1995; Šolcová and Tománek, 1994). Highly hardy individuals are found to have a positive belief in control, commitment and challenge. In the face of stress, such individuals will remain healthier than those who believe that external forces make them powerless, alienated and threatened. It is assumed that the highly hardy individual makes positive, optimistic, cognitive appraisals which then result in appropriate coping strategies. In this way, the impact of stressful events can be minimized (Kobasa, 1982).

The above descriptions of the four resilience constructs imply strong theoretical relations among them. Despite the prominence of these traits and rather obvious associations between them, these characteristics are studied in isolation, and treated as entirely separate variables. Relatively few investigations have explicitly considered their relationships. Judge et al. (2002) addressed the question of a common core of resilience measures. They examined locus of control, self-esteem, self-efficacy, and neuroticism, and concluded that the common concept could be a dimension, neuroticism – emotional stability, although more broadly conceptualized than in the Big Five studies.

Originally, Maslach and Jackson (1986) had defined burnout as a psychological syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do “people work” of some kind. Later on, they extended the conceptualization of burnout on occupational groups other than human service providers, and defined burnout as “a crisis in one’s relationship with work, not necessarily as a crisis in one’s relationship with people at work” (Maslach, Jackson, and Leiter, 1997, p. 4).

Further information about these constructs can be found in our chapter “Trends in Resilience Theory and Research” in this text.

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The components of burnout are Exhaustion, Cynicism, and Professional Efficacy. Exhaustion primarily indicates the depletion of physical energy and fatigue. Cynicism reflects indifference or a distant attitude toward one’s work and its circumstances. Reduced professional efficacy refers to a decline in one’s feelings of competence and successful achievement at one’s work. The positive pole of burnout is engagement, which is characterized by energy, involvement and efficacy (Maslach and Leiter, 1997).

Another view of burnout comes from Shirom and Melamed (2006) who view burnout “as relating to individuals’ feelings of physical, emotional, and cognitive exhaustion, thus focusing on the continuous depletion of the individual’s energetic coping resources resulting from their chronic exposure to occupational stress” (Shirom and Melamed, 2006, p. 179). Shirom and Melamed’s conceptualization of burnout stems from Hobfoll’s (1989) Conservation of Resources (COR) theory, based on the core assumption that people have a basic motivation to obtain, retain, and protect the resources they value (e.g. material, social, and energetic resources). The concept of burnout relates to energetic resources (Shirom and Melamed, 2006). The positive pole of burnout in this conception is vigor, which is characterized by physical strength, emotional energy, and cognitive liveliness (Shirom, 2006).

Focus of the Research

The concept of resilience has captured the interest of psychologists and other researchers for several decades, and the scientific literature devoted to this problem is very extensive. However, structuring, generalizing and unifying views are rare. Although the different theories represent distinct ways of approaching resilience, there are clear common points among the approaches, making it plausible to hypothesize that resilience traits are interrelated at both conceptual and empirical levels.

Therefore, the purpose of the present study was to explore the relations among the four widely studied constructs related to personality resilience: sense of coherence, hardiness, locus of control, self-efficacy. We were also interested in the relation of these constructs to the burnout syndrome.

METHOD

Sample

The study comprised 168 university undergraduates aged between 22 – 58 years of age (M = 34.38; SD = 8.41), with 34% being males and 66% being females. All the measures were administered in paper-pencil format. The subjects gave informed consent process for their participation and the research proposal was approved by the Ethics Committee of the Institute of Psychology.
Measures

The following questionnaires were administered to the participants: Personal Views Survey, Sense of Coherence Scale, Locus of Control Questionnaire, General Self-Efficacy Scale, Maslach Burnout Inventory – General Survey, and the Shirom-Melamed-Burnout-Measure.

The **Personal Views Survey** (PVS, Kobasa, 1985) has 50 items (16 for the assessment of commitment, 17 items for control, and 17 items for challenge). Examples of PVS items are “I really look forward to my work” and “Ordinary work is just too boring to be worth doing” (commitment), “What happens to me tomorrow depends on what I do today” and “Most of what happens in life is just meant to happen” (control), and "It's exciting to learn something about myself” and “The tried and true ways are always the best” (challenge). Participants rated each item on a 4-point scale (0 = not at all true; 3 = completely true). The higher the score, the higher is hardiness and its components. According to the data of the Hardiness Research Institute, the reliability of the PVS (Coefficient alpha) is 0.92 (based on 21,000 subjects) (Skip Dane, Personal communication, March, 1992). The Cronbach’s alpha coefficients of the Czech version (N = 2,638) are: 0.82 (whole scale), 0.81 (challenge), 0.75 (commitment), and 0.76 (control) (Šolcová and Kebza, 2003).

The **Sense of Coherence Scale** (SOC; Antonovsky, 1987) consists of 29 items, which measure three components of the construct: comprehensibility (11 items, e.g., “Do you have very mixed-up feelings and ideas?”), manageability (10 items, e.g., “Do you have the feeling that you're being treated unfairly?”), and meaningfulness (8 items, e.g., “How often do you have the feeling that there's little meaning in the things you do in your daily life?”). Respondents rated items on a seven-point Likert-type scale, yielding an overall score between 0 and 203. The higher the score, the higher is one’s sense of coherence and its components. The measure has shown respectable internal consistency and reliability in the literature (Cronbach’s alphas range from 0.70 to 0.92, according to Eriksson and Lindström, 2005). Cronbach’s alpha for the Czech version (N = 718) is 0.84 (Kupka, Dostál, and Malůš, 2009).

The **Locus of Control Scale** (LOC, Rotter, 1966) includes 29 items, each containing two contracting statements (e.g. 7a. “No matter how hard you try, some people just don't like you”, 7b. “People who can't get others to like them don't understand how to get along with others”). Participants are asked to choose the statement that best describes how they feel. The responses are summed up to yield a final composite score. A higher score means more internal locus of control. Cronbach’s alpha coefficient is 0.78 in the present study.

The **General Perceived Self-Efficacy Scale** (GSE, Jerusalem and Schwarzer, 1992) includes 10 items (e.g., “I can solve most problems if I invest the necessary effort”) that are rated on a 4-point scale. The responses are summed up to yield a final composite score ranging between 10 and 40. The higher score means higher self-efficacy. In samples from 25 nations, Cronbach’s alphas for the GSE range from 0.76 to 0.90, with the majority being in the high 0.80s (Scholz et al., 2002). Cronbach’s alpha of the Czech translation is 0.86 (N = 1,321; Šolcová and Kebza, 2006).

**Maslach Burnout Inventory—General Survey** (MBI-GS, Leiter and Schaufeli, 1996) was used to measure burnout syndrome. The MBI-GS includes three subscales: emotional exhaustion (five items, e.g., “I feel used up at the end of the workday”), cynicism (five items, e.g., “I have become less enthusiastic about my work”), and professional efficacy (six items, e.g., “In my opinion I am good at my job”). All items are scored on a 7-point frequency scale.
ranging from 0 (never) to 6 (daily). Although the authors suggest using the means of the scales for detection of burnout, for our purposes we used the sum of items scores. The high scores indicate high level of subscales. In terms of the psychometric properties of the MBI-GS, the authors originally reported internal consistency coefficients for the three subscales ranging from 0.71 to 0.90, and high test-retest reliability as well (Shirom and Melamed, 2006). Cronbach’s alphas of the Czech version are 0.85 (exhaustion), 0.65 (cynicism), and 0.81 (professional efficacy) in the present study. We did not use an aggregated score, as Maslach, Leiter and Schaufeli (2008) recommend that researchers treat the three dimensions separately.

As there are differences in the conceptualization of burnout, we used also the *Shirom Melamed Burnout Measure* (SMBM, Shirom and Melamed, 2006). The SMBM consists of three subscales: physical fatigue (six items, e.g., “I feel tired; I feel physically fatigued”), emotional exhaustion (three items, e.g., “I feel I am not capable of investing emotionally in coworkers and customers”), and cognitive weariness (six items, e.g., “I am too tired to think clearly; I feel that I think slowly”). Respondents are asked to rate the frequency of each feeling during their work. Items are scored on a 7-point frequency scale, ranging from 1 (almost never) to 7 (almost always). The high scores indicate high level of the subscales. The reliability coefficient (Cronbach’s alpha) for the burnout scale by Melamed et al. (1999) was 0.91; the reliability coefficient of the Czech version is 0.81 in the present study.

**RESULTS**

**Analyses**

Correlation analysis was used to explore the relationships between resilience measures, burnout measures, and between resilience and burnout measures. To analyze the relationships among the measures, we used an approach known as the Multitrait-Multimethod Matrix (MTMM), that is, an approach developed to assess the construct validity of a set of measures in a study (Campbell and Fiske, 1959). On the basis of this approach, we can see to what degree the resilience measures are interrelated, and to what degree the measures of burnout are interrelated with the measures of resilience. Principal component analysis was employed to examine the underlying structure of the data analyzed.

**Descriptive Statistics**

Firstly the descriptive statistics of the resilience and burnout measures are set out in Table 1. Compared to available data, the mean value of the GSE corresponds with the mean value obtained in most of samples \(N = 29;\) Schwartz, 2009). Cut-off scores for exhaustion, cynicism and professional efficacy described by to Schaufeli and Van Dierendonck (2000) in the Dutch sample are not exceeded in our sample. Compared with the data of Shirom (2008a, b) our means for emotional exhaustion, cognitive weariness, and physical fatigue conform to the means for respective scales in Israeli samples.
Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Means</th>
<th>Std.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td>50.4</td>
<td>9.48</td>
</tr>
<tr>
<td>Manageability</td>
<td>53.9</td>
<td>7.46</td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>45.3</td>
<td>4.92</td>
</tr>
<tr>
<td>Sense of Coherence - total score</td>
<td>149.7</td>
<td>19.26</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>15.6</td>
<td>3.44</td>
</tr>
<tr>
<td>Challenge</td>
<td>24.1</td>
<td>5.50</td>
</tr>
<tr>
<td>Commitment</td>
<td>33.9</td>
<td>5.31</td>
</tr>
<tr>
<td>Control</td>
<td>34.7</td>
<td>4.89</td>
</tr>
<tr>
<td>Hardiness – total score of PVS</td>
<td>92.7</td>
<td>13.02</td>
</tr>
<tr>
<td>General Self Efficacy</td>
<td>30.5</td>
<td>3.74</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>9.5</td>
<td>5.36</td>
</tr>
<tr>
<td>Cynicism</td>
<td>7.7</td>
<td>5.72</td>
</tr>
<tr>
<td>Professional Efficacy</td>
<td>26.2</td>
<td>5.96</td>
</tr>
<tr>
<td>Physical Fatigue</td>
<td>17.0</td>
<td>6.30</td>
</tr>
<tr>
<td>Cognitive Weariness</td>
<td>13.4</td>
<td>4.90</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>6.7</td>
<td>2.75</td>
</tr>
<tr>
<td>SMBM - total score</td>
<td>37.1</td>
<td>10.41</td>
</tr>
</tbody>
</table>

Note: SMBM = Shirom-Melamed-Burnout – Measure.

Correlation Analysis

Correlation analysis was employed to determine: (1) if the relationships between resilience measures are high enough to entitle presuming a common core construct; and (2) if the relationships of resilience measures and burnout measures can indicate whether burnout is an antipode of resilience.

The correlations among the six measures and their subscales (Table 2a, b) in our sample ranged from 0.02 to 0.91, with an average correlation of 0.36 (all measures), and 0.45 (resilience measures only).

Multitrait-Multimethod Matrix Approach

When we apply the Multitrait-multimethod matrix (MTMM) approach to our data, the correlations in the resilience triangle (left upper part of the correlation matrix in Table 2a), and the correlations in the burnout triangle (right bottom part of the correlation matrix in Table 2b)\(^5\) should be the highest, whereas correlations in the left bottom part (Table 2a) should be the lowest\(^6\). As can be seen from Tables 2a and 2b, there are fairly strong correlations among resilience variables, and strong correlations between burnout variables. However, there are also fairly high correlations between resilience and burnout variables:

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\(^5\) Monotrait-heteromethod relations in the Campbell and Fiske (1959) terminology.

\(^6\) Heterotrait/heteromethod in the Campbell and Fiske (1959) terminology.
Table 2a. Correlation Coefficients between Resilience Variables and Burnout Variables

<table>
<thead>
<tr>
<th>Resilience variables</th>
<th>Compr</th>
<th>Manag</th>
<th>Mean</th>
<th>SOC</th>
<th>LOC</th>
<th>Challen</th>
<th>Comm</th>
<th>Contr</th>
<th>Hardi</th>
<th>GSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td>0.75</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>0.52</td>
<td>0.62</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of Coherence</td>
<td>0.91</td>
<td>0.91</td>
<td>0.75</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– total score (SOC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of Control m(LOC)</td>
<td>0.46</td>
<td>0.39</td>
<td>0.27</td>
<td>0.45</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge</td>
<td>0.32</td>
<td>0.34</td>
<td>0.35</td>
<td>0.38</td>
<td>0.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>0.55</td>
<td>0.58</td>
<td>0.52</td>
<td>0.63</td>
<td>0.33</td>
<td>0.46</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>0.57</td>
<td>0.54</td>
<td>0.45</td>
<td>0.60</td>
<td>0.36</td>
<td>0.43</td>
<td>0.70</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardiness – total score</td>
<td>0.57</td>
<td>0.58</td>
<td>0.53</td>
<td>0.64</td>
<td>0.28</td>
<td>0.77</td>
<td>0.87</td>
<td>0.84</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>General Self Efficacy (GSE)</td>
<td>0.61</td>
<td>0.54</td>
<td>0.47</td>
<td>0.63</td>
<td>0.41</td>
<td>0.22</td>
<td>0.34</td>
<td>0.43</td>
<td>0.40</td>
<td>1.00</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>-0.33</td>
<td>-0.45</td>
<td>-0.30</td>
<td>-0.42</td>
<td>-0.31</td>
<td>-0.32</td>
<td>-0.47</td>
<td>-0.29</td>
<td>-0.44</td>
<td>-0.20</td>
</tr>
<tr>
<td>Cynicism</td>
<td>-0.34</td>
<td>-0.40</td>
<td>-0.38</td>
<td>-0.42</td>
<td>-0.20</td>
<td>-0.29</td>
<td>-0.48</td>
<td>-0.28</td>
<td>-0.43</td>
<td>-0.25</td>
</tr>
<tr>
<td>Professional Efficacy</td>
<td>0.35</td>
<td>0.37</td>
<td>0.28</td>
<td>0.39</td>
<td>0.18</td>
<td>0.19</td>
<td>0.30</td>
<td>0.31</td>
<td>0.32</td>
<td>0.34</td>
</tr>
<tr>
<td>Physical Fatigue</td>
<td>-0.43</td>
<td>-0.49</td>
<td>-0.35</td>
<td>-0.49</td>
<td>-0.38</td>
<td>-0.23</td>
<td>-0.51</td>
<td>-0.38</td>
<td>-0.45</td>
<td>-0.25</td>
</tr>
<tr>
<td>Cognitive Weariness</td>
<td>-0.49</td>
<td>-0.54</td>
<td>-0.38</td>
<td>-0.54</td>
<td>-0.30</td>
<td>-0.32</td>
<td>-0.43</td>
<td>-0.39</td>
<td>-0.46</td>
<td>-0.55</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>-0.23</td>
<td>-0.27</td>
<td>-0.16</td>
<td>-0.26</td>
<td>-0.29</td>
<td>-0.31</td>
<td>-0.27</td>
<td>-0.35</td>
<td>-0.24</td>
<td></td>
</tr>
<tr>
<td>Shirom-Melamed-Burnout-Measure- total score (SMBM)</td>
<td>-0.55</td>
<td>-0.62</td>
<td>-0.43</td>
<td>-0.62</td>
<td>-0.39</td>
<td>-0.36</td>
<td>-0.60</td>
<td>-0.49</td>
<td>-0.58</td>
<td>-0.47</td>
</tr>
</tbody>
</table>

Note: The triangle with assumed highest correlations is outlined by shading. Correlations greater than 0.13 are significant at the .05 level. Correlations greater than 0.18 are significant at the .01 level.

Table 2b. Correlation Coefficients between Resilience and Burnout Variables

<table>
<thead>
<tr>
<th>Burnout variables</th>
<th>Exh</th>
<th>Cyni</th>
<th>Prof.eff</th>
<th>Fatigue</th>
<th>Weary</th>
<th>Em.exh</th>
<th>SMBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meaningfulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of Coherence – total score (SOC)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Locus of Control m(LOC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardiness – total score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Self Efficacy (GSE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaustion</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cynicism</td>
<td>0.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Efficacy</td>
<td>0.02</td>
<td>-0.09</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Fatigue</td>
<td>0.79</td>
<td>0.42</td>
<td>-0.10</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Weariness</td>
<td>0.35</td>
<td>0.31</td>
<td>-0.25</td>
<td>0.41</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>0.17</td>
<td>0.24</td>
<td>-0.06</td>
<td>0.12</td>
<td>0.28</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Shirom-Melamed-Burnout-Measure- total score (SMBM)</td>
<td>0.69</td>
<td>0.46</td>
<td>-0.20</td>
<td>0.83</td>
<td>0.79</td>
<td>0.47</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: The triangle with assumed highest correlations is outlined by shading. Correlations greater than 0.13 are significant at the .05 level; those greater than 0.18 are significant at the .01 level.
The average correlation 0.35 is quite high for the measures conceptualized and constructed as independent. The average correlation in the burnout triangle is also 0.35. Moreover, for example, the correlations of the Shirom-Melamed-Burnout-Measure with resilience variables are comparable in size to correlations of the Shirom-Melamed-Burnout-Measure with MBI-GS variables, and the highest correlations of cognitive weariness and professional efficacy are outside the burnout sector. Thus, the high correlations between measures of resilience and burnout do not fit the MTMM assumption concerning correlations that share neither trait nor method. The requirement of the lowest correlation between the measures of resilience and burnout was thus not met in our data.

Resilience Measures

Correlations between resilience measures are provided in Table 3. The results show that the strongest correlations among the resilience measures were found with the total score of the Sense of Coherence. The lowest correlations are with Locus of control.

Table 3. Correlation coefficients between resilience measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>SOC</th>
<th>LOC</th>
<th>HD</th>
<th>GSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Coherence (SOC)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of Control (LOC)</td>
<td>0.45*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardiness (HD)</td>
<td>0.64**</td>
<td>0.28**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>General Self Efficacy (GSE)</td>
<td>0.63**</td>
<td>0.41**</td>
<td>0.40</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: ** Correlations significant at the .01 level.

Burnout Measures

In comparison with the Shirom and Melamed study (2006), the general size of the correlation coefficients between the Shirom-Melamed-Burnout-Measure and the Maslach-Burnout-Inventory-General Survey was slightly lower in our study. The highest correlation in the Shirom and Melamed study was between SMBM and exhaustion (0.80; 0.69 in the present study), and the highest correlation in the present study was between physical fatigue and exhaustion (0.79). The correlations provided in the Shirom and Melamed study (2006) and the respective correlations from the present study are displayed in the Table 4. As you can see, the correlations range from high moderate to high.

Table 4. Correlation coefficients between burnout variables

<table>
<thead>
<tr>
<th>MBI-GS</th>
<th>SMBM (total)</th>
<th>Physical fatigue</th>
<th>Cognitive weariness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaustion</td>
<td>0.80** 0.69**</td>
<td>0.74** 0.79**</td>
<td>0.68** 0.35**</td>
</tr>
<tr>
<td>Cynicism</td>
<td>0.68** 0.46**</td>
<td>0.48** 0.42**</td>
<td>0.54** 0.31**</td>
</tr>
<tr>
<td>Professional efficacy</td>
<td>0.48** 0.20**</td>
<td>0.39** 0.10</td>
<td>0.42** 0.25**</td>
</tr>
</tbody>
</table>

Note: MBI-GS = Maslach Burnout Inventory, SMBM = Shirom Melamed Burnout Measure. Correlations in the first column in the cells are from the Shirom and Melamed study (2006, p. 184) and in the second column (in italics) are from our current study. * Correlations significant at the .05 level. **Correlations significant at the .01 level.

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Principal Component Analysis

From the correlation matrix (see Tables 2a, 2b), aggregated scores of SOC, Hardiness and SMBM and their correlations to other variables were removed. A correlation matrix, as displayed in the Table 5a, 5b was submitted to a principal components analysis (method Varimax normalized). We included SOC, Hardiness and SMBM subscales in a principal components analysis (method Varimax normalized). This resulted in two orthogonal factors (see Table 6); Factor 1 explained 4.22 (30.2%) of the total variance, while Factor 2 explained 3.18 (22.7%) of the total variance.

Table 5a. Correlation Matrix submitted to Principal Components Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Compr</th>
<th>Manag</th>
<th>Mean</th>
<th>LOC</th>
<th>Challen</th>
<th>Comm</th>
<th>Contr</th>
<th>GSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td>0.75</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>0.52</td>
<td>0.62</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of Control (LOC)</td>
<td>0.46</td>
<td>0.39</td>
<td>0.27</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge</td>
<td>0.32</td>
<td>0.34</td>
<td>0.35</td>
<td>0.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>0.55</td>
<td>0.58</td>
<td>0.52</td>
<td>0.33</td>
<td>0.46</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>0.57</td>
<td>0.54</td>
<td>0.45</td>
<td>0.36</td>
<td>0.43</td>
<td>0.70</td>
<td>1.00</td>
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</tr>
<tr>
<td>General Self Efficacy (GSE)</td>
<td>0.61</td>
<td>0.54</td>
<td>0.47</td>
<td>0.41</td>
<td>0.22</td>
<td>0.34</td>
<td>0.43</td>
<td>1.00</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>-0.33</td>
<td>-0.45</td>
<td>-0.30</td>
<td>-0.31</td>
<td>-0.32</td>
<td>-0.47</td>
<td>-0.29</td>
<td>-0.20</td>
</tr>
<tr>
<td>Cynicism</td>
<td>-0.34</td>
<td>-0.40</td>
<td>-0.38</td>
<td>-0.20</td>
<td>-0.29</td>
<td>-0.48</td>
<td>-0.28</td>
<td>-0.25</td>
</tr>
<tr>
<td>Professional Efficacy</td>
<td>0.35</td>
<td>0.37</td>
<td>0.28</td>
<td>0.18</td>
<td>0.19</td>
<td>0.30</td>
<td>0.31</td>
<td>0.34</td>
</tr>
<tr>
<td>Physical Fatigue</td>
<td>-0.43</td>
<td>-0.49</td>
<td>-0.35</td>
<td>-0.38</td>
<td>-0.23</td>
<td>-0.51</td>
<td>-0.38</td>
<td>-0.25</td>
</tr>
<tr>
<td>Cognitive Weariness</td>
<td>-0.49</td>
<td>-0.54</td>
<td>-0.38</td>
<td>-0.30</td>
<td>-0.32</td>
<td>-0.43</td>
<td>-0.39</td>
<td>-0.55</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>-0.23</td>
<td>-0.27</td>
<td>-0.16</td>
<td>-0.06</td>
<td>-0.29</td>
<td>-0.31</td>
<td>-0.27</td>
<td>-0.24</td>
</tr>
</tbody>
</table>

Note: Correlations greater than 0.13 are significant at the 0.05 level. Correlations greater than 0.18 are significant at the 0.01 level.

Table 5b. Correlation Matrix submitted to Principal Components Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Exh</th>
<th>Cyni</th>
<th>Prof.eff</th>
<th>Fatigu</th>
<th>Wear</th>
<th>Em.exh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Meaningfulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of Control (LOC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Self Efficacy (GSE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaustion</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cynicism</td>
<td>0.48</td>
<td>1.00</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Professional Efficacy</td>
<td>0.02</td>
<td>-0.09</td>
<td>1.00</td>
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<td></td>
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</tr>
<tr>
<td>Physical Fatigue</td>
<td>0.79</td>
<td>0.42</td>
<td>-0.10</td>
<td>1.00</td>
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<td></td>
</tr>
<tr>
<td>Cognitive Weariness</td>
<td>0.35</td>
<td>0.31</td>
<td>-0.25</td>
<td>0.41</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>0.17</td>
<td>0.24</td>
<td>-0.06</td>
<td>0.12</td>
<td>0.28</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: Correlations greater than 0.18 are significant at the 0.05 level. Correlations greater than 0.23 are significant at the 0.01 level.
Table 6. Principal Component Analysis: Factor Loadings

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility (SOC)</td>
<td>0.772</td>
<td>0.312</td>
</tr>
<tr>
<td>Manageability (SOC)</td>
<td>0.731</td>
<td>0.426</td>
</tr>
<tr>
<td>Meaningfulness (SOC)</td>
<td>0.634</td>
<td>0.322</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>0.447</td>
<td>0.283</td>
</tr>
<tr>
<td>Challenge (PVS)</td>
<td>0.382</td>
<td>0.361</td>
</tr>
<tr>
<td>Commitment (PVS)</td>
<td>0.571</td>
<td>0.567</td>
</tr>
<tr>
<td>Control (PVS)</td>
<td>0.672</td>
<td>0.330</td>
</tr>
<tr>
<td>General Self-Efficacy</td>
<td>0.770</td>
<td>0.094</td>
</tr>
<tr>
<td>Exhaustion (MBI-GS)</td>
<td>-0.071</td>
<td>-0.906</td>
</tr>
<tr>
<td>Cynicism (MBI-GS)</td>
<td>-0.219</td>
<td>-0.655</td>
</tr>
<tr>
<td>Professional Efficacy (MBI-GS)</td>
<td>0.669</td>
<td>-0.192</td>
</tr>
<tr>
<td>Physical Fatigue (SMBM)</td>
<td>-0.199</td>
<td>-0.830</td>
</tr>
<tr>
<td>Cognitive Weariness (SMBM)</td>
<td>-0.590</td>
<td>-0.346</td>
</tr>
<tr>
<td>Emotional Exhaustion (SMBM)</td>
<td>-0.302</td>
<td>-0.231</td>
</tr>
</tbody>
</table>

Note: See the loadings higher than 0.300.

The highest loadings on the Factor 1 came from the comprehensibility scale of the SOC, general self-efficacy, the manageability scale of the SOC, professional efficacy of the MBI-GS, and the control scale of the PVS. Factor 1 was labeled Competence-Control.

The highest loadings on Factor 2 were from emotional exhaustion of the MBI-GS (negative), physical fatigue of the SMBM (negative), cynicism of the MBI-GS (negative), commitment of the PVS, manageability of the SOC, cognitive weariness of the SMBM (negative), challenge of the PVS, and control of the PVS. As the highest loadings are negative, we substituted the negative characterizations of scales by their counterparts – as defined by the authors of MBI-GS and SMBM. According to Leiter (2006), burnout is a construct at the negative end of the dimension burnout – engagement, and MBI-GS provides a sufficient and adequate measure of the engagement. In terms of exhaustion, engagement is characterized by energy, in terms of cynicism, engagement is characterized by involvement. The third component of engagement is self-efficacy. Similarly, Shirom (2003) speaks about physical strength (as the positive pole of physical fatigue) and cognitive liveliness (as the positive pole of cognitive weariness). Factor 2 is thus sourced by energy, physical strength, involvement, commitment, manageability, and cognitive liveliness and is labeled Vitality/Well-being.

Factors as Dimensions

The underlying structure of our data has been condensed into two orthogonal factors, which might constitute the two parts of the core construct of interest. When we lay the factors orthogonal to one another (see Figure 1), we obtain two dimensions with Competency/control (high vs. low) and Vitality/Well-being (high vs. low). By viewing our data in this way, each cell of this schematic diagram might hypothetically correspond to varying manifestations of behavior (high resilience vs. low resilience).
To summarize, correlational and principal component analyses revealed: (1) correlations between resilience measures; (2) correlations between burnout (engagement) measures; and (3) a two factor structure. The orthogonal structure of the two factors led us to consider a schematic representation of resilient versus non-resilient behavior.

**DISCUSSION**

The main aim of this study was to examine the relationships among resilience traits (locus of control, sense of coherence, hardiness, and self-efficacy). Correlation analyses revealed strong positive relations among the various resilience measures confirming our expectations. The average correlation among the four measures of resilience and their subscales was relatively high, and the average correlations remained moderately strong when two measures of burnout were included. In particular, locus of control correlated most weakly with the other core traits, confirming previous research (Judge et al., 2002). Perhaps locus of control is less indicative of resilience than other traits measured in the present study. Of the four resilience traits, SOC showed the strongest interrelationships with the other measures. Perhaps the concept of the SOC is closest to the hypothesized common core concept, because it shares the highest level of variance with other traits.

The next aim of the study was to examine the relationship between resilience and engagement/burnout variables. Results from the MTMM approach suggest that resilience is not the single underlying construct. We found fairly strong negative interrelations between resilience and engagement/burnout measures, and these correlations were in some cases higher than those within the resilience and burnout sectors respectively (see for example, negative correlations between physical fatigue and SOC, cynicism and commitment, and
cognitive weariness and SOC). This is an important finding considering that these constructs are based on different approaches and are mostly treated as separate variables. These results suggest that one common core construct underlies both the resilience and engagement/burnout variables. Resilience may act as an overarching construct and as such provide meaning to all examined variables.

When we submitted our correlation matrix to a principal-component analysis, the four resilience traits and two burnout-engagement traits loaded on two factors that together explained 55% of the variance in these traits. The factors were labeled Competence-Control, and Vitality/Well-being. (As the highest loadings on the latter factor were negative, we substituted the negative characterizations of burnout scales by their counterparts, to secure a better understanding of our findings). The core characteristics of the first factor are control over one’s life and its comprehensibility, personal and professional efficacy, and competency. The core characteristics of the second factor are energy, involvement, physical strength, and commitment. We believe that a combination of these two factors may clarify our current understanding of resilient behavior. Although the sense of coherence, which is conceptualized as an ability to use one’s resources\(^7\), resembles the vitality/well-being part of resilience, this factor is not considered in other studies examining the construct of resilience. However, Gralinsky-Bakker and colleagues (2004) did designate, in their longitudinal study, competence and well-being as markers of adaptive functioning. The most in-depth work in this particular area of sense of coherence appears to be that of Monica Eriksson and Bengt Lindström (see chapter in this text) who refer to the umbrella concept where Eriksson lists many components of that super-ordinate category of sense of coherence.

Thus we propose that the resilience cluster consists of two dimensions: Competence-control, and Vitality/well-being. In Figure 1, we portray our two factors as two visual dimensions; and we display a model with four types of competence-vitality combinations. The horizontal axis represents the high level of Vitality/well-being on the one side and the low level of vitality/well being on the other side. The vertical axis relates to Competence-control on one side and low competence/control on the other side. This taxonomy makes it possible to distinguish between resilient behavior (high competence-control, high vitality/well-being) and non-resilient behavior (low competence-control, low vitality/well-being).

**Suggestions for Further Research**

There are some potential limitations that should be considered in evaluating the results of our research. The present findings are based on a single cross-sectional study, and our sample does not guarantee generalisability of the findings. It is thus desirable to verify our findings with another samples, and in prospective and longitudinally designed studies.

\(^7\) General resistance resources are defined as biological, material and psychological factors that are at a person’s disposal (Antonovsky, 1979). The depletion of resources (depletion of energy) is reflected in the Shirom-Melamed conceptualization of burnout; also Maslach and Leiter (1997) describe a positive pole of burnout (engagement) as an energetic state and argue that engagement and burnout constitute the opposite poles of a continuum of work related well-being.

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CONCLUSION

Our findings suggest that a two-factor model may better represent the construct of resilience. If replicated, these findings are important in highlighting the concept of resilience. The results also suggest some directions for future research; first, it will be necessary to examine the two factor concept in various age groups. It will be also important to develop a new tool for measuring resilience including both of the factors described. Most importantly, it is essential to seek the ways by which Vitality/well-being part of resilience can help in the promotion of resilience; that is, how Vitality/well-being can facilitate resilience when included in strategic interventions.

ACKNOWLEDGMENTS

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REFERENCES


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Chapter 6

MEASURING COPING VERSUS SYMPTOM INTENSITY: IMPLICATIONS FOR CLINICAL PRACTICE

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ABSTRACT

The Rehabilitation Survey of Problems and Coping (R-SOPAC; Salmon and Celinski, 2002) was developed as a brief measure addressing typical clinical manifestations related to stress, trauma and physical injuries which are subjectively rated by clients, both with respect to symptom intensity (an inverse indicator of resilience) and coping which refers to resourcefulness. The R-SOPAC is recommended for initial assessments, treatment monitoring and the evaluation of final outcomes in rehabilitation, health and mental health clinical settings. The instrument’s atheoretical approach (in the sense that it is not limited to specific coping styles) provides an opportunity for monitoring spontaneous recovery and effectiveness of physical and cognitive rehabilitation and mental health interventions in a broad array of conditions. It may also be used in studies of coping in various adverse or stressful situations, in conjunction with specific measures of coping styles. The current chapter reviews the conceptual underpinnings of the authors’ multifaceted assessment and recovery model, as relevant to the R-SOPAC’s originally identified psychometric properties established on physical rehabilitation clientele.

Keywords: Stress Reaction, Ubiquitous Symptoms, Coping, Coping Measures, Outcome Measures


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INTRODUCTION

Clinically, resilience initially modifies the negative impact from an accident, trauma or stressor, by preventing more serious disintegration (manifested as symptoms of various intensity) and by facilitating future recovery. On the other hand, resourcefulness represents a person’s inner ability to utilize past and newly acquired experiences, skills and knowledge for successful coping, thus allowing for recovery and better adaptation in cases of physical injuries, psychotraumatic and broader mental health conditions, and traumatic brain injuries.

In this chapter, we attempt to distinguish between symptom intensity (which typically is the focus of clinical assessment and considered the predictor of impairment) and functional abilities and coping as a separate construct. The importance of coping is specifically understood in the context of resilience and resourcefulness. If we understand post-traumatic resilience as the ability to maintain a certain level of functioning in spite of symptoms, and resourcefulness as the ability to achieve specific goals in recovery, we are able to present a more optimistic clinical picture for the client with the primary focus being on values and abilities, rather than on the elimination of symptoms (which frequently is not possible). Maintaining quality of life, social connectiveness and sustained involvement, along with acting on the belief that one’s own efforts matter regardless of the circumstances, are the essence of such an attitude when confronting uncertainty and unpredictability of the final outcome. In this context, coping is a construct which embraces all these personality qualities and characteristics.

Clinically, whereas we reviewed a variety of coping style concepts as a foundation principle of the R-SOPAC, we exercised the generic notion of coping as an ability to maintain normal functioning in spite of symptom presence and without regard to the specific style or process invoked to achieve that end. Such an approach provides the possibility of partial dissociation from symptoms, and changes the perspective from that of symptoms being the primary determinants of clients’ behaviours. In the initial assessment, it is not as important to know what kind of coping strategy is applied, but in the course of treatment, these issues need to be addressed and specific coping styles reviewed with the client. In the process of recovery, introduction of the coping concept pertains to all the values, positive attitudes and experiences which clients need to master in order to focus on their recovery in a sustainable manner. When this concept is accepted and implemented, it allows the client to gradually switch from focusing on disability to focusing on abilities and prospects of recovery that are primarily defined as improvement in functioning.

In this chapter, we provide evidence that coping is a better predictor of actual performance on cognitive testing than subjective rating of symptom severity, and reference other supportive data demonstrating the positive relationship between coping and functionally oriented measures. Given that favourable cognitive functioning relies upon the mobilization of one’s own effort and skills, we highlight the cognitive domain here to provide concrete objective indicators of coping effectiveness. It is, therefore, not surprising that “coping” as a reflection of active engagement with the functional task at hand correlates more strongly with higher levels of cognitive functioning, in contrast with weaker correlations between cognitive performance and symptom severity.
The Rehabilitation Survey of Problems and Coping (R-SOPAC; Salmon and Celinski, 2002) is a brief, concise atheoretical measure of self-rated symptom intensity and coping which simultaneously captures both the concepts of resilience and resourcefulness, and, as such, has application in a wide variety of contexts. Although initially developed for a physical rehabilitation population, the instrument is now also routinely used for acute and chronic mental health assessment, and treatment outcome monitoring. In the physical rehabilitation context, the R-SOPAC is useful in simultaneously tracking patients’ singular or combined physical, emotional and/or cognitive impairments over the course of time from the acute stage through to community and vocational reintegration.

Using the example of an individual with a traumatic brain injury, in the earliest stages of recovery, the patient’s primary symptom concerns are often more focused on issues such as imbalance, dizziness, tinnitus (ringing in the ears), bodily pain and the like. Such symptoms are captured by the R-SOPAC Physical Scale and tracked from both the perspectives of symptom intensity and the patient’s capacity to cope with such symptoms. As the individual becomes more physically mobile and independent, and begins to take on more day to day responsibilities, and as the need for sustained attention on tasks emerges, intensified symptoms of headaches and cognitive limitations often become more apparent. These newly pressing symptoms become more highly recognized rehabilitation barriers and thus will become more prominent targets of treatment focus in the next phase of intervention.

Such evolving symptom priorities are tracked by the R-SOPAC Cognitive Scale, informing clinicians of treatment needs and allowing professionals, involved in cognitive rehabilitation and headache management, to track intervention effectiveness, upon re-administration of the measure. Several months later, as the patient becomes more aware of his/her overall condition (in the case of resolving neurogenic lack of awareness) or is aware of slowed progress and/or the likelihood of permanent impairments, psychological deterioration may unfold. The evolution of greater degrees of anxiety, depression, diminished self-esteem/confidence and related sleep disturbance and fatigue are commonplace; such emerging symptoms are then readily identified for mental health treatment needs by the R-SOPAC Emotional Scale. Through further repeat measurement, the Emotional Scale and related sub-items can monitor treatment efficacy relative to the client’s mental health status, while the R-SOPAC Physical and Emotional Scales continue to track progress in these domains as well.

In yet another application of the R-SOPAC, the measure is also being routinely used in mental health acute and long term disability cases. As referenced in our other chapter in this book “Use of “R-SOPAC” in Cases of Physical and Psychological Trauma and Stress”, recently acquired data support the clinical usefulness and unique contribution of the instrument in the context of community integration of mental health populations. Even in the absence of recognized prior or co-existing physical or cognitive symptoms, the R-SOPAC is useful in documenting what research and diagnostic manuals (e.g. DSM-IV) have long since established in connection with many mental health diagnoses; namely, that the onset and presence of mental health conditions such as anxiety and depression, even in their milder forms of an Adjustment Disorder, may result in secondary physical symptoms including...
muscle tension/pain, sleep disturbance and fatigue. Such mental health conditions also often give rise to cognitive symptoms of disturbance in attention/concentration and related secondary symptoms of disturbances in memory and executive functions.

Despite the fact that such physical and cognitive symptoms are not atypical in connection with purely mental health conditions, mental health professionals pay little attention to the adverse contribution that such symptoms can make. To a greater or lesser degree, these secondary symptoms can potentially compound and/or exacerbate the primary mental health symptoms as well as form a vicious cycle with them. Such secondary physical and cognitive symptoms may also become barriers to recovery and rehabilitation in their own right, compounding the impacts of the mental health condition. In light of the information based economy, even previously predominantly physically oriented occupations now require significantly greater analytical and other cognitive skills to undertake more complex tasks, and to utilize more sophisticated technologies. Similarly, emerging physical issues for predominantly mental health clients may also pose barriers for return to work. The R-SOPAC can thus play an important role in identifying and tracking such physical and cognitive symptoms that mental health providers and disability evaluators might otherwise overlook.

With Cognitive items including concentration, memory, planning/organization and decision-making, and Physical items as noted above (and reviewed below), the R-SOPAC’s Emotional items are complemented to provide a brief, yet holistic, symptom review.

In another scenario, in either the context of physical injury or sole psychological trauma, the R-SOPAC Emotional Scale and related individual items may identify and track both trauma-specific and trauma non-specific (i.e. broader emotional response) conditions. Applicable to both acute traumatic stress reactions (Acute Stress Disorder) and more chronic ones (PTSD), the inclusion of trauma related items allows for measurement of psychotherapy effectiveness with respect to trauma-specific psychopathology. Simultaneously, the Emotional Scale, with its broader based sub-items, contribute, together with the Cognitive and Physical scales, to enhancing the diagnostic usefulness of the R-SOPAC and providing a more holistic understanding of the patient’s condition including secondary symptomatology. With the ability to track very discrete symptoms such as “nightmares”, “anger/irritability”, “muscle tension” and “fear of driving/being a passenger”, specifically targeted treatment impacts can be readily measured.

In all of the above scenarios, the R-SOPAC’s usefulness, in relation to differential diagnosis and outcome measurement (Salmon, 2003, 2004), may be enhanced through simultaneous use of its sister measures: the Rehabilitation Checklist (RCL; Salmon, 1998), the Rehabilitation Activity of Daily Living (R-ADLS; Salmon, 1999) Survey and/or The Pre/Post Condition Life Events Survey (PPCLES; Salmon, 1998b), as well as by psychodiagnostic or coping measures.

**Symptoms and Coping as Reflections of Resilience and Resourcefulness**

The R-SOPAC is a self-rated measure of symptom intensity and ability to cope with individual symptoms, and overall refers to a client’s perception pertaining to both domains. From studies of stress, it is known that perception triggers psychopathological reactions. An
individual’s cognitive assumptions of helplessness or control (that represent the primary clinical dimension related to resilience) result in different patterns of neuro-endocrine activation (Henry, 1992). When the challenge is perceived as easy to handle, the release of the neurosympathetic system’s norepinephrine, leading to increased arousal, will be elicited as an active coping response. Conversely, there is an increase in the production of the flight or anxiety hormone (epinephrine) when there is a perception that a loss of control is possible. Also, adrenocorticotropic hormone and cortisol levels rise (manifesting behaviourally as helplessness and depression), as the threat and arousal continue and as distress grows. Selyean general adaptation syndrome\(^1\) is activated by these classic hormones. However, the hypothalamic pituitary adrenocortical (HPA) axis is not activated as long as individuals (be they animals or humans) perceive themselves as being in control. Despite an individual’s control being possibly delusional, not actual, the corticoids stay low. It is the perception that matters. The right hemispheric functions associated with control of the pituitary adrenal cortical axis are less aroused as long as control is perceived as being retained, despite an overwhelming challenge to the organism. Affective denial may actually be adaptive from this perspective.

Another aspect of our psychobiological reactivity in relation to stress refers to resourcefulness which is needed when resilience is inadequate to withstand the challenge. If damage was done and disintegration occurs, broadening awareness of one’s own potential in relation to the task at hand, along with acquisition of new knowledge and skills, is needed for successful restoration of the self and functioning (Celinski and Gow, 2005).

There is already accumulated clinical evidence that, from a cognitive perspective, improvement in the prospect of recovery from trauma is grounded in the Sense of Coherence (SOC), as Frommberger et al. (1997) conceptualized after Antonovsky (1987, 1993). Individuals’ Sense of Coherence manifests as the ability to give meaning to a traumatic event, understand what has occurred, and have a sense of manageability of the sequelae. The authors summarized research as showing that individuals who possess these qualities are better able to cope with the traumatic event itself. Increased Sense of Coherence correlated negatively with development of post-traumatic psychopathology and psychological disorders, including post-traumatic stress disorder and anxious cognitions, and with the personality trait of neuroticism, and correlated positively with extroversion and frustration tolerance. Also, other concepts representing resources such as self-esteem, mastery, optimism and locus of control correlated positively with the SOC. Conversely, the reviewed literature indicates that increased distress, anxiety and anger as a response to stress were associated with low SOC scores. Frommberger et al. (1997) believe that the way individuals perceive the trauma, its meaning and subsequent symptoms are at least as important as the objective indicators of the trauma itself. Furthermore, individual resiliency against post-traumatic stress symptomatology, major depression or other anxiety disorders may be enhanced, through his or her concept of a Sense of Coherence in dealing with attributes and appraisals pertaining to adverse events.

\(^1\) Hans Selye “defines and measures stress in terms of the non-specific elements of the (physiological) response to noxious or aversive stimuli. In practice, there has been a tendency to concentrate on sympathetic adrenal medullary activity and on pituitary-adrenal cortical activity as representative of the non-specific stress response”. In R. Harre and R. Lamb (Eds.). (1983). The Encyclopedic Dictionary of Psychology. Cambridge, Massachusetts: The MIT Press.
In our conceptualization underpinning the R-SOPAC design, intensity of psychopathological manifestation is in inverse relation to resilience, whereas coping is in direct relation to resourcefulness. Salmon and Celinski’s Resilience and Recovery Model (Figure 1) visualizes resilience as a shield that protects the individual from the ‘blows’ of adversities or diminishes their impacts, especially in relation to emotional functioning; subsequently resilience facilitates spontaneous recovery, as well as an individual’s ability to put sustained effort into it, and to seek appropriate resources.

While specifying the dynamics of post traumatic symptomatology and recovery, Salmon, Celinski and Young (2007) differentiated between the primary impacts directly related to the event, and the impacts and processes secondary to the original event. In relation to the primary impact, they commented that by definition, conditions that immediately follow the impact would not arise, unless the event is perceived as significantly injurious or psychotraumatic to the victim. They refer to studies by Ozer et al. (2003) and Malt and Olafsen (1992) who noted that there is a relatively weak association between the real danger of an event or severity of the injury, and the appraisal of the gravity of the situation. Consequently, the more or less resilient way of dealing with a threatening situation or an actual injury, as having short term and especially long term emotional and physical sequelae, will depend on prior experience with successful coping, one’s concept of self, reality and values which, in our opinion, result in a sense of commitment and confidence with respect to handling particular situations. Resilience enables us to engage in optimal strategies and to seek appropriate resources to cope with symptoms for post-traumatic problems in adjustment. The alternative is activation of regressive behaviour which leads to secondary symptoms and chronicity of the condition.

The Resilience and Recovery model in Figure 1 presents an intrinsic link between a client’s coping skills and styles, and the client’s functional activity level. However, it should also be recognized that by having become more active, clients may exhaust their adaptive coping resources and eventually reduce their activity level. More specific coping strategies, that are part of our resourcefulness model, include: stress management, exercise, assertive communication, relaxation skills, activity goal-setting, energy conservation, activity pacing, social support mechanisms, among others. The degree and the manner through which clients cope with symptoms would influence their functional activity levels. A vast body of literature (Rosentiel and Keefe, 1983; Kerns, Turk, and Rudy, 1985; Folkman and Lazarus, 1984; Kulkarni, 1987; Endler and Parker, 1990) documents the consequence resulting from using adequate coping skills and of using specific adaptive versus maladaptive coping strategies. The relationships between psychopathology, behavioural/psychosocial adjustment, and coping style have been demonstrated by Jensen and colleagues (1994), Spinhoven and collaborators (1989) and Harkapaa and team (1991). Furthermore, Stanton et al. (1993) have related coping styles characterized by catastrophizing and helplessness to poorer treatment outcomes for chronic-pain clients, as well as to greater physical and psychological dysfunction.

With reference to pain perception, Jensen et al. (1994) have demonstrated that more favourable coping strategies involve diverting attention and reinterpreting one’s symptoms. The Coping Strategies Questionnaire (Rosentiel and Keefe, 1985) was credited with determining successful utilization of cognitive coping strategies for a group of rheumatoid arthritis sufferers (Beckham et al., 1991). The Coping Strategies Questionnaire also specified some positive coping strategies for chronic pain, such as ignoring or reinterpreting pain.
sensations, diversion of attention utilizing coping self-statements, or praying and hoping; as opposed to catastrophizing which makes coping with pain more difficult. This study supports the positive relationship between emotional adjustment to pain and perceived disability on the one hand, and coping on the other.

Coping ability has been linked with post-concussion syndrome by Marsh and Smith (1995), in that during chronic stages, a patient’s efforts to compensate for their cognitive deficits generate neurotic symptoms. In this interpretation, the development of symptoms was seen as an answer to social and environmental demands perceived through a patient’s own standards. In patients who have sustained injuries, but are still able to partially resume previous activities and are not visibly handicapped, the social and environmental demands may exceed their abilities and this may result in secondary emotionally based symptoms.

Baumeister, Faber and Wallace (1999) distinguished active coping, which is the pursuit of specific objective outcomes, from passive coping. The latter refers to subjective adaptation when an individual does not aim at altering the outcome itself. Just as active coping may draw on the person’s volitional resources, passive coping often requires active exertion of control over one’s behaviour. The authors postulated that, in the process of coping with stress, the
self’s volitional resources are strained. In the situations that allow simple, direct, and unambiguous exertion of control over stress, the client’s resources are least drained. However, considerable effort must be extended when there is no clear superior option, or where feedback is ambiguous, or because a lot of diverse efforts are required, and when control over external factors is difficult to implement.

When people encounter stress or trauma, their coping abilities are often strained to their maximum capacity, especially when the executive functions operate on the basis of limited resources. Furthermore, when the person performs acts of volition, the resources become severely depleted by making choices, responsible decisions, self-control and taking active initiatives. The individual’s own coping effort, and not the external stress itself, may result in decreasing a person’s ability to cope and function over time which is observed clinically as burnout. Therefore, managing one’s own feelings and thoughts during the difficult period may require recovery of its own.

However, in the long term, coping mastery should result in a manageable rate of energy expenditure, reduced emotional distress and lesser symptom discomfort, and optimal activity level. Stanton and Franz (1999) assessed two major coping styles, emotion focused coping and problem focused coping, and concluded that positive affect will also help restore the executive function to its full power. Whereas problem focused coping involves direct effort to modify the problem at hand, emotion focused coping is aimed at regulating emotions triggered by the stressful encounter. Emotion focused coping operates along the avoidance-approach dimension and involves active effort to acknowledge, understand, and express emotion.

Hope is considered an important aspect of coping because it represents possible pathways to the goal of better adjustment or decreased distress. If the selected pathway is blocked, people with high hope develop alternative pathways to reach their goals which represent resourceful and logical attempts to deal with the ‘unknown’ situation which assumes that a solution could be found, if one does not prematurely give up. This is a matter of mindset and perhaps a character trait, not a matter of ability. Individuals with low hope see no apparent alternatives in situations, when a singular or habitually used coping strategy is blocked.

A distinction also exists between the mastery-oriented pattern and the helpless and hopeless pattern. Mastery-oriented people take action to surmount the problem, instead of doubting their competence. Habituation to the stressors, awareness of central issues and use of emotional signals indicating the degree of discrepancy between expected and actual rates of progress toward a goal, are the necessary parts of effective emotional coping. Stanton and Franz conclude that those individuals who actively approach emotions (rather than shun them) are more likely to adopt new learning associated with successful coping. Emotion provides impetus for behavioural action programmes. Those who avoid their feelings deprive themselves of information which may aid problem solving or help them orient themselves better to their environment. Maladaptive cognitive processes, such as rumination or activity oriented thoughts that manifest as violent aggression, result from unsuccessful emotional coping.

Carver and Scheier (1999) evaluated optimism as a coping strategy. Optimists presented as seeking information, actively coping and planning, positively reframing, seeking benefit, using humor, and accepting. By contrast, pessimists were suppressing thoughts, giving up, being self-destructive, focusing on distress, and using denial and cognitive avoidance. Premature resignation may well promote a kind of functional death in that a person
disengages from the opportunities of life. They found that people who react to a diagnosis of illness with stoic resignation or passive acceptance of their own impending death may actually die sooner than those who exhibit less of these qualities. On the other hand, those who accept that their life may be compromised (but not over) may be impelled to develop a more adaptive frame of mind for the purpose of keeping themselves engaged in life goals.

In the context of successful coping, of particular importance is the role of positive emotions. Fredrickson (1998, 2001, 2009; Fredrickson and Branigan, 2005) has developed a broaden-and-build theory of positive emotions that postulates that positive and negative emotions have distinct and complimentaryadaptive functions, together with cognitive and physiological effects. Whereas negative emotions narrow one’s momentary thoughts and action repertoire, positive emotions broaden them by expanding the range of cognitions and behaviours that come to mind. Positive emotions widen the area of thoughts and actions that would facilitate creativity and behavioural flexibility. Experiments have shown that positive affect widens the scope of attention (Fredrickson and Branigan, 2005), increases creativity (Isen, Daubman and Nowicki, 1987) and also increases intuition (Bolte, Goschke and Kuhl, 2003). Furthermore, Isen’s (1987) study indicates that positive mood has a distinct and solitary effect on cognitive processes, such as creativity, problem solving and decision making, and helps retrieval of information from memory. Isen, Rosensweig and Young (1991) further documented the existence of positive relationships between positive mood and decision making on the one hand, and an ability for problem solving in medical students dealing with diagnostic process on the other. Respective studies have also shown that frequent positive affect predicts resiliency to adversity (Fredrickson, Tugade, Waugh and Larken, 2003), increases happiness (Fredrickson and Joiner, 2002) and promotes growth (Fredrickson et al., 2003).

By contrast, Peterson and Moon (1999) addressed the issue of a catastrophizing attitude and pointed out that if global catastrophizing does not change, the specific coping strategies do not help either. Therefore, active seeking of actual information (de-catastrophizing), positive reappraisal and distancing, comprise the most important aspects of a coping strategy.

Tennen and Affleck (1999) discussed the issue of finding benefit in adversity. The perceived benefits include strengthening of relationships with family and friends. Positive personality changes could also be achieved including greater patience, tolerance, empathy, courage, as well as perceived beneficial change in terms of life priorities and personal goals. It is important to notice that the accuracy of beliefs construed by victims is less important to adaptation than the belief that positive changes have occurred. This coping strategy is characterized by efforts to find meaning in traumatic experience by focusing on personal growth.

Unlike other measures and concepts in the literature, rather than identifying, labeling, or evaluating the coping style or process per se, the R-SOPAC aims to assess the client’s perceived sum total outcome or success resulting from whatever combination of coping strategies, resources, and processes that have been explicitly or implicitly used. Thus the instrument remains applicable to a diverse spectrum of theoretical and pragmatic approaches to coping, and may be viewed as representing a unifying approach to otherwise diverse conceptualizations and practical interventions.
USEFULNESS OF THE R-SOPAC IN DOCUMENTING THERAPY OUTCOMES

Leoniuk (2009) selected the positive emotion scale and the negative emotion scale from the 18 bipolar clinical scales of Resourcefulness for Recovery Inventory-R (Celinski, Antoniazzi and Allen, 2006) which she used along with the R-SOPAC. She documented that there is a high positive correlation between positive emotions and all three types of coping (emotional, physical and cognitive) at a given time. Participants (the victims of motor vehicle accidents and traumas) who reported high ability to experience and utilize positive emotions also reported better coping with emotional problems ($R = .62$, $p<.001$), physical problems ($R = .48$, $p<.001$) and cognitive problems ($R = .48$, $p<.001$). By contrast, clients who reported more intense and frequent negative emotions also reported poorer coping with emotional problems ($R = .38$, $p<.001$), physical problems ($R = .31$, $p<.01$) and cognitive problems ($R = .27$, $p<.05$).

With respect to predicting change over time, a significant positive correlation ($R = .47$, $p<.01$) was obtained between physical coping at Time One (before psychological treatment began) and physical coping at Time Two (several months later during which the patient underwent some physical and psychological therapy) as well as between cognitive coping at Time One and cognitive coping at Time Two ($R = .46$, $p<.01$), and between emotional coping at these two different times ($R = .30$, $p<.05$).

At the time of the second assessment after treatment, the highest positive correlation was observed between the ability to cope with cognitive problems and ability to cope with emotional problems ($R = .90$, $p<.001$); the second highest positive correlations were established between coping with physical problems and coping with cognitive problems ($R = .78$, $p<.001$), and between physical coping and emotional coping ($R = .76$, $p<.001$).

These findings document the importance of coping as a clinical construct at the beginning of rehabilitation and treatment which predicts the final outcome, and also as a measure of success of patients’ recovery at the end of treatment.

SUMMARY OF R-SOPAC PSYCHOMETRIC PROPERTIES

This section serves to review the statistical properties of the R-SOPAC, in order to present to readers the instrument’s psychometric characteristics and validity as a measure of symptom intensity and symptom coping that reflect the concepts of resilience and resourcefulness.

A comprehensive analysis of the R-SOPAC’s psychometric properties is presented in the R-SOPAC Technical Manual (Salmon and Celinski, 2002). Only a summary of highlights will therefore be presented here. The R-SOPAC was initially validated on a sample of 296 workers’ compensation patients and 100 motor vehicle accident patients. Additionally, two dissimulation groups ($n = 84$ and $n = 35$ respectively) were included in malingering studies. Furthermore, considering the impacts of unemployment as a reflection of a broad ranging stressor (without physical injuries), 84 employed and 100 unemployed non-disabled subjects were tested.
In relation to reliability studies, Test-re-test reliability was found to be .91 - .93. The Chronbach’s alpha for the full scale (all items) was established to be .87, while the Chronbach’s alphas for the R-SOPAC subscales were found to be .77 - .92, with the vast majority being above .80. In addition, there is substantive factor analytic support for the multiple scale structure and for test validity. For our purposes, only key validity aspects linking the concepts of coping, resourcefulness and resilience shall be further reviewed.

The R-SOPAC items are presented in clustered format in the chart in Table 1.

Table 1. R-SOPAC Example Items by Subscale

<table>
<thead>
<tr>
<th>Physical Scale (total 8 items)</th>
<th>Emotional Scale (total 10 items)</th>
<th>Cognitive Scale (total 5 items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Disturbance</td>
<td>Embarrassed of Appearance</td>
<td>Planning/Organizing</td>
</tr>
<tr>
<td>Pain (non-headache)</td>
<td>Depression</td>
<td>Memory</td>
</tr>
</tbody>
</table>

For all items across all subscales, symptom intensity is first rated on a Likert scale from 0 (“Not a Problem”) to 6 (“Extreme Problem”). Subsequently, the respondent is asked to rate his/her ability to cope with the previously identified symptoms also using a Likert scale with a rating of “3” indicating “Satisfactory Coping” with extremes from “0 – Cannot Cope At All” to “6 – Can Cope Very Well”. As additional measures, individuals are asked to indicate the presence of pre-existing symptoms, to identify post-condition worsening of pre-existing symptoms and to rate his/her general coping and general disability levels.

In the context of evaluating the measure’s validity, efforts were made to assess the construct validity of the R-SOPAC Cognitive scale relative to neuropsychological domains which suggest that clients’ perceptions, rather than actual injury, have an impact on their cognitive test results. Consistent with the literature, R-SOPAC validity studies (Salmon and Celinski, 2002) have demonstrated an inverse relationship between the client’s cognitive complaints on the one hand, severity of sustained brain trauma and neurocognitive test findings indicative of organic pathologies on the other, which suggest that client’s perceptions, rather than actual injury, had an impact on their cognitive test results. At the extreme of the spectrum, patients who demonstrated the highest levels of symptom intensity and corresponding lowest levels of symptom coping, also evidenced generally poor cognitive testing results reflecting non-organic etiology. However, a positive relationship was observed between pain complaints and emotional pathologies. To quote from the technical manual on the measure (Salmon and Celinski, 2002):

As can be seen from Table 2 [was labelled Table 1 in original text], with few exceptions, the Coping scales demonstrate consistently higher correlations than the Intensity scales. This is best revealed in the comparison between Total Intensity and Total Coping, wherein, particularly on measures of global memory (General Memory Index) and pure attention/concentration (Attention Index, Digits Backwards), the correlations range from .31 to .26 respectively, and are substantially greater (around 50% or more) than the related Intensity measure. The trend was maintained, although to a lesser extent in terms of cognitive flexibility (Wisconsin Card Sort-Perseverative Response score) and nonverbal problem solving (Category Test). It was not supported in terms of the Wisconsin Card Sort Category score, although as was the case throughout this analysis, each and every correlation was in the anticipated direction. (p. 85)
Table 2. R–SOPAC Comparison of Pathology versus Symptom Intensity in Relation to Cognitive Functioning

<table>
<thead>
<tr>
<th>R–SOPAC</th>
<th>General Memory Index</th>
<th>Attention Index</th>
<th>Digits Span Backwards</th>
<th>Wisconsin Card Sort Test Number of Categories</th>
<th>Perseverative Responses</th>
<th>Halstead-Reitan Category Test Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive-Intensity</td>
<td>-0.14</td>
<td>-0.16</td>
<td>-0.07</td>
<td>-0.20</td>
<td>0.13</td>
<td>-0.01</td>
</tr>
<tr>
<td>Cognitive-Coping</td>
<td>0.29*</td>
<td>0.26*</td>
<td>0.19*</td>
<td>0.17*</td>
<td>-0.18*</td>
<td>-0.01</td>
</tr>
<tr>
<td>Physical-Intensity</td>
<td>-0.15</td>
<td>-0.20</td>
<td>-0.05</td>
<td>-0.15*</td>
<td>0.20*</td>
<td>0.10</td>
</tr>
<tr>
<td>Physical-Coping</td>
<td>0.28*</td>
<td>0.29*</td>
<td>0.22*</td>
<td>0.11</td>
<td>-0.13</td>
<td>-0.14*</td>
</tr>
<tr>
<td>Emotional-Intensity</td>
<td>-0.12</td>
<td>-0.13</td>
<td>-0.07</td>
<td>-0.17</td>
<td>0.25*</td>
<td>0.19</td>
</tr>
<tr>
<td>Emotional-Coping</td>
<td>0.31*</td>
<td>0.24*</td>
<td>0.21*</td>
<td>0.20</td>
<td>-0.22</td>
<td>-0.21*</td>
</tr>
<tr>
<td>Total Coping</td>
<td>0.31*</td>
<td>0.26*</td>
<td>0.21*</td>
<td>0.16</td>
<td>-0.17*</td>
<td>-0.13*</td>
</tr>
<tr>
<td>Total Intensity</td>
<td>-0.14</td>
<td>-0.14</td>
<td>-0.02</td>
<td>-0.18*</td>
<td>0.14</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Note: * reflects higher correlation between intensity-coping pairs per domain. Category Test results reflect the number of errors indicating that especially with increased emotional coping, the performance will improve.

The notion of coping, in concert with that of resourcefulness, refers to functioning in spite of experiencing symptoms. Coping is seen as being linked to better functional ability and meaningful levels of activity. The scale’s design was such that the intensity domains of the R-SOPAC were anticipated to be more highly correlated with measures of pathology, while the coping domains were expected to achieve high correlations with measures of daily functioning and/or life role impairment. In the R-SOPAC technical manual, when comparing Intensity versus Coping measures, the reported coping scores are consistently better predictors (with a correlation of .57 for the Overall Coping score versus .51 for the Overall Intensity score) with respect to an overall back/neck pain disability index. A similar outcome was noted with respect to the R-SOPAC’s greater Coping (than Intensity) correlations with the Rehabilitation-Activity of Daily Living Survey (R-ADLS; Salmon, 1999). The data in the R-SOPAC technical manual also demonstrate a clear trend towards the Intensity subscales being more highly correlated with the MCMI acute psychopathology oriented scales than with Coping subscales, when compared across similar domains (physical, cognitive, emotional).

**CONCLUSION**

Our findings indicate that the Coping dimensions of the R-SOPAC appear to be generally better predictors of functional ability than the Intensity dimensions. The fact that most study participants in the validity analyses were being seen between 6 to 10 months post injury was further testimony to the greater likelihood of change being attributed to improved coping ability, rather than to decreased underlying symptomatology. These findings also suggest that a focus on symptom coping, as opposed to symptom intensity, would be preferable in terms of outcome monitoring in the rehabilitation context given that the longer term objective of rehabilitation is that of coping/functional maximization, rather than symptom amelioration.

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2 The Millon Clinical Multiaxial Inventory (MCMI) is a 175 item multi-faceted measure of acute clinical (DSM-Axis I), and personality (DSM-Axis II) pathology.
Measuring Coping Versus Symptom Intensity

per se which may not be possible to achieve. In support of this statement, in the R-SOPAC technical manual, the authors had previously demonstrated\(^3\) that time-limited interventions with psychoeducation, exercise and activity focused programming brought about marginal changes in perceived symptom intensity. By contrast, these same interventions significantly increased participants’ self-perceived coping ability and activity levels for patients with mild to moderate brain injury and related pain conditions.

In providing clear differentiation between, and empirical support for, the distinct clinical measurement of symptom intensity and symptom coping, the R-SOPAC also offers parallel distinct measurement of the resilience and resourcefulness concepts. The latter concepts contribute to a deeper understanding of the development of symptom and related disability as a two dimensional process. In the first dimension, the concept of resilience serves to manage the initial adverse impact of a stressor by preventing more serious disintegration (manifested in multiple domains as symptoms of various intensity) and by facilitating future recovery. As a second dimension, resourcefulness reflects the individual’s capacity to harness past and newly acquired experiences, skills, and knowledge, and to mobilize coping resources towards facilitating recovery and/or enhanced adaptation. As an atheoretical (i.e., without regard to specific ‘coping styles’) coping measure, the R-SOPAC captures the individual’s degree of success in coping with a given symptom(s) and more broadly the client’s ability to enhance overall mental and physical health status. Because it is an empirically validated brief and concise measure, differential diagnosis, progress monitoring and treatment outcome efficacy may all be duly measured by the R-SOPAC at both symptom and domain levels. In addition to the empirical support reviewed here, further relevant studies, particularly germane to the mental health population, are reviewed in our other chapters in this text.

ACKNOWLEDGMENTS

The authors wish to express their recognition and gratitude to Tyler Salmon, Sid Kimel and Donna Cleva for their assistance in the preparation of this manuscript.

REFERENCES


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\(^3\) “On a percentage scale of 0 to 100, the mean rating of improvement in terms of symptom intensity was 19\%, whereas on a similar scale, the mean rating of improvement in your ability to cope with your symptoms was 28\% (Salmon and Celinski, 2002, p. 86).


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Chapter 7

USE OF ‘R-SOPAC’ IN CASES OF PHYSICAL AND PSYCHOLOGICAL TRAUMA AND STRESS

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ABSTRACT

The conceptual underpinnings of the R-SOPAC and its relationship to the measurement of coping, and by extension to the concepts of resilience and resourcefulness, have been reviewed in a companion chapter in this text. That other chapter also presented a summary of the psychometric characteristics of the instrument that were developed based on the initial physical rehabilitation study population. This chapter will focus on the evidentiary support for the instrument as a proxy for broad health outcomes in comparing: (i) a clinical population spectrum ranging from “Adaptive Copers” through to those demonstrating poorest resilience and resourcefulness, termed “Distressed-Diffuse Symptoms”; (ii) unemployed adults versus employed and versus clinical populations; and (iii) a DSM-IV diagnosed psychopathology continuum ranging from “no diagnosis” through to Adjustments Disorders, to Major Depression and Somatoform (Pain) Disorders. In addition to aggregate data analysis, a case study shall be presented of an individual with significant mental health diagnoses utilizing comprehensive health outcomes measurements. The case study demonstrates the importance of mental health professionals considering the more ubiquitous impacts of DSM-IV diagnosed conditions on both physical and cognitive functioning, with significant implications for occupational disability assessment and an overall psychosocial adjustment.

Keywords: Trauma, Stress Reaction, Ubiquitous Symptoms, Coping, Coping Measures

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INTRODUCTION

The Rehabilitation Survey of Problems and Coping (R-SOPAC) measures common symptoms found in post-concussive symptomatology and also those resulting from psychotraumatic conditions, stress exposure and general mental health conditions. Typical symptoms include, but are not limited to, anxiety, depression, memory and concentration problems, dizziness, headache, pain, etcetera. Symptom intensity is first rated on a Likert scale from 0 to 6. Subsequently the respondent is asked to rate his/her ability to cope with the previously identified symptoms also using Likert scale, with a rating of “3” defined as “Satisfactory Coping”. Additionally, individuals are asked to indicate the presence of pre-existing symptoms, symptoms worsened, post recent condition onset, and to rate their general coping and general disability levels.

In our conceptualization of the problem, we were inspired by and followed the original Hans Selye’s (1993) ideas who, while looking at the bodily responses to any type of illness, noted the “syndrome of just being sick” and subsequently “was struck by how patients suffering from the most diverse diseases exhibited strikingly similar signs and symptoms, such as loss of weight and appetite, diminished muscular strength and absence of ambition” (p. 9). “It was soon discovered that all toxic substances, irrespective of their source, produced the same pattern of responses. Moreover, identical organ changes were evoked by cold, heat, infection, trauma, hemorrhage, nervous irritation, and many other stimuli. Gradually, I realized that this was an experimental replica of the syndrome of being sick” (p. 10).

Further, with reference to Selye’s conceptualization of bodily reactions to stress, similarities are also found in respect to our assessment instrument as especially applicable to the resistance stage of the General Adaptation Syndrome (consisting of the initial alarm reaction, stage of resistance and stage of exhaustion). It is during the resistance stage that release of the adaptation energy brings some stabilization to bodily functions which may be depleted, however, if the stress continues. The symptoms that R-SOPAC addresses represent breakdown of the person’s adaptive abilities while exposed to the continuous stress caused by the presence of physical symptoms originating from injury, and emotional trauma (some aspects of which are inability to prevent the traumatic event and inability to change its undesirable psychosocial consequences, uncertainty about recovery, change in self-image, etc.).

At such a stage, a lot depends either on the previously acquired abilities to deal with stress or on “good genes” which spontaneously trigger optimal psychological reactions promoting further recovery or at least some stabilization; the third way is a conscious and deliberate effort to give in and mobilize one’s energy to withstand the pressure and to remain hopefully and purposely involved with life (which represents resilience); this prevents further regression that typically worsens a person’s condition by triggering unfavourable emotional reactions of anxiety, depression, loss of self confidence, helplessness, ruminations and self-embarrassment that cause passivity and withdrawal. Subsequently, use of various resources enables continuity of recovery at a certain level of functioning. Clinical applications of these conceptualizations will be presented with reference to whiplash, brain injury and psychotrauma.
**BACKGROUND AND EVOLUTION OF THE R-SOPAC**

Clinical and rehabilitation psychologist’s work is based on the model which first requires that a client be identified as somebody who suffers from psychopathological reactions that interfere with this client’s usual functioning which he/she would like to change in order to to live a better life. The model further posits that it is also necessary for a psychologist to help the client to establish some degree of understanding what the particular problem represents from the clinical perspective as to whether the symptoms constitute the known reactions to some causality. This is based on the knowledge of how various conditions may manifest themselves clinically. Being able to label the symptoms brings us closer to understanding what possibly may be their origin and also what possible remedies could be utilized to change the condition for the better. Furthermore, while looking at possible origins of a particularly uncomfortable or undesirable behavioural manifestation, psychologists ask about their intensity as possibly resulting from a hypothetical causation and/or other factors; to this end, it is necessary to explore whether this particular reaction was facilitated by a particular lifestyle and whether an individual made an effort to prevent this particular reaction from occurring or getting worse. In these respects, Young, Kane and Nicholson (2006) evaluated clinical manifestations and typical causations for Post Traumatic Stress Disorder, chronic pain and traumatic brain injury.

Clinical observations and the literature provide descriptions of some ubiquitous psychological reactions even though the causative factors are different. This is due to the fact that any prolonged and uncontrolled disruption in human functioning leads to hyperarousal and triggers stress which then manifests in typical ways as anxiety, fear, somatoform manifestations, pain, cognitive disturbances and so on that reflect the way in which major psychological domains are affected. An even more important aspect is to what degree particular symptomatology affects the broader life functioning that includes activities of daily life and various social roles in which people typically engage.

Such a conceptualization requires that in order to document a clinical condition in a comprehensive way, it is not enough to simply establish symptoms, put a label on them and determine their causality, but also requires that we document to what degree a particular configuration of psychopathological manifestations is likely to be causally linked with deterioration in activities of daily living. This requires that the broad range of measurements be mutually interconnected, because otherwise different measures (representing different theoretical or clinical models and administered at different times in people’s recovery or during multifaceted assessments of a particular condition) would not provide reliable results. For these reasons, a comprehensive model of assessment has been developed which begins with the R-SOPAC as the brief instrument that addresses both symptoms and coping. In this manner, the R-SOPAC (Salmon and Celinski, 2002) plays an important role as one of several measures comprising a broad battery of rehabilitation-oriented instruments, together entitled the Rehabilitation Assessment Series (RAS). The overall aim of the RAS is to provide a comprehensive measurement system to enhance effectiveness of clinical treatment and to monitor treatment outcomes. The other instruments within the series include the Rehabilitation Checklist (RCL; Salmon, 1998a), Rehabilitation Activities of Daily Living Survey (R-ADLS; Salmon, 1999) and Pre/Post Condition Life Events Survey (PPCLES; Salmon, 1998b). The RCL serves to address and prioritize the subjectively perceived primary
rehabilitation barriers, the client’s perception of their impacts generally and across various life roles, as well as the client’s perception of his/her prospects for recovery. As the next step, the R-ADLS seeks to identify singular or combinations of cognitive, emotional and/or physical symptoms as affecting activities of daily living.

The R-SOPAC’s initial main objective was to quantify the diverse complaints reported by head injury patients (with or without brain injury). Subsequently, both clinical experience and the literature highlighted similarities in symptom presentation across the spectrum of rehabilitation patients beyond head injury, including those with soft tissue and other types of physical injuries which created a need for development of methodology enabling the differential diagnosis.

In their early work together on the development of the R-SOPAC in the late 1980s, the authors came to the conclusion that recording solely the presence of the most common post-concussion and psycho-traumatically based symptoms (i.e., headache, dizziness, irritability, poor concentration, etc.), does not adequately reflect the clinical reality which requires paying attention to the perceived severity of symptoms in order to determine differential diagnosis and prognosis. Furthermore, it was expected that client’s symptomatology will be proportional to the severity of traumas. To address this perspective, a rating scale was incorporated, rather than simply utilizing a more traditional approach which would either reflect presence or absence of symptoms.

When the R-SOPAC was in its infant stages of conceptualization, the concept of coping was just beginning to emerge in the clinical literature. At that time, the authors were inspired by their clinical experience suggesting that coping with symptomatology sometimes better describes the outcomes, despite continuous symptoms and initial diagnosis. For this reason, the coping aspect became an essential part in the R-SOPAC self-rating scale.

In the R-SOPAC, the instruction for coping was simplified for the clients to indicate to what degree it is possible for them to function normally in spite of their current suffering from a particular symptom. This approach encourages clients to view coping abilities (and thus their functioning) independently from diagnosis and symptoms, and thus subjectively separates the traumatic effects of their symptomatology from their daily lives. Achieving any improvement in functioning indirectly supports the notion that patients have developed hopeful motivation and inner resourcefulness, and that they started to utilize their potential knowledge and skills which should be acknowledged. The design of R-SOPAC (in combination with other RAS measures) allows for the consideration of how both disability perception and overall objective functioning would be influenced by a positive perception of self-coping. It was also hypothesized that psychological intervention or rehabilitation could be especially effective in enhancing a client’s ability to cope more effectively, despite symptomatology, by enabling the client to increase his or her level of functioning, rather than to focus strictly on achieving significant reduction in symptom intensity. It should be noted that an increased level of functioning can be either concurrent with reduction of symptom intensity or be achieved, even if symptoms remain unchanged. Therefore, while symptom amelioration ought to be the primary practical goal in the acute treatment phase, as chronicity develops and symptoms become “ingrained”, this perspective should be altered in favour of management of symptoms for which “coping” is the primary objective. If this process is successful, the final outcome should be the possibility of functioning better with less symptomatology, and less effort.
Within such a conceptual framework, the R-SOPAC brings to the clinician’s attention the broad range of ubiquitous symptoms that may be overlooked under the pressure of clinical demands, while the instrument’s practical utilization is enhanced by its brevity. The instrument enables the quick accumulation of data from a patient based on his or her awareness of the presence of symptoms, their intensity and the self-perception of the client’s ability to continue to function (cope) with a particular symptom despite having to endure ongoing discomfort and interference. Overall, the R-SOPAC’s objective is to provide a quick insight into a client’s state of mind regarding awareness of the most typical reactions to stress and injuries, their severity, pre-existing conditions and confidence in one’s own coping skills. This is essential information for the first client contact, treatment planning, and for follow-up reviews and assessment of final outcomes. The R-SOPAC also records each client’s ratings of an overall degree of disability and overall coping.

In the next section, we will present the rationale for relevant item selection in clinical practice.

THE R–SOPAC ITEM SELECTION AND ITS CLINICAL SIGNIFICANCE

The R–SOPAC item selection clearly captures the most commonly referenced symptoms across physical, cognitive, and emotional domains that may be related to typical and frequently dealt with conditions caused by psychotrauma, whiplash and brain injury. This section reviews the literature pertaining to the congruity between the symptoms from each of these groups and the R-SOPAC items.

The cognitive processing model developed by Creamer, Burgess and Pattison (1992) stipulates that the experience of a trauma confronts victims with information that is inconsistent with the existing schemas about their safety and invulnerability. A prospect of assimilating threat-related information requires exposure to aversive stimuli that causes increased arousal and a desire to avoid or escape along with thoughts and reminders of the trauma. Furthermore, Creamer and colleagues stated that until a traumatic event can be assimilated and integrated into existing schematic representations, it is stored in active memory and the internal representations of the event continue to produce intrusive and emotionally upsetting recollections. In reference to existing theories, they suggest that memory of traumatic events forms a fear network that includes: (a) information about the traumatic event; (b) cognitive, affective, physiological, and behavioral responses; and (c) interpretation of the event meaning and of one’s own responses. The presence of intrusive thoughts indicates that the memory network has been activated which produces a state of high physiological arousal accompanied by a variety of aversive affective and cognitive responses. In turn, these triggers attempt to block out the traumatic memories to avoid re-experiencing trauma and psychological distress. While intrusion, avoidance and general distress represent emotional disturbance, the specific diagnostic conditions that develop following exposure to psychotraumatic events include single episode depression, generalized anxiety disorder, and post-traumatic stress disorder (PTSD).

Based on the post-traumatic literature, Elklit (1997) identified symptoms characteristic of the acute phase that includes nightmares, reliving the experience, anxiety, fatigue, sensitivity...
to noise, and dizziness. Elklit further noted that a geographic distance to exposure (in the
described case, an explosion at work) has strong links to the frequency and intensity of post-
traumatic stress reactions. In Elklit’s own study, the group of people who were in close
proximity to the center of the explosion seemed to develop a much stronger emotional
reaction than the group of people who were further away. Older people were less affected
than their younger counterparts. Closeness to the center of the explosion was very strongly
correlated with survivor’s guilt, and with both emotion-focused and social-coping strategies,
and less strongly, but still very significantly, with problem-focused coping. The degree of
exposure was not related to scores on the intrusion or the avoidant subscales. The majority of
people reacted with anxiety either immediately after or within the few hours ensuing
exposure. This was subsequently followed by depressive reactions, social withdrawal, guilt,
shame, and irritability, all of which are nearly always concomitant with anxiety symptoms.
Post-traumatic stress reactions diminished over a 4-year period, but if there was no clinical
improvement within the first seven months, the prognosis was poor. In the chronic phase,
there is the possibility of personality change with irritability and the development of a number
of neurotic symptoms and syndromes.

Malt and Olafsen (1992) stated that there is a relatively weak association between the real
danger or severity of an injury and the appraisal of the graveness of the situation. Kanner,
Primary appraisal deals with the initial assessment of an encounter as being one or more of
the following: irrelevant, benign, positive, harmless, stressful, threatening, or challenging.
The secondary appraisal is a complex evaluation process that takes into account which coping
options are available, the likelihood that the given coping option will accomplish what
it is supposed to, and the likelihood that one can apply a particular strategy
(or a set of strategies) effectively.

Specifically with respect to motor-vehicle accidents, Bryant and Harvey (1995) stated
that objective measures of trauma severity were not associated with post-traumatic stress.
This was consistent with previous findings that failed to indicate a linear relationship between
trauma severity and stress response. The main predictor of post-traumatic intrusive symptoms
was an avoidant coping style, measured by the Impact of Events Scale. An avoidant coping
style prevents people from being gradually habituated to trauma related material. In their
study, the issue of compensation was strongly associated with symptoms of PTSD.

In cases of PTSD, Bryant (1996) found that following burn injury, the predictors of
development of post-traumatic stress disorder were anxiety about being potentially burned
and having scars (not actual injury) or the presence of visible scars, along with avoidant
coping style as identified on the coping style questionnaire.

Jaspers (1998) concluded from a review of relevant literature that impact of the stressors,
usually measured by Impact of Events Scale (IES), is the most important predictive factor for
the development of symptoms of post-traumatic stress disorder. High scores for intrusion and
avoidance soon after the accident are strongly related to the onset of PTSD at a later stage,
while other factors include previous traumatic experience which led to PTSD or episodes of
depression, avoidant coping strategies, and alcohol abuse. The severity of physical injuries
does not predict the onset of PTSD, nor does being involved in insurance procedures to obtain
financial compensation have any predictive value regarding the development of PTSD or
other psychological complaints. The majority of people, who after a motor vehicle accident
developed an anxiety reaction towards driving, displayed combined characteristics of simple

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phobia and of panic disorder consistent with agoraphobia. Even four to six years after the accident, about one third of the traffic accident victims still showed some degree of avoidance and anxiety behavior towards driving a motor-vehicle. While two thirds of the patients recovered fully in two years, the vast majority of patients, with chronic complaints from having sustained whiplash, continued to have neck pain, headaches, memory and concentration disturbances, irritability, anxiety, depression, insomnia, mood and behavioral changes, and a reduction in libido. In the same paper, Jasper noted that a broad proportion (of which 35% is an underestimation) of chronic whiplash patients will also suffer from post-traumatic stress.

Regarding the authors’ own studies of injured workers, Bacal, Pilowsky, Celinski, and Salmon (1991) found that physical injuries (to the head, back, neck, and extremities, and multiple injuries) in 1,565 Workers’ Compensation Hospital Rehabilitation Centre patients who were assessed many months after the injury, resulted in the persistence of various types of somatoform disorders as the most frequent psychopathological manifestation. In about 68% of cases, these disorders were associated with upper extremities and head injury, as opposed to about 18–23% for other parts of the body (back, neck, and lower extremities, and multiple injuries). Affective disorders in the same sample were represented in the range of 5–8%, anxiety disorder in the range of 3–13% (the lowest for the back and the highest for multiple injury); the mixed anxiety and depressive adjustment disorder was at the highest level at 23–25% represented in head injuries and multiple injuries. The incidence of mixed anxiety and depressive disorder was 2.5% for workers with lower extremity injuries, and for those with injuries to all other locations, it was within the range of 8-12%.

**EVIDENTIARY SUPPORT FOR THE R-SOPAC AS A PROXY OF BROAD HEALTH OUTCOMES IN THE CONTEXTS OF RESILIENCE AND RESOURCEFULNESS**

The conceptual underpinnings of the R-SOPAC and its relationship to the measurement of symptom intensity and coping, and by extension to concepts of resilience and resourcefulness, are reviewed in a companion chapter in this book (Salmon and Celinski, 2011). The other chapter also presented a review of the measure’s items and a summary of the psychometric characteristics of the instrument, established on the original physical rehabilitation population.

The remainder of the current chapter will focus on the evidentiary support for the instrument as a proxy for broad health outcomes. By reviewing the key empirical validity support for the instrument, some interesting findings are also revealed about the nature of the impact of stressors across multiple health domains, which are otherwise often ignored by mental health clinicians. Similarly, mental health clinicians, by virtue of their training understandably tend to focus overwhelmingly on the psycho-emotional impacts, while overlooking the impacts within the physical and cognitive domains. Insights into such issues are gleaned through observation of how the R-SOPAC discerns and characterizes varied stress impacts in comparing: (a) unemployed adults to employed and clinical populations; (b) a clinical population spectrum ranging from “Adaptive Copers” through to those demonstrating poorest resilience and resourcefulness, termed “Distressed-Diffuse
Symptoms”; and (c) a DSM-IV based psychopathology continuum from “no diagnosis” through to Adjustments Disorders, to Major Depression and to Somatoform (Pain) Disorders. In addition to aggregate data analysis, a case study shall be presented of an individual with significant mental health diagnoses due to an emotional stressor alone (and without any physical injury), utilizing a comprehensive health outcomes oriented measurement approach. The case study demonstrates the importance of mental health professionals considering the more ubiquitous impacts of DSM-IV diagnoses on both physical and cognitive functioning, with significant implications for occupational disability assessment.

Typically as a non-traumatic but significant life stressor, the onset of unemployment is often perceived predominantly in the context of the loss or grieving process, that is, with predominantly psycho-emotional effects. Utilization of the R-SOPAC serving to compare symptom levels between employed and unemployed groups reveals, however, that much broader effects occur and should be recognized and addressed accordingly. In contrast, in the context of disability and rehabilitation, the co-occurrence of unemployment can be shown to reflect a distinct stress impact relative to that of the disabling condition itself. Statistically significant one-way t test comparisons of the mean overall intensity, overall coping and overall total R-SOPAC scores between the employed and unemployed, and between the unemployed and clinical populations, are noted in Table 1. The findings support the notion that non-disabled, unemployed individuals demonstrate broad and significant increases in R-SOPAC measured symptoms and diminished coping ability relative to their employed counterparts. The table also demonstrates that the clinical population evidences significantly (statistically) more pathology and less coping ability than either the employed or unemployed population.

Table 1. Statistically significant (.001 level) Employed, Unemployed, and Clinical Means

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Intensity – Total (M)</th>
<th>Coping – Total (M)</th>
<th>Overall – Total (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed Group</td>
<td>88</td>
<td>24.4</td>
<td>20.5</td>
<td>44.9</td>
</tr>
<tr>
<td>Unemployed Group</td>
<td>102</td>
<td>37.0</td>
<td>34.3</td>
<td>71.3</td>
</tr>
<tr>
<td>Clinical Group</td>
<td>194</td>
<td>78.0</td>
<td>68.0</td>
<td>150.0</td>
</tr>
</tbody>
</table>

As stated in the R-SOPAC technical manual (Salmon and Celinski, 2002), in relation to Table 1, the increasing progression of symptom intensity and corresponding coping deterioration is clearly depicted by progression across the three groups above.

This observation supports the notion that impaired individuals are under the influence of two distinct classes of stressors: 1) those related to the direct and indirect effects of their injury or disease process; and 2) those related to the effects of unemployment. The implications of the current study is that individuals who may have otherwise recovered from the initial effects of their injury/disease process, may subsequently misconstrue unemployment-generated, ongoing diffuse physical, cognitive, and/or emotional symptoms as being residual effects of their health condition. Alternatively, the effects of unemployment may serve to aggravate and augment condition-specific symptoms, again leading to self-misperceptions regarding fitness to return to work. The unique and cumulative effects of these
two classes of stressors clearly require further investigation, and demand consideration from the standpoint of this and other rehabilitation assessment tools. (p. 89)

Comparison of the three groups presented above revealed a certain progression from those who are least symptomatic and coping best, to patients with the poorest R-SOPAC outcomes. In a similar but distinct manner, using the R-SOPAC can serve to differentiate between rehabilitation patients who show minimally or maximally diffuse symptoms which is a reflection of their coping. Clusters analysis of the original Head Injury Survey sample of 243 Workers’ Compensation cases yielded a three-cluster (group) solution and is presented in Figure 1. The three clusters were plotted using the centroid mean of each cluster, with a k-means cluster analysis having been employed. ANOVAs were then performed comparing clustering on each variable, and yielded positive F statistics that confirmed the groupings. The clusters have been interpreted to reflect the following:

- Cluster 1: “Adaptive Coper” characterized by low symptom intensity ratings and high symptom coping.
- Cluster 2: “Distressed-Diffuse Symptoms” characterized by high symptom intensity ratings and corresponding low symptom coping.
- Cluster 3: “Mild to Moderate Circumscribed Symptoms” indicative of mild to moderate intensity ratings, and mild to moderate symptom coping across varied symptoms.

A two cluster solution was also derived and was identical to the three cluster solution, exclusive of the middle group. This two cluster solution served to support the integrity of the interpretation of the three cluster solution. However, conceptually, the “Mild to Moderately Circumscribed Symptoms” has utility in pragmatically describing a significant patient subgroup population, and is also intuitively appealing. Hence, ultimately, the three cluster solution was adopted to more meaningfully reflect the broader range of clinical manifestations.

![Figure 1. Three Cluster Solution.](image)

These clusters reflect in our opinion the typical clinical reality where people are either coping well by minimizing the impact of a particular symptom, or catastrophizing allowing...
symptom(s) to overwhelm them. In support of this view, Boothby et al. (1999) reviewed catastrophic way of dealing with pain and consequences of this with respect to psychological distress and interference with daily life.

We have now considered the R-SOPAC’s capacity to discern un/employed and clinical populations, as well as to discern levels ranging from low to high coping patients. The non-disabled unemployed group also demonstrated significant physical and cognitive symptoms which often gain little attention from mental health professionals. It will also serve to highlight the inseparable link between “coping” and “functioning”. In service of this last mandate, on a much broader scale, very recent data analysis of 819 cases reviewed R-SOPAC and other ROMS measures [Rehabilitation Checklist (RCL), Salmon, 1998a; Rehabilitation Activities of Daily Living Survey (R-ALDS), Salmon, 1999] with regard to DSM IV based diagnostic grouping. The DSM IV diagnoses were derived on the basis of extensive file review, comprehensive clinical interview, coupled with multiple psychodiagnostic inventories (at least one of which contained multiple validity scales). Similar to earlier analyses of R-SOPAC based diagnostic differentiation (statistically significant on the basis of ANOVA analysis, Salmon and Celinski, 2002, p. 79), the data below include more functionally based measures of Life Roles (RCL) and activities of daily living (R-ADLS). This is most salient here as it nicely demonstrates the relationships between coping and resourcefulness. As these data became available only shortly before publication, more rigorous statistical analysis will occur in subsequent publications. Again however, the trends are self-evident and are consistent with prior analyses that used two distinct smaller (but sizeable) sample populations.

Figures 2-4 respectively demonstrate the aggregated Physical, Emotional and Cognitive domains of the R-SOPAC with bars below the x-axis reflecting symptom (problem) “intensity”, and those above the x-axis reflecting symptom “coping”. For both Intensity and Coping dimensions, the score ranges are from 0-6. The value of 3 on the coping dimension reflects a rating of “Satisfactory Coping”.

![Domain Aggregate: Physical](image)

**Figure 2.** DSM-IV diagnoses by R-SOPAC physical scale scores.
Consistent with prior analyses, Figures 2-4 clearly demonstrate a trend towards increased physical, emotional and cognitive symptoms, and progressively poorer coping capacity (as measured by the R-SOPAC) with increased DSM-IV diagnostic severity.

As part of the ROMS battery, Figure 5 reflects aggregated patient ratings on the R-ADLS (Salmon, 1999) based upon mental health diagnostic group membership. The first set of histograms on the left side reflect respondents’ ratings of their pre-condition activities of daily living as labeled from 0-100% “Intact Ability”, along a behaviourally anchored continuum from total dependency to total independence. The second set of histograms on the right side reflects respondents’ ratings of their current condition using the same measurement scale. Figure 6 reflects the relative contribution of Physical, Cognitive and Emotional limiting...
symptoms that are responsible for the current diminished ADL functioning relative to the individual’s pre-condition state. For any given group, the corresponding Physical, Cognitive and Emotional values add to 100% - the sum total of limiting symptoms responsible for the post-condition functional decline.

In interpreting the R-ADLS for this study, Figure 5 clearly demonstrates minimal difference in subjective pre-condition activities of daily living. However, consistent with prior analyses with much smaller sample sizes, this figure demonstrates a clear trend towards decreased current activities of daily living capacity with increased diagnostic severity.

Figure 5. DSM-IV diagnoses by R-ADLS aggregate pre-condition VS current status scores.

Figure 6 demonstrates a relatively decreasing impact from limitations caused by physical symptoms and progressively relative increase in cognitive and emotional limitations in association with increased diagnostic severity. The overall relatively higher proportion of physical limitations across all groups is accounted for by virtue of the physical rehabilitation sample base.

Figure 6. DSM-IV diagnoses by R-ADLS post-condition “limiting symptoms impact” summary aggregate.
As the third measure of the ROMS battery, Figure 7 reflects aggregated patient ratings in terms of the RCL (Salmon, 1998a) Average Perceived Life Role Disability in relation to the severity of the diagnoses condition. The y-axis scale ranges from 0% to 100% of the perceived life role disability. The diagnosed group comparisons in Figure 7 demonstrate a clear trend towards increased RCL life role disability with increased diagnostic severity. Figure 8 depicts diagnostic-aggregated patient responses in relation to RCL items of client perceived physical and emotional progress to date, and expected future progress, with measurement from -100% (worsening) to +100% reflecting positive progression. Figure 8 demonstrates a clear trend towards client perceptions of worsening physical status, worsening emotional status and worsening future self-prognosis with increased diagnostic severity.

![Average Perceived Life Role Disability](image)

Figure 7. DSM-IV diagnoses by RCL average perceived life role disability scores.

In sum, these graphs clearly demonstrate a trend (consistent with prior statistically significant data) that the following factors are correlated with increasing levels of DSM psychopathology severity: (1) Physical, cognitive and emotional symptom intensity (positive correlation); (2) Physical, cognitive and emotional symptom coping (negative correlation); (3) Perceived activities of daily living capacity (negative correlation); (4) Relatively greater presence of emotional and cognitive symptoms, relative to physical ones (positive correlation); (5) Perceived life role disability (positive correlation); (6) Perceived physical and emotional progress to date (negative correlation); and (7) Patient expected future prognosis (negative correlation).

The gist of these cumulative findings is that, as psychopathology intensifies, so too does the prevalence/severity of cognitive and emotional symptoms, while the capacity to manage or cope with those symptoms worsens. Moreover, consistent with DSM-IV conceptualization (more functionally oriented Axis V in particular) patients’ functional status is demonstrated to deteriorate in both ADL and life role dimensions with increased psychopathology. As will be discussed in greater detail below, these findings serve to further validate the usefulness of rating both the symptom intensity and coping aspects of the R-SOPAC in light of the identified relationships. Given the correlation between the measure and psychopathology and the instrument’s more comprehensive measurement of symptoms by consideration of the

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cognitive and physical domains, these findings also contribute to the role of the R-SOPAC in relation to differential diagnosis. Furthermore, a more holistic measurement approach which also has coping/functional implications, better serves the needs of treatment planning and pragmatic outcome monitoring/measurement in both mental health populations, as well as in physical rehabilitation populations.

**DISCUSSION**

Given its sound psychometric properties and rather unique measurement approach, the R–SOPAC has already demonstrated its utility in a rehabilitation context, in relation to facilitating differential diagnosis, treatment planning, and outcome monitoring and measurement. The relationships between symptom coping, cognitive performance (Salmon and Celinski, 2011), and engagement in activities of daily living, coupled with the R-SOPAC profile cluster analysis, further support its use for brief assessment in a broad variety of post-traumatic conditions and in addressing a generalized response paradigm. In the face of stress/injury/illness, less resilient individuals are expected to show diffuse, multi-domain symptom endorsements. Greater resilience is recognized by the lack of symptoms, or a relatively circumscribed symptom intensity presentation (i.e., in the Problem section of the R-SOPAC form), as reflected by the Mild to Moderate Circumscribed Symptoms Cluster patients. In turn, resourcefulness may be operationalized by the Coping aspect of the R-SOPAC. This becomes particularly evident in the context of traumatic events or stressors that potentially may trigger serious symptomatology (e.g. irritability, migraine/tension headaches, concentration difficulties, PTSD symptoms, etc.). In such instances, sound coping capacity reflects the individual’s utilization of resources in the service of resilient functioning that enables sustained involvement on a certain adaptive level. As noted in our other chapter, a direct relationship appears to exist between subjective perceptions of effective coping and performance on cognitive measures. Similarly, higher daily functional abilities are also associated with perceptions of higher levels of coping capacity; conversely, increased levels of symptom intensity demonstrate inverse correlations with both cognitive ability and perceived ADL status.

Whereas the R-SOPAC was initially intended for, and validated on physical rehabilitation populations, lending credibility to its broader utilization is the fact that the populations in the original study obtained a variety of DSM based mental health diagnoses, which were well correlated with the measure (Salmon and Celinski, 2002). In addition, the new data presented above, serve to further confirm that as the severity of psychopathology increases (from no DSM diagnosis, to Adjustment Disorders, to Pain Disorder and then Major Depression), there is a double dissociation: Symptom intensity progressively increases while symptom coping progressively decreases in lock step with diminished perceived capacity for daily activities and corresponding increases in perceived role disability.

Furthermore, the R-SOPAC has demonstrated that among non-disabled unemployed individuals, there are measurable diffuse and significant increases in physical, emotional, and cognitive symptoms. In this context, and coupled with the other Rehabilitation Outcome Measurement System instruments (ROMS; Salmon, 2003, 2004), the R-SOPAC is capable of
documenting symptoms that reflect the direct impacts of an injury or disease, as well as the more diffuse, non-specific effects of non-injury/disease based stressors.

**CASE STUDY ILLUSTRATION**

The authors will now outline a presentation of the R-SOPAC and other ROMS graphs for an individual with no sustained physical injuries whatsoever. The salience of presenting this case is three-fold: (1) to demonstrate that even in absence of physical injuries, the documentation and measurement of secondary physical and cognitive symptoms is paramount to a holistic approach to mental health conceptualization, intervention, rehabilitation and disability compensation; (2) to demonstrate that a key aspect of mental health rehabilitation (including clients with mild to moderate conditions), must be that of considering, measuring and addressing the coping or functional impacts (in terms of ADL and life role participation) in relation to their mental health diagnosis; and, (3) to provide readers with a full understanding of the broader ROMS outcome measurement system of which the R-SOPAC is an integral and integrated component.

In this case illustration, derived from an actual patient, who was a 49 year old employed factory labourer with a grade 10 education level and had immigrated to Canada from China with his family, four years before the subject event. At the time that he was seen, he spoke English very poorly and thus required an interpreter for the initial assessment. The client’s adolescent son had sustained serious multiple orthopedic and brain injuries as a result of a motor vehicle accident. As a consequence of the son’s injuries and subsequent related marital collapse, the client’s wife developed a serious psychiatric breakdown resulting in hospitalization. Not difficult to comprehend, the client developed substantial distress in the context of: his son’s injuries; related subsequent marital collapse; estranged wife’s psychiatric crisis and his assumption of the role of primary caregiver to the younger sibling and primary decision maker for the injured son; family move to a new city for the sake of his son’s rehabilitation and his minimal command of the English language, let alone his involvement with the complex insurance and medical-legal systems. As confirmed by file evidence, comprehensive psychological interview and multiple psychodiagnostic measures, the client was suffering from and was diagnosed with a Major Depressive Episode and Anxiety Disorder Not Otherwise Specified (including vicarious flashbacks and occasional panic attacks). Again, the client sustained no physical injuries and had no documented pre-morbid physical ailments. In order to provide a richer picture of the client’s symptoms and functional status, his graphical ROMS profile will now be presented.

The R-SOPAC graphs in Figure 9 demonstrate the respective self-rated individual symptoms as reflected within the respective Physical, Cognitive and Emotional domain graphs. In depicting the client responses per symptom, each of the domain graphs reflect the symptom intensity rating above the x-axis, and symptom coping rating below the x-axis. The Aggregated Domain Graph, with similar structure in terms of depicting symptom intensity and symptom coping, above and below the x-axis respectively, appears in the lower right hand corner of the R-SOPAC page. By way of interpretation of this client’s R-SOPAC results, despite his lack of unrelated pre- or co-existing physical symptoms one notes that the client rates significant individual symptoms across physical, cognitive and emotional.
domains. The graphs demonstrate that all cognitive symptoms are roughly equally problematic, both in terms of symptom intensity and coping. However, in the physical domain graph, sleep disturbance, related fatigue and headaches stand out as being more prominently problematic. Given that he had no prior history of such cognitive or physical symptoms, his state of emotional distress and related diagnoses appear to be solely responsible for bringing about his secondary cognitive and physical symptoms (this was confirmed based on interview and formal measurement (Salmon, 1998b). Naturally, with the emergence of such secondary symptoms, the phenomenon would in turn likely serve to further aggravate his primary mental health condition, which in turn would exacerbate the secondary symptoms in a reciprocal fashion. Turning to the bottom right hand Domain Aggregate graph, one notes that the Emotional bar surpasses the -3 threshold which is a statistically validated indictor of psychopathology risk - also serving differential diagnostic considerations. The Domain Aggregate, also clearly demonstrates the relative salience of physical, cognitive and emotional symptoms and highlights the clear poor coping capacity of this client. In other words, he demonstrates both poor resilience (high symptom intensity) and poor resourcefulness (low symptom coping) across each symptom domain. In this regard, his profile is characteristic of those clients reflected by the R-SOPAC Cluster 2: “Distressed-Diffuse Symptoms”.

The RCL graphs in Figure 10 show the aggregated or Average Perceived Life Role Disability on the top graph and depicting the cumulative average of the individually rated Life Roles in the middle graph. The bottom graph depicts the client’s perceived physical and emotional progress to date and anticipated future progress. In terms of interpretation of this particular client’s RCL profile, the RCL graphs demonstrate the client’s significant life role limitations across most spheres (middle graph), to the extent of an average 40% Average Perceived Life Role disability overall (upper graph), and negative view of his physical/emotional progress to date and future prognosis (lower graph). His negative view of his current status and future can be viewed as a partial manifestation of the pessimistic triad, common in those with Major Depression. Although not viewable in the graph, the client is also asked to rank in order of importance the Life Roles from both the pre-condition and current vantage points. Those Life Roles which remain of most importance should be targeted in terms of intervention, in order to assure that the intervention plan remains client centred and to maximize client compliance. Given that he continued to place a very high priority on employment, social activities and friendships, all of which he currently perceives as reflecting substantial role limitation, certainly these perceptions would also feed into his substantial anxiety and depressive symptoms. Although also highly valued, fortunately he perceived his ability to parent as remaining relatively intact (upon further exploration, this is largely because his injured elder son remained in institutional care).

The R-ADLS graphs depicted in Figure 11 commence with the Pre-Condition Summary Aggregate (third page upper graph), contrasting Pre versus Current ADLS aggregate status (third page middle graph), and the relative physical/cognitive/emotional limiting symptoms (third page lower graph). In Figure 12, the R-ADLS Pre Condition status is shown across domains in the upper part of the page, while the R-ADLS Pre-post across domains comparison is depicted in the lower part of the page. It should be noted, that in this case, the R-ADLS form was input by the client himself (as opposed to input on the basis of significant others’ ratings, or professional direct-assessment based input, as alternately available inputs); also, in the interest of space, the domain-specific graphs are not presented. As a final

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consideration, although in this case example, the client was not himself involved in traumatic accident, his plight parallels many patients who do experience a traumatic injury or life altering disease. The initial condition often triggers a cascade of secondary and tertiary symptoms and stressors (e.g., cognitive disturbance, job loss, marital collapse, financial distress) which can in turn exacerbate the initial primary symptoms themselves whether those be physical, emotional and/or cognitive in nature. In addition to these cascading and reciprocal relationships having been discussed in the other chapter in this book (Salmon and Celinski, 2011), the concepts were explored more rigorously in Salmon, Celinski and Young (2007).

Figure 9. ROMS ® Rehabilitation checklist report.
Figure 10. ROMS ® Rehabilitation Survey of Problems and Coping.

The salient findings of this case study, as depicted in Figures 9-12, reveal the preponderance of both physical and cognitive symptoms deriving strictly from this client’s adverse mental health (emotional) state. The R-SOPAC allows the clinician to appreciate secondary symptoms in the physical and cognitive realms that mental health professionals often otherwise overlook. The R-ADLS reflect the interaction between symptoms and their cumulative impacts upon circumscribed daily activities. In turn, the RCL serves to summarize the specific and cumulative impacts of daily living impairments upon role functioning and identifies client perceived primary rehabilitation barriers (not depicted). In this respect, the ROMS suite of measures provides an empirical model to operationalize the World Health Organization’s “International Classification of Functioning, Disability and Health” (ICF; WHO, 2001).

Consistent with the WHO model, the additional identification and tracking of secondary symptoms/impairments beyond the primary symptom scope have substantial implications in relation to the appropriate provision of holistic mental health intervention and related vocational rehabilitation services; that is, secondary symptoms in and of themselves may become primary functional limitations and rehabilitation barriers. In failing to address these otherwise potentially unbeknownst limitations/barriers, the client’s state of disability may become unnecessary and unwittingly prolonged.
In summary, the case study serves to illustrate a number of important points relative to the clinical value of the R-SOPAC in stress cases and mental health assessment and outcome measurement in general. Despite the absence of any pre-existing physical or cognitive symptoms, the client clearly evolved broad based and substantial diffuse physical and cognitive symptoms in response to the substantial stressors which he faced and in concert with his substantive DSM-IV mood and anxiety disorders. In terms of the R-SOPAC cluster grouping, he provided a clinical example of an individual whose profile and clinical presentation is reflected by Cluster 2: “Distressed-Diffuse Symptoms” characterized by high symptom intensity ratings and corresponding low symptom coping. His presentation of significant cognitive symptoms (confirmed by the RCL and R-ADL functional measures)

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J. Douglas Salmon, Jr. and Marek J. Celinski argues for the implementation of basic cognitive compensatory strategies to help him manage daily cognitive challenges. Echoing the R-SOPAC Physical Domains identification of these salient symptoms items, the client’s RCL prioritized rehabilitation barriers also identified headaches, sleep disturbance and fatigue as priority concerns. Such data alerts the clinician to consider the inclusion of more targeted interventions for such symptoms including biofeedback treatment for headaches and specific relaxation and sleep hygiene training, respectively. Naturally, consideration may also be given to medical consultations for headaches and/or sleep disturbance, at any time in the treatment process.

Figure 12. ROMS® R-ADLS All Domain Report.

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Given the negative feedback loop between such physical symptoms and the client’s mood and anxiety symptoms, successful intervention of the physical symptoms would clearly have positive emotional benefits. Utilization of related functional measures such as the RCL and R-ADLS further serve to remind mental health professionals that mental health restoration must also bring about improvements in daily functional abilities. In this respect, more behavioural approaches to restoring functioning, whether through cognitive or physical compensatory strategies, or targeted functional restoration programs must also be seriously considered and whenever viable, integrated into a holistic intervention approach. Pragmatic targeting of the client’s cognitive and physical functional difficulties should in turn help to restore the client’s sense of life mastery and competency, in turn positively influencing self-esteem and thus bolstering psychotherapy efforts towards mental health restoration. Moreover, clear identification and monitoring of the client’s physical and cognitive health status are also critical to the determination of the client’s overall employability and occupational disability status.

In absence of consideration of related secondary physical/cognitive symptoms and functional impacts, the mental health professional is disadvantaged in making an accurate assessment of the client’s psychosocial adaptation and vocational capacity. Such professionals are also disadvantaged in terms of formulating a viable vocational rehabilitation plan, including required accommodations and modifications or alternate work scenarios. Particularly given that in the information age, occupations of all sorts have become increasingly technical and cognitively demanding, a keen understanding of mental illness driven cognitive symptoms and functional impacts is a critical first step in vocational rehabilitation of those with mental health challenges. Clearly the corollary of this is the importance of client cognitive capacity considerations in relation to occupational disability entitlement.

**CONCLUSION**

In this chapter, we presented validity support for, and clinical applications of R-SOPAC as a measure of symptomatology and coping which pertain to typical psychopathological manifestations related to psychotrauma, mental health conditions, whiplash and brain injury. In support of the utilization of the instrument in the mental health population, we documented that the overall clinical population has the highest level of psychopathology and has the poorest coping, and that otherwise healthy unemployed people have higher endorsement of symptomatology and poorer coping than contrasted employed individuals.

In rehabilitation centre clients (who undergo treatment for psychotraumatic, physical and head injuries), we identified three R-SOPAC profile clusters: on the positive side, there are “Adaptive Copers” with low symptom intensity rating and sound symptom coping; on the opposite extreme, there is a “Distressed/Diffuse Symptoms” group characterized by high symptom intensity and low symptom coping across the board; there is also a middle group with mild to moderate circumscribed symptoms who present with mild to moderate intensity rating and delineated symptom coping difficulties. Empirical evidence using the R-SOPAC involving 819 victims of MVA (motor vehicle accidents) revealed an association between increasing severity of diagnosed condition and higher levels of symptom endorsements and
poorer coping. Furthermore, in this same group, increased diagnostic severity (No diagnosis, Adjustment Disorder, Somatoform Disorder, Somatoform Disorder and Major Depressive Disorder) was related to increasing impairments in activities of daily living and in life roles. We further documented that for an individual to be affected by a broad range of non-emotional symptomatology and also with impairment in daily life activities and life roles, psychoemotional distress without physical injury may be sufficient causality.

This is an important conclusion with respect to clinical management of clients whose mental health condition may have far reaching consequences pertaining to broad aspects of their lives. In the presented case study, we further demonstrated the application of the R-SOPAC in a strict mental health context. The emergence of secondary physical and cognitive symptoms was highlighted in a situation devoid of such prior symptoms, and emphasized the salience of such symptoms in the context of the client’s broader functional and mental health recovery. We further emphasized the need for mental health practitioners to adopt a broad holistic model in conceptualizing the barriers to recovery, in addressing daily living and occupational limitations, and in clinical and vocational rehabilitation intervention. From the occupational standpoint, the important role of secondary cognitive impairments in the information economy was also stressed both in terms of vocational rehabilitation and disability analysis for income benefits entitlement.

In conclusion, we regard the R-SOPAC as a brief screening measure that is useful in initial diagnostic considerations and in monitoring treatment and dynamics of rehabilitation and health recovery, as well as for purposes of documenting outcomes from various interventions or spontaneous recovery. Emotional trauma and substantive stress alone have a profound impact on a person’s perception of the self, resulting in typical psychopathological manifestations and impaired coping across emotional, cognitive and physical domains. It is also clear that with increased severity of trauma or of substantial distress, both symptoms intensity and coping indicators may worsen.

Documenting the ubiquitous nature of response to trauma or stress (be it emotional alone or in combination with physical adversity) and separating coping from symptom intensity may create further positive dynamics in recovery. This is one of the major reasons for utilization of the ‘R-SOPAC’ for a broad variety of conditions of primary physical, cognitive or emotional origin. This brief instrument purposely portrays human nature in “non-deterministic terms” as it implies that an individual is capable of coping (i.e. demonstrating resilience and resourcefulness) in spite of factors which typically or habitually determine the manner in which one reacts to his/her plight. Utilization of this measure encourages people to think about themselves as transcending the circumstances of their life and their condition, and acting as a free agent and having an impact on their own destiny.

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REFERENCES


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PART 2:

HOW HUMANS COPE AND SURVIVE IN A WIDE VARIETY OF LIFE’S CHALLENGES

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THE ROLE OF COPING IN THE DEVELOPMENT AND TREATMENT OF CHRONIC PAIN

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ABSTRACT

This Chapter comprehensively reviews the role of an individual’s coping skills in the development and treatment of chronic pain. In the U.S.A. alone, there are more than 75 million people who suffer from pain, which is greater than the number of individuals with diabetes, heart disease and cancer combined. In addition to the human suffering, there are enormous economic costs associated with chronic pain that exceed almost $125 billion each year in terms of medical care and lost productivity. In response to this major health problem, a great deal of clinical research has been conducted to evaluate the most therapeutic and cost-effective methods for managing chronic pain. It appears to us, from this research, that the biopsychosocial model of treatment has emerged as the most heuristic approach. The biopsychosocial model views physical disorders, such as chronic pain, as a result of the complex and dynamic interaction among physiologic, psychologic and social factors that perpetuate and may worsen the clinical presentation. In the present chapter, clinical research will be comprehensively reviewed that reveals the following: (1) Those individuals who lack adaptive coping skills for managing stressful situations are more susceptible to develop chronic pain after an acute pain episode; (2) Any comprehensive treatment program for chronic pain must include a psychosocial component that teaches patients to utilize more adaptive coping skills for handling stressful situations such as chronic pain.

Keywords: Coping, Chronic Pain, Biopsychosocial Model, Health Costs, Pain Treatment

INTRODUCTION

Development and maintenance of chronic pain is complex, resulting from the interactions of underlying pathophysiological processes with psychological and social factors to yield a...
unique pain experience for each person. A range of psychological, social and economic factors can interact with physical pathology to modulate a patient’s report of symptoms and subsequent disability to create a unique pain experience for each person. Among the psychosocial variables involved in the biopsychosocial equation are emotional factors (such as anxiety, depression and anger), as well as cognitive factors (such as appraisals and beliefs, control and self-efficacy, vulnerability and resilience, etc.). Of the latter cognitive factors, an individual’s array of coping strategies, to deal with stressful events, are important key variables in understanding the development and treatment of chronic pain.

The biopsychosocial model can be used to guide researchers and clinicians in synthesizing these relationships and identifying key pathways through which the chronic pain cycle can be broken. One important pathway involves cognitive and behavioral strategies that patients use to cope with their condition. This chapter will review the role of an individual’s coping skills in the development and treatment of chronic pain in the context of the biopsychosocial model. Clinical research is reviewed that examines key coping strategies that predict vulnerability to chronic pain syndromes, and the importance of incorporating coping skills training into any chronic pain treatment program.

In addition to the millions of people suffering from chronic diseases, there are serious economic costs associated with chronic pain affecting health care budgets and workplace output. Given the widespread morbidity and economic burden associated with chronic pain, researchers and clinicians are working to determine what factors predict the transformation of pain from an inherently adaptive physiological process to a severely disabling chronic condition.

At its initiation, pain signals actual tissue damage or threat of harm to the organism. It is adaptive to immediately remove your hand from a hot stove top, just as it is adaptive to seek care when you have a toothache. If pain persists, despite the removal of the pain stimulus and no further tissue damage, it loses its adaptive significance, but maintains its negative connotation, resulting in continued appraisals of threat and harm and the experience of chronic stress. The symptoms and disability associated with chronic pain often lead to other environmental and interpersonal stressors. For example, patients with chronic pain are more likely to experience negative life events associated with their disability, such as loss of income, interpersonal conflicts, and inability to engage in activities of daily living or pleasurable activities.

Negative appraisals of pain stimuli trigger covert and overt coping behaviors designed to reduce the symptoms, or help the patient accommodate to their effects. Lazarus and Folkman (1984) made us aware that coping behaviors are a dynamic process representing the interaction between the person and his or her environment. As such, an individual is constantly appraising and re-appraising the situation and choosing among many different coping strategies, if negative appraisals are being made, then they will have to be modified and be replaced with positive appraisal coping strategies. Similarly, the identification of coping behaviors, that are differentially associated with adaptive and maladaptive outcomes, will allow clinicians to recognize which patients are at heightened risk for chronic pain syndromes, and which coping strategies should be targeted for intervention. Furthermore, the use and effectiveness of coping strategies are determined, in part, by a myriad of other factors such as personal characteristics, beliefs, appraisals, and environmental circumstances. Before reviewing various coping strategies that have been identified as quite important in the area of
chronic pain, an overview of the Biopsychosocial Model of Chronic Pain\(^1\) within which these coping strategies are subsumed, will be provided.

**THE BIOPSYCHOSOCIAL MODEL OF CHRONIC PAIN**

The biopsychosocial model is now widely accepted as the most heuristic perspective to the understanding and treatment of chronic pain disorders (e.g., Gatchel 2005; Gatchel, Peng, Peters, Fuchs and Turk, 2007). This model views physical illnesses such as pain as the result of the dynamic interaction among physiologic, psychological, and social factors, which perpetuates and may even worsen the clinical presentations. Each individual experiences pain uniquely, and a range of psychological and socioeconomic factors can interact with physical pathology to modulate a patient’s report of symptoms and subsequent disability. Such a comprehensive conceptual model of the biopsychosocial interactive processes involved in pain can be quite complex. However, there have been major breakthroughs in recent years concerning the basic neuroscience processes of pain (the *bio* part of biopsychosocial), as well as psychosocial factors such as coping (Gatchel, Peng et al., 2007). Indeed, neuroscience research has made major inroads into better understanding of the basic neural and biochemical mechanisms involved in pain processing. These mechanisms, in turn, have led to important clinical applications, such as the development of analgesic agents for managing chronic pain. In addition, the emergence of the biopsychosocial model has led to the development of the most effective approach to the management of chronic pain – the interdisciplinary pain management approach.

Patients with chronic pain are at increased risk for emotional disorders (such as anxiety, depression, and anger), maladaptive cognitions (such as catastrophizing and poor coping skills), functional deficits and physical deconditioning (due to decreased physical activity and fear of re-injury), as well as basic nociceptive dysregulation. All of these aforementioned variables, in turn, are often interdependent so that one cannot simply treat one to the exclusion of the others. Interdisciplinary pain management embraces the fact that the comprehensive assessment-treatment of all these dimensions is needed in order to be effective. Such an approach has been demonstrated to be the most therapeutic- and cost-effective means of managing the often recalcitrant chronic pain syndromes (Gatchel and Okifuji, 2006). Future breakthroughs in the understanding of such biopsychosocial mechanisms will lead to even greater understandings in the areas of etiology, assessment, treatment, and prevention of chronic pain. The role of genetic factors is also an especially promising new area of research that should provide even greater insights into etiological mechanisms of pain that may account for important individual differences in the pain experience and one’s responses to it. Of the psychosocial factors involved in chronic pain, an individual’s coping skills to deal with stressful events (such as chronic pain) have been shown to be quite significant in its development and treatment.

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1 One of the first people to introduce the term biopsychosocial model was George Engel (1977) who proposed the biopsychosocial model as an alternative to the reductionist biomedical model. Although many researchers and clinicians have embraced the model, there is no single definitive model. Robert Gatchel and colleagues (e.g., Gatchel 2005; Gatchel, Peng, Peters, Fuchs and Turk, 2007) have further defined the model in reference to chronic pain.
COPING STRATEGIES

As will be reviewed in this present Chapter, clinical research has revealed a number of important findings, specifically that: (a) those individuals who lack adaptive coping skills for managing stressful situations are more susceptible to develop chronic pain after an acute pain episode; and (b) any comprehensive treatment program for chronic pain must include a psychosocial component that teaches patients to utilize more adaptive coping skills for handling stressful situations such as pain.

Different Measures of Coping

Past research has tried to group coping strategies into broad categories, and many of the coping scales devised to assess coping with chronic pain use such typologies (e.g., Brown and Nicassio, 1987; Lazarus and Folkman, 1984; Turk and Rudy, 1988). *The Ways of Coping Checklist* (Lazarus and Folkman, 1984) is a popular coping assessment tool and has been modified by several researchers to create more customized coping assessments. Individual coping items are categorized into two scales: problem-focused and emotion-focused coping. Problem-focused items include behaviors with the intention of changing the situation, such as gathering information and making a plan of action. Items on the emotion-focused scale concentrate on the regulation of emotional responses, and include behaviors such as avoidance and emphasizing the positive. No one coping strategy is deemed to be adaptive or maladaptive in its own right. However, some situations may be better suited to problem-focused strategies, while other situations may be better suited to emotion-focused strategies. Adaptation depends on the match between the coping strategy and the situation at hand.

Because both problem and emotion-focused scales may contain adaptive and maladaptive items that are measured at the same time, it is probably more prudent to examine the various subtypes of coping that have been identified by research as important in this population, such as problem-focused coping, seeking social support, self-blame, wishful thinking, and avoidance (Vitaliano, Russo, Carr, Maiuro, and Becker, 1985). In doing so, more definitive statements can be made regarding what works or does not work for specific types of chronic pain patient populations, and in what specific situations. Indeed, as will be outlined, a recurrent theme in the scientific literature is that coping strategies do not act in isolation, but depend on the interaction of the person and his or her environment, such that one coping strategy may be very efficacious in one setting, but not in another. For example, the use of distraction as a coping technique is very beneficial for promoting greater tolerance of time-limited pain, such as pain during dental treatment (Cohen, Cohen, Blount, Schaeen, and Zaff, 1999). However, the effects of distraction are limited in patients experiencing chronic pain, such as low back pain. The setting and time-course of pain varies in these patients, and consequently they cannot use distraction indefinitely as their sole coping mechanism, but must compliment it with other coping strategies.

The *Coping Strategies Questionnaire* (Rosenstiel and Keefe, 1983) was the first coping inventory designed specifically for dealing with pain. There are six cognitive subscales (distraction, reinterpretation, positive self-talk, ignoring pain, praying or hoping, and catastrophizing) and two behavioral subscales (active distraction and overt pain behaviors).
The Coping Strategies Questionnaire has spurred a lot of research on coping with chronic pain, and has demonstrated the ability to predict pain outcomes, even after controlling for other important predictors such as pain severity (Keefe, Caldwell, Queen, et al., 1987).

Another popular coping assessment tool is the Vanderbilt Pain Management Inventory (Brown and Nicassio, 1987). It assesses active versus passive coping. Active strategies involve behaviors with the intention of controlling pain or maintaining functioning, such as use of distraction and stress management. In contrast, use of passive coping involves surrendering control or withdrawal from the situation, and includes behaviors such as taking medicine and resting in bed. The revision of this original Inventory – the Vanderbilt Multidimensional Pain Coping Inventory (Smith, Wallston, Dwyer, and Dowdy, 1997) – contains 11 subscales that can also be examined, such as planful problem-solving, positive reappraisal, distraction, confrontative coping, distancing/denial, stoicism, use of religion, self-blame, self-isolation, wishful thinking, and disengagement.

Finally, a now widely used measure of coping, developed specifically for a pain population, is the Multidimensional Pain Inventory (MPI). As reviewed by Gatchel (2005), the MPI, also known as the West Haven – Yale Multidimensional Pain Inventory (Kerns, Turk and Rudy, 1985), was initially developed to measure three psychological dimensions of pain: (a) a patient’s self-reported pain and the effect of that pain, (b) the response of significant others to the communication of pain patients, and (c) the level of activities of daily living. The Inventory was shown to have good psychometric properties. Turk and Rudy (1988) subsequently developed a classification system based on the MPI, which categorized patients according to three subgroups that predicted response to treatment: (a) dysfunctional, (b) interpersonally distressed, and (c) adaptive copers. According to this classification system, dysfunctional profile patients are hypothesized to not respond as well to interventions as would patients in the other two subgroups. Indeed, a study conducted by Asmundson, Norton and Allerdings (1997) demonstrated that patients with chronic low back pain, who were classified as dysfunctional on the MPI, reported more pain-specific fear and avoidance than did patients in the other two subgroups. Such characteristics were, in turn, related to poorer coping abilities in these dysfunctional chronic-pain patients.

Turk and Okifuji (1998) reviewed research demonstrating the utility of the MPI with other chronic-pain conditions, including headache, temporomandibular jaw pain, and fibromyalgia. Assessment of such MPI profiles will help to tailor the needs for treatment strategies to account for the different personality characteristics of patients. For example, patients with an interpersonally distressed profile may need additional clinical attention which addresses interpersonal skills needed to perform effectively in a group-oriented treatment program. Pain patients with dysfunctional and interpersonally distressed profiles display more indications of acute and chronic personality differences relative to adaptive-coper profile patients, and they would, therefore, require more clinical management (e.g., Etscheidt, Steiger, and Braverman, 1995). Such additional attention, however, would not necessarily be essential for adaptive-coper profile patients.

Studies such as those discussed above support the notion that because patients’ responses to treatment differ as a function of their psychosocial coping profiles, then some specific treatment modalities are more likely to be better suited than others for each profile. An

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2 The Multidimensional Pain Inventory (MPI) should not be confused with the Minnesota Multiphasic Personality Inventory (MMPI).
important issue for future clinical research is whether there are other types of biopsychosocial profiles that are more or less responsive to different treatment modalities. For example, variables that have been found to be predictors of pain-related disability outcomes, such as catastrophizing, fear of movement/reinjury, pain beliefs, anxiety, and depression, and their interactions with environmental factors, such as workplace variables, and health care system variables, need to be more closely evaluated.

Adaptive Versus Maladaptive Coping

By grouping various coping strategies together and examining their associations with outcomes, clinical researchers have been able to designate coping strategies broadly into “adaptive” versus “maladaptive” categories (DeGood, 2000; Fernandez and Turk, 1989). Of the identified maladaptive coping strategies, strong evidence has been observed for negative thinking or catastrophizing, passive coping, and pain avoidance as predictive of negative outcomes. Of the researched adaptive coping strategies, positive outcomes have been observed among individuals who employ behavioral pain control, imagery, and rational thinking strategies.

Van Damme, Crombez and Eccleston (2008) have also recently proposed a motivational model of coping with pain. They contend that there are three classes of coping behaviors based on the patient’s motivational perspective: (i) assimilative coping; (ii) persistence; and (iii) accommodative coping. Assimilative coping involves pursuing life goals and valued activities, either by ignoring the pain (task persistence) or by seeking a solution. Specific coping behaviors depend on the patient’s characteristics such as habits and skills, as well as the patient’s beliefs about the controllability and origin of their pain. When assimilative efforts fail, patients may simply persist in attempting to ignore the pain, eventually leading to feelings of depression and identity confusion. In contrast, patients may adopt accommodative coping behaviors that are aimed at either disengaging from unattainable goals or establishing new goals that result in acceptance, cognitive restructuring, and priority setting. Consistent with Lazarus and Folkman’s (1984) conceptualization of coping, specific coping behaviors may be adaptive or maladaptive, depending on their fit with the person-environment interaction. Factors such as perceived control, self-efficacy, social support, and negative thinking have emerged from the literature as powerful moderators of successful coping efforts.

M O D E R A T O R S O F C O P I N G

Important coping resources exist within the person and the environment, and they act to moderate the effectiveness of any given coping strategy on pain outcomes. The most salient of these moderators are the patients’ own appraisals and beliefs, their perceived control and self-efficacy, their catastrophizing beliefs, as well as their religion and spirituality, and dispositional factors.
Appraisals and Beliefs

When individuals experience pain, they make appraisals regarding the significance of that pain. Based on Lazarus and Folkman’s (1984) model of stress and coping, patients make primary appraisals as to whether the pain is negative (threat, harm, or challenge), benign/irrelevant, or positive. Secondary appraisals also occur in which patients determine whether or not they have the resources to deal with a negative primary appraisal, and attributions are made regarding constructs such as personal control. Appraisals are determined, in part, by beliefs that patients hold regarding their assumptions about reality, including the cause of the pain, treatments, and prognosis. Beliefs are based on the patient’s learning history and develop over the course of the lifetime.

Both appraisals and beliefs can influence the choice of cognitive and behavioral coping strategies and affective responses to pain. As mentioned above, negative appraisals of threat or harm evoke coping responses to deal with the pain. Health beliefs, regarding the nature of pain that have been associated with poorer pain outcomes, include beliefs that: (a) pain signals damage; (b) pain leads to disability; (c) activity should be avoided; (d) pain is uncontrollable; and (e) pain is a permanent condition (Jensen, Turner, Romano, and Lawler, 1994; Turner, Jensen, and Romano, 2000). These beliefs, combined with our tendency to generalize stimuli over time can produce a downward spiral of physical deconditioning and decreased functionality (Turk, 2001). Additionally, negative pain appraisals can be modified based on our expectations or the meaning we place on the pain. For example, cancer pain is often rated as more unpleasant than other types of pain, even if the intensity is the same (Smith, Gracely, and Safer, 1998).

Perceived Control and Self-Efficacy

Part of the pain appraisal process involves making attributions that involve level of personal control. Patients make perceptions of control regarding not only the cause of the pain, but also the control and management of the pain and its prognosis. In general, humans like to be able to control their environments and when perceptions of control are low, or do not match the actual control available, people are more likely to experience distress (Baum, Fleming, and Davidson, 1983). In the case of chronic pain patients, more pain symptomatology may be associated with perceptions of low, or loss of, control. When actual control is low, but patients continue to make attempts to solve the pain problem, they are more likely to experience negative symptoms such as fear, worry, catastrophic thinking, and hyper vigilance (Crombez, Eccleston, De Vlieger, Van Damme, and De Clercq, 2008). Conversely, if patients are able to reappraise their pain, to be consistent with a low control situation and use disengagement from unattainable goals and engagement in new goals, they are more likely to experience better well-being and quality of life (Esteve-Zaragaza, Ramirez-Maestre, and Lopez-Martinez, 2007; Viane et al., 2003).

Related to perceived control are perceptions of self-efficacy. Pain patients need to take an active role in their treatment in order for it to be successful. If they are prescribed physical exercise, they must engage in those exercises for them to receive the benefits. A major determinant of patients complying with treatment recommendations, or even seeking appropriate medical attention, is the belief that patients have regarding how successful these
behaviors will be. If patients do not believe that they are able to engage in their prescribed physical activity, this lack of self-efficacy may undermine their attempts to try to engage in the activity. Likewise, pain patients need to believe that the medical provider and their other treatments are efficacious and, most importantly, that they will be able to engage in all of the behaviors required of them. Thus, patients who report high levels of self-efficacy experience greater reductions in pain disability and depression (Arnstein, Caudill, Mandle, Norris, and Beasley, 1999). Cognitive-behavioral therapy (to be discussed further in this chapter) techniques can help to increase pain self-efficacy beliefs by promoting mastery experiences through the use of modeling, persuasion, or reinterpretation of symptoms (Keefe, Rumble, Scipio, Giordano, and Perri, 2004). Furthermore, increasing self-efficacy for specific pain coping behaviors can lead to the initiation of behavior change (Rothman, 2000).

**Catastrophizing Beliefs**

Pain catastrophizing is the construct that is most consistently linked with poor pain outcomes, such as increased distress, depression, pain and disability (Campbell and Edwards, 2009; Martorella, Cote, and Choiniere, 2008; Quartana, Campbell, and Edwards, 2009). These effects have been demonstrated cross-sectionally, as well as prospectively, in pain-free persons, as well as in chronic pain patients. Pain catastrophizing is composed of exaggerated negative cognitions in which the patient ruminates or repeatedly thinks about the pain or anticipates future pain, magnifies the threat appraisals of the pain, and/or experiences feelings of helplessness when dealing with pain (Sullivan, Bishop, and Pivik, 1995). Catastrophizing has been conceptualized in the pain field as a situational coping response to pain, and as a more stable coping style that develops as a result of learning contingencies occurring throughout a person’s lifetime (Sullivan, Thorn, Haythornthwaite, et al., 2001). Catastrophizing is also a primary target for cognitive-behavioral interventions (Sullivan, Adams, Rhodenizer, and Stanish, 2006). Interventions that successfully decrease pain catastrophizing are also associated with decreases in pain disability, intensity, and depression (Jensen, Turner, and Romano, 2001).

Alterations in biological pathway variables have been associated with pain catastrophizing and may help to explain some of its relationships with pain outcomes. Specifically, pain patients who exhibit catastrophizing also exhibit greater muscle tension, more interleukin-6 mediated inflammation, dysregulation of the HPA axis, diminished activation of endogenous opioids resulting in weakened analgesic effects, greater vulnerability to COMT genetic polymorphisms, and greater activation in the anterior cingulated cortex, prefrontal cortex, and insular cortex all involved in the affective response to pain (Campbell and Edwards, 2009; Quartana et al., 2009).

There are also two major models that have been proposed as a framework for explaining the phenomenon of pain catastrophizing and how it relates to psychosocial and physical health outcomes. The first is the *Communal Coping Model* (Sullivan, Thorn, Rodgers, and Ward, 2004) that describes catastrophizing as a dispositional tendency to use an interpersonal style of coping with pain, based on the significance associated with the pain. As such, catastrophizing serves to notify support persons of pain and prompt provision of emotional or tangible support for dealing with the pain, thereby reinforcing the pain behavior and potentially preventing more adaptive behaviors. For example, always complaining about how
“bad the pain hurts” may initially prompt a great deal of attention and sympathy from significant others. However, such support may erode as pain catastrophizing persists because significant others grow tired of constantly hearing this “cry for sympathy”. Interpersonal conflict can then result, leading to further increases in stress and pain (Cano, 2004).

The second model is the Fear-Avoidance Model, in which preoccupation with pain in the form of ruminative thoughts drives the experience of the other two dimensions of catastrophizing, helplessness and magnification (Sullivan, Bishop and Pivik, 1995). Rumination has been identified by numerous studies as the key component of catastrophizing, and it appears to be the dimension most strongly associated with heightened pain responses, even in people who typically do not engage in catastrophizing (Eccleston and Crombez, 1999; Van Damme, Crombez, and Eccleston, 2004).

Quartana and colleagues (2009) have recently proposed a heuristic model for studying the biopsychosocial pathways involved in pain catastrophizing and its psychosocial and physical health outcomes. They propose that researchers need to devise studies that try to capture each of these processes, including communal coping, fear-avoidance, and biological pathways as moderators of pain appraisal processes and determinants of coping behaviors. Following this model, researchers will be able to further understand the interplay among these pathways, and importantly be able to identify suitable targets for intervention. Of course, other psychosocial factors are also important for dealing with chronic pain. For example, many patients turn to their religious and spiritual beliefs and resources for help in dealing with their condition.

Religion and Spirituality

Prayer is the most frequently reported complementary and alternative medicine technique used to deal with medical conditions (Barnes, Powell-Griner, McFann, and Nahin, 2004), and chronic pain is no exception (Rippentrop, 2005). However, prayer is only one such way that patients may use religion or spirituality to help them cope with chronic pain. Patients who are religious may also garner protective coping resources, such as social support from other congregation members, enhancement of self-esteem and self-mastery, as well as be less likely to engage in poor health behaviors such as substance abuse and poor diets. The use of religion and spirituality as a coping technique has been a topic of recent attention (c.f., Moreira-Almeida and Koenig, 2008; Wachholtz and Pearce, 2009) and examination of the literature reveals that religious coping strategies can have both positive and negative effects on pain outcomes.

Positive forms of religious coping include seeking spiritual support, finding meaning, using others as spiritual role models for coping, working collaboratively with God, and using religion as a distraction (Moreira-Almeida and Koenig, 2008; Wachholtz and Pearce, 2009). In contrast, negative forms of religious coping include reappraising God’s power, viewing God as punishing, making demonic appraisals, pleading with God, allowing God to solve one’s problems, and spiritual discontent. An interesting finding is that use of positive religious coping has been linked to increases in pain tolerance, such that while chronic pain patients may not experience decreases in pain intensity, they are better able to tolerate the levels (Wachholtz, Pearce, and Koenig, 2007). Additionally, religious coping is associated with biological pathway variables, such as decreases in inflammatory cytokines and healthy diurnal HPA axis rhythms (Dedert et al., 2004; Lutgendorf et al., 2004). Both of these
biological pathways are important contributors to the experience of chronic pain and may explain some of the relationships between religion and pain outcomes.

Religious and catastrophizing beliefs are situation-specific strategies to deal with pain. However, personality or trait-like characteristics are also important in shaping appraisals and beliefs associated with pain.

**Dispositional Factors**

Personality or trait-like characteristics are stable dispositions that often have heritable components that are subsequently reinforced throughout a patient’s life. Several personality traits have been associated with maladaptive pain outcomes and are important predictors of the development of chronic pain, including negative affectivity, anxiety sensitivity, and injury/illness sensitivity. Patients who are high in negative affectivity are predisposed to perceive threat, react with strong emotions, and experience negative mood states (Watson, Clark, and Harkness, 1994). In non-pain samples, negative affectivity is associated with greater sensitivity to bodily sensations and lowered pain tolerance thresholds (Fillingim et al., 2005; Stegen, Van Diest, Van de Woestijne, and Van den Bergh, 2000). However, the predictive value of negative affectivity in chronic pain patients has not been convincingly demonstrated (Scholten-Peeters, et al., 2003).

More compelling evidence has accrued for anxiety sensitivity as a risk factor for chronic pain development. Anxiety sensitivity is the predisposition to fear anxiety-related sensations (Reiss, Peterson, Gursky, and McNally, 1986; Stein, Jang, and Livesly, 1999). When feelings of anxiety (such as increases in heart rate) are experienced, individuals with high anxiety sensitivity are more likely to make a threat or harm appraisal and experience negative emotional responses. Anxiety is highly associated with fear avoidance and can potentiate catastrophic belief processes, leading to enhanced pain and distress (Asmundson, Wright, and Hadjistavropoulos, 2000; Keogh and Asmundson, 2004). Not surprisingly, anxiety sensitivity has also been associated with increased analgesic use and decreased physical and social functioning among chronic pain patients.

Illness/injury sensitivity is related to anxiety sensitivity and appears to be a better predictor of medical fears (Taylor, 1993). Like anxiety sensitivity, it evokes feelings of fear, but it differs in that the fears are based on the condition on hand: further injury or illness. In non-pain samples, illness/injury sensitivity has been predictive of fear avoidance and pain catastrophizing beliefs (Vancleef, Peters, Roelofs, and Asmundson, 2006). Future research is needed to explain the role of illness/injury sensitivity in the development of chronic pain syndromes.

Personality traits can also serve as protective factors by promoting resilience and better pain outcomes. Most of the attention has focused on dispositional optimism and closely related constructs, such as hope and benefit-finding. Dispositional optimism is the generalized expectation that good things will happen in life (Scheier and Carver, 1985). Optimism has been associated with better general health, faster surgical recovery, and adaptation to chronic illnesses (Scheier and Carver, 1992). In regards to chronic pain, there is evidence that optimism is associated with improvements in mood and life satisfaction, as well as decreases in depression and pain (Affleck, Tennen, and Apter, 2001; Treharne, Kitas, Lyons, and Booth, 2005). The effects of optimism appear to be mediated by the coping strategies that optimistic
individuals use. Optimism is associated with greater use of active and problem-focused coping and less use of avoidant or denial coping. However, optimists also appear to be flexible in their choice of coping and can readily switch to strategies such as acceptance, positive reframing, or humor when the situation demands (Garofalo, 2000; Scheier, Carver, and Bridges, 1994).

Related to the construct, or trait, of optimism are the constructs of hope and situational benefit-finding. Hope appears to be beneficial in increasing tolerance to pain and decreasing the overall experience of pain (Snyder, Berg, Woodward, et al., 2005). Benefit-finding refers to the patient’s ability to find something positive in their pain experiences. It is not a stable trait, but has similar positive effects as optimism and hope. Patients who are able to find benefit report less distress, more positive moods, and better psychological adjustment to chronic medical conditions (Tennen and Affleck, 2005).

Upon reviewing the literature, it becomes apparent that there are many factors that influence a patient’s coping response to pain. This is consistent with other observations that relationships between coping styles and pain outcomes vary among patients, as well as across various pain syndromes (DeGood, 2000). Successful intervention depends on our ability to intervene successfully to stop the chronic pain process by targeting appraisals and beliefs, as well as the constructs that influence them, such as perceptions of control and self-efficacy, catastrophizing beliefs, religion and spirituality, and dispositional traits.

**INTERVENTIONS**

The most common therapeutic interventions target pain behaviors and cognitions using cognitive-behavioral therapy techniques.

With the recent advances in the biopsychosocial model of pain, that have produced a great deal of empirical work on coping strategies and moderators which we have just reviewed, it is not surprising that a number of potential intervention approaches have been concomitantly developed for more effective chronic pain management. As comprehensively presented by Turk and Gatchel (2002), there are now an array of interventions that can be used in different combinations, depending on the unique needs of specific patients: cognitive behavioral therapy (CBT), operant conditioning techniques, biofeedback, stress management, hypnosis, pharmacotherapy, as well as group and family therapy. Turk and Gatchel (2002) have provided material that includes practical clinical information and guidelines for each of these interventions.

**Cognitive Behavioral Therapy**

Techniques that are commonly used in the management of chronic pain, and that are now incorporated in cognitive behavioral therapy (CBT), include distraction, imagery, relaxation, biofeedback, and motivational self-talk. The major goal of CBT is to replace maladaptive behaviors and cognitions with more adaptive ones. CBT also uses strategies to increase assertiveness, decrease self-defeating thoughts, and promote flexible appraisals and coping. As reviewed by Gatchel and Rollings (2008), from the earlier reviewed biopsychosocial
perspective, CBT alone does not address all of the important variables potentially contributing to chronic pain (e.g., biological factors), but may improve care for patients with psychosocial co-morbidities such as poor coping skills. Indeed, CBT is an important component of any comprehensive interdisciplinary pain management program. It should also be noted that the umbrella label CBT varies widely, and may be used to denote self-instructions (e.g., distraction, imagery, motivational self-talk), relaxation and/or biofeedback, development of adaptive coping strategies (e.g., minimizing negative or self-defeating thoughts), changing maladaptive beliefs about pain, and goal setting. Patients referred for CBT may be exposed to varying selections of these strategies, specifically tailored to their individual needs.

Gatchel, Peng et al. (2007) have further highlighted the fact that CBT is a very effective treatment modality. In a very influential early investigation, Morley, Eccleston and Williams (1999) reported the results of a systematic review and meta-analysis of the extant randomized studies of CBT for chronic pain. Their findings concluded that such treatment is effective for a variety of chronic pain conditions; subsequently, Gatchel and Okifuji (2006) came to a similar conclusion, as did Linton and Nordin (2006). Again, the major goals of CBT are to replace maladaptive patient cognitions and behaviors with more adaptive ones. This allows patients to better manage and cope with chronic pain.

Finally, it should be clearly noted that the most effective intervention for chronic pain is the interdisciplinary biopsychosocial approach, which includes a variety of integrated treatment modalities that comprehensively address the biological/physical and psychosocial factors (thus, the term biopsychosocial) that interact in producing/maintaining chronic pain (Gatchel, 2005; Turk and Monarch, 2002). Indeed, Gatchel and Okifuji (2006) have reviewed the evidence-based literature that unequivocally demonstrates the treatment and cost-effectiveness of such interdisciplinary programs, compared to simple monotherapy approaches.

**CONCLUSION**

Coping strategies are integral to the management of pain. Effective approaches result in the successful resolution of pain and recovery, whereas ineffective strategies result in the continuance or possible augmentation of pain leading to chronic pain syndromes. Therefore, ways of coping are important variables in the psychosocial component of the biopsychosocial model of pain that need to be considered, along with important biological pathway variables, such as tissue damage. Unfortunately, however, the current literature has not been able to identify specific coping mechanisms that lead to better or worse outcomes. Nevertheless, pain researchers have effectively demonstrated that person and environmental characteristics, such as personality, appraisals, beliefs, perceived control, and religion are associated with coping styles that are more likely to be either adaptive or maladaptive depending upon the specific construct.

Of all the potential determinants of coping strategies, the most support exists for catastrophizing beliefs as risk factors for the development and maintenance of chronic pain. Research has begun to link this psychosocial construct to biological mechanisms that underlie the experience of chronic pain. By examining biological, psychological, and social pathways
at the same time, researchers will be better able to understand the development of chronic pain and, more importantly, discover ways to break or reverse the process.

One implication of a focus on the biopsychosocial model is the growing recognition of the importance of interdisciplinary treatment for chronic pain. Providers working together on each aspect, while at the same time understanding the importance of each aspect, can provide a much more comprehensive and ultimately more successful form of treatment for this complex syndrome. By focusing on the interaction between the person and his or her environment, clinicians are able to successfully develop CBT strategies that are tailored to each individual’s needs. Such an approach has been repeatedly demonstrated as effective, and it provides further support for the research findings that coping strategies need to be matched to the needs of the situation in order for them to be effective.

Future research and practice should also focus on identifying coping moderators and strategies that provide the most short-term benefit, as well as the ones that provide the most long-term benefit, how these variables interact, and how they can be applied in treatment. For example, use of an adaptive short-term strategy such as distraction (behavioral pain control) may be more likely to occur among those patients who think that they can change their pain level (perceived control over pain; moderator). The successful employment of the short-term strategy increases their self-efficacy for pain management thus allowing individuals to be able to learn and employ more long-term or tougher strategies (e.g., rational thought and/or dieting and physical activity program).

To our way of thinking, coping clearly plays a role in the development, maintenance, and treatment of chronic pain. Future studies should focus on examining the contribution of catastrophic beliefs, as well as the other coping moderators, using the biopsychosocial model as a guide for pain research and treatment evaluation. The biopsychosocial model can also be extended to allow comparisons of treatment modalities based on presented biopsychosocial profiles. Only by examining contributing factors, in each of the biopsychosocial pathways, can we truly develop an understanding of chronic pain and establish a hope for its effective management.

REFERENCES


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Chapter 9

RELIGIOUS ORIENTATION AND ITS RELATIONSHIP TO WELL BEING AND OPEN-CLOSED MINDEDNESS ACROSS RELIGIOUS GROUPS

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ABSTRACT

As with other chapters on religion and/or spirituality in this book series, in terms of coping, religious orientation is worthy of attention, as it has been shown to be associated with well-being and life satisfaction - two measures of resilience. The relationship between religious orientation and open-closed mindedness is connected here, because dogmatism (closed mindedness) has been shown to be linked to lower mental health functioning, rather than openness and flexibility; without these latter key resources, coping with change and life’s adversities is more difficult. As evidence suggests that there is a need to distinguish between the intrinsics and the extrinsics and the indiscriminate antireligious (IAR) and the indiscriminately proreligious (IPR) groups, because of the likelihood that certain of these approaches to religion may be less psychologically healthy, analyses on these variables are investigated in this chapter. This chapter explores the relationships between religious orientation and well-being and open-closed mindedness across four religious groups in Australia: Roman Catholics, Jehovah’s Witnesses, Muslims and Buddhists.

Keywords: Religious Beliefs; Well Being; Open-Closed Mindedness; Indiscriminately Proreligious
INTRODUCTION

Pargament (1997) suggests that the efficacy of religion may have less to do with specific religious beliefs and practices and more to do with the degree to which beliefs, practices and motivations are integrated into individuals’ lives. A scale which combines belief, behaviour, and motivation items to measure religious commitment is the Religious Orientation Scale (ROS), developed by Allport and Ross (1967). This scale was developed following Allport’s (1950) earlier work in personality psychology which illustrated how different individuals may use religion in different ways. In an effort to separate healthy (mature) religion from unhealthy (immature) religion, Allport (1963) introduced the concept of intrinsic and extrinsic religious orientations. An intrinsic religious orientation was operationalised as one that was sincere, internalised, and used to guide one’s behaviour in all other areas of life. Allport (1963) suggests that an intrinsic approach to religion produced or attracted individuals characterised by personal security, efficacy and esteem, openness, and an active flexible approach to dealing with life situations. Alternatively, Allport (1963) suggested that an extrinsic religious orientation reflected a self centred approach, where faith and beliefs were lightly held or selectively shaped, and where religion was used for non-religious ends (such as emotional or social support, or feelings of security, comfort and protection). Allport (1963, p. 107) wrote that an extrinsic approach to religion ‘resembled a neurosis’ and was a ‘defence against anxiety’, surmising that this approach attracted individuals who turned to religion in order to feel better or to alleviate fears. Allport (1963) considered this instrumental, utilitarian approach to religion to be less healthy than an intrinsic orientation, and surmised that religion should, after all, have more significant implications for the well-being of those who are more religious.

Allport (1967) originally scored the ROS as though the two scales formed a single bipolar continuum, combining the intrinsic and extrinsic subscales in such a way that a high score indicated an extrinsic orientation, and a low score indicated an intrinsic orientation, but became puzzled by the lack of a strong negative correlation between the intrinsic and extrinsic religious dimensions (Pargament, Brannick, Adamakos, Ensing et al., 1987). After empirical studies regarding the ROS began to appear, Hunt and King (1971) in a critical review, proposed that no intrinsic-extrinsic dimension existed, and that the two factors could be more accurately viewed as separate dimensions and not as opposite poles of the same dimension. As a result, the two religious orientations are now considered separate unipolar constructs (Donahue, 1985b). After additional testing, Allport and Ross (1967) also found that some subjects were scoring high on both subscales, therefore those individuals that persisted in endorsing any or all items that seemed favourable to religion were called ‘indiscriminately proreligious’. A fourfold classification system was further developed when Hood (1971) identified church members who seemed indifferent toward religion. These subjects scored low on both subscales and were called ‘indiscriminately antireligious’. Thus, participants who are above the extrinsic median, but below the intrinsic median, are extrinsic; subjects who are above the intrinsic median, but below the extrinsic median, are intrinsic; participants who are above the median on both scales are indiscriminately proreligious; and subjects who are below the median on both scales are classified as indiscriminately antireligious.
Religious orientation has remained a focal point in the psychology of religion, despite periodic criticism that it has outlasted its usefulness (e.g., Connolly, 1999; Kirkpatrick and Hood, 1990). In a review on intrinsic and extrinsic religiosity, Donahue (1985a) concluded that intrinsic religiosity served as an excellent measure of religious commitment, as distinct from religious belief, church membership, liberal-conservative theological orientation and related measures. Patrick (1979) found, in a study looking at divergent religious populations, that the ROS’s lack of doctrinal content and open-ended definition of religion made it usable with virtually any Christian denomination, and perhaps even with non-Christian religions. Therefore, being intrinsically orientated or extrinsically orientated is the way religiosity will be operationally defined in this study.

WELL-BEING

Recent years have seen a widening interest in research on aspects of well-being. Well-being in a general sense is the subjective, self-evaluation of one’s life experience and overall sense of health (Ryff, 1995). Conceptually, well-being is considered multidimensional in nature and guided by two distinct forms, with research on subjective well-being focusing mainly on how people feel, for example satisfaction with life (Diener, Emmons, Larsen, and Griffin, 1985), whilst psychological well-being focuses on how well people perceive aspects of their functioning, for example anxiety, depression, and self control (Chamberlain and Zika, 1992). Recent years have also witnessed encouraging developments in research interest in the interaction between religion and well-being; however findings are frequently mixed and appear to depend upon how well-being is measured, how religiosity is measured, and the nature of the group involved (Beit-Hallahmi and Argyle, 1997; Loewenthal, 1995; Wulff, 1991). Some people have argued that religion is detrimental to well-being, as it has the potential to generate unhealthy levels of guilt; establish an unhealthy repression of anger; create anxiety and fear by way of beliefs in punishment (e.g., hell); impede self direction and a sense of internal control; foster dependency, conformity and suggestibility; encourage the view that the world is divided into camps of mutually exclusive ‘saints’ and ‘sinners’ which increases hostility and lowers tolerance; and interferes with rational and critical thought (Hood, 1992; Hood et al., 1996; Schumaker, 1992).

Alternatively, many people have ventured the argument that religion is generally beneficial to well-being by offering a sense of hope and meaning and purpose; reducing anxiety by offering pacifying explanations which serve to impose order on a chaotic world; offering solutions on a wide range array of situational and emotional conflicts; partially solving the disturbing problem of mortality by way of afterlife beliefs; establishing moral guidelines while suppressing self destructive practices and lifestyles; and giving people a sense of power and control through association with an omnipotent force (Beit-Hallahmi and Argyle, 1997; Chamberlain and Zika, 1992; Ferraro and Albrecht-Jensen, 1991; McCullough, Hoyt, Larson, Koenig, and Thoresen, 2000). The latter argument that religion can be beneficial is supported by extensive studies of thousands of people across 14 countries verifying that the presence of religious beliefs and attitudes are one of the best predictors of life satisfaction and a sense of well-being (for review see Myers, 1992).
The consistent finding that religious persons are happier and are more satisfied with life than nonreligious individuals supports the common interpretation that religious faith adds something to an individual's life, whether in terms of personal meaning or social integration (Hadaway, 1978). Furthermore, in an overview of studies on religion and health, Baumeister (2002) proposed that it did not make much difference which religion a person believed in, as benefits seemed to flow from religiosity per se, rather than from holding any particular faith - an interesting finding considering most faiths assert that theirs is the only true religion. Baumeister (2002) reported that religious people recovered from heart attacks and depression faster and more thoroughly than nonreligious people (see also Koenig, George, and Peterson, 1998; Koenig, Parkerson, and Meador, 1997), and that effects of religion were noted after social support and proscribed health behaviours (against smoking, drinking or drugs) of different religious groups had been controlled for (see also Broyles and Drenovskyy, 1992; Kune, Kune, and Watson, 1993).

It seems then that religion has some effect on well-being, so which ways of being religious are the most beneficial? Gorsuch (1988) argues that one area of research that has been the most useful and given much insight into the relationship between religion and psychological health is the distinction between individuals who display intrinsic and extrinsic orientation towards religion. He suggests that religiosity cannot be meaningfully related to psychological health without considering how a person is religious.

Several researchers (e.g., Dull and Skokan, 1995; Genia, 1996; Genia and Shaw, 1991; Petersen and Roy, 1985) have suggested that because an intrinsic orientation provides a framework for living one's life in faith, those with a high intrinsic orientation could turn to religion more easily in times of crisis. These studies concluded that people with intrinsic faith tended to redefine potentially negative life events in religious terms, as opportunities for spiritual growth or as part of a broader divine plan, which was linked to a marked decrease in anxiety and depression over time. Having and using an intrinsic religious belief system in times of stress may provide meaning, a sense of mastery, and self esteem through one's relationship with a benevolent and omnipotent God (Park, Cohen, and Herb, 1990). This 'faith factor' has emerged as a significant correlate of mental health indices in life satisfaction, happiness, self esteem, internal locus of control, hope and optimism, and purpose of life (for review see Emmons, 1999).

Alternatively, in a study linking well-being with meaning and purpose, Petersen and Roy (1985) noted that people whose lives lack meaning and purpose could experience psychic discomfort (which is characterised by feelings of emptiness or a lack of direction), and might have difficulty making sense out of their experiences, and question the significance of being who or what they are. Similar research supports the suggestion that the attainment of meaning is associated with positive mental health outcomes, whereas a lack of meaning is associated with pathological outcomes (Coleman, Kaplan, and Downing, 1986; Ganellen and Blaney, 1984; Zika and Chamberlain, 1987). Thus, if a person's religious faith is not salient, or does not extend fully into their lives, can they still derive extensive meaning and purpose benefits from religion?

Pargament et al. (1979) proposed that it was important that one actually believes in synchronicity with one's religious values in order for there to be beneficial consequences. Extrinsics have been portrayed as individuals who participate in their religion without religious conviction (Allport, 1963), and therefore this inconsistency between religious values and behaviours could prove detrimental to their well-being. Religious beliefs may offer the
Religious Orientation, and its Relationship to Well Being …

individual hope or reassurance that problematic aspects of life will be overcome, and the internalisation of this notion should allow the individual to be optimistic, even in the face of difficult problems, and thereby reduce feelings of apprehension or discouragement (Ross, 1990).

Research by Pargament, Steele, and Tyler (1979) determined that extrinsic individuals had the worst psychological profiles on such dimensions as coping skills, self attitudes and world attitudes; similarly Masters and Bergin (1992) pinpointed that those with an extrinsic orientation were more likely to appraise stress and change as threatening and to engage in rigid and maladaptive coping mechanisms (e.g., blaming, wishful thinking, avoidance), which in turn, may create a vulnerability to negative well-being (see also Donahue, 1985a; Petersen and Roy, 1985). Accordingly, numerous studies have shown extrinsic religiosity to correlate positively with anxiety (Baker and Gorsuch, 1982; Bergin, Masters, and Richards, 1987; Sturgeon and Hamley, 1979), depression (Genia and Shaw, 1991; Park et al., 1990), fear of death (Baston, Schoenrade, and Ventis, 1993), low self esteem (Hood, 1992), irrational thinking (Bergin et al., 1987), ego weakness (Joe, 1971) and paranoid type insecurity (Baker and Gorsuch, 1982). Taking all these studies together, we may be justified in assuming that the inner experience of religion (what it means to the individual) is an important factor in developing a particular outlook on life, and as Allport and Ross (1967, p. 442) observed “to know that a person is in some sense ‘religious’ is not as important as knowing the role that religion plays in their life”.

The results of over 70 studies generally support Allport’s theory (for review see Donahue, 1985a; Hood et al., 1996), with intrinsics usually showing greater psychological health than extrinsics (see also Baker and Gorsuch, 1982; Bergin et al., 1987; Maltby, Lewis, and Day, 1999; Watson, Morris, and Hood, 1987). However, Baston and his colleagues (Baston, Flink, Schoenrade, Fultz, and Pych, 1986; Baston, Naifeh, and Pate, 1978; Batson and Ventis, 1982) have offered a strong challenge to these results, providing both correlational and experimental evidence to support their position. They argue that measures of intrinsic religiosity are hopelessly confounded by social desirability, thus positive correlations between intrinsic religion and favourable mental health variables may simply be due to the desire to appear healthy on the part of the intrinsic individuals. In response, several researchers (Donahue, 1985a; Gorsuch, 1988; Morris, Hood, and Watson, 1988; Watson, Morris, Foster, and Hood, 1986) criticised the social desirability hypothesis on a number of grounds. Specific points of rebuttal included: (1) that not all studies have found a relation between intrinsic religiosity and social desirability; (2) there is evidence that intrinsically religious people may actually be more desirable socially; (3) a historical perspective indicates that what is socially desirable at one time and place may not be socially desirable at another time and place; and 4) that other equally persuasive theoretical interpretations of the literature are possible. The latter researchers thus concluded that the claim that intrinsic orientation is related to better mental health functioning remains legitimate.

Intrinsic religiosity is not always linked to greater well-being however. There have been studies which demonstrate that intrinsic religious orientation positively correlates with depression (Bergin et al., 1987; Park et al., 1990), and that intrinsics may also show guilt from trying to follow strict religious norms; this may be the reason that those who are more intrinsic evidence a higher prevalence of hypertension and panic disorders (Levin and Vanderpool, 1987; Trenholm, Trent, and Compton, 1998). Feelings such as guilt and unworthiness can contribute powerfully to feelings of low self esteem which may be
maladaptive to well-being (Alcock, 1992), suggesting that religion may be uniquely tied to costs as well as benefits in living. This implication is borne out even with controversial forms of religion. For instance, fundamentalism has been linked to an extrinsic orientation, narrow mindedness, rigid thinking and greater prejudice and bigotry toward a variety of groups (Altemeyer and Hunsberger, 1992; Kirkpatrick, 1993) and also to several positive features such as greater optimism and personal well-being (Genia, 1996; Sethi and Seligman, 1993). These adherents to fundamentalism have strict systems of religious beliefs and practices which provide members with a clear cut sense of right and wrong, closeness with like-minded believers, and the faith that their lives are sanctioned and supported by God, with some studies showing that this can make them less prone to depression and anxiety than intrinsics (Genia, 1996; Pargament, 2002; Sethi and Seligman, 1993; Stifoss-Hanssen, 1994). This could be seen as an example of an extrinsic approach to religion, where the individual has a need to maintain a rigid belief security in order to allay anxiety. These needs are most successfully met by dogmatic systems of belief, with Rokeach (1960) finding that anxious people were the most dogmatic about their beliefs.

OPEN- CLOSED MINDEDNESS

Dogmatism involves holding fast to dogma or set values or beliefs without considering or respecting other values or beliefs, and dogmatists have been described as being intolerant of ambiguity, censoring, stereotyping, opinionated and submissive to authority (Wulff, 1991). Rokeach (1960) believed that a person’s belief system (or personality system) was conceived along a continuum of open-closed mindedness (dogmatism). He believed that it was not so much the content, but the structure of a person’s thinking that mattered (it is not so much what you believe but how you believe). To measure this variable, he created a Dogmatism scale which was constructed by scrutinising the various definitions of open and closed belief systems and writing items to measure these characteristics. This scale contained items of logically contradictory beliefs (double-think), denial of contradiction, threat orientation, authority orientation, and a relatively narrow future oriented perspective. Rokeach additionally defined dogmatism in both cognitive and psychodynamic terms (Falbo and Shepperd, 1986). In cognitive terms, dogmatism was defined as a network of closed belief systems that satisfies one’s need to know (cognitive closure), and in psychodynamic terms, dogmatism was defined as a system of defence mechanisms against anxiety. Rokeach (1960) characterised the dogmatic person as one who has such a strong need to allay anxiety and ward off threat that his cognitive styles were rather undifferentiated, with a relative lack of communication among beliefs and the coexistence of contradictions.

Alternatively, Rokeach (1960) proposed that the open-minded person would be more flexible, liberal, and non-authoritarian in their thinking, would be more tolerant of ambiguities and uncertainties, and would express more scepticism of conventional religious beliefs (especially those that are orthodox and fundamentalist). Allport’s theory seems to imply that intrinsic religiosity should be related to open-mindedness and extrinsic religiosity to close-mindedness (Donahue, 1985a), yet there are those who argue that it is intrinsic religiosity that is linked with a closed mind and commitment to orthodox doctrines with no questioning (Baston et al., 1993; Beit-Hallahmi and Argyle, 1997). Baston and Ventis (1982)
pointed out that people highly committed to a particular value (such as intrinsics) score lower on measures of mental health that centre on openness and flexibility, and several studies have shown Allport and Ross’s (1967) intrinsic religion scale to correlate positively with various aspects of religious teachings and dogma (Baston, 1976; Kahoe, 1974b).

Consensus has yet to be reached about whether intrinsics or extrinsics are more likely to be dogmatic. Allport's (1963) explanation of an extrinsic religious orientation fulfilling psychological needs for security, status and social support is conceptually quite similar to Rokeach's (1960) psychodynamic description of dogmatism, and numerous studies (concerning mainly Christian groups) have shown that dogmatism correlates positively with extrinsic religiosity but is uncorrelated with intrinsic religiosity (e.g., Kahoe, 1974a; Kahoe and Dunn, 1975; Seaman, Michel, and Dillehay, 1971). Donahue (1985a) argues that this absence of a correlation between intrinsic orientation and dogmatism calls into question the assertion that intrinsics are “compulsive, conforming and unquestioning believers” (p. 406), but concedes that the absence of a correlation may also be due to the intrinsic subscale only tapping into portions of the dogmatism concept, rather than the entire construct. Nevertheless, a study by Paloutzian, Jackson, and Crandell (1978) found dogmatism to be independent of extrinsic religiosity, but positively correlated with intrinsic religiosity, and a study by Snook and Gorsuch (1985) (that looked, not at American Christians, but at church members in South Africa) also concluded that dogmatism was independent of extrinsic religiosity, but positively correlated with intrinsic religiosity. Snook and Gorsuch (1985) thought these results reflected the tendency for those who were the most involved in religion (the high attendees and the intrinsics) to strictly adhere to the internalised norms of their church group (the Dutch Afrikaans religion included separatism as a clear norm). To confuse the situation even more, in a sample of Christian students, McNeel and Thorsen (1985) saw that dogmatism was independent of both extrinsic religiosity and intrinsic religiosity.

A study by Gow (1980) looked at religious orientation and dogmatism in members from four religious groups: the Uniting Church, Jehovah’s Witnesses, Roman Catholics and Seventh Day Adventists from the Brisbane area, Australia, and observed that the more fundamental religions (Seventh Day Adventists and Jehovah Witnesses) were more dogmatic and more intrinsic than the less fundamental church groups (Uniting Church and Roman Catholics). Studies such as Gow’s (1980), Paloutzian et al (1978), and Snook and Gorsuch’s (1985) give some support to the assumption that religious faith and closed-mindedness go hand in hand, suggesting that individuals with an intrinsic religious orientation may be more inclined to identify with religious dogma and authority in an “uncritical fashion” (Batson and Ventis, 1982).

Few studies have sought to take into account the numerous subjects who agree with both the intrinsic and extrinsic items (the indiscriminately proreligious [IPR]) as well as those who disagree across the board (the indiscriminate antireligious [IAR]). Allport and Ross (1967) noted that the IPR individuals were scoring higher in prejudice on the ROS than both extrinsics and intrinsics, and theorised that the type of cognitive style they displayed (characterised by the inability to make necessary cognitive discriminations), was directly related to what Rokeach characterised as the dogmatic cognitive style. A study by Strickland and Weddell (1972) reported, when looking at a Baptist church group, that IPR church members were the most dogmatic, but found the extrinsic types no more dogmatic than the intrinsic individuals. Thompson (1974) carried out a study with a group of Roman Catholics and found that IPR’s were the most dogmatic, followed by extrinsics, then intrinsics and...
IAR’s, and Hoge and Carroll (1973), although examining only three of the four ROS categories, also found that IPR’s were highest in dogmatism, followed by extrinsics.

Pargament et al. (1987) proposed that the IPR’s failure to draw distinctions in the assessment of different religious beliefs and practices may reflect a tendency to process information in a way which selectively attends, or accentuates, positive data and disregards, or minimises, negative data. This may result in distortions of information in reporting personal religious practices (e.g., inflated estimates of congregation attendance or frequency of prayer), which makes one wonder whether this category of individuals actually have an intrinsic orientation at all, or if such stubbornness has lead to an artificial sense of completeness. This cognitive narrowness, and the functions of the belief disbelief system in warding off the threatening aspects of reality, may also lead to the rejection of ideas or viewpoints that are in disagreement with one’s own opinion and foster the belief in a single correct view, characteristics which are at the core of the dogmatism concept (Rokeach, 1960). Alternatively, the indiscriminate antireligious (IAR) individuals have been found to be the least prejudiced and dogmatic when tested (scoring similarly to non-religious individuals and intrinsics) (Thompson, 1974; Wulff, 1991). Hood (1971) argues these individuals are highly conflicted over the subject of religion hence the name ‘antireligious’, but Donahue (1985a) found no statistical support for a conflicted relationship and sees these individuals as being more apathetic toward religion and categorises them as ‘non-religious’.

AIMS AND HYPOTHESES

The function of the present study is to study people in relation to their faith. Different personality types may have different reasons for being religious, and regardless of the religious traditions they choose to follow, every religion will be made up of those who see religion as an end in itself, and those who see it as a means to an end. Intrinsic and extrinsic orientations represent cognitive, motivational and behavioural patterns (personality), and therefore this seemed the best way to operationally define religiosity in this study. The present study will focus on well-being in relation to religiosity, as this should highlight the impact religious orientation can have on a person’s own self, and will measure dogmatism in relation to religiosity, as it may help to identify how a person’s belief system is structured, which may in turn affect how a person relates to others and the world.

Research has shown that religion can have an effect on well-being, as seen by the difference in recovery rates between religious and non religious people in relation to physical and mental health. Studies from all over the world have also seen that members of religious groups are more satisfied with their life as a whole, compared to non-members. The present study will (in addition to measuring specific domains of well-being such as health, depression, anxiety etc.) ask participants for a global measure of life satisfaction, as this may help to obtain a more robust indication of overall well-being.

H1: In light of Baumeister’s (2002) findings, where benefits seem to flow from religiosity per se, rather than from holding any particular faith, the researchers hypothesise that there will be no significant difference between the four religious groups on well-being and life satisfaction.
The majority of studies reviewed show support for Allport’s (1963) theory, with intrinsics scoring higher on well-being measures. Allport (1963) suggested that people who score high on the extrinsic orientation scale may use their religion as a way to reduce anxiety and/or depression; however he argues that this approach may still not be as beneficial to well-being as an intrinsic approach, while other studies (e.g., Masters and Bergin, 1992; Pargament et al., 1979) propose that an extrinsic approach may even be detrimental to well-being. Therefore, presuming no difference between groups, it is hypothesised that (H1a): There will be a positive correlation between intrinsic orientation, well-being and life satisfaction; and (H1b): There will be a negative correlation between extrinsic orientation, well-being and life satisfaction.

Rokeach (1960) located a dimension of personality which he called dogmatism, or the ‘closed mind’. Individuals who scored high on his dogmatism scale were found to be rigid in their thinking, intolerant of ambiguity, and unable to deal with new information. The Research Question (RQ1) being put forward in this study is: Are there any differences in levels of dogmatism between the groups?

Consensus has yet to be reached about whether intrinsics or extrinsics are more likely to be dogmatic, as previous research has found dogmatism to positively correlate with both orientations. Some of these studies have asserted that intrinsics can be ‘compulsive, conforming and unquestioning believers’ (Baston, 1976), while others propose that extrinsics need to maintain a rigid belief security in order to allay anxiety which is most successfully met by dogmatic systems of belief (Allport and Ross, 1967; Rokeach, 1960). The majority of studies undertaken have shown a correlation with the extrinsic orientation and no correlation with the intrinsic orientation, therefore it is hypothesised that (H2a): Dogmatism will positively correlate with an extrinsic orientation, but will not correlate with an intrinsic religious orientation.

Very few studies have looked at indiscriminate proreligious (IPR) and indiscriminate antireligious (IAR) individuals, yet those that have found IPR’s to be the most dogmatic group of all. Rokeach (1960) argued that it is cognitive structure, not content, that matters. Considering that IPR people respond to all religious material favourably, this may reflect a personality type that fails to discriminate in their thinking or to evaluate uncritically; which would fit Rokeach’s (1960) cognitive profile of a highly dogmatic individual. Therefore, it is hypothesised that (H2b): Indiscriminate proreligious individuals will be more dogmatic than those who are predominantly extrinsically orientated, predominantly intrinsically orientated, and indiscriminately antireligious.

**METHOD**

**Participants**

Participants were 167 volunteer practising members of 4 religious groups (62 male, 105 female), ranging in age from 18 to 93 years \( (M = 40 \text{ years}) \). Seventy three participants (23 male, 50 female) were Roman Catholics, aged 18 to 93 years \( (M = 46 \text{ years}) \), 27 participants (10 male, 17 female) were Jehovah’s Witnesses, aged 18 to 63 years \( (M = 43 \text{ years}) \), 25 participants (10 male, 15 female) were Muslims, aged 18 to 84 \( (M = 30 \text{ years}) \), and 42
participants (19 male, 23 female) were Buddhists, ranging in age from 18 to 69 ($M = 32$ years).

**Measures**

The background questionnaire commenced by asking the participant questions regarding their current religious affiliation, gender, age, nationality and postcode. The subject was then asked how often they attended their place of worship. It also enquired if the subject had ever been a practising member of any other religion/s and if so, to specify in writing which one and how long they had been a member for.

Religious orientation was measured by Allport and Ross’ (1967) Religious Orientation Scale (ROS). This scale was designed to identify those whose are intrinsically orientated (their religion is an end in itself) and those who are extrinsically orientated (their religion is a means to an end). It is a 20-item measure with two separate scales including 9 intrinsic items and 11 extrinsic items. A sample intrinsic item is “I try to live all my life according to my religious beliefs,” and a sample extrinsic item is “I go to my place of worship mostly to spend time with my friends.” For the current study, the word “church” was changed to “church/temple/mosque/kingdom hall” for questions 4, 11, 12 and 14, and for questions 9 and 10 the word “church” was changed to “place of worship”.

Items are scored on a 5-point, Likert type scale where 1 means strongly disagree and 5 means strongly agree. Scores equal to or greater than 4 on the intrinsic and extrinsic scales indicate high motivation. The Cronbach’s $\alpha$ reported by several researchers for the intrinsic and extrinsic religious orientation subscales range from .69 to .91 (Leong and Zachar, 1990; Spilka, Stout, Minton, and Sizemore, 1977).

Following reviews of the scoring system, Allport and Ross (1967) introduced a classification system whereby the 20 statements could be used to measure indiscriminately pro-religious tendencies and indiscriminately anti-religious tendencies, as well as intrinsic and extrinsic orientations. Under this measuring system, subjects were classified as indiscriminately pro-religious if they scored high on both subscales and indiscriminately anti-religious if they scored low on both subscales (Donahue, 1985a).

The General Well-Being Schedule (GWBS) (Fazio, 1977) was used in this study, as it is a brief, well designed tool useful for measuring sense of well-being. Norms were established using the HANES database of over 6,900 people (Fazio, 1977). The GWBS consists of 18 items indicating subjective feelings of psychological well-being and distress. All of the items utilise the past month as the time frame of interest. The first 14 questions use a 6 point rating scale, with the remaining items using a 0–10 rating scale. Because some items are reverse scored (items 1, 3, 6, 7, 9, 11, 15, and 16), 14 is subtracted from the total score, yielding a total possible range of scores from 0 to 110 (Jonas, Franks, and Ingram, 1997). Low scores represent greater distress (Fazio, 1977). Proposed cut-offs representing three levels of distress are 0–60 (severe distress), 61–72 (moderate distress), and 73–110 (positive well-being). In addition, the GWBS is hypothesized to assess six latent dimensions including anxiety, depression, general health, positive well-being, self-control, and vitality (Fazio, 1977).

Moderate test–retest reliability has been reported for the GWBS total, with reliability coefficients ranging from 0.68 to 0.85 (Fazio, 1977; Taylor, Carlos Poston, Haddock, Blackburn et al., 2003). High internal consistency has been found with all coefficients...
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reported to be over 0.90 (Fazio, 1977; Hildebrandt and Kelber, 2005). Fazio (1977) correlated the GWBS schedule with the Minnesota Multiphasic Personality Inventory (MMPI), Zung Self-Rating Depression Scale, College Health Questionnaires (CHQ) for current depression, CHQ for past depression, Psychiatric Symptoms Scale, Personal Feelings Inventory, and interviewer rating.

The five item Satisfaction with Life Scale (SWLS) (Diener et al., 1985) was used in this study because of its cognitive, global nature and because it has previously been shown to correlate strongly with measures of religious belief, religious coping, social support obtained through religious sources, and spirituality (Cohen, 2002). Diener et al. (1985) defined life satisfaction as the cognitive appraisal involved when an individual compares their current circumstances in life to their self-defined ideal, other people or one’s own past. This scale has been used in a multitude of studies with a variety of populations (Pavot and Diener, 1993). Responses for all items are on a 7-point scale where 1 means strongly disagree and 7 means strongly agree. A sample item is “I am satisfied with my life”. The scale has a Cronbach’s α of .87, and a good test-retest reliability coefficient of .82 over a 2 month period. Convergent validity is evident in that the SWLS correlates positively with other measures of similar constructs, such as interviewer ratings of life satisfaction, and correlates negatively with measures of distress, such as the Beck Depression Inventory (Pavot and Diener, 1993). Discriminant validity is evident in that the SWLS does not correlate with impulsivity or affect intensity (Cohen et al., 2005).

Open-closed mindedness (dogmatism) was assessed by Rokeach’s (1960) short form, 20-item Dogmatism Scale proposed by Troldahl and Powell (1965). Responses for all items are on a 6 point Likert scale where -3 meant disagree very much and +3 meant agree very much. The minimum score which can be obtained from the scale is 20 while the highest is 140, with higher scores indicating that a person is closed-minded (dogmatic) and lower scores indicating a person is open minded. The short form dogmatism scale includes the same questions as Rokeach’s (1960) dogmatism scale, however it excludes the items that have low item total score correlations. The shortened version measures the same construct as the normal scale, namely open mindedness and closed mindedness. An example of a question used in the dogmatism scale is “It is only when a person devotes themselves to a cause or ideal that life becomes meaningful”. The 20-item short form dogmatism scale had a predicted split half reliability of .79. The item total correlations ranged from .37 to .60 (Troldahl and Powell, 1965).

Design

A cross sectional design was utilised for this research. The variables that were investigated in the present study were religious orientation, well-being, life satisfaction and dogmatism. The order of the scales was counterbalanced using a quasi Latin square design. A correlational analysis was undertaken between the variables of religious orientation and well-being, life satisfaction and dogmatism. This study also undertook a number of between groups’ comparisons in relation to well-being, life satisfaction and dogmatism.
Procedure

Participants were recruited from the local community and from religious organisations in the South East Queensland area of Australia. Participants were asked to volunteer 15 minutes of their time to complete the questionnaire, but if they could not complete it just then, they were given a reply paid envelope to return the questionnaire at their earliest convenience.

RESULTS

The collected data was evaluated using SPSS. The raw data (N = 167) was screened for inaccurate data entry, missing values and outliers. Data analysis revealed that data was missing at random, across cases and variables, and missing data was replaced using the Missing Value Analysis EM method. Descriptives, stem-and-leaf plots and the distribution of the cleaned data were then checked. Skewness and kurtosis for each variable were not breached. Ultimately, all 167 participants were used in analysis.

Items were then grouped into their respective scales, with a constant of 4 added onto the raw scores on the Dogmatism scale, as established by Rokeach (1960). Participants’ scores on the intrinsic and extrinsic subscales of the Religious Orientation Scale were analysed and grouped, so that participants were categorised according to religious orientation (high extrinsic-low intrinsic; high intrinsic-low extrinsic; indiscriminately pro-religious; and indiscriminately anti-religious) as well as religion (see Table 1).

Table 1. Number of Participants per Religion and Religious Orientation Group

<table>
<thead>
<tr>
<th>Religion Type</th>
<th>Indiscriminately pro-religious</th>
<th>Indiscriminately anti-religious</th>
<th>Intrinsic</th>
<th>Extrinsic</th>
<th>Number/religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholics</td>
<td>16</td>
<td>16</td>
<td>32</td>
<td>9</td>
<td>73</td>
</tr>
<tr>
<td>Buddhists</td>
<td>15</td>
<td>5</td>
<td>21</td>
<td>1</td>
<td>42</td>
</tr>
<tr>
<td>Jehovah’s Witnesses</td>
<td>0</td>
<td>0</td>
<td>27</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Muslims</td>
<td>11</td>
<td>2</td>
<td>11</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Totals</td>
<td>42</td>
<td>23</td>
<td>91</td>
<td>11</td>
<td>167</td>
</tr>
</tbody>
</table>

The correlation between general well-being and life satisfaction was verified, \( r(167) = 0.506, p < 0.05 \), validating the suggestion that while general well-being and life satisfaction are similar variables, it would be useful to consider both variables together in order to gain a more robust picture of the impact of religion and religious orientation on an individual.

Table 2. Means and SDs. of General Well-being Scores between Religious Groups

<table>
<thead>
<tr>
<th>Religion Type</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholic</td>
<td>77.712</td>
<td>16.593</td>
</tr>
<tr>
<td>Buddhist</td>
<td>82.357</td>
<td>13.762</td>
</tr>
<tr>
<td>Jehovah’s Witnesses</td>
<td>85.370</td>
<td>10.703</td>
</tr>
<tr>
<td>Muslim</td>
<td>76.160</td>
<td>15.566</td>
</tr>
</tbody>
</table>
A one way ANOVA revealed no significant differences between the groups, on well-being $F(3,163) = 2.629, p = .052$ or life satisfaction $F(3,163) = .631, p = .596$ (see Tables 2 and 3).

**Table 3. Means and SDs. of Life Satisfaction Scores between Religious Groups**

<table>
<thead>
<tr>
<th>Religion Type</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholic</td>
<td>24.890</td>
<td>5.751</td>
</tr>
<tr>
<td>Buddhist</td>
<td>26.167</td>
<td>5.591</td>
</tr>
<tr>
<td>Jehovah’s Witnesses</td>
<td>25.148</td>
<td>4.203</td>
</tr>
<tr>
<td>Muslim</td>
<td>24.440</td>
<td>6.795</td>
</tr>
</tbody>
</table>

In relation to the hypothesis predicting that there would be a positive correlation between intrinsic orientation, well-being and life satisfaction, the analyses revealed that intrinsic orientation was found to have a significant, but moderately low, positive correlation with both well-being ($r(167) = .238, p <0.05$), and life satisfaction ($r(167) = .234, p <0.05$); extrinsic orientation was found to have a significant (albeit moderately low) negative correlation with well-being ($r(167) = -.203, p <0.05$), but no significant negative correlation was found with life satisfaction ($r(167) = -.038, p >0.05$).

A one way ANOVA ascertained that there was a significant difference in dogmatism scores between the groups, $F(3,163) = 5.854, p = .001$. Due to a significant Levine’s statistic ($F(3,163) = 3.713, p = .013$), Dunnett’s T3 post hoc test was used. Muslims were significantly more dogmatic than Catholics ($p = .004$) and also more dogmatic than Buddhists ($p = .033$) (see Table 4). The other three groups showed no differences on dogmatism.

**Table 4. Means and SDs. of Dogmatism Scores between Religious Groups**

<table>
<thead>
<tr>
<th>Religious Group</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslims</td>
<td>86.680</td>
<td>19.442</td>
</tr>
<tr>
<td>Jehovah’s Witnesses</td>
<td>76.444</td>
<td>9.939</td>
</tr>
<tr>
<td>Buddhists</td>
<td>72.738</td>
<td>18.384</td>
</tr>
<tr>
<td>Catholics</td>
<td>70.603</td>
<td>17.231</td>
</tr>
</tbody>
</table>

A correlation analysis conducted on Dogmatism scores and extrinsic religious orientation scores revealed a significant relationship between these two variables, $r(167) = 0.326, p < 0.05$, however no significant relationship was found between intrinsic religious orientation and dogmatism, $r(167) = 0.060, p = 0.443$.

To test the hypothesis that IPR individuals would be the most dogmatic, a one-way ANOVA was conducted. Analysis revealed that a significant difference existed in Dogmatism scores between religious orientations, $F(3, 163) = 7.177, p < 0.05$. Contrast tests were used where equal variances were assumed due to a non significant Levine’s test ($F(3,163) = 2.202, p = .090$). The contrast tests found that IPR’s were significantly more dogmatic than intrinsics ($t(163) = 4.448, p<0.05$) and also more dogmatic than IAR’s ($t(163) = 3.315, p < 0.05$) (see Table 5). However, even though IAR’s were the least dogmatic, the difference between IAR’s and intrinsics and extrinsics was not significant.
Table 5. Means and SDs. of Dogmatism Scores between Religious Orientations

<table>
<thead>
<tr>
<th>Religious Orientation</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiscriminately proreligious</td>
<td>84.643</td>
<td>19.859</td>
</tr>
<tr>
<td>Extrinsic</td>
<td>75.818</td>
<td>16.067</td>
</tr>
<tr>
<td>Intrinsic</td>
<td>70.725</td>
<td>15.315</td>
</tr>
<tr>
<td>Indiscriminately antireligious</td>
<td>70.217</td>
<td>16.520</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Results for the first set of hypotheses suggest that differences in religious orientation are more important than differences in religious affiliation, in relation to psychological well-being and life satisfaction. The finding that there was no significant difference between the four religious groups (Roman Catholic, Jehovah’s Witnesses, Buddhists, and Muslims) on well-being and life satisfaction measures adds to the growing literature in this area, which implies that what matters in terms of psychological and health outcomes is whether a person is religious, not which religion a person is affiliated with.

Gorsuch’s (1988) observation, that the distinction between an intrinsic and extrinsic orientation towards religion could prove useful in the psychology of religion and health, seems to be applicable to this study. The prediction that an intrinsic orientation would have a positive correlation with well-being and life satisfaction was supported, with moderate but significant results. This finding is in agreement with the majority of studies that have looked at these variables, and supports the theory that faith may induce a peace of mind that is beneficial to well-being. These results suggest that those, who orient their lives more closely to religion, experience the benefits associated with benevolent systems of belief and practice. Using an overarching interpretive scheme to find positive meaning, both in ordinary daily events and in major life challenges, perhaps may be the most reliable path to cultivating positive emotions (such as joy, serenity, awe, and hope), which in turn could build personal resources such as resilience, optimism and social support. These factors may then contribute to promoting greater well-being and life satisfaction. Therefore, religion may be more than just group affiliation; it may be a central attitude which enhances both cognitive and affective perceptions of life, which may also help buffer the negative effects of stress and trauma. Consequently, health professionals working with individuals should be aware of the importance and function of religion as a worldview and coping strategy, and consider integrating religion into their approach to take advantage of this often hidden resource and personal strength.

The aforementioned results were strengthened by the finding that the extrinsic orientation had a significant, yet moderate, negative correlation with well-being as predicted, although results showed no correlation with life satisfaction. The negative correlation with well-being is consistent with Masters and Bergin’s (1992) theory, where extrinsics may engage in maladaptive appraisals of stress and less positive coping which leads to a negative association with well-being. Perhaps anxiety or depression could be higher in these persons because they do not believe in a loving God to whom they can turn with their problems. Even though extrinsics endorse the tenants of their faith, religion may be no more important to them than are other aspects of their lives which are untouched by religious concerns. If it is strength of...
belief that motivates and holds an individual together during crisis, then a weak religious belief system could be worse for an individual than having no religion at all (this does not hold however where the activating crisis is the loss of faith). In line with this is Pargament et al.’s (1979) proposition that well-being is more likely to suffer when religious beliefs, practices and motivations are fragmented or out of sync (as in the case of extrinsics). This lack of integration and coherence of ideas may also be partly responsible for the lack of any significant relationship between an extrinsic orientation and life satisfaction.

The above results show clearly that intrinsic and extrinsic scores reveal the opposite pattern, thus supporting the notion that intrinsic and extrinsic orientations represent differing ways of being religious, and also that being intrinsically orientated is healthier than being extrinsically orientated. Pargament’s (1997) comment that the efficacy of religion may have less to do with specific religious beliefs and practices and more to do with the degree to which they are integrated into an individual’s life seems particularly relevant in light of these findings. Further work should be done to extend our understanding of intrinsic faith as it relates to well-being and life satisfaction. It may be that certainty of belief, or lack of conflict, may be more important to well-being than religion per se, therefore future research could study intrinsic and nonreligious individuals to see how they score on various measures of well-being. Also if strength of commitment is important, does it matter what one is committed to? If an overarching religious commitment serves as a cognitive schema to help people adapt to stress and cope with adverse circumstances, then future studies could study intrinsic individuals in comparison to nonreligious individuals who are committed to, and get emotional support from, other organisations.

Due to limited research on dogmatism with religious groups other than Christian denominations, the Research Question in this study was aimed at discerning differences in levels of dogmatism between the four different religious groups. Results indicated that there were differences between the four religious groups in dogmatism scores. It was observed that Muslims scored significantly higher on the Dogmatism scale than either Catholics or Buddhists, while Jehovah’s Witnesses scored second highest on the scale, but did not differ significantly from any of the other three religions. In a world where tension surrounds Muslim extremists, it is necessary to consider the need for normal Muslim believers to hold steadfastly to their true faith, rather than interpreting this finding in a negative light.

The prediction that dogmatism would positively correlate with an extrinsic orientation, but not with an intrinsic orientation, was supported. The moderate, but significant, relationship observed between dogmatism and extrinsically orientated individuals supports the majority of previous studies in this area. These results could also be linked to the above well-being findings, where extrinsics were seen to have a negative relationship with well-being compared to intrinsics. Lower levels of well-being may motivate extrinsics to fulfil psychological needs by embracing closed belief (dogmatic) systems which might help to reduce uncertainty, fear and anxiety (as postulated by Rokeach, 1960; and Allport, 1963). This motivation to seek certainty could lead to dichotomous thinking styles (black and white types of stereotyping of both people and issues), distorted impression and opinions, and a strong orientation toward authority (Schumaker, 1992). An individual whose life is dependent on the supports of extrinsic religion, such as the need for security, comfort, status and social support, is likely to also be dependent on the supports of closed belief systems where there is no room for confusion or question, and which might foster feelings of confidence and pride, and acceptance by the majority. This attempt to achieve cognitive closure may lead to a
desperate search for any ‘firm belief’ that can bring certainty and safety in the midst of a confusing world.

Additionally, this study did not find the intrinsic approach to religion correlated with dogmatism. One may surmise that, if an intrinsic orientation does produce, or attract, individuals characterised by personal security, efficacy, esteem, openness and flexibility (Allport, 1963), they may find it easier than extrinsics to tolerate ambiguities and uncertainties in life. An open mind may see new ideas and opinions as challenging, not threatening, thus removing the need for rigid belief security, and if one’s religious beliefs support the notion that life’s circumstances are not random occurrences, but intentional events that occur for a designated purpose, then it follows that many of the stress factors associated with uncertainty are also removed. Furthermore, in situations where the intrinsic individual does rely on authority, it may be done so rationally and not absolutely, as they may be flexible enough to partition their world, so that rational thinking is applied in some domains, while faith reigns in others (Alcock, 1992).

An interesting finding in this study is that the Jehovah’s Witnesses studied were all classified as intrinsically orientated and yet were the second most dogmatic group out of the four. They were not significantly different from the Muslim group, who scored the highest on the Dogmatism scale and yet an intrinsic orientation did not correlate with dogmatism. This may be because cell sizes in this study were too small to allow for meaningful results, or it may be as Donahue (1985a) hypothesised, that the absence of a correlation may also be due to the intrinsic subscale only tapping into portions of the dogmatism concept, rather than the entire characteristic.

The hypothesis that IPR’s would be more dogmatic than those who are extrinsically orientated, intrinsically orientated, or indiscriminately antireligious (IAR’s) was supported. IPR’s were found to be the most dogmatic of the four orientations and significantly more dogmatic than intrinsics and IAR’s.

CONCLUSION

The aim of the current study was to explore the concept of religious orientations and how they relate to well-being and open-closed mindedness. Results of this study indicate that the dogmatism level of an individual is influenced by the extent to which they uphold the extrinsic aspects of their religion, whereas the intrinsic practice of religion had no influence upon dogmatism levels. IAR’s were found to be the least dogmatic individuals in the current study, which is consistent with previous research. This seems to validate the supposition that an intrinsic orientation is not related to dogmatism, as IAR’s score low and intrinsics score high on the intrinsic scale, thus pointing to the extrinsic orientation as being a determining factor when it comes to dogmatism.

The results suggest that studying intrinsic and extrinsic religious orientations in relation to well-being and belief systems may teach psychology a great deal about issues such as coping with stress, interpretation and meaning, uncertainty, prejudice, memory and distortion, depression, happiness, goals and hope.
REFERENCES


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Religious Orientation, and its Relationship to Well Being …


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Chapter 10

LIFE’S STRESSORS, PERSONALITY
AND NIGHTMARES

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Queensland University of Technology, Australia

ABSTRACT

Ordinary individuals will commonly have to cope with a number of major challenges and stressors throughout their lifetimes. Certain of these challenges can cause very significant distress, some of which can even spill over into people’s sleep and dreaming, causing them to experience nightmares. Some people will become even more upset by such nightmares while others may feel unperturbed, or even enlightened, by them. One of the factors that has not received a lot of attention in the coping literature is that of boundary thickness. The study described in this chapter was designed to examine whether nightmare frequency and nightmare distress could be predicted by personality factors, such as ego strength, and waking distress caused by current stressors, and whether boundary thickness was a protective factor in coping with such distress. Participants in the study consisted of 255 undergraduate university students in Australia. Waking distress was found to be a strong predictor of nightmare frequency, while personality traits were relatively strong predictors of nightmare distress. Less than half of the participants dreamed about the main life stressor they had reported and of those participants, more perceived dreaming to be unhelpful than helpful. A large proportion of participants reported that dreaming about the stressor actually induced more stress and anxiety, as it reminded them of the situation and highlighted the problems they had experienced. Only one personality trait, boundary thickness, significantly predicted whether or not participants dreamed about waking stressors, whereas personality could not predict the likelihood that participants would find dreams about their stressors to be helpful.

Keywords: Nightmares, Personality, Waking Distress, Boundary Thickness, Ego Strength
INTRODUCTION

Life’s stressors often lead to anguish, but there is no doubt that some individuals cope better with such psychological discomfort than others. Some people are able to separate this distress from other aspects of their lives, so that they can function relatively well on a day-to-day basis. Others experience such great suffering in relation to the same stressors that they function poorly, de-compensate and ‘fall apart’. There are many facets of personality that can play a part in people’s response to stress, with levels of neuroticism, openness to experience, boundary thickness, and ego strength being amongst those facets that have been known to have a bearing on how individuals respond to major life events (Funkhouser, Wurmle, Cornu and Bahro, 2001; Grieser, Greenberg and Harrison, 1972; Hartmann, 1997; Hartmann, 2000; Hartmann, Harrison and Zborowski, 2001; John and Srivastava, 1999; Levin, 1989, 1990; Watson, 2001; Wolcott and Strapp, 2002). For some individuals, distress related to waking concerns can spill over into sleep, sometimes resulting in fractured sleep and nightmares. In people who have experienced major life ordeals, including exposure to violence and trauma, sleep disturbances and nightmares are very common indeed (Phelps, Forbes and Creamer, 2007).

Nightmares are frightening, distressing, disturbing, or unpleasant, dreams which are easily and vividly recalled upon awakening (Blagrove, Farmer and Williams, 2004; Chivers and Blagrove, 1999; Wood and Herber, 2000; Zadra and Donderi, 2000; Zervas and Soldatos, 2005). Negative consequences associated with nightmare suffering include poor and disturbed sleep, anxiety, depression, and somatisation (Belicki, Chambers and Ogilvie, 1997; Kothe and Pietrowsky, 2001; Pietrowsky and Kothe, 2003). Interestingly, a large proportion of the adult population suffers from nightmares, with a significant percentage of these people reporting considerable distress in relation to them (Belicki and Cuddy, 1991; Berquier and Ashton, 1992; Zervas and Soldatos, 2005). It is well known that repetitive nightmares are often seen in individuals who have endured traumatic events (Aron, 1996; Stoddard, Chedekel and Shakun, 1996; Wilmer, 1996), but less is known about the ‘garden variety’ of nightmares that are experienced by non-clinical populations (Bearden, 1994; Belicki and Cuddy, 1991). The occurrence of nightmares in the general population is relatively widespread. Levin and Fireman (2002) reported that 85% of university students experienced at least one nightmare annually, with 10 to 25% of students experiencing one or more nightmares per month. Similar prevalence has been found in the non-student population (Zadra and Donderi, 2000).

It is well established that life events influence dream content, and this is particularly apparent in relation to acute life stress and nightmares (Domhoff, 2003). It has been shown that waking stress is often incorporated into dream content (Blagrove, 1992), and this association is consistent with the general continuity hypothesis of dreaming (Domhoff, 2003). The continuity theory of dreaming (Domhoff, 2003) postulates that dreaming and nightmares are sleeping cognitions which are continuous with waking cognitions, and that they only differ from waking thought because they are less constrained by frontal lobe activity (Blagrove, 1992; Busby and de Konick, 1980; Domhoff, 2003; Hartmann, et al., 2001; Lang and O’Connor, 1984; Revonsuo, 2000; Schredl, 2003; Schredl, Langgraf and Zeiler, 2003b).

It has become increasingly apparent that an important distinction must be made between nightmare frequency and nightmare distress. Belicki (1992b) raised the point that while some
people who experience frequent nightmares seem relatively unaffected, others who suffer very few nightmares may be extremely distressed by those experiences. Belicki and Cuddy (1991) contended that having nightmares is not the same thing as suffering from nightmares. Consequently, nightmare frequency best refers to the rate of nightmare occurrence, whereas the negative impact of the nightmare (the waking suffering), is better termed as nightmare distress (Belicki, 1992a; Claridge, Clark and Davis, 1997; Wood and Bootzin, 1990).

**NIGHTMARES AND PERSONALITY**

Although acute stress has been shown to be reliably associated with nightmare frequency, the relationship between personality and nightmare frequency is less robust (Cernovsky, 1984; Chivers and Blagrove, 1999; Hartmann, Rand and Rosen, 1998; Pagel, Van and Altomare, 1995; Schredl, 2003). Schredl’s (2003) review of the nightmare literature revealed that state factors such as current distress, rather than trait factors such as personality characteristics, tended to be better predictors of nightmare frequency.

It has been suggested that nightmare distress may represent a function of the dreamer’s personality, rather than the dream content itself (Nguyen, Madrid, Marquez and Hicks, 1999). Nightmare sufferers, in comparison to the general population, tend to be more anxious and fearful individuals, with lower general psychological well-being, less adequate defence mechanisms, and heightened perceptual sensitivity (Bearden, 1994; Levin, 1989; Hersen, 1971; Zadra and Donderi, 2000). Nightmare suffering has also been linked to psychopathological symptoms, particularly those across the affective spectrum (Berquier and Ashton, 1992; Najam and Malik, 2003; Schredl, 2003).

Research to date on the link between nightmare suffering and measures of personality has produced mixed and inconsistent findings (Belicki and Belicki, 1986; Berquier and Ashton, 1992; Levin and Fireman, 2002; Najam and Malick, 2003; Schredl, 2003; Schredl, Ciric, Gotz and Wittmann, 2003; Schredl, et al., 2003b; Watson, 2001; Zadra and Donderi, 2000). However, findings have highlighted several personality dimensions which seem to characterise nightmare sufferers, including neuroticism, openness to experience, boundary thickness, and ego strength (Berquier and Ashton, 1992; Blagrove and Akehurst, 2000; Hartmann, 1990; Hartmann, et al., 1998; Hersen, 1971; Lang and O’Connor, 1984; Levin, Fireman and Rackley, 2003; Schredl, et al., 2003b).

Neuroticism has been found to be associated with nightmare intensity, frequency, and distress (Belicki and Cuddy, 1991; Blagrove, et al., 2004; Claridge, et al., 1997; Miro and Martineze, 2005; Schredl, 2003). Individuals high in neuroticism are more apt to exaggerate the intensity of the impact of nightmares on their well-being (Belicki, 1992a), and are less able to adequately deal effectively with this impact (Schredl, et al., 2003b). Neuroticism is characterised by tension, anxiety, and emotional and affective instability, and it tends to correlate with negative affects in dreams, including anger, fear, worry, hatred and loneliness (Blagrove, et al., 2004; John and Srivastava, 1999). Consistent with these findings, individuals with dreams high in negative emotion are more likely to have low well-being than those with average levels of dream emotion (Blagrove, et al., 2004). Schredl et al. (2003b) provided further evidence of an association between nightmare frequency and neuroticism, but found that stress played an additional role in relation to the frequent occurrence of
nightmares. Similarly, there is evidence that the poor sleep quality, that often accompanies nightmare suffering, is partly accounted for by neuroticism and stress (Schredl, et al., 2003a).

Nightmare sufferers have indicated more propensity than control groups for hypnosisibility, absorption in daytime fantasy, and imagery capability (Berquier and Ashton, 1992; Kothe and Pietrowsky, 2001; Miro and Martinez, 2005), traits which are known to be associated with openness to experience (Blagrove and Akehurst, 2000; Schredl, et al, 2003a). A propensity for absorption is associated with creative imagination and a tendency towards dissociation (Levin et al., 2003). The suggestion that nightmare sufferers are characterised by these traits is substantiated by research which shows that individuals with frequent nightmares are more creative and artistic, hold more supernatural ideas about their dreams, relive their nightmares more intensely, and report more profound mystical experiences such as out-of-body experiences and lucid dreaming (Chivers and Blagrove, 1999; Claridge, et al., 1997; Wood and Bootzin, 1990). It is suggested that creativity and divergent thinking style is related to dream detail and dream recall. This may explain why individuals who are more ‘creative’ tend to be more affected by their nightmares, as they can remember the nightmare with more detail and vividness, and also may exaggerate their experiences (Wolcott and Strapp, 2002).

In an attempt to describe some of the common underlying characteristics which were found in people with recurrent nightmare experiences, Hartmann (1990), showed that frequent nightmare sufferers tend to have thin boundaries, as opposed to thick boundaries (Levin and Fireman, 2002; Schredl, 2003). Generally, thin-boundaried people tend to be more affected by stimuli; have more difficulty focusing on one thing at a time; have a greater tendency to lose themselves in relationships; have less sense of personal space; have trouble distinguishing between the two states of fantasy and reality; and tend to perceive the world in shades of grey (Funkhouser, et al., 2001; Hartmann, 1997; Hartmann, 2000; Hartmann, et al., 2001; Levin, 1990; Watson, 2001; Wolcott and Strapp, 2002). Thin-boundaried individuals are thought to be more fantasy-prone, unguarded, open-minded, and sensitive, as well as more affected by internal and external stimuli (including stimuli which presents during dreams) (Claridge, et al., 1997; Kothe and Pietrowsky, 2001; McRae, 1994). Alternatively, people with thick boundaries are described as having a more distinct sense of self, restrained expression of emotion, clear division between thought and emotion, and unlike their thin-boundaried counterparts, they tend to rarely fantasise or daydream (Barbuto and Plummer, 2000; Hartmann, 1997; 2000; Schredl, et al., 2003a). Significant positive correlations have been found between boundary thinness and nightmare frequency, as well as more intense images within the dreams themselves (Hartmann, 2000; McRae, 1994; Levin, Gilmartin and Lamontanaro, 1998; Rawlings, 2001).

Another personality measure that has been found to relate to nightmares is ego strength. Ego strength is a measure of sense of identity, personal resourcefulness, contact with reality, and adaptation (Burns, 1991). Individuals with low ego strength display poorer personal adjustment, have a weaker sense of reality, worry more about their physical health, and have limited capacity to manage under stress than people with high ego strength (Grieser, et al., 1972; Levin, 1989). Lower manifest ego strength has been shown to correlate with higher nightmare frequency as well as higher recall of nightmares (Levin, 1989; Tonay, 1995). Higher ego strength equates with more elevated levels of energy, self-confidence, resiliency, grounding, and psychological well-being. Hersen (1971) found that frequent nightmare sufferers displayed lower ego strength than people who experienced less frequent nightmares. Frequent nightmare sufferers, on average, were found to be less intelligent, more emotionally
guarded, possessed of a weaker sense of reality, more restrictive in their morality, more inclined to feel inadequate, and more likely to be in poor general health. Furthermore, Grieser et al.’s (1972) study suggested that for people with high ego strength, dreams may provide a means of reducing the repression of threatening or anxiety-related material. They postulated that persons with lower ego strength possessed fewer of the ego defences required for psychological self-preservation (Fodor, 1995; Levin, 1989; Levin, 1990).

THE CURRENT STUDY

The current study aimed to determine the best predictors of nightmare frequency and nightmare distress. It was hypothesised that current distress about life events would be a stronger predictor of nightmare frequency, while personality traits would be stronger predictors of nightmare distress. It was also hypothesised that a particular personality “profile” would emerge to describe the person who is inclined to dream about their current waking stressors: lower ego strength, thinner boundaries, and higher neuroticism and openness traits than those who did not dream about waking stressors. Thirdly, it was hypothesised that most individuals who dreamed about current stressors would report that such dreams had not been helpful.

METHOD

Participants

Two hundred and fifty-five undergraduate university students (179 females, 59 males, 17 unspecified) took part in the study. Some of the participants were undergraduate psychology students who participated in order to gain credit for course requirements, while others from cross-faculty and nursing classes were invited by the researchers to participate through in-class announcements. Participants were screened according to three exclusion criteria: the diagnosis of a mental disorder, the regular use of sedatives to assist with sleeping, and the regular use of anti-depressants. These factors have been shown to sometimes affect REM sleep and nightmare frequency, and thus they were considered to be important exclusion criteria for the study (Van Bemmel, 1997). Data from one participant was excluded from the analysis, as she disclosed on her completed questionnaire that she had recently been diagnosed with bipolar disorder.

Materials

Nightmare frequency. Nightmare frequency was measured by a single question asking the participant to approximate the number of nightmares they had experienced in the past year. Belicki et al. (1997) has suggested that this approach is the most accurate and reliable method of assessing frequency of nightmares. Although some dream research (Belicki, 1992a; Chivers and Blagrove, 1999; Schredl, et al., 2003a) has indicated that retrospective reports
tend to underestimate the prevalence of nightmares, Wood and Bootzin (1990) have found that they do correlate significantly with daily log reports. Participants were instructed to identify a nightmare as a distressing dream that could be clearly recalled, as opposed to a night terror. Nightmares have often been confused with night terrors, slow-wave sleep phenomena whereby the dreamer awakens, usually screaming and in a state of fear, without recalling detailed dream content (Taylor, 1993). The average prevalence of university students who suffer one or more nightmares per month is estimated to be between 10 and 25%, with approximately five to ten nightmares being experienced annually (Chivers and Blagrove, 1999; Levin, 1989; Wood and Bootzin, 1990; Zadra and Donderi, 2000).

Nightmare distress. The Nightmare Distress Questionnaire (NDQ), developed by Belicki (1992b), was administered to all participants to evaluate levels of nightmare distress. In addition to its usefulness as a measure of personal adjustment to the nightmare event, the NDQ has also been found to be an indicative measure of emotional wellbeing (Belicki, 1992b; Wood and Bootzin, 1990). Although nightmare frequency and nightmare distress are related, correlations between the two measures have been shown to be as low as .33, and thus they are best treated as separate constructs (Wood and Bootzin, 1990). The NDQ comprises 12 items, relating to the amount of distress participants suffer as a result of their nightmare, how salient they consider their nightmare to be, and whether they have considered seeking professional help for their nightmares. Responses are scored on a five-point scale (Never, Rarely, Sometimes, Often, Always; or Not at all, Slightly, Somewhat, Definitely, A great deal). The NDQ possesses good internal consistency, with Cronbach’s alpha ranging up to .87 (Belicki, et al., 1997).

Boundary thickness. Participants’ boundary thickness was measured by the Boundary Questionnaire (Short Form) (BQ18) (Hartmann, 1998). This instrument was developed by Hartmann in order to evaluate a particular personality trait, boundary thickness, which was conceptualised as the relative permeability of psychological and physiological boundaries which exist both intra-psychically and interpersonally (Claridge, et al., 1997; Hartmann, et al., 1998). The questionnaire consists of 18 items which are scored on a self-report five-point scale (0 = Not at all true of me, 1 = Only slightly true of me, 2 = Somewhat true of me, 3 = Quite true of me, 4 = Very true of me). The BQ18 possesses good test reliability and split-half reliability (Hartmann, 1997; Hartmann, et al., 1998). The questionnaire also has adequate construct validity (Hartmann, 1997). The test is constructed in such a way that people who have thinner boundaries obtain higher scores, while those with thicker boundaries score in the lower range (Funkhouser, et al., 2001). The boundary thickness indicates the degree of separation or segmentation (thick boundaries), as opposed to the connection or communication (thin boundaries), of a wide variety of mental processes and entities (Hartmann, et al., 1998; Levin, et al., 1998). The BQ18 has been found to reliably discriminate between contrasting groups of people who experience nightmares, in terms of those individuals who suffer greatly from nightmares, compared to those who are not so much affected by them (Cowen and Levin, 1995).

Ego strength. Ego strength was measured using the MMPI-2 (Hathaway and McKinley, 1989) Ego Strength subscale was developed by Barron (1953) from a combination of existing items in the original MMPI scale. The MMPI-2 (Hathaway and McKinley, 1989) is the most widely used personality test in the world (Piotrowski and Lubin, 1990), and this subscale consists of 47 items, with forced-choice True or False responses. Example items include: “I find it hard to keep my mind on a task or job” and “I seldom worry about my health.”
MMPI-2 Ego strength subscale is a good measure of adaptability, resiliency, personal resourcefulness, and effective functioning, and is also a good general indicator of psychological health and adjustment (Butcher et al., 2001). Ego strength has been shown to account for individual differences in degree of dream recall, as well as nightmare frequency and repression of anxiety-loaded material (Grieser et al., 1972; Levin, 1989). The Barron scale reliably measures adaptability, personal resourcefulness, and effective personal functioning (Burns, 1991). Higher ego strength implies successful coping mechanisms under stress, greater contact with reality, and good psychological adjustment (Burns, 1991). Individuals with higher ego strength also demonstrate more resiliency, reliability, energy and better self-esteem (Butcher et al., 2001). At the opposite end of the spectrum, lower scorers are more likely to display reduced psychological well-being, and more inadequate forms of coping (Grieser et al., 1972; Levin, 1989).

Neuroticism, agreeableness and openness to experience. Participants’ personality traits, along the major dimensions of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience were assessed using the Big Five Inventory (BFI), developed by John, Donahue, and Kentle (1991) and validated by John and Srivastava (1999), and Worrell and Cross (2004). In completing the BFI, participants were instructed to rate themselves against self-report statements, such as “Can be somewhat careless”, or “Is considerate and kind to almost everyone” using a five-point scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither disagree nor agree, 4 = Agree, 5 = Strongly agree).

Waking concerns. A short questionnaire (Sacre, Gow, Hansen and Blagrove, 2006) was devised to assess the waking concerns of participants, and whether dreaming about a difficult situation was perceived as having assisted them in waking life. Participants were directly asked to describe a difficult or distressing situation that was personally experienced during the previous two months, and then self-rate on a ten-point scale how upsetting they perceived the event to be. Participants were then required to indicate whether they had dreamed about the situation, whether the dream had helped them, and how they believed it had helped them.

Design

The study was a cross-sectional, correlational design, in which personality measures of boundary thickness, ego strength, neuroticism, and openness to experience were examined as predictors of nightmare frequency and nightmare distress. The influence of waking stressors on nightmare frequency and distress were also examined. In addition to this, the question of whether dreaming about a difficult life event would be perceived as helpful or unhelpful to the dreamer was explored.

RESULTS

The hypotheses were tested using correlations, and hierarchical and logistic regressions. Correlations between the variables under study are displayed in Table 1. This analysis shows a significant, moderate, bivariate correlation between nightmare frequency and current distress. Individuals who experienced greater nightmare distress were significantly more
likely to be characterised by thin boundaries, low ego strength, and higher neuroticism. There were significant, but weaker correlations between nightmare frequency and current distress, ego strength and agreeableness. Individuals who suffered more frequent nightmares were more likely to be characterised by lower ego strength and agreeableness, and were more likely to be experiencing greater levels of current distress in relation to a personal stressor.

To determine whether nightmare frequency could be predicted by the level of current distress in relation to a recent stressor, the first hierarchical regression was conducted with current distress entered first into the equation, and personality factors (boundary thickness, ego strength, extraversion, agreeableness, neuroticism, conscientiousness, and openness to experience) entered separately at step two. The hierarchical model revealed that higher levels of current distress about recent stressful events was a significant predictor of greater nightmare frequency, with current distress accounting for 3.6% of variance in nightmare frequency, \( R = .202, F (1, 217) = 9.27, p = .003 \). While personality added to this prediction, the contribution of these variables was only just significant, accounting for an additional 6.7% of the variance in nightmare frequency, \( R^2_{\text{change}} = .067, F (7, 210) = 2.24, p = .032 \) (see Table 2). Obviously with such a small amount of the total variance being accounted for by current distress and personality, other explanations are at work here.

A second hierarchical regression was conducted to examine the best predictors of nightmare distress. The personality traits of boundary thickness, ego strength, extraversion, agreeableness, neuroticism, conscientiousness, and openness to experience were entered first into the equation. To examine any additional influence of current distress about a stressful experience, current distress was entered separately at step two. The hierarchical model revealed that personality accounted for a highly significant 33% of the variance in nightmare distress, \( R = .577, F (7, 214) = 15.23, p = .000 \). Boundary thickness uniquely accounted for 4.8% of the variance in participants’ nightmare distress, with ego strength uniquely contributing 5%, and agreeableness accounting for 3.3%. The second model revealed similar partial correlations; however openness to experience emerged as a significant predictor, but uniquely accounted for only 1% variance in participants’ nightmare distress. The step 2 variable of current distress did not add significantly to the prediction of nightmare distress, \( R^2_{\text{change}} = .011, F (8, 226) = 3.67, p = .057 \) (see Table 3).

Table 1. Intercorrelations Among Nightmare Frequency, Nightmare Distress, Current Distress, and Personality Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>Nightmare frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nightmare distress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current distress</td>
<td>.20**</td>
<td>.31**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boundary thickness</td>
<td>.10</td>
<td>.40**</td>
<td>.20**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ego strength</td>
<td>-.20**</td>
<td>-.48*</td>
<td>-.31**</td>
<td>-.47**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>-.05</td>
<td>-.05</td>
<td>.04</td>
<td>-.10</td>
<td>.25**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.22**</td>
<td>-.24**</td>
<td>-.19**</td>
<td>.09</td>
<td>.12</td>
<td>.24**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.02</td>
<td>-.15**</td>
<td>.00</td>
<td>-.48**</td>
<td>-.25**</td>
<td>.30**</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.19**</td>
<td>.35**</td>
<td>.33**</td>
<td>.35</td>
<td>-.62**</td>
<td>.31</td>
<td>-.34**</td>
<td>-.27**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness to experience</td>
<td>.02</td>
<td>.01</td>
<td>.08</td>
<td>.38**</td>
<td>-.05</td>
<td>.20**</td>
<td>.21**</td>
<td>-.04</td>
<td>-.08</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05. ** p < .01.
Two separate logistic regressions were conducted in order to determine whether there was a general personality “profile” of participants who were more likely to dream about waking stresses, and additionally, who were more likely to find their dreams helpful. Boundary thickness, ego strength, extraversion, agreeableness, neuroticism, conscientiousness, and openness to experience were entered as continuous covariates for both outcomes.

For the first logistic regression analysis, which explored the characteristics of participants who had dreamed about the recent stressor, the group of participants who did not dream about their waking stress (58.7% or 138 of 235) served as the reference group. Results revealed that only one personality trait, boundary thickness, significantly predicted whether or not a participant had dreamed about the stressor, Wald $\chi^2 = 5.45$, $p = .02$, odds ratio = 1.055, CI 1.009 – 1.103. Participants who possessed thinner boundaries were significantly more likely to have dreamed about their situation. The combination of personality variables accounted for 10.6% of the variance in predicting the odds of dreaming about the situation. Overall, this model correctly predicted the absence or presence of dreaming about a stressful situation in 67.6% of the participants. The Hosmer-Lemeshow test ($p = .28$) indicated a good fit for this

Table 2. Standardised Regression Coefficients and Partial Correlations of Variables Predicting Nightmare Frequency

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardised coefficients</th>
<th>Standardised coefficients</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>11.128</td>
<td>1.829</td>
<td>.069</td>
</tr>
<tr>
<td>Current distress</td>
<td>.223</td>
<td>.142</td>
<td>.020</td>
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<tr>
<td>Boundary thickness</td>
<td>-.007</td>
<td>-.127</td>
<td>-.009</td>
</tr>
<tr>
<td>Ego strength</td>
<td>-.134</td>
<td>-.164</td>
<td>-.113</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.008</td>
<td>.119</td>
<td>.008</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.187</td>
<td>-.283</td>
<td>-.194</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.066</td>
<td>-.083</td>
<td>-.057</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.035</td>
<td>.047</td>
<td>.033</td>
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<tr>
<td>Openness to experience</td>
<td>.034</td>
<td>.057</td>
<td>.039</td>
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Table 3. Standardised Regression Coefficients and Partial Correlations of Variables Predicting Nightmare Distress

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardised coefficients</th>
<th>Standardised coefficients</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>20.963</td>
<td>3.492</td>
<td>.001</td>
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<tr>
<td>Boundary thickness</td>
<td>.208</td>
<td>.296</td>
<td>.009</td>
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<tr>
<td>Ego strength</td>
<td>-.322</td>
<td>-.403</td>
<td>-.266</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.102</td>
<td>.163</td>
<td>.112</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.211</td>
<td>-.328</td>
<td>-.121</td>
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<tr>
<td>Conscientiousness</td>
<td>.068</td>
<td>.873</td>
<td>.048</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-.005</td>
<td>-.067</td>
<td>.005</td>
</tr>
<tr>
<td>Openness to experience</td>
<td>-.117</td>
<td>-.197</td>
<td>-.109</td>
</tr>
<tr>
<td>Current distress of situation</td>
<td>.324</td>
<td>.210</td>
<td>.037</td>
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</table>
The second logistic regression analysis aimed to predict which participants perceived dreaming about a stressful situation to be helpful. Only those participants who had actually dreamed about the stressor, a sub-group of the total group, could provide data for this analysis. Those who perceived dreaming to be unhelpful (38.2% or 34 of 89) served as the reference group. Results indicated that no single personality trait significantly predicted whether a participant perceived dreaming about a stressful situation to be helpful or unhelpful. The combination of personality predictors accounted for 13.5% of the variance in predicting the odds of whether dreaming was perceived to be helpful. Overall, this model correctly predicted the perception of dream helpfulness in 65.6% of the participants. The Hosmer-Lemeshow test ($p = .26$) revealed an adequate fit for the model.

**DISCUSSION**

The study examined acute stress and personality traits as predictors of nightmare frequency and nightmare distress. All but one of the hypotheses were supported by the findings of the current study. While life stress was found to be related to how many nightmares a person might experience, personality was found to be a strong predictor of the effects of nightmares on their psychological wellbeing. A particular personality profile did emerge to describe the person who is inclined to suffer high levels of distress in relation to their nightmares, but not all of the personality factors that were predicted to contribute to this profile were found to be characteristic. Individuals who reported higher nightmare distress tended to display lower ego strength, thinner boundaries, lower agreeableness, and more openness to experience. Contrary to prediction, personality factors were not found to predict what type of person would be more likely to dream about their waking stress. However, as predicted, fewer individuals who dreamed about current stressors reported that such dreams had been helpful, than those who reported that they had been unhelpful to them.

Current distress, in relation to a personal waking concern, was found to be associated with the number of nightmares participants had experienced within the past year. The more stress participants experienced over the life event, the more nightmares they reported. Personality traits also contributed to nightmare frequency; however current distress was evidently the stronger predictor. This is consistent with previous findings (Blagrove, 1992; Schredl, 2003; Schredl, et al, 2003b) that individuals’ waking thought tends to be reflected in their dream content. The relatively small amount of variance accounted for by current stress means that its importance should not be overstated. Nevertheless, the finding does seem unexpected and the results do concur with a substantial body of research demonstrating that waking concerns are often incorporated into dreams, especially those which are traumatic in nature (Blagrove, 1992; Domhoff, 2003; Revonsuo, 2000).

As expected, personality traits, specifically boundary thickness, ego strength, agreeableness, and to a lesser degree, openness to experience, were found to be related to nightmare distress. Current distress did not contribute to the prediction of levels of nightmare distress. This is a clear indication that level of stress is not the best gauge of propensity to suffer from nightmares. As nightmare distress is thought to be the *waking* impact of
experiencing a nightmare (Belicki and Cuddy, 1991; Berquier and Ashton, 1992; Levin, 1989; Zervas and Soldatos, 2005), it makes sense that its severity is more a function of the individual’s personality than the nightmare content itself. While a large proportion of the general non-clinical population experience nightmares, only a handful of these people suffer significant distress in relation to them (Belicki and Cuddy, 1991; Berquier and Ashton, 1992; Levin, 1989; Zervas and Soldatos, 2005). Along with poor sleep quality, the occurrence of nightmares can lead to anxiety and depression in these individuals, and this may be the result of some sort of difficulty in the perception and processing of emotions (Claridge, et al., 1997; Pietrowsky and Kothe, 2003).

Not surprisingly, Hartmann’s personality construct of boundary thickness, the degree of permeability between mental processes, emerged as a significant predictor of nightmare distress. Boundary thickness contributed a significant amount of unique variance to the equation predicting nightmare distress. The findings support the proposition that thin-boundaried individuals who are more vulnerable and sensitive to incoming stimuli, are also more likely to suffer emotionally after experiencing a bad dream. It is also evident that thin boundaries are associated with attaching more consequence to the nightmare (Schredl, Schafer, Hoffman and Jacob, 1999). Thus, it may be that after experiencing a nightmare, thin-boundaried participants found it more difficult to think of it as ‘just a bad dream’ upon awakening. This problem may be exacerbated by the fact that thin-boundaries increase the propensity for remembering the nightmare with much more clarity, making it harder for the dreamer to wake up and emotionally disengage from the dream.

As expected, ego strength, a measure of personal resourcefulness and contact with reality (Burns, 1991), significantly predicted nightmare distress and contributed a significant amount of unique variance to the prediction equation. Ego strength seems to be a strong indicator of how an individual controls and processes perception, as well as the ability to appropriately use defence mechanisms to combat anxiety (Burns, 1991). With anxiety being one of the most common of emotions experienced during and after a nightmare, those individuals who scored low ego strength scores may have less adequate ego defences for dealing with this anxiety, thus becoming more distressed by the nightmare experience. Furthermore, as low ego strength is characterised by general worry and lower resiliency to stress (Grieser, et al., 1972; Levin, 1989), it is not surprising that nightmares, especially if repetitive or upsetting in content, cause particular anxiety and distress upon awakening to those who scored lower in this personality trait.

Openness to experience was found to be another significant personality predictor of nightmare distress, although its contribution in terms of unique variance was only barely significant in the prediction equation. This finding was anticipated, as many characteristics of openness to experience are similar to the fluidity of the mental processes typified by thin-boundaried individuals. Indeed, in the current study, boundary thickness was significantly correlated with openness to experience.

Agreeableness unexpectedly emerged as a significant personality predictor of nightmare distress, and it contributed a significant amount of unique variance to the prediction equation. Those studies which have examined personality factors in relation to nightmare distress (e.g., Miro and Martinez, 2005) have tended to use scales such as the Eysenck Personality Questionnaire which do not measure agreeableness. The results of the present study revealed that people who possessed less agreeable traits were more likely to suffer negative affects in relation to their nightmares. It has been suggested that the characteristics of agreeableness are
founded on temperament, namely the person’s general emotional expression and approach to social behaviour (Cumberland-Li, Eisenberg and Reiser, 2004). People who are characterised as being high on agreeableness are described as being affectionate, sympathetic, kind, and interestingly, demonstrate an ability to adapt to, and recover from, stress (Cumberland-Li et al., 2004). Similarly, Van der zee and Remko (2004) describe agreeableness as the ability to realise one’s potential, to enjoy and be satisfied by one’s life, and to maintain a positive attitude. These findings imply that agreeableness is derived from a predisposition to be able to understand the nature of emotion, and thus be able to successfully regulate mood and carry a positive attitude. As nightmare distress is linked to particular vulnerability in regulating emotions, it is perhaps not surprising that people who scored lower on agreeableness were less likely to effectively deal with the negative impact of the nightmare.

Neuroticism did not emerge as a significant personality predictor of nightmare distress. This was of particular note, as it shared quite a high negative correlation (−.62) with ego strength. Although neuroticism and nightmare distress were significantly correlated, neuroticism did not uniquely account for a significant amount of the variance in the prediction of nightmare distress. This may have been because neuroticism overlapped with ego strength and boundary thickness, and all three variables may have been tapping into a similar construct. Neuroticism has previously been shown to relate to nightmare suffering. For example, Miro and Martinez (2005) and Schredl et al. (2003b) both found significant relationships between neuroticism and nightmare frequency and distress. While there are numerous studies which have found associations between neuroticism and nightmare frequency (e.g., Chivers and Blagrove, 1999; Wood and Bootzin, 1990), there seems to be a lack of research to date which has specifically investigated the relationship between neuroticism and nightmare distress. It is possible that neuroticism may not be a useful personality trait to examine in relation to nightmare distress, and that boundary thickness and ego strength are, in fact, better predictors.

Consistent with Kramer’s (1993) findings, less than half of the participants in the current study dreamed about the life stressor that they had reported. Furthermore, of those participants who did dream about their personal stressor, more perceived dreaming to be unhelpful than helpful. A large proportion of participants reported that dreaming about the stressor actually induced more stress and anxiety, as it reminded them of the situation and merely highlighted the problem they had experienced. This is inconsistent with adaptive functional theories of dreaming (Cartwright, 1986; Greiser, et al., 1972; Hartmann, 2000), which would fit better with a perceived benefit of dreaming about current problems.

In contrast, there were a few reports of students who perceived dreaming to be helpful. This is consistent with the adaptation theories which posit that dream imagery assists the individual by contextualising the situation and promoting adequate coping mechanisms, through integrating the current stressor with similar situations from the past (Hartmann and Basile, 2003). However, these reports are also consistent with the continuity theory of dreaming, in that individuals were dreaming about the very same things that were preoccupying their waking thoughts. It has been argued by Blagrove (1992) that dreams may provide insight to waking reflection without serving a problem-solving function during sleep.
CONCLUSION

This study found no significant personality predictors of whether or not dreaming was perceived to be helpful; although results revealed that participants who possessed thinner boundaries were significantly more likely to have dreamed about their stressful experience. This finding is supportive of previous findings that thin-boundaried individuals have higher dream recall (Hartmann, et al., 1998); however it also reveals that dreams about a personal stressor, rather than simply dreams in general, are reported more by thin-boundaried people. The findings of the current study confirm that people with thinner boundaries are more likely to dream about the situations that preoccupy their waking thoughts. This finding is consistent with the continuity theory, and shows that this principle is especially evident in people with thin boundaries, who are more likely to incorporate their waking concerns into their dream content (Domhoff, 2003).

The significance of boundary thickness may also shed light on why more than half of the participants who did dream about their personal stressor did not find such dream content to be helpful. This again may be attributed to the fact that thin boundaries are associated with more vivid and emotional dreams (Schredl et al., 1999). Thus, if the dream was about a negative waking experience, then the thin-boundaried dreamer would be more likely to wake up feeling anxious, rather than feeling as though the dream had helped.

Significantly, this study has highlighted the importance of separating the measurement of nightmare frequency and nightmare distress, as suggested by Belicki (1992a) and Blagrove and Akehurst (2000). Blagrove and Akehurst (2000) have suggested that the relationship between nightmare frequency and life stress may be physiological. People who are very distressed by waking concerns may experience more anxiety and poorer sleep quality, leading to more frequent awakenings and higher nightmare recall. An extension of this proposition might be that the relationship between nightmare distress and personality is more psychological.

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REFERENCES


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COPING, STRESS AND ANXIETY IN ELITE ATHLETES

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ABSTRACT

Successful performance in elite sports requires a substantial degree of sacrifice and commitment. Striving for goals and withstanding the impact of stressors from external and internal sources is critical for continuing achievement. The inability to cope with such issues has been cited as a contributing factor for burnout. The current investigation included 84 Australian athletes from sports including women’s cricket and netball which are often overlooked in psychological research. Whereas our results indicated that burnout scores were significantly correlated with depression, stress and anxiety, as well as dysfunctional perfectionism and maladaptive coping, our investigations failed to identify coping (adaptive or maladptive) as having a mediating role in burnout with respect to anxiety, stress, dysfunctional perfectionism and athletic identity. In terms of age and gender differences, younger athletes (18-25) reported significantly higher levels of dysfunctional perfectionism than 26-33 year old sportspeople, while male athletes also displayed significantly higher levels of stress and anxiety than the normal population. This study serves as a preliminary, albeit important, investigation of athletes’ coping and the identification of stress, anxiety and dysfunctional perfectionism as contributors to burnout in an Australian sample.

Keywords: Burnout, Coping, Athletic Identity, Stress, Athletes, Dysfunctional Perfectionism

INTRODUCTION

In order to achieve their goals, athletes must display great commitment and dedication to their craft and undertake seemingly endless physical training in order to perform at their peak.
capacity (Tenenbaum, Jones, Kitsantas, Sacks, and Berwick, 2003). Gould, Dieffenbach and Moffett (2002) highlighted a number of psychological characteristics that were associated with athletic success including self-confidence, competitiveness, a strong work ethic, optimism, sporting intelligence, ability to control arousal and the ability to set and achieve goals. Gould et al. also highlight dispositional hope and adaptive perfectionism as being central to achievement. According to Wiggins, Lai and Deiters (2005) and Kallus and Kellerman (2000), stress management, the employment of effective coping strategies, and self control maintenance, are critical for athlete well-being. Other such as Earle, Earle and Clough (2008) specified a form of mental toughness as being essential in the successful sports person.

While one of the key factors in the success of athletic performance is motivation, researchers point out that it is important to distinguish between types of motivation, whether it be context motivation (Gaudreau and Anti, 2009), or adaptive or maladaptive motivation (Lemyre, Hall and Roberts, 2007).

One of the many factors contributing to peak performance is flow. Flow is considered to be a state of focus in which an athlete becomes completely absorbed in the execution of their task at the exclusion of all other thoughts and emotions and is indicative of the optimal state for high performance (Csikszentmihalyi, 1990; Csikszentmihalyi and Jackson, 1999). Goal attainment and the successful completion of one’s tasks are components enhanced by the flow experience (Csikszentmihalyi and Jackson, 1999). Components including a loss of self-consciousness, clear goals, a sense of control over challenges, immediate feedback, concentration, intrinsic reward of the activity and time distortion are key aspects of flow, according to Csikszentmihalyi (1990). The presence of a strong self concept and the use of psychological skills training methods assists athletes to enhance the likelihood of experiencing flow (Jackson, Thomas, Marsh, and Smethurst, 2001).

Facilitative Performance Factors

The ability for an athlete to cope with the myriad of stressors which impact on both training and competitive situations is central for optimum performance (Amiot, Gaudreau, and Blanchard, 2004). Coping involves both cognitive and behavioural efforts to mediate the effects of appraised stressors (Lazarus and Folkman, 1984). These stressors are perceived as demanding or challenging, or exceeding the resources of the individual (Holt and Mandigo, 2004). When individuals are presented with an event, they immediately and habitually cognitively appraise the situation, and this involves assessment, judgement and response decisions which are based on prior knowledge and past experience (Lazarus and Folkman, 1984). This process allows for the instantaneous acknowledgement of the type of event which has occurred and its likely effect on the individual (Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen, 1986; Kim and Duda, 2003). Initially, primary appraisals occur and are concerned with consequences, while latter secondary appraisals focus on outcome and efficacy expectancy (Folkman et al., 1986).

Humara (1999) indicated that the ability to interpret anxiety as positive and to utilize the resulting physiological sequelae to enhance performance, increases an athlete’s self confidence and also increases performance intensity. When Dugdale, Eklund and Gordon (2002) examined coping skills in athletes, they ascertained that unexpected stressors were appraised as more negative and threatening. They also identified the moderate use of

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acceptance, increasing effort and planning strategies (all adaptive methods) in response to these encounters. Amoit et al.’s (2004) analysis of coping and goal attainment demonstrated that during stressful sporting competition, task orientated coping strategies, such as goal setting, were positively associated with goal attainment. Adaptive methods were viewed by Yi, Smith and Vitaliano (2005) as positively contributing to illness resilience in young female athletes, while Kim and Duda (2003) contended that in the immediate aftermath of an aversive sporting event, adaptive and maladaptive or disengaging strategies were effective.

**Over Striving and Resource Overload**

An athlete’s drive for the ultimate performance is motivated greatly by the search for the flow-state, as referred to earlier. Many consequences, however, exist as a result of the prolonged intense physical training undertaken by sportspeople including performance staleness and injury (Gould and Dieffenbach, 2002). O’Toole (1998) also highlights intra-team conflict and increased feelings of stress and anxiety as common effects reported by athletes. Depressed mood, anger and frustration and cognitive dissociation from team goals are psychological markers noted by McCann (1995). Unresolved overtraining syndrome has been sighted as a precursor to elite dropout, a factor which is also considered to be a major result of athletic burnout (Gould and Dieffenbach, 2002).

**Burnout**

Burnout is the result of an athlete’s inability to cope, utilize coping strategies, or adapt to high levels of anxiety and stress, when faced with prolonged exposure to chronic stressors (Cresswell and Eklund, 2004). According to Smith (1989), athletes experiencing burnout suffer from emotional depletion, fail to experience positive emotions and are also more likely to quit or retire from professional sport. Burnout and dropout are, however, distinguished between by Babkes and Partridge (2004) on the basis of emotions. Dropout is viewed to be the result of the absence of positive and negative emotions, while burnout generates increased negative feelings, concurrently with a loss of positive feelings towards partaking in their sport. The assessment of burnout is critical for the well-being of athletes given the severe psychological and physiological functioning deficits of burnout that extend beyond their sporting endeavours.

The most simplistic of many views on burnout suggests that the sum of prolonged stress, insufficient recovery and deficient coping capacity equates to burnout (M. R. Flett, 2002). Smith’s (1986) cognitive-affective model of athletic burnout is a popular and realistic conceptualization of the parallel relationship between stress and burnout and the intervening factors which result in a change from stress-adaptation to a perception of an inability to cope with aversive circumstances. As long as an individual maintains sufficient resources to mediate situational and task demands through effective coping and task behaviours, the model suggests that physical and psychological well-being is preserved. The employment of inappropriate coping mechanisms, however, results in burnout which is accompanied by negative physiological and psychological responses.
Athletes suffering from burnout have reported numerous physiological effects with sleep disturbances, illness, lethargy, injury propensity, and gastrointestinal disturbances being commonplace (Meyers and Whelan, 1998). While injuries are often a consequence of burnout, they can also act as an antecedent of the negative state according to Kallus and Kellerman (2000). Self doubt over one’s ability to overcome serious injury, familial and self generated pressure to return to training and concerns over sporting future are viewed as draining a player’s already stretched coping resources (Hagger, Chatzisarantis, and Griffin, 2004). O’Toole (1998) and Wiggins et al. (2005) indicated that lowered self-esteem, loss of direction, global mood disturbances, sport devaluation, cynicism, fear of competition and an increased tendency to withdraw from anxiety invoking or competitive situations are also common psychological sequelae of burnout. Many causes have been espoused for recent increases in burnout prevalence including a strive for ‘perfect’ performance and societal pressure coupled with a diminished coping capacity (Brewer, Van Raalte, and Linder, 1993; M. R. Flett, 2002).

Research undertaken by Cresswell and Eklund (2004; 2005) suggested that, in top amateur and elite rugby players, high degrees of sport-related competence, loss of social support, financial difficulties and perception of career control are strong predictors of burnout potential. Reduced self-determination and achievement orientation and a sole drive for higher selection honours were identified and a concordant reduction in enthusiasm for training was also observed. The interpretation of burnout by coaching staff was viewed by Raedeke, Lunney and Venables (2002) as pivotal for athletes' well being and for the early employment of strategies that minimise burnout.

Factors Contributing to Burnout

Athletic identity is defined by the strength of association that a sportsperson has with the athletic role and is viewed as a combination of a self-schema and social role as it guides the organization of self-related information and is influenced by role labelling by external sources (Brewer et al., 1993; Griffith and Johnson, 2002). Griffith and Johnson (2002) highlighted the potential for over-commitment to the athletic role to be detrimental for psychological and physical health in situations which challenge self-construct and self-efficacy. Athletes who exclusively construe themselves as sportspeople may display inefficient coping in response to non-sporting participation which has the potential to lead to burnout (Gill, Dzewaltowski, and Deeter, 1988). A loss of identity lead to uncertainty, maladjustment, a loss of self esteem and increased cynicism towards society according to Heyman (1986).

Flett and Hewitt (2002; 2005) highlight the link between perfectionism and numerous forms of maladjustment including psychopathologies such as major depression and dysphoria. Their research indicated that athletes who were outcome orientated and focussed on mistake eradication were more likely to doubt their abilities and were more predisposed to stress, depression and anxiety. Enns and Cox (2002) determined that inflexibly high standards, a focus on avoiding error, fear of failure and harsh self criticism following failure, are other central components of maladaptive perfectionism. While the positive outcome of self-oriented perfectionistic striving is that it is linked to high standards, researchers are continuing to find that it is associated with fear of failure and concerns about making mistakes (Hill, Hall and Appleton, 2010). Khawaja and Armstrong (2005) had earlier indicated dysfunctional aspects
of perfectionism, such as obsession with mistakes and excessive striving, as being associated with poorer performance.

Athletes who are highly self critical, yet continue to achieve success inadvertently reinforce the use of dysfunctional perfectionism according to Flett and Hewitt (2005). Magnusson, Nias and White (1996) noted that psychological fatigue is a major consequence of dysfunctional perfectionism which can also lead to the utilization of maladaptive coping methods. Burns and Fedewa (2005) recorded individuals who exhibited dysfunctional perfectionism to be more likely to display maladaptive coping methods in response to stress while Anshel and Mansouri (2005) identified that athletes, who were overly concerned with mistakes, were highly self critical and causally attributed their failure to internal factors.

Coaches and athletic trainers have also reported high levels of stress and potential for burnout as a result of the high degree of personal investment they make in their athletes (Kelley, Eklund, and Ritter-Taylor, 1999). This indicates that burnout is not confined to sporting participants, but also those charged will the responsibility of aiding athletes to succeed (Woodman and Hardy, 2001). McLaine (2005) reported that feelings of inadequacy as a trainer, as well as perceptions of non-appreciation, lead to mounting stress and a loss of passion for their profession. Burnout has also been widely reported in non-sporting and organizational settings, as reported by Gwede, Johnson, Roberts and Cantor (2005) and Burke and Mikkelsen (2006).

The role of coping has been explored by Hill, Hall and Appleton (2010) who concluded that different coping mechanisms appear to explain the differing relationships between perfectionism (maladaptive versus adaptive) and burnout. This corresponds to the research undertaken by Chen, Kee, Chen and Tsai (2008) who highlighted the need to keep in mind the two types of perfectionism in coaching and psychological interventions.

**Anxiety and Sporting Performance**

Anxiety is an ever-present factor in elite sport (Jones, 1995) and according to Jackson, Kimiecik, Ford and Marsh (1998), is the antithesis of the flow state, as it results from athletes’ perceptions of challenges outweighing their skills and abilities. High levels of anxiety are considered to have a negative impact on functioning, causing psychological distraction and contributing to physiological stress such as tremors and muscle tightness (Mahoney and Meyers, 1989). Concerns regarding current form, game characteristics, selection, fitness and injuries and impending competition are factors noted as severely encroaching on success (Raedeke and Smith, 2004).

**AIMS AND HYPOTHESES**

The aim of the current study was to explore the role of coping, in both its adaptive and maladaptive forms, as mediators of the relationship between burnout and espoused antecedents.

The function of perfectionism, stress, anxiety and athletic identity in relation to burnout will be described in the context of adaptive and maladaptive coping mediation. The primary
research question (RQ1) for this investigation is to ascertain if either positive or negative coping levels inhibit or augment burnout. Based on past research in the area of burnout in professional sportspeople, it is hypothesised (H1) that high levels of adaptive coping will positively mediate burnout for the predictor variables, while (H2) maladaptive perfectionism is also expected to mediate burnout; however, (H3) this relationship would theoretically serve to enhance the likelihood of burnout occurring. It is also expected (RQ2) that athletes who score higher on burnout will also display greater levels of depression.

Differences between genders and age groups on burnout prevalence and use of coping methods will be explored. No specific hypotheses are made regarding these research questions given the lack of past investigations that incorporate the investigated sports. Descriptive statistics, such as training hours, employment and or study commitments and subjective stress perceptions will also be assessed in light of athletes' scores on these questionnaires.

**METHOD**

**Participants**

Eighty-four athletes (61 female, 23 male), participating in elite team sports, took part in the study. Participants were aged 18 to 33 ($M = 23.2, SD = 3.75$) and were members of state training squads in the sports of cricket ($n = 51$), softball ($n = 4$), netball ($n = 17$), basketball ($n = 4$) and hockey ($n = 8$). Twelve athletes reported that they were suffering from an injury at the time of participation that had prevented them from fully participating in their sport. Athletes also noted their training status as being out of competition ($n = 6$), preseason ($n = 56$) or in season/competition ($n = 22$).

**Measures**

*Background Questionnaire.* The background questionnaire assessed an individual’s demographic details, sporting achievements and training status. The questionnaire also inquired about current employment and study commitments. A subjective life stress scale, measured on a 1-10 basis, was also included.

*Athlete Burnout Questionnaire* (ABQ; Raedeke and Smith, 2001). The ABQ is a sport specific measure of burnout and is applicable to the target participant pool. The questionnaire consists of fifteen items which are responded to using a five-point Likert scale of 1 (almost never) to 5 (almost always), with items 1 and 14 being reversed scored. Test retest reliability for this measure is high with reliability coefficients of .71 (reduced sense of accomplishment), .77 (devaluation) and .84 (emotional/physical exhaustion) being observed for each subscale (Cresswell and Eklund, 2006).

*Athletic Identity Measurement Scale* (AIMS; Brewer et al. 1993). The AIMS is a scale that identifies the degree to which a person identifies themselves in the athletic role. Responses on this questionnaire are rated on a 7-point Likert scale from strongly agree (7) to strongly disagree (1). Conjecture surrounds the substructure of this scale; however for the
purposes of this study, a 10-item three subscale (social identity, exclusivity and negative affectivity) version of this questionnaire will be employed. Brewer et al. (1993) report a Chronbach’s alpha of .93 and test-retest reliability of .89 for the scale.

Brief COPE (Carver, 1997). The Brief COPE is based on the 60 item (15 subscales) COPE (Carver, Scheier and Weintraub, 1989). This measure contains 28 items and 14 subscales. Responses on this measure are made on a four-point Likert scale which ranges from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). Carver reported adequate subscale reliability coefficients ranging from .50 (venting) to .90 (substance use). For the purposes of this study, subscales will be combined to represent adaptive (active coping, acceptance, positive reframing, humour, using emotional and instrumental support, planning and religion) and maladaptive coping (self-distraction, denial, venting, substance use, behavioural disengagement and self blame).

Depression Anxiety Stress Scale (Short version) (DASS-21; Lovibond and Lovibond, 1995). The DASS-21 is a reduced version of the DASS that incorporates half of the items which form the 42-item scale. The shortened version includes seven items from each subscale of depression, anxiety and stress. Responses on the DASS-21 are made on a 4-point scale that ranges from 0 (did not apply to me at all) to 3 (applied all of the time or very much) and are made with regards to how much each statement is applicable to the participant over the previous week. Higher scores suggest that the individual was plagued by higher levels of stress, anxiety and depression. Internal consistency coefficients for a normal population sample are reported by Lovibond and Lovibond (1995) to be Depression .91; Anxiety .84 and Stress .90.

Frost Multidimensional Perfectionism Scale - Reduced (FMPS-R, Frost, Marten, Lahart, and Rosenblate, 1990). The FMPS-R (17 items, two subscales) is a reduced version of Frost et al.’s (1990) Multidimensional Perfectionism Scale (35 items) generated using psychometric analyses by Khawaja and Armstrong (2005). The dysfunctional subscale (DYS-P; 11 items) incorporates items from the original Concerns over Mistakes, Doubts about Actions and Personal Standards factors, while the functional perfectionism dimension (FUN-P; 6 items) includes six of the seven original items from the original subscale. Reliability analyses yielded a Chronbach’s alphas for the FMPS-R (α = .90), DYS-P (α = .91) and FUN-P (α = .84) which were noted to be acceptable by Khawaja and Armstrong (2005).

Procedure

Questionnaires were distributed to athletes through their respective sporting bodies at group training sessions or were emailed to players via their sport’s administration. Approximately 450 athletes were provided with either an electronic or hard copy version of the questionnaire with a resulting 18% response rate. Emailed questionnaires were returned either directly to the researcher’s email address or were sent through the organization and were printed out with the email file deleted for confidentiality purposes. Hard-copy questionnaires were collected by the researcher personally from netball players and some cricketers, while the remaining questionnaires were returned via reply-paid post.
RESULTS

Descriptive Statistics and Normative Comparisons

Tables 1-3 present descriptive statistics and demographics for this study population which highlights the substantial commitment of participants to their sport and or work/study. Additionally, it was noted that the earnings of 34 athletes was the primary income for their respective households.

Table 1. Mean Training, Travel, Work/Study Commitments & Subjective Stress Perceptions

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training hours per week</td>
<td>11.94</td>
<td>4.98</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Sessions per week</td>
<td>5.89</td>
<td>2.98</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Average travel to/from training pw (hrs)</td>
<td>3.42</td>
<td>2.76</td>
<td>.15</td>
<td>16</td>
</tr>
<tr>
<td>Work/study per week (hrs)</td>
<td>31.77</td>
<td>15.64</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Subjective stress level</td>
<td>5.85</td>
<td>1.81</td>
<td>2</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 2. Highest Level of Representation Reported by Athletes (By Sport)

<table>
<thead>
<tr>
<th>Sporting Group</th>
<th>Nat. Open</th>
<th>National Youth</th>
<th>National Underage</th>
<th>State Open</th>
<th>State 2nd X1/A</th>
<th>State Underage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cricket</td>
<td>15</td>
<td>8</td>
<td>3</td>
<td>20</td>
<td>3</td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td>Netball</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Softball</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Basketball</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Hockey</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: The above data displays the highest level of sporting achievement athletes have reached during their respective careers.

Table 4 presents the means and standard deviations of the study and normative populations for the included questionnaires. Single sample t-tests were conducted to ascertain significant differences between the sample and normative populations. These comparisons suggested participants in the current study reported similar levels of burnout to the general athlete populace. Female athletes’ scores on the DASS-21 did not significantly differ from the normative data, however male athletes scored significantly higher on the stress and anxiety components of the questionnaire. Deviations on the use of functional and dysfunctional perfectionism from the general population were also noted.
Table 3. Work and Study Commitments of Elite Athletes

<table>
<thead>
<tr>
<th>Sport</th>
<th>Type of work</th>
<th></th>
<th></th>
<th>Type of study</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F T</td>
<td>PT</td>
<td>Casual</td>
<td>None</td>
<td>FT</td>
<td>PT</td>
</tr>
<tr>
<td>Cricket</td>
<td>28</td>
<td>3</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Netball</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Softball</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hockey</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Basketball</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: FT = full time, PT = part time, Ext = external study, Not = not working/studying at all. One athlete reported multiple jobs (1x casual and 1x part time). For the purposes of this study, the higher order or part time job was recorded as their work status.

Table 4. Sample and Normative Means for Questionnaire Subscales

<table>
<thead>
<tr>
<th>Questionnaire and Subscale</th>
<th>Sample</th>
<th>Normative</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>t</td>
</tr>
<tr>
<td>DASS-21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>7.57</td>
<td>8.22</td>
<td>6.55</td>
<td>7.01</td>
<td>.592</td>
</tr>
<tr>
<td>Female</td>
<td>7.97</td>
<td>8.45</td>
<td>6.14</td>
<td>6.92</td>
<td>1.68</td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.35</td>
<td>7.60</td>
<td>4.60</td>
<td>4.80</td>
<td>2.36</td>
</tr>
<tr>
<td>Female</td>
<td>6.26</td>
<td>6.59</td>
<td>4.80</td>
<td>5.03</td>
<td>1.73</td>
</tr>
<tr>
<td>Stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13.74</td>
<td>8.16</td>
<td>9.93</td>
<td>7.66</td>
<td>2.40</td>
</tr>
<tr>
<td>Female</td>
<td>12.46</td>
<td>8.5</td>
<td>10.29</td>
<td>8.16</td>
<td>1.99</td>
</tr>
<tr>
<td>FMPS-R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysfunctional</td>
<td>29.30</td>
<td>6.44</td>
<td>33.42</td>
<td>10.99</td>
<td>-5.85</td>
</tr>
<tr>
<td>Functional</td>
<td>23.20</td>
<td>4.32</td>
<td>21.05</td>
<td>5.42</td>
<td>4.56</td>
</tr>
<tr>
<td>AIMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Identity</td>
<td>5.73</td>
<td>0.66</td>
<td>5.43</td>
<td>1.24</td>
<td>4.21</td>
</tr>
<tr>
<td>Exclusivity</td>
<td>4.12</td>
<td>1.18</td>
<td>3.99</td>
<td>1.51</td>
<td>1.00</td>
</tr>
<tr>
<td>Neg. Affect.</td>
<td>4.97</td>
<td>1.40</td>
<td>5.48</td>
<td>1.47</td>
<td>-3.33</td>
</tr>
<tr>
<td>Brief-COPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive C</td>
<td>17.39</td>
<td>4.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maladaptive C</td>
<td>9.93</td>
<td>3.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RSA</td>
<td>2.30</td>
<td>0.65</td>
<td>2.37</td>
<td>0.76</td>
<td>-0.93</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>2.56</td>
<td>0.70</td>
<td>2.62</td>
<td>0.86</td>
<td>-0.80</td>
</tr>
<tr>
<td>Devaluation</td>
<td>1.95</td>
<td>0.72</td>
<td>2.02</td>
<td>0.88</td>
<td>-0.85</td>
</tr>
</tbody>
</table>

Note: *p<.05; **p<.001. RSA = reduced sense of accomplishment. DASS-21 subscales reported in respect to gender for normative comparison. No normative data was available for the Brief COPE; range of responses for adaptive coping was 8-32, and for maladaptive coping was 6-24.

Gender and Age Comparisons

Age groups (18-25 and 26-33) were computed for these analyses. MANOVA revealed a significant difference between age groups on the use of dysfunctional perfectionism, F (1, 80)
Follow up pair wise comparisons revealed athletes aged 18-25 scored significantly higher than the 26-33 year old age group (mean difference = 5.431, \( p < .025 \)) following alpha level adjustment to control for error. No significant differences were found between genders or age groups for the remaining variables.

**Correlations and Mediation Analyses**

Prior to the regression analysis, correlations between variables were computed and are presented in Table 5. Depression, stress and anxiety were found to be significantly correlated with burnout. No significant correlation was identified between active coping and burnout, although there was a significant positive correlation (moderate) between burnout and maladaptive coping and dysfunctional perfectionism (high correlation).

Athletic identity was significantly correlated with depression, stress and anxiety, as well as dysfunctional perfectionism and both adaptive and maladaptive coping; but not with burnout (see Table 5), leading us to wonder whether the more exclusively the athlete identifies with the sport, the more likely he or she is to experience psychological distress and engage in a range of coping strategies, both functional and dysfunctional. Interestingly, no significant relationship was discernable between athletes’ subjective stress perceptions and their responses on the DASS-21 stress subscale, \( R = .073, \text{ns} \).

A hierarchical multiple regression analysis reaffirmed that active coping was not a significant mediator of burnout. Independent variables were entered in two blocks, followed by the mediator, as presented in Table 6. This was done so as to reflect the expected degree to which variables would contribute to the models. Standard regressions were conducted to isolate any significant independent predictors of burnout. This identified that stress, \( R^2 = .133 \), adjusted \( R^2 = .123 \), \( F(1, 83) = 12.60, p < .01 \), anxiety, \( R^2 = .135 \), adjusted \( R^2 = .124 \), \( F(1, 83) = 12.78, p < .01 \), and dysfunctional perfectionism \( R^2 = .048 \), adjusted \( R^2 = .037 \), \( F(1, 83) = 4.17 \), \( p < .05 \) were significant independent predictors of burnout.

**Table 5. Inter-Correlations between Scales**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Dep</th>
<th>Stress</th>
<th>Anx.</th>
<th>Dys-P</th>
<th>Fun-P</th>
<th>A-C</th>
<th>M-C</th>
<th>Burnout</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI</td>
<td>.359***</td>
<td>.316***</td>
<td>.230 ***</td>
<td>.633***</td>
<td>-.041</td>
<td>.280***</td>
<td>.482***</td>
<td>.181</td>
</tr>
<tr>
<td>Dep</td>
<td>-</td>
<td>.632***</td>
<td>.741***</td>
<td>.307***</td>
<td>-.262*</td>
<td>.242*</td>
<td>.698***</td>
<td>.346***</td>
</tr>
<tr>
<td>Stress</td>
<td>-.613***</td>
<td>.271*</td>
<td>-.041</td>
<td>.238*</td>
<td>.568***</td>
<td>.316***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.194</td>
<td>-.336***</td>
<td>.116 **</td>
<td>.577***</td>
<td>.367***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dys-P</td>
<td>-</td>
<td>-.079</td>
<td>.224*</td>
<td>.494***</td>
<td>.220*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun-P</td>
<td>-</td>
<td>.099</td>
<td>-.267*</td>
<td>-.187</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-C</td>
<td>-</td>
<td>-</td>
<td>.594***</td>
<td>.171</td>
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<td></td>
<td></td>
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<tr>
<td>M-C</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.427***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: *\( p < .05 \), two tailed; **\( p < .01 \), two tailed; anxiety, depression, adaptive coping and maladaptive coping scales include transformed data. AI = Athletic Identity; Anx. = Anxiety; Dep = Depression; Dys-P = Dysfunctional perfectionism; Fun-P = Functional perfectionism; A-C = Adaptive Coping; M-C = Maladaptive coping.

Hierarchical multiple regression was also undertaken to assess the role of negative coping as a mediator of burnout. Significant correlations were identified between all variables providing conceptual support for the analysis (\( p < .05 \)). No significant mediation effects were
observed without any individual predictor beta weights of sufficient magnitude; however, trends towards this were identified.

**Table 6. Summary of Hierarchical Regression Analysis for Variables Predicting Burnout in Elite Athletes (N = 84) including Adaptive Coping**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE B</th>
<th>R² Change</th>
<th>B</th>
<th>Zero order Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>.012</td>
<td>.009</td>
<td>.166</td>
<td>0.182</td>
<td>0.365</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.091</td>
<td>.051</td>
<td>.166</td>
<td>0.229</td>
<td>0.367</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athletic Identity</td>
<td>-0.017</td>
<td>.088</td>
<td>.014</td>
<td>-0.027</td>
<td>0.181</td>
</tr>
<tr>
<td>Dys-P</td>
<td>.010</td>
<td>.011</td>
<td>.014</td>
<td>0.122</td>
<td>0.220</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive Coping</td>
<td>.010</td>
<td>.015</td>
<td>.005</td>
<td>0.079</td>
<td>0.171</td>
</tr>
</tbody>
</table>

Note: Dys-P = Dysfunctional Perfectionism. Standardized and unstandardized beta coefficients taken from final regression model. No β weights are asterisked due to non significant results.

Again, the entry of variables was ordered on a conceptual basis. Table 7 includes the final model coefficients for negative coping mediation. Sobel test results are not reported for either hierarchical procedure, as a consequence of the non-significant findings. Separate regressions were conducted for both adaptive and maladaptive coping for males and females. Neither coping methods were identified as significant mediators of burnout for either male or female athletes.

**Table 7. Summary of Hierarchical Regression Analysis for variables predicting burnout in elite athletes (N = 84) including maladaptive coping**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE B</th>
<th>R² Change</th>
<th>β</th>
<th>Zero-order Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>.009</td>
<td>.009</td>
<td>.166</td>
<td>.137</td>
<td>.365</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.054</td>
<td>.055</td>
<td>.166</td>
<td>.137</td>
<td>.367</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athletic Identity</td>
<td>-.038</td>
<td>.087</td>
<td>.014</td>
<td>-.059</td>
<td>.181</td>
</tr>
<tr>
<td>Dys-P</td>
<td>.006</td>
<td>.011</td>
<td>.014</td>
<td>.068</td>
<td>.220</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Coping</td>
<td>.061</td>
<td>.036</td>
<td>.030</td>
<td>.255</td>
<td>.416</td>
</tr>
</tbody>
</table>

Note: Dys-P: Dysfunctional Perfectionism. Standardized and Unstandardized beta weights taken from final model of analysis. No β weights are asterisked as no significant results were identified.

**DISCUSSION**

**Evaluation of Hypotheses**

The aims of this study were to explore the roles of adaptive and maladaptive coping methods as mediators of burnout. Contrary to our predictions, no significant findings were evident that supported either maladaptive or adaptive coping as undertaking a mediating
function. These findings are inconsistent with the outcome expectancies purported by the cognitive affective model of burnout (Smith, 1986) which has guided research in this field. Maladaptive coping strategies were found to be associated with increased levels of psychological and physiological distress by Day and Livingstone (2001), while Thornton (1992) ascertained that in a managerial environment, the use of maladaptive coping strategies increased as burnout levels increased, while adaptive coping levels remained constant. Thornton’s findings suggested that maladaptive coping methods were used as adjuncts to, and were implemented, and when adaptive methods were insufficient or ineffective for certain stressors.

In this study, mediation analyses did not discern model significance for males or females for either positive or negative coping methods. Research by Lai and Wiggins (2003) suggested that males tended to report higher levels of burnout than females across competitive season testing. The small sample size and uneven distribution of players across genders in the current study may have impinged on the ability for this assertion to be supported and is a limitation evident in the current research.

The second hypothesis explored in this study was that a relationship would exist between depression and burnout. A significant positive correlation between the two factors supported this hypothesis. This is consistent with empirical findings such as Kentta et al’s (2001) study of overtraining syndrome which ascertained that high degrees of mood disturbance, including depression, were associated with staleness of performance and burnout. Smith’s (1986) model also noted that depression was a state intrinsically related to burnout. It must be emphasised that such findings do not prove that depression is a cause of burnout, but rather it may be that it is the result of burnout.

**Prediction of Burnout**

Independent regressions for dysfunctional perfectionism, anxiety and stress revealed them to be significant predictors of burnout for the sample. Flett and Hewitt (2005) asserted that the display of dysfunctional perfectionism in elite athletes could result in rumination over past failures and an inability to recognise unobtainable goals. According to Flett and Hewitt (2005), following failure, dysfunctional perfectionists are predisposed to burnout as a consequence of their expectations, fear of failure and their inability to cope with, and accept, less than perfect performances.

Lovibond and Lovibond (1995) contended that anxiety is representative of substantial worry, apprehension, panic and negative physiological responses, such as trembling and sweaty palms. Wiggins et al. (2006) indicated that athletes, who reported their anxiety to be debilitative, consistently scored higher on the reduced sense of accomplishment subscale of the athlete burnout questionnaire, across testing periods. Anshel and Sutarso (2006) highlight that it is not only an individual’s levels of chronic stress which contributes to burnout, but also their incapacity to deal with the stressors.

Athletic identity was not found to be a significant predictor of burnout in the current investigation. This finding is inconsistent with previous research which highlighted the negative effects of an exclusive identity as an athlete. Sense of self worth reduction on the basis of disparity between perceived ability and performance is evidence of the detrimental

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effects of identity exclusivity (Brewer et al., 1993; Hale, James, and Stambulova, 1999). Measurement issues, however, may possibly have contributed to this contrary finding.

Sample and Normative Comparisons

Overall, the sample group was deemed to be representative of the normative athlete population (Cresswell and Ecklund, 2006; Hale et al., 1999). The current study noted gender differences in the reporting of anxiety and stress levels, with males reporting significantly higher mean ratings than the general populous. This is consistent with previous research comparing athlete and non-athlete student populations. Wilson and Pritchard (2005) discerned higher stress and anxiety levels in athletes in comparison to non-athletes, due to the pressures of taking part in elite competitive sport. Sport-specific stressors have the potential to compound those stressors experienced as a consequence of study or employment, and this is consistent with research implicating the overstretching of personal resources (Burke and Mikkelsen, 2006).

Participants in the current study reported significantly lower levels of dysfunctional perfectionism and significantly higher levels of functional diligence. This is an encouraging sign, as it suggests that these athletes are less likely to be highly self critical and/or to set excessive and unachievable goals, and more likely to gain satisfaction from their sporting participation. Participants did not display levels of athletic identity that varied from the normative data and as previously identified, athlete experience of burnout was not different from the average elite sportsperson. The non-availability of normative data for the Brief COPE prohibited comparison of the sample with the general population. Thornton (1992) suggested that adjunctive use of maladaptive and adaptive methods together may assist an individual to cope with stressors and subsequently provide explanation for correlations between adaptive coping and burnout. This may also be the case in the current study; however future research is necessary to clarify this matter.

Age Differences

A significant difference was identified between age groups on the reporting of dysfunctional perfectionism. Athletes, aged 18-25, displayed higher levels of dysfunctional perfectionism than elite participants, aged 26-33, indicating they are more likely to hold inflexibly high standards that, when not met, results in harsh self criticism. Younger athletes also reported greater degrees of fearing failure and striving to avoid error and deriving greater degrees of self-worth from their performance. These results can be viewed in the context of younger athletes striving for higher representative honours and putting pressure on themselves to do so. It could also be that older athletes may have already achieved their goals and consequently are not putting great pressure on themselves to continually refine their performances. Flett and Hewitt (1998; 2005) note that the ramifications of dysfunctional perfectionism are most observable when success is not attained, with players more likely to indulge in self criticism and other maladaptive methods. Interestingly in 2002, Koivula, Hassmen and Fallby, who worked with elite athletes, determined that it was the athletes who had a high self esteem who tended to have more positive perfectionism, whereas for
those athletes whose self esteem was linked to their competence, it tended to be more a negative perfectionism.

**Reflections and Suggestions**

A key limitation to the current investigations included the low level of burnout identified in the participant group. Few athletes reported burnout levels that exceeded the scale mean, reducing the capacity for this study to ascertain any mediational relationships between the predictor variables, coping methods and burnout syndrome. Due to data collection constraints, the fact that the majority of athletes \( (n = 62) \) were undertaking preseason training or no formal training during the period this study was undertaken was unavoidable. It would be expected that burnout levels would be lowest during this period and highest at the end of the competitive season rather than preseason sessions. This is supported by Lai and Wiggins’ (2003) comparison of burnout levels across competitive seasons in first division collegiate soccer players. This may have also contributed to the positive and abnormal correlation evident between adaptive coping and the burnout scores. It could also be that people who suffer from burnout are not deficient in internal resources, but rather as Roberston and Gow (2011) indicate, they have drawn on those and have exhausted those resources. In this sample, the athletes, like other non-athletes, would continue to draw on their internal resources in order to cope and achieve their goals.

Given the small sample used in the analyses, caution must be used when interpreting the aforementioned results. Hair, Black, Babin, Anderson and Tatham (2006) reported that the acceptable minimum \( N \) required for a robust hierarchical multiple regression is one hundred participants. As only 84 participants from team sports (including an uneven distribution across genders) were included in this study, the results may not be applicable to all sporting groups competing in the elite environment.

Limitations are also evident with respect to the use of the Brief COPE and AIMS in this study. Velicer and Fava (1998) note the need for all factors extracted from the analysis to include a minimum of three items as variables cannot always be expected to act in the anticipated manner. The Brief COPE fails to meet such criteria. Fabrigar, Wegener, MacCallum and Stahan (1999) indicate that the use of a small ratio of variables to factors may distort the accuracy of findings. MacCallum Widaman, Zhang and Hong (1999) clarify that smaller sample sizes are adequate should all communalities exceed .6. This is not the case with the Brief COPE and as Carver’s (1997) sample included 168 participants, it is apparent that the validity of the scale is insufficient. No normative data was produced for the Brief COPE. As such, the degree of coping used by athletes in the current study was not discernable.

Past research has highlighted the role that high athletic identity plays in burnout; however this was not the case for the participants in the present study. Psychometric analysis of the AIMS has produced varying levels of support for the instrument, with Hale et al. (1999) indicating that the 10-item questionnaire is possibly not the most accurate and reliable measure of the three latent constructs and recommending the inclusion of additional items and the wording of a number of pre-existing questions.

The current study provides evidence that reinforces past findings regarding the negative effects of dysfunctional perfectionism, stress and anxiety on well being and athletic
performance. This study also contributes data to the growing pool of research that highlights environmental and organisational factors which detract from the potential for athletes to experience flow and perform at their peak. The study of sports athletes who are not often addressed in psychological research has provided an additional avenue of enquiry and the inclusion of female cricketers in the research may assist them in improving their understanding of the contribution of psychology to their performances. This also appears to be the first study which has incorporated the FMPS-R in an athlete population. Commitments and stressors additional to those imposed by elite sport have also been identified.

**CONCLUSION**

This study did not confirm the anticipated differential roles of adaptive and maladaptive coping as mediators of burnout; although the low level of burnout in the athletes can be viewed in positive terms, given that the majority of them were in preseason fitness and skills training at the time of data collection. High burnout so early in the season would have been of substantial concern. The ability to ascertain predictive relationships for stress, anxiety and dysfunctional perfectionism with burnout, considering the small variance afforded to the analyses due to the lack of burnout reported by athletes, highlights the importance of this association.

The current study serves as an initial investigation into coping and burnout within the participant group assessed in this study. Further research is needed to clarify the role of adaptive and maladaptive coping methods for all Australian athletes, although it may be preferable to utilise the Athlete Burnout Questionnaire utilised in this study, together with the Maslach burnout/engagement measure (Maslach and Leiter, 1997). (See the Solcova and Kebza chapter on Personality Characteristics Related to Resilience: Seeking for a Common Core in this book for the benefits of exploring both aspects of burnout and engagement in research on burnout).

Research seeking to confirm coping as a mediating factor of burnout should incorporate a wide base of athletes from sports - both team and individually orientated. Comparisons between sports should also be incorporated. Alternative coping measures should be considered such as the revised COPE (Zuckerman and Gagne, 2003) or the Athletic coping skills inventory (Smith, Schultz, Smoll, and Ptacek, 1995). Additional examination and modification of the AIMS is paramount for the accurate measurement of athletic identity. Gender specific items should be considered because the contribution of these variables for males and females, as the inventory stands now, may influence the results on this variable. Research should also examine other potential mediators, such as resilience or trait hardiness, which are viewed to bolster one’s capacity to deal with negative events.

**ACKNOWLEDGMENTS**

The authors would like to acknowledge and thank the athletes and sporting bodies who participated in this study for their assistance and cooperation.
REFERENCES


Chapter 12

THE RELATIONSHIP BETWEEN EGO STRENGTH, COPING STYLE AND ADJUSTMENT TO MARITAL SEPARATION

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²Consulting Psychologist, Regional Australia

ABSTRACT

Marital separation constitutes a major stressor for most people who experience it, and can even be extremely harrowing and traumatic for some individuals. In this study, the roles of two types of inner personal resources in the adjustment to marital separation were investigated, to determine which might have the stronger association with predicting adjustment outcomes. Adjustment was evaluated using scales that measured levels of depression, satisfaction with life, self-rated adjustment and impact of the separation event. Participants were 97 recently separated males and females, who had been in their relationships for an average of almost nine years and had been separated for an average of 16 months. A significant relationship was found between ego strength and adjustment, and to a lesser degree, adaptive coping style and adjustment, highlighting the influence of internal personal resources in adjusting to difficult life circumstances. The results of this study support the idea that personality and inner personal resources are more important than learned strategies when it comes to adjusting to, coping with, and successfully surviving through, a major stressor such as a marital separation.

Keywords: Marital Separation, Adaptive Coping, Ego Strength, Coping Style, Adjustment

INTRODUCTION

Descriptive research has shown that certain personality factors, coping styles, cognitive flexibility, tolerance for ambiguity, and social supports appear to contribute to resilience.
However, there have been few longitudinal studies examining trajectories of adaptation, survival, recovering and thriving, and their predictors (Butler et al., 2007). The divorce literature emphasises the importance of two types of inner resources, in addition to material resources: psychological resources and coping strategies (Andrew and Robinson, 1991; Booth and Amato, 1992; Cohen and Dekel, 2000; Demo and Acock, 1996). According to Pearlin and Schooler (1978), psychological resources are the personality characteristics that people may draw upon to foster resilience and survival when faced with threats and threatening events, while coping strategies are the cognitions, perceptions, and behaviours that they actually use when contending with life challenges. Pearlin and his colleagues (e.g., Pearlin, Lieberman, Menaghan and Mullan, 1981) have also suggested that serious and chronic problems are likely to lead to further stressors over time.

The loss of a partner through bereavement is an example of a life experience which, unlike many other stressful life events, cannot be altered by the coping efforts of survivors (Wortman and Boerner, 2007). Similarly, the loss of a partner through marital separation is unlikely to be affected by coping efforts. The major coping task faced by both bereaved and separated partners is to reconcile themselves to a situation that cannot be changed and to find the best way to carry on with their own lives. What remains unclear is exactly how they come to terms with what has happened, and what inner resources predict adjustment to such major losses and life changes.

When considering which individuals might better come through marital separation more easily, and adjust more quickly and sturdily, the issue of resources comes to mind. Some of these resources are external (e.g., financial resources and social supports), while some are internal (e.g., personality factors, coping style, self-efficacy and self-esteem). Some resources, both external and internal, are fixed, while others are modifiable. This research focuses on the influence of certain inner resources that are, for the most part, relatively stable in adult individuals; namely ego strength (or personal resilience) and coping style.

**Ego Strength and Resilience**

Ego strength is a construct that involves personal resilience and a predisposition to be emotionally stable and self-sufficient (Butcher et al., 2001; Grieser, Greenberg and Harrison, 1972). Individuals with high ego strength have good contact with reality, are personally resourceful, are better at making adaptations to change, and are more able to use defence mechanisms to manage their anxiety levels (Burns, 1991). High ego strength has also been found to be positively correlated with high self-esteem, locus of control, and positive forms of coping (Markstrom and Marshall, 2007). At the other end of the spectrum, people with low ego strength are less adjusted, have a weaker sense of reality, tend to worry more about their physical health, and have a limited capacity to cope when under stress, and or when having to survive threatening situations (Butcher et al., 2001; Grieser, Greenberg and Harrison, 1972; Levin, 1989). In her studies of adjustment after divorce, Thomas (1982, 1995) found that the best-adjusted participants scored significantly higher on nine dimensions of personality, including ego strength, than the poorest adjusted participants.
Coping Style

In studies of the impact of marital separation, there are wide individual differences in adjustment, some of which may reflect differences in the tendency to use particular coping strategies (Zautra, Sheets and Sandler, 1996). Although not a personality factor in the strict sense, coping style is a vitally important variable that influences an individual’s wellbeing and adjustment following difficult and stressful life events (Cohen, 2000). In a biological, evolutionary sense, the capacity to cope with environmental challenges largely determines individual survival (Koolhaas, de Boer, Buwalda and van Reenen, 2007). In this way, coping styles can really be considered as trait characteristics that are stable over time and across situations (Koolhaas, et al., 2007). Other researchers (e.g., Carver, Scheier and Weintraub, 1989, Epstein and Katz, 1992) have also regarded coping styles as stable individual dispositions, in terms of specific cognitive and behavioural responses to stressful life events. Coping is experimentally and conceptually independent of personality, but is likely to be directly affected by personality resources (Pearlin and Schooler, 1978).

Several studies have investigated the relationship between adjustment to marital separation and coping style. People experiencing marital separation and divorce are frequently dealing with multiple stressors, such as financial hardship, conflictual relationships, loneliness, and difficulties of single parenting (Compas and Williams, 1990; Demo and Acock, 1996; Garvin, Kalter and Hansell, 1993). In their study of the health of divorced individuals, Richmond and Christensen (2000) discerned that the physical and psychological health of divorcees was significantly related to the use of effective coping strategies. Stewart (2005) determined that intra-psychic factors, such as coping style, were more important determinants of post-separation adjustment than demographic or other contextual factors.

Cohen (2000) investigated coping styles as a personality resource, in relation to divorced mothers dealing with the divorce crisis, and concluded that mothers who utilised more effective coping strategies had a higher sense of coherence and wellbeing, and derived more benefit from the coping strategies they used. Another study of divorcing parents (Karpowicz, 2004) found that a significant determinant of positive post-divorce outcomes was the use of particular coping strategies. Parents who were successful in mediation differed significantly from those who were not successful on two coping strategies: seeking alternative rewards and emotional discharge, with emotional discharge being the most salient feature that differentiated the two groups. Waters (1997) examined coping style in relation to post-divorce adjustment and concluded that problem-focused coping style was positively correlated with adjustment, while more emotion-focussed coping was negatively related to adjustment.

Some studies have detected that active, rather than passive, coping strategies are more effective in the divorce situation (e.g., Holloway and Machida, 1991), while others have suggested that different modes of coping suit different situations (Cohen and Dekel, 2000). Active coping might include eliciting support from friends, making plans and taking active steps to build a new life, whereas passive coping might include avoidance, accepting the change, self-analysis or self-blame, or substance use. Zautra, Sheets and Sandler (1996) indicated that coping style was related to the level of distress following marital separation, but that coping style did not account for changes in distress over time.
**Life Satisfaction**

The literature is divided on the relationship between divorce and life satisfaction. Some studies (e.g., Michael and Ben-Zur, 2007) have found that divorced individuals scored lower on life satisfaction before the separation, than after the event. On the other hand, some prospective studies have shown that individuals who divorce tend to be less satisfied with life than married people; this is evident even before they get married, suggesting that individual differences may play a role in the kind of life events that particular people encounter (Diener, Nickerson, Lucas and Sandvick, 2002; Headey and Wearing, 1989; Marks and Fleming, 1999). While Booth and Amato (1991) found that adjustment to divorce was complete, studies by both Johnson and Wu (2002) and Hope, Rodgers and Power (1999) found long-lasting changes in distress levels amongst divorcees. Although Lucas (2005) concluded that satisfaction drops as individuals approach divorce, and then gradually rebounds over time, he also noted that the return to previous levels of satisfaction is not complete.

Since personal inner resources, especially ego strength and coping style, have been determined, in separate studies, to be closely related to levels of adjustment following major life stressors such as marital separation, the current research sought to investigate the relationship between post-separation adjustment and these two resource types.

The next aspect for consideration was how best to measure adjustment in this population. Adjustment in relation to a specific stressor, such as a marital separation, occurs across several dimensions of emotional experience and functioning. Wellbeing and adjustment are multidimensional phenomena that may best be measured through a combination of measurable factors that assess subjective distress and impact of the stressor on the individual’s life and functioning. For this reason, four different adjustment factors were measured in this study: self-rated adjustment; impact of (separation) event; depression; and life satisfaction.

**METHOD**

**Design**

The study was a retrospective, quasi longitudinal design, with measurements being taken initially, then 3 months later, and again at 12 months. Initially, two sets of variables were measured: personality variables and adjustment variables. The purpose of this first assessment was to obtain a baseline measure of each participant’s mental state in the earliest period after, or during, the stressful life experience, with which to compare their overall mental state and level of adjustment at the two follow-up points over the next 12 ensuing months (i.e., at 3 and 12 months time periods).

**Participants**

In all, 97 maritally separated people (73 separated and 24 divorced) participated in the study. Seventy-five of the participants were female and 22 were male. The average age of
participants was 37.01 years (SD = 10.03 years). Participants had been in their relationships for an average of 8.95 years, prior to the separation. Among the participants, length of separation varied from 1 week to 114 months (M = 16 months, SD = 18 months). Modal length of separation was 18 months, and the Median was 11 months. To be included in the study, separated participants had to have undergone the breakdown of a significant personal relationship or marriage, and they had to regard the separation as being a current issue for them. For example; they were undergoing divorce after a long period of ambiguous or sporadic separation; or there were restraining orders currently in place; or property settlements were still being negotiated. Eighteen participants had been separated for over 24 months. While others, who had been separated, for just as long, were screened out of the study, the cases that were retained were cases where the separation and divorce was still considered to be a currently stressful and significant issue, with unresolved problems or conflicts remaining. For example, eight participants were screened out because they had been separated for over 24 months, had been divorced many months previously and were now in new, stable relationships.

The occupational distribution of the participants ranged across several different bands, with 33% being unemployed or engaged in studies or home duties, and 3% being retired. A greater proportion of individuals were working in unskilled or semi-skilled employment (37%) and a smaller proportion were working in skilled or professional roles (27%). The majority (85%) of participants were of Australian nationality, with a further 7% being British or New Zealanders (8%).

Volunteers were excluded from participating, if they were suffering from a diagnosed psychiatric disorder. Although none of the participants reported being diagnosed by a health professional with a depressive illness, almost half of the participants attained scores on the Depression subscale of the Depression, Anxiety and Stress Scales (DASS) that indicated that they may have been suffering from depression.

### Attrition

Over the 12 month course of the research project, participants were required to complete questionnaires at baseline, three months, and twelve months. There was some natural attrition over this time, as some participants changed address, reconciled with their ex-spouse, or did not continue for other reasons. Seventy-one participants completed the second questionnaire at three months and 53 people completed the final follow-up questionnaire at 12 months (see Table 1).

### Table 1. Participation at Initial Testing, After Three Months, and After 12 Months

<table>
<thead>
<tr>
<th>Participation</th>
<th>Participants (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 (Initial Testing)</td>
<td>97</td>
</tr>
<tr>
<td>Time 2 (After 3 Months)</td>
<td>71</td>
</tr>
<tr>
<td>Time 3 (After 12 Months)</td>
<td>53*</td>
</tr>
</tbody>
</table>

Note: * Five participants did not complete the Time 2 testing.
To assess whether the participants who did not continue their engagement with the study were different in any substantial way from those who remained in the study for the entire 12 months, t-tests were conducted. Fortunately, individuals who participated through the full 12 months did not differ significantly from the individuals who did not continue beyond the initial or three month testing sessions.

Amongst the participants, there was a large range with regard to length of separation (1 week to 114 months), and although all participants asserted that the separation remained a current source of significant distress for them, it was important to check that outliers on length of separation were not scoring differently on measures of adjustment. Adjustment was measured using a self-reported indicator of adjustment, as well as scales indicating depression, life satisfaction, and impact of the event of separation. A correlational analysis revealed that there were no significant relationships between length of separation and ego strength, coping style, initial adjustment, or change in adjustment over three months, or over twelve months.

Initiation of Separation

There are numerous factors that may have an impact on the degree of distress experienced by a person who has recently separated from a partner. One important factor is that of control over the separation decision, the degree of which is known to have a positive influence on divorce adjustment (Gray and Silver, 1990; Kitson, 1982; Wallerstein, 1986). While initiators have been found to be less attached to their ex-spouses after divorce (Kitson, 1982) and have better quality of life following divorce (Wallerstein, 1986), they also often experience strong feelings of guilt (Weiss, 1979). In addition, the timing of distress and recovery may be different for initiators and non-initiators (Kitson, 1992). In the current study, the possibility that initiation of the separation may have influenced initial levels of adjustment was explored. Of the 71 participants, who completed the first follow-up questionnaire, 48 indicated that the separation had been initiated mutually or by themselves; 20 indicated that their partner had initiated the separation; and 3 did not indicate either way. Independent-groups t-test analyses showed that although there was a trend for participants, whose partners had initiated their separations, to display less adjustment to the separation event than participants who had initiated the separation themselves or mutually with their partners, only satisfaction with life at initial follow-up was significantly different between the two groups, $t$ (66) = 3.17, $p = .002$.

Personality Measures

_Ego Strength._ Ego strength was measured using the MMPI-2 (Hathaway and McKinley, 1989) Ego Strength subscale was developed by Barron (1953) from a combination of existing items in the original MMPI scale. All of the participants completed this scale. The MMPI-2 (Hathaway and McKinley, 1989) is the most widely used personality test in the world (Piotrowski and Lubin, 1990), and this subscale consists of 47 items, with forced-choice True or False responses. Example items include: “I find it hard to keep my mind on a task or job” and “I seldom worry about my health.” The MMPI-2 Ego strength subscale is a good measure
of adaptability, resiliency, personal resourcefulness, and effective functioning, and is also a good general indicator of psychological health and adjustment (Butcher et al., 2001).

**Coping Style.** Coping style was assessed using the Brief Cope (Carver, 1997), which assesses several responses known to be relevant to adaptive and avoidant coping. The scale was designed with questions that were anchored to the ways in which an individual had been coping with a particular stressor (in this case, the marital separation). A 28 item, self-report measure of coping style, the Brief COPE is a brief form of the COPE Inventory (Carver, Scheier, and Weintraub, 1989). The Brief COPE consists of 14 subscales, each having two items. Examples of items from the Brief COPE include: “I’ve been getting emotional support from others”; and “I’ve been blaming myself for things that happened.” Response choices are on a 4-point scale, ranging from one (I haven’t been doing this at all) to four (I’ve been doing this a lot).

The subscales measure both potentially dysfunctional and adaptive responses to stressors, including: self-blame; denial; behavioural disengagement; acceptance; planning; humour; positive reframing; and substance abuse. Data demonstrating the psychometric properties of the Brief COPE were derived from a larger study of community residents who were recovering from the effects of a natural disaster, Hurricane Andrew (David et al., 1996; Ironside et al., 1997). Although each of the subscales consists of only two items, their reliabilities have been shown to be moderately acceptable, with Cronbach’s alphas ranging from .50 to .90, and most registering above .60 (Carver, 1997). Data from a factor analysis of the larger COPE Inventory (Lyne and Roger, 2000) was used to determine which subscales could be used in this study to assess Adaptive and Avoidant Coping. The subscales used to measure Adaptive Coping were: Active coping; Positive reframing; Planning; and Acceptance. The subscales that were used to measure Avoidant Coping were: Denial; Behavioural disengagement; Substance Use; and Self-Blame. In the current study, internal consistency was found to be acceptable for both scales (Adaptive Cronbach’s α = .68; Avoidant Cronbach’s α = .70). Also in the current study, estimates of reliability were not markedly improved by deleting any of the subscales on either combined scale, so all were retained.

**Adjustment Measures**

Adjustment was measured using four scales, which broadly assessed general wellbeing and adjustment to the separation event. Two of the scales measured depression and satisfaction with life. These scales were not anchored to any specific event. Adjustment to the separation event itself was measured through a self-rated Likert scale and a scale measuring the impact of the event.

**Life Satisfaction.** Life satisfaction was considered to be an important measure of general adjustment and was assessed using the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larson, and Griffin, 1985). A five item self-report measure of general life satisfaction, the SWLS, includes items such as: “In most ways my life is close to ideal” and “I am satisfied with my life”. The scale asks respondents to rate their level of agreement on a seven-point scale, with 1 equating to “strongly disagree” and 7 indicating a response of “strongly agree”, thus yielding a maximum score of 35. The SWLS has been demonstrated to have good reliability and internal consistency (Diener et al., 1985). Inter-item consistency
was found to be consistently positive and correlations ranged from .44 to .81. Reliability was demonstrated with a two month test-retest correlation coefficient of .82 and a coefficient alpha of .87 (Diener, et al., 1985). Test-retest reliability for the SWLS was also demonstrated in the current study, with a correlation coefficient after three months of .76, and .66 after 12 months being reported. There is also previous good evidence of convergent validity, and the scale correlates positively with other subjective wellbeing scales, self-esteem, and interviewer ratings of life satisfaction (Diener at al., 1985; Pavot and Diener, 1993; Pavot, Diener, Colvin, and Sandvik, 1991).

**Depression.** To comprehensively assess wellbeing, depression was also measured, using the Depression subscale of the Depression, Anxiety, and Stress Scales (DASS) (Lovibond and Lovibond, 1996). Previous studies have focussed on depression in the assessment of wellbeing and adjustment in relation to traumatic events such as marital separation (e.g., Cartwright, 1986, 1991, 1996; Cartwright, Lloyd, Knight and Trenholme, 1984; Punamaki, 1998; Siegel, 1996; Trenholme, Cartwright, and Greenberg, 1984). The DASS Depression subscale consists of 14 items, for which the response choices are rated on a 4-point scale, from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). Respondents are asked to indicate how much the various statements applied to them over the previous week. These statements include: “I felt down-hearted and blue” and “I couldn’t seem to experience any positive feeling at all”. The DASS is a widely used, well-normed, and reliable set of scales, and the Depression subscale is appropriate for measuring both current state and change in state over time on the depression dimension (Lovibond and Lovibond, 1996). The Depression subscale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia (Lovibond and Lovibond, 1996). The subscale has been shown to have high internal consistency and to yield meaningful discriminations in a variety of settings. A key strength of the subscale is its ability to assess depression in a brief and psychometrically sound manner (Brown, Chorpita, Korotitsch, and Barlow, 1997).

**Self-Rated Adjustment.** Self-rated adjustment was assessed through the use of a scale rating adjustment from one to ten. This scale was anchored to the separation event. This 10 point scale measured the individual’s own estimate of their adjustment to the separation, with 1 representing “not over it at all” and 10 representing “fully recovered”. Test-retest reliability for this scale was demonstrated in the current study, with a correlation coefficient after three months of .58, and .75 after 12 months.

**Impact of (Separation) Event.** Impact of the separation was measured using the Impact of Event Scale – Revised (IES-R) (Horowitz, Wilner, and Alvarez, 1979; Weiss and Marmar, 1997). The IES-R is one of the most widely used self-report measures to assess the frequency of intrusive and avoidant phenomena associated with the experience of a particular event, such as survival of an assault or wartime experience. A self-report, 22 item measure, it assesses common subjective distress in response to a stressful life event, such as intrusive thinking, avoidance, and hyperarousal. Examples of items from the IES-R include: “Any reminder brought back feelings about it” and “I was aware that I still had a lot of feelings about it, but I didn’t deal with them.” Response choices are on a 4-point scale (0, 1, 3, 5) ranging from “Not at all” (0) to “Often” (5).

The IES-R has been found to be useful in following the trajectories of people responding to specific traumatic life events over long periods of time, since it can easily be used repetitively and anchored to the same psychological trauma (Horowitz et al., 1979). The IES-
R has a large literature and has been employed in many studies of natural disasters, criminal victimisation, accidents, cancer, and emergency service work.

The IES-R possesses good psychometric properties (Joseph, 2000; Weiss and Marmar, 1997). Internal consistency has been demonstrated to be good for the total IES (Cronbach’s α = .86) (Horowitz et al., 1979), and for the three subscales (Intrusion; Avoidance; and Hyperarousal) (Cronbach’s α = .84 to .91) (Weiss and Marmar, 1997). Internal consistency was also demonstrated in the current study for the total IES (Cronbach’s α = .90). Test-retest reliability has also been demonstrated with test-retest correlation coefficients of .51 to .59 after 1.5 years, and .89 to .94 after six months (Weiss and Marmar, 1997). Test-retest reliability was also demonstrated in the current study, with a test-retest correlation coefficient of .73 after three months, and .75 after 12 months. There is good prior evidence for convergent validity of the IES-R as a measure of subjective distress, with significant correlations between it and various measures of psychological distress (e.g., BDI, STAI, GHQ, and SCL-90) (e.g., Bryant and Harvey, 1996; Creamer, Burgess, and Pattison, 1992; Foa, Riggs, Dancu, and Rothbaum, 1993; Joseph et al., 1996), as well as increased physiological responsivity (e.g., Orr, Pitman, Lasko, and Herz, 1993). The IES-R is considered a good index of ongoing cognitive and behavioural adjustment (Joseph, 2000). With high internal consistency for the total IES, and this reliability not being improved by deleting any subscale, it was decided to combine the three subscales into one scale measuring overall impact of event.

**Procedure**

Information for this study was gathered entirely through the distribution of questionnaires by mail to people in the community who volunteered in response to public notices, media announcements and advertisements. Potential participants were invited to take part in a study that would “explore the experiences and adjustment of people who have experienced a marital separation”. Initial contact was made with the researcher by telephone or email. The researcher then screened the participants via a brief telephone interview to ensure their suitability for the study. Individuals who had been long-separated, and who no longer considered the separation to be a current emotional issue in their lives, were not invited to participate. Individuals, who were aware that they had been diagnosed with a psychiatric disorder or who were taking regular sedative or hypnotic medication, or high doses of antidepressants, were unable to participate.

**RESULTS**

**Data Cleaning and Screening**

Data were examined to check for patterns of missing data, and this was not found to be systematic for any of the variables. Missing data occurred in a random pattern across all questionnaires, with occasional items having been missed or left incomplete by participants. Where this occurred for one item of a scale, a mean substitution technique was utilised,
whereby a replacement value was imputed from that participant’s mean score on available items in that particular scale.

Data were examined for normality and all variables were found to be normally distributed, with the exception of months of separation which was positively skewed (skewness value of 2.57 and kurtosis value of 9.20). This was to be expected, as participants had been recruited who were recently separated, although for some who participated and had been separated longer, the separation remained a current issue.

Scores on each scale were examined for univariate outliers, using visual inspections of distribution histograms and stem-and-leaf plots. On months of separation, there were two outliers who had been separated for more than 60 months. On Ego Strength, there were two outliers who scored 10 or below. These scores were considered within the normal range of scores for this scale, and their inclusion did not significantly alter the results.

Significance Levels

All statistical analyses conducted for this study were evaluated using a reasonably conservative significance level of \( p < .01 \), in order to control for Type 1 error in conducting multiple tests. This significance level indicates that there is only a 1% likelihood that this result could have been found by chance alone. The actual significance levels are reported in the tables and asterisks denote those analyses that were found to be statistically significant at the level of \( p < .01 \).

Adjustment Change over Time

Table 2 displays the average scores for participants on each of the descriptive and adjustment variables, at each of the three time points of the study. Repeated measures ANOVA analyses were performed to determine differences in depression, satisfaction with life, self-rated adjustment and impact of event across the three time points. Depression was shown by the omnibus test to not be significantly different across the three time points, \( F (2, 45) = 2.48, p = .094 \), (Hotelling’s Trace =.111), \( \eta_p^2 = .10 \). However, satisfaction with life was significantly different between the three time points, \( F (2, 45) = 6.52, p = .003 \), (Hotelling’s Trace =.290), \( \eta_p^2 = .22 \).

Again, post-hoc tests for satisfaction with life were evaluated using a conservative significance level of \( p < .01 \). These revealed a significant improvement in satisfaction with life from Time 1 to Time 2, but not from Time 2 to Time 3 (see Tables 3a; 3b).

Self-rated adjustment was shown by the omnibus test to be significantly different across the three time points, \( F (2, 45) = 7.18, p = .002 \), (Hotelling’s Trace =.319), \( \eta_p^2 = .24 \). Using the stringent significance level of \( p < .01 \), the post-hoc tests revealed a non-significant improvement in self-rated adjustment from Time 1 to Time 2, and from Time 2 to Time 3 (see Table 3). Impact of event was also shown by the omnibus test to be significantly different across the three time points, \( F (2, 45) = 9.65, p = .000 \), (Hotelling’s Trace =.429), \( \eta_p^2 = .30 \). Post-hoc tests for impact of event were again evaluated using a conservative significance level of \( p < .01 \). These revealed a significant improvement in impact of event from Time 1 to Time 2, but not from Time 2 to Time 3 (see Table 3).
Table 2. Means and Standard Deviations on Descriptives, Personality and Adjustment

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>97</td>
<td>37.01</td>
<td>10.03</td>
</tr>
<tr>
<td>Years of Marriage</td>
<td>97</td>
<td>8.95</td>
<td>7.43</td>
</tr>
<tr>
<td>Current Hours of Sleep</td>
<td>97</td>
<td>6.73</td>
<td>1.63</td>
</tr>
<tr>
<td>Ego Strength</td>
<td>97</td>
<td>29.53</td>
<td>7.41</td>
</tr>
<tr>
<td>Adaptive Coping Style</td>
<td>97</td>
<td>37.76</td>
<td>8.53</td>
</tr>
<tr>
<td>Satisfaction with Life</td>
<td>97</td>
<td>18.51</td>
<td>8.03</td>
</tr>
<tr>
<td>Satisfaction with Life</td>
<td>71</td>
<td>21.81</td>
<td>7.58</td>
</tr>
<tr>
<td>Satisfaction with Life</td>
<td>52</td>
<td>20.94</td>
<td>7.88</td>
</tr>
<tr>
<td>Self-rated Adjustment</td>
<td>97</td>
<td>6.26</td>
<td>2.58</td>
</tr>
<tr>
<td>Self-rated Adjustment</td>
<td>71</td>
<td>7.32</td>
<td>2.21</td>
</tr>
<tr>
<td>Self-rated Adjustment</td>
<td>52</td>
<td>7.42</td>
<td>2.19</td>
</tr>
<tr>
<td>Depression</td>
<td>97</td>
<td>12.32</td>
<td>11.87</td>
</tr>
<tr>
<td>Depression</td>
<td>71</td>
<td>9.19</td>
<td>9.58</td>
</tr>
<tr>
<td>Depression</td>
<td>52</td>
<td>11.51</td>
<td>12.03</td>
</tr>
<tr>
<td>Impact of Event</td>
<td>97</td>
<td>44.62</td>
<td>28.92</td>
</tr>
<tr>
<td>Impact of Event</td>
<td>71</td>
<td>31.39</td>
<td>23.79</td>
</tr>
<tr>
<td>Impact of Event</td>
<td>52</td>
<td>30.30</td>
<td>27.19</td>
</tr>
</tbody>
</table>

Table 3a. Means, Standard Deviations, F-values & Level of Significance for Depression, Satisfaction With Life, Self-rated Adjustment & Impact of Event at Times 1 & 2 (N = 47)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1 M</th>
<th>Time 1 SD</th>
<th>Time 2 M</th>
<th>Time 2 SD</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEP</td>
<td>12.10</td>
<td>11.93</td>
<td>8.38</td>
<td>8.68</td>
<td>4.51</td>
<td>.039</td>
</tr>
<tr>
<td>SWL</td>
<td>19.40</td>
<td>8.38</td>
<td>22.36</td>
<td>7.81</td>
<td>12.54*</td>
<td>.001</td>
</tr>
<tr>
<td>SRA</td>
<td>6.46</td>
<td>2.49</td>
<td>7.27</td>
<td>2.24</td>
<td>5.58</td>
<td>.022</td>
</tr>
<tr>
<td>IOE</td>
<td>41.97</td>
<td>28.34</td>
<td>31.91</td>
<td>23.64</td>
<td>13.06*</td>
<td>.001</td>
</tr>
</tbody>
</table>

Table 3b. Means, Standard Deviations, F-values & Level of Significance for Depression, Satisfaction With Life, Self-rated Adjustment & Impact of Event at Times 2 & 3 (N = 47)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 2 M</th>
<th>Time 2 SD</th>
<th>Time 3 M</th>
<th>Time 3 SD</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEP</td>
<td>8.38</td>
<td>8.68</td>
<td>11.17</td>
<td>11.58</td>
<td>3.03</td>
<td>.088</td>
</tr>
<tr>
<td>SWL</td>
<td>22.36</td>
<td>7.81</td>
<td>21.12</td>
<td>7.97</td>
<td>2.31</td>
<td>.135</td>
</tr>
<tr>
<td>SRA</td>
<td>7.27</td>
<td>2.24</td>
<td>7.44</td>
<td>2.16</td>
<td>.39</td>
<td>.535</td>
</tr>
<tr>
<td>IOE</td>
<td>31.91</td>
<td>23.64</td>
<td>29.91</td>
<td>25.86</td>
<td>.65</td>
<td>.421</td>
</tr>
</tbody>
</table>

Note. DEP = Depression; SWL = Satisfaction With Life; SRA = Self-rated adjustment; IOE = Impact of Event. *p<.01, two-tailed.

These results showed that at the three month time point, participants demonstrated improvement in adjustment, with that improvement being significant for two of the adjustment variables; however, at the 12-month point, there was a tendency for adjustment...
scores to fall back toward initial scores. This pattern was less apparent for impact of event which was anchored to the separation, with separated participants continuing to improve on this measure across the 12-month study period, albeit non-significantly.

**Prediction of Adjustment over Time**

Individual logistical regression analyses were conducted to ascertain whether adjustment could be predicted at any of the time points by the personality variables, ego strength and adaptive coping style. These analyses were evaluated using a conservative significance level of $p < .01$, in order to control for Type 1 error in conducting multiple regressions. The results of these analyses showed that the personality measures significantly predicted depression at Time 1 ($F(2,94) = 41.76, p = .000$), Time 2 ($F(2,68) = 7.21, p = .001$) and Time 3 ($F(2,49) = 8.38, p = .001$). They also significantly predicted satisfaction with life at Time 1 ($F(2,94) = 13.56, p = .000$) and Time 2 ($F(2,68) = 7.27, p = .001$), but not at Time 3 ($F(2,49) = 2.55, p < .088$). The personality variables significantly predicted self-rated adjustment at Time 1 ($F(2,94) = 15.05, p = .000$), Time 2 ($F(2,68) = 6.52, p = .003$) and Time 3 ($F(2,49) = 6.68, p = .003$). There was a different pattern with impact of event. Ego strength and adaptive coping style predicted impact of event at Time 1 ($F(2,94) = 13.65, p = .000$) and Time 3 ($F(2,49) = 9.09, p = .000$), but not at Time 2 ($F(2,68) = 4.47, p = .015$).

**Table 4. Multiple Regression Analyses Predicting Initial Adjustment at Time 1 from Personality Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ego Strength</th>
<th>Adaptive Coping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$t$</td>
</tr>
<tr>
<td>DEP</td>
<td>-.671</td>
<td>-8.87</td>
</tr>
<tr>
<td>SWL</td>
<td>.481</td>
<td>4.56</td>
</tr>
<tr>
<td>SRA</td>
<td>.492</td>
<td>5.43</td>
</tr>
<tr>
<td>IOE</td>
<td>-.476</td>
<td>-5.19</td>
</tr>
</tbody>
</table>

**Table 5. Multiple Regression Analyses Predicting Adjustment at Time 2 from Personality Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ego Strength</th>
<th>Adaptive Coping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$t$</td>
</tr>
<tr>
<td>DEP</td>
<td>-.330</td>
<td>-2.97</td>
</tr>
<tr>
<td>SWL</td>
<td>.290</td>
<td>2.61</td>
</tr>
<tr>
<td>SRA</td>
<td>.168</td>
<td>1.50</td>
</tr>
<tr>
<td>IOE</td>
<td>-.319</td>
<td>-2.77</td>
</tr>
</tbody>
</table>

The Beta Coefficient indices in Tables 4, 5 and 6 indicate the relative strength of the predictor variables, in predicting the participants’ adjustments at Time 1. The beta weights for each of the independent variables revealed that the most important predictor of adjustment was ego strength, accounting for unique variance of 67% in depression, 41% in satisfaction with life, 49% in self-rated adjustment and 47% in impact of event. At Time 2, ego strength
was still a significant predictor of depression and impact of event, and adaptive coping was a significant predictor of self-rated adjustment. At Time 3, ego strength was a significant predictor of all of the adjustment variables except satisfaction with life.

**Table 6. Multiple Regression Analyses Predicting Adjustment at Time 3 from Personality Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ego Strength</th>
<th>Adaptive Coping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>t</td>
</tr>
<tr>
<td>DEP</td>
<td>-.494</td>
<td>-3.96</td>
</tr>
<tr>
<td>SWL</td>
<td>.192</td>
<td>1.39</td>
</tr>
<tr>
<td>SRA</td>
<td>.379</td>
<td>2.95</td>
</tr>
<tr>
<td>IOE</td>
<td>-.526</td>
<td>-4.26</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The results of the multiple regressions indicated that ego strength particularly had a reasonably robust relationship with how well adjusted separated people had been at the initial testing time point. The results also suggested that separated individuals, who have low ego strength, are likely to suffer a greater impact from the separation event and feel as if they are making less progress, and coping less well, in terms of their own adjustment.

This study aimed to investigate the relative importance of personality factors in relation to adjustment following marital separation, and to the prediction of this adjustment at follow-up. The results indicated that people, with high ego strength, tended to be better adjusted at any given point in time. Although this study is not able to determine the direction of these relationships in terms of causation, the findings would be consistent with the suggestion that people with high ego strength are more resilient and less likely to become preoccupied with the stressors they face. Thus they tend to cope better with a major event such as a marital separation.

This study concluded that personality variables, especially ego strength and to a lesser degree, the tendency to use adaptive coping strongly predicted initial adjustment, and then, also predicted follow-up adjustment. Although there was a reliable and continued improvement across the whole 12 months, in relation to adjustment variables (that were specifically anchored to the separation - impact of event and self-rated adjustment), a different and unexpected pattern occurred in relation to the two more general adjustment measures (depression and life satisfaction) which were not anchored to the separation event. Mean scores on these two variables followed a pattern of adjustment over the first three months, and then in the subsequent nine months, deteriorated again and stabilised to mean scores that were closer to those found at baseline. This finding was consistent with that of Zautra et al. (1996) who noted that coping style was related to the level of distress initially following marital separation, but that it did not account for changes in distress over time. It also reflected the possibility that participants’ adjustment to the separation was a separate issue to their general wellbeing and overall outlook.

Overall, these results were consistent with the findings of Thomas’s (1982, 1995) studies of adjustment following divorce, where the best-adjusted participants scored significantly

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higher on nine dimensions of personality, including ego strength, than the poorest adjusted participants. The results also support Pearlín and Schooler’s (1978) assertions that coping is independent of personality, but directly affected by personality resources. Although ego strength showed a stronger relationship with adjustment than adaptive coping style in the current study, the results were consistent with studies by Cohen (2000), Karpowicz (2004), Waters (1997) and Holloway and Machida (1991), which all confirmed adaptive coping style to be correlated with post-divorce adjustment.

CONCLUSION

This study supports the assertion that personality and inner personal resources may be more important than learned strategies, when it comes to adjusting to a major stressor such as a marital separation. The MMPI-2 ego strength subscale, which is meant to measure a person’s adaptability, resilience, personal resourcefulness, and effective functioning (Butcher et al., 2001), certainly seemed to capture an important set of personal attributes, in relation to adjustment in this particular study of recently separated individuals.

People who are undergoing marital separation and divorce are not usually at risk in terms of their physical survival. Nevertheless, separation events are often traumatic and many aspects of their survival are, in some sense, threatened (e.g. psychological adjustment, connection with children, financial survival and place of habitation). Some people cope better than others with these issues and adjust quicker, even in the face of acrimony and drawn-out legal processes. The findings of this study support the idea that inner, personal resources, such as ego strength and coping style, are important in determining how well and how quickly that people adjust to, and cope with, adversity. Personal psychological make-up probably determines how one responds to difficulties and these responses subsequently influence the behaviour of others. The strength of their inner resources, therefore, serves as an important predictor of coping and survival, and the quality of that survival.

REFERENCES


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PART 3:

HOW HUMANS COPE WHEN ALL HELL BREAKS LOOSE
Chapter 13

FACTORS INFLUENCING DIFFERENTIAL RESILIENCY AMONG HOLOCAUST SURVIVORS

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\(^1\)Queensland University of Technology, Australia
\(^2\)Consulting Psychologist, Regional Australia

ABSTRACT

One of the most harrowing experiences reported in the last century was that of the Nazi Holocaust in Europe. How people managed to survive these experiences and get on with their lives is a testament to the resilience of the human spirit. This chapter conducts a detailed review of the current state of evidence for the moderating role of age, nature of experiences, country of origin, and loss of family/sole survivorship status on the post-war psychological adjustment/resilience of Holocaust survivors. These results are supplemented by, and contrasted with, the results of an empirical study designed to further assess and clarify the role of these demographic variables. This process leads to the consideration of resilient and vulnerable sub-groups of the Holocaust survivor population and implications for survivors of more recent analogous traumas.

Keywords: Holocaust Survivors, Demographics, Moderators, Resilience, Psychopathology

INTRODUCTION

Survivors of the Nazi Holocaust provide an inspirational example of the triumph of the human spirit over unspeakable trauma. That many survivors were able to piece together any semblance of a normal life after the Holocaust demonstrates that it is possible to experience extremely traumatic circumstances and still maintain a level of healthy psychological functioning afterwards. Some might refer to those survivors who were able to do this as ‘resilient.’ Luther and Cicchetti (2000) define resilience as a process by which an “individual displays positive adaptation despite experiences of significant adversity or trauma (p. 858).”
This represents a retrospective use of the term, whereby an individual shows they are resilient, after the fact, through the absence of subsequent severe symptomatology following a traumatic event. One way of showing positive adaptation is to evidence low or normal post-trauma levels of negative symptoms such as depression, anxiety or posttraumatic stress disorder (PTSD) symptoms.

Of interest to both researchers and clinicians in the field who examine resilience, is the identification of factors that lead to increased vulnerability to post-trauma symptomatology, or, in contrast, protect against (or at least minimise) their development (Luthar and Cicchetti, 2000). McCann and Pearlman (1990) also argued that the exploration of individual differences, in response to massive traumas, should be an important area of research within the trauma field.

More than forty years ago, several researchers suggested that reasons for differential adjustment should be explored within the Holocaust survivor population (for example Antonovsky, Maoz, Dowty, and Wijzenbeer, 1971; Eitinger, 1969; Grubrich-Simitis, 1981; Halik, Rosenthal, and Pattison, 1990; Kellerman, 1999), but they were largely ignored. Grubrich-Simitis (1981, p. 425) noted that “there is no obligatory correlation between having survived the concentration camps and the emergence of belated psychic after-effects.” Although some survivors remained deeply affected by their experiences, many adjusted to post-Holocaust life very well and led productive lives (Halik et al., 1990). While empirical assessment of potential demographic moderators has been far from extensive, theoretical conjecture about their role in explaining differential symptom levels within the Holocaust survivor population has abounded.

Within this chapter, the influence of a number of demographic and situational variables on the post-war well-being of Holocaust survivors will be examined. The demographic/pre-existing variables that will be addressed are age and country of origin. The situational variables or variables related to the survivors’ experiences during the war, being considered are the nature of their experiences (for example, whether they were imprisoned in a concentration camp, spent time in hiding or had other experiences) and the extent of the bereavement experienced (that is, loss of family members and whether they were a sole survivor of their family).

**Influence of Age**

With regard to the influence of age, the majority of researchers argue that a negative relationship between age and psychological symptomatology exists in the Holocaust survivor population (Auerhahn and Laub, 1987; Bower, 1994; Brom, Durst, and Aghassy, 2002; Budick, 1985; M. Cohen, Brom, and Dasberg, 2001; Dasberg, 1987; Kahana and Kahana, 2001; Kellerman, 2001; Mazor, Gampel, Enright, and Orenstein, 1990; Sigal, 1998), while others argue for a positive relationship (Kestenberg, 1990, 1993; Matussek, 1975; Niremberski, 1946). Still a third group argues that adolescence was the most vulnerable age group (Bower, 1994; Budick, 1985; Marcus and Rosenberg, 1988; Suleiman, 2002).

Krell’s (1985, p. 379) comments précis the main argument for why the youngest among survivors would be the most severely scarred by their experiences. These young survivors were “too young to have partaken of a foundation for life, too traumatised to experience a childhood and too preoccupied with survival to reflect on its impact.” Kestenberg (1993)
argued that once the child survivors went through the initial physical recovery, they were essentially better able to ‘bounce back’ than adults. For adults, on the other hand, the treatment endured in the camps was more psychologically damaging, as it led to regression back to earlier stages of development. Budick (1985) explains that adolescents as a group could be considered to be more vulnerable to Holocaust traumata because of the tumultuous nature of the adolescent period. Suleiman (2002) argued that because this age group was forced to take on responsibilities and make choices at a much younger age than they normally would have; this additional stress had a compounding influence on their already traumatic situation.

It is worth noting that age had a significant influence on the likelihood of survival. Camp survivors are mainly made up of those who came to the camps towards the end of the war, as very few survived for lengthy periods of time (i.e., years) in camps. Young children had a better chance of surviving the war, if they were in hiding (Brody, 1999). This point therefore raises a potential confound between age and the nature of Holocaust experiences. To what extent this relationship is confounded is examined within the results section of this chapter.

Nature of Holocaust Experiences

In terms of the specific nature of Holocaust experiences, the general consensus has been that camp survivors are the most detrimentally affected of all survivors (Eaton, Sigal, and Weinfeld, 1982; Favaro, Rodella, Colombo, and Santonastaso, 1999; Friedman, 1948; Jucovy, 1989; Kahana and Kahana, 2001; Nathan, Eitinger, and Winnik, 1964). However, there are a number of authors who contend that survivors who spent time in hiding are more anxious than other survivors because of the constant threat of discovery (Rosenbloom, 1988; Yehuda, Schmeidler, Siever, Binder-Brynes, and Elkin, 1997). It has been further suggested that survivors who spent time with partisan/resistance groups were aided psychologically by the knowledge that they were actively trying to undermine the regime trying to persecute them (Favaro et al., 1999; Jucovy, 1992; Matussek, 1975; Porter, 1981; Steinberg, 1989). The predominant explanation, as to why survivors who were interned in camps may not have fared as well as others, relates to how active a role the survivor played in their situation. Lev-Wiesel and Amir (2000) suggest that survivors who spent the war in hiding, or as partisans, felt more in control of their lives because they were doing something active toward the goal of self-preservation. This concept fits with Selye’s theory of flight and fight reactions to stressors and the release of stress and strain in the body by taking action, especially physical action to address the problem.

Country of Origin

The survivors’ country of origin has rarely been studied as a potential moderating factor, despite the fact that the nature and duration of a survivor’s experiences could vary greatly depending on this factor (Brom et al., 2002; Suleiman, 2002). Some survivors endured over 10 years of gradual worsening of conditions, while others experienced a much more rapid decline in conditions which lasted for around 3 years (Shanan, 1989). While it would be natural to Assume that greater traumatisation/traumatic reactions would be seen among

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survivors from countries with longer durations of persecution, Davidson (1980) believed that ghettoisation was a ‘strengthening process’ which made ghetto survivors better able to adjust to concentration camp life than survivors who went straight to the camps (as often occurred in countries invaded in later stages of the war).

**Familial Losses**

The extent of familial losses experienced by a Holocaust survivor has been hypothesised as being potentially the most important predictor of post-war well-being of survivors (Berger, 1988; Chodoff, 1963; Hafner, 1968; Matussek, 1975). Green (1993) lists the nature and number of familial losses as being a key aspect of trauma experiences in determining how well a survivor recovers from their experience. More specifically, if a person endured their traumatic experiences with another family member, such as a parent or sibling, it is predicted that they should have more positive psychological outcomes (Dasberg, 1987; Kestenberg, 1990).

**Aims and Approach**

This chapter seeks to consolidate and explore the existing empirical assessment of the moderating role of the demographic variables, discussed above, on the post-war psychological health of the Holocaust survivors. A concise review of the extent and nature of empirical assessment in the literature is conducted and is supplemented by the results of an empirical study conducted by the first author.

The authors sought to elucidate the current state of evidence testing for significant heterogeneity in post-war adjustment or resilience among the Holocaust survivor population, and supplement this with analysis of data collected by the first author. This process would lead to the identification of resilient and vulnerable subgroups of Holocaust survivors, which in turn may be useful and applicable for survivors of more recent analogous traumas. This chapter summarises and discusses the existing empirical assessment of the influence of age, nature of Holocaust experiences, country of origin and familial losses in the literature. In addition, results of an empirical study conducted with a sample of Holocaust survivors are also discussed. The analysis of this empirical study data includes the analysis of potential confounding relationships between these demographic variables that have hitherto been unaddressed in the literature. Thus, for each of the four demographic variables considered in this chapter a summary of existing literature as well as the relevant results from the empirical study are discussed in turn.

**METHOD**

In this section, the approaches utilised for the review and empirical studies are outlined. For both investigations, a ‘Holocaust survivor’ was defined as any person who suffered some form of persecution by the German Nazi Regime/Third Reich. This was dated from January
1933 (when Hitler came to power) until the end of World War II. Psychological health is measured in the empirical study, and limited in the current review, to the assessment of anxiety, depression and PTSD symptomatology.

Summary of Existing Literature

For the review of the existing literature, the search terms ‘Holocaust Survivors’ and ‘concentration camp’ and the time period 1945 to 2010 were entered into the PsycINFO, ProQuest Psychology Journals and Psychology Journals, Dissertation Abstracts International and WorldCat Dissertations and theses online databases to identify studies of relevance.

Empirical Study

A total of 27 Jewish Holocaust survivors participated in a survey study, conducted by the first author, of whom 14 (52%) were male and 13 (48%) were female. Their average age during the Holocaust (as operationalised by their age in 1945) was 17.33 years, with a range of 2 to 41 years. In terms of country of birth, 26% (7) were born in Austria, 19% (5) in Hungary, 15% (4) in Poland, 11% (3) in the Netherlands, 11% (3) in Germany, 7% (2) in Belgium, 7% (2) in Lithuania, and 4% (1) in Latvia. With respect to country of residence, 56% (15) currently live in Australia, 30% (8) in America, 7% (2) in England, 4% (1) in Germany and 4% (1) in Israel. With regard to their experiences during the Holocaust, 44% (12) spent time in either a concentration or labour camp. A number were in hiding, either as a child (22%, 6) or as an adult (7%, 2) with the help of false papers or under an assumed identity. One participant indicated that they had been part of the resistance or a partisan group. In addition, 22% (6) of the survivor sample managed to escape Nazi persecution before 1945, but endured some form of persecution as defined by the sample criteria. While 19% of the (5) survivor participants believed they were the sole survivors of their family, 44% (12) indicated that they were alone (without family members) during at least part of the Holocaust. A variety of world-wide recruitment methods were used to obtain participants including canvassing various survivor and other groups and organisations for help, word of mouth, personal contacts and indirect advertising via media coverage. Data was collected between November 2004 and January 2006.

Participation involved the completion of a questionnaire booklet containing the Depression Anxiety Stress Scales (DASS), the Impact of Events Scale-Revised (IES-R), as well as demographic questions. The DASS (Lovibond and Lovibond, 1995) is a 42 item, 4-point likert type scale measure with the subscales of anxiety, depression and stress each containing 14 items. Reliability co-efficients obtained for the current sample were 0.84 for the anxiety and 0.95 for the depression subscales. The stress subscale was not used in the study. The IES-R scale (Weiss and Marmar, 1997) is scored on a 5-point likert scale and has 22 items in total. It assesses the PTSD symptom clusters of intrusion and avoidance (7 items each) and hyperarousal (6 items). Reliabilities obtained with the current sample were 0.88 for intrusion, 0.86 for avoidance, 0.87 for hyperarousal and 0.95 for the total IES-R score.
RESULTS

The information in this Results section is signposted with side headings indicating the main factor under consideration in bold followed by the source of the data in italics; the use of the italics indicates whether it was obtained from the existing research literature on the Nazi Holocaust, or whether it was obtained from the empirical study undertaken by the first author as part of her PhD research.

Age During the Holocaust

Review of Existing Literature

The influence of a survivor’s age during the Holocaust on their post-war psychological health was assessed by thirteen studies located for the review. Age was operationalised either as a continuous variable, or as a categorical variable with various age cut-offs. The results of these studies are summarised in Tables 1 and 2. Across the studies, there are a few findings that are ambiguous; however overall, there is a trend towards negative effects increasing, rather than decreasing with age. It should be noted that none of the studies explicitly tested for a curvilinear relationship with age (as would be required for the suggestion that adolescents are the most vulnerable age group).

Empirical Study Results

Within the Holocaust survivor sample derived for the empirical, survivor age during the Holocaust (as operationalised by age in 1945) was not significantly correlated with DASS anxiety \( r = -0.05 \), or depression \( r = -0.19 \) subscale scores, but was significantly and positively correlated to PTSD symptom levels as measured by the IES-R total score \( r = 0.45, p < 0.05 \). All relationships were checked for linearity visually and via quadratic function analysis (which would indicate a curvilinear relationship). In all three cases, the quadratic analysis did not aid in the interpretability of the relationship.

Nature of Holocaust Experiences

Review of Existing Literature

Twenty-one studies were located that considered the influence of the nature of Holocaust experiences on the presence or severity of post-war psychological symptoms. The dominant operationalisation of this variable in the literature was categorical, but categories used are not uniform across studies. A number of studies used a camp versus non-camp categorisation, but the nature of these groups across studies differed widely. Some studies used a subjectively determined severity rating which was not consistent across studies. The studies located, which assessed the role of the nature of Holocaust experiences, are summarised in Table 3. While there were a few exceptions to the rule, overall it appears that survivors with some form of camp experience suffered more detrimental effects than other survivors, and that within the camp survivor group, differences in post-war adjustment were related to differing conditions between camps.
### Table 1. Studies Assessing Impact of Survivor Age via Correlation/Regression Analysis

<table>
<thead>
<tr>
<th>Study</th>
<th>Findings</th>
<th>Trend</th>
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<tbody>
<tr>
<td>Brody (1999)</td>
<td>The information provided on the impact of age on PTSD symptoms was only calculated for the entire sample (including both survivors and controls). A correlation of r = 0.05 between age and PTSD severity was obtained. It is reported (without associated descriptive statistics) that older subjects suffered more from intrusion and avoidance (as opposed to hyperarousal) than younger subjects. Again this was not delineated by group. It cannot be determined whether a stronger correlation would have been derived if it had been just based on the survivor sample.</td>
<td>Mixed/unreliable findings.</td>
</tr>
<tr>
<td>Cohen, Dekel, Solomon and Lavie (2003)</td>
<td>The correlation between age and current PTSD symptoms was r = 0.20 for 43 treated survivors and r = 0.32 (p &lt; 0.05) for 48 non-treated survivors.</td>
<td>PTSD symptoms increase with age.</td>
</tr>
<tr>
<td>Cordell (1980)</td>
<td>No statistically significant correlation between the depression subscale of the Heimler Scale of Social Functioning and survivor age during the Holocaust, in a group of 20 Holocaust survivors.</td>
<td>No effect.</td>
</tr>
<tr>
<td>Lis-Turlejska, Luszcynska, Plchta, and Benight (2008)</td>
<td>Separate results for 64 Jewish and 148 non-Jewish Survivors using the Posttraumatic Diagnostic Scale and the Beck Depression Inventory. Jewish survivors: PTSD Severity r = -0.18, Criteria B symptoms r = -0.08, Criteria C symptoms r = -0.19, Criteria D symptoms r = -0.15, Depression Severity r = -0.22. Non-Jewish survivors: PTSD Severity r = 0.14, Criteria B symptoms r = 0.20, Criteria C symptoms r = 0.28 (p &lt; 0.05), Criteria D symptoms r = 0.06, Depression Severity r = 0.21.</td>
<td>Mixed findings.</td>
</tr>
<tr>
<td>Schreiber et al. (2004)</td>
<td>The main focus of study was on PTSD levels before and after heart surgery. A statistically significant negative correlation was found between pre-surgery avoidance scores and age (r = -0.30, p &lt; 0.05) among the Holocaust survivor group.</td>
<td>PTSD avoidance decreases with age but biased data.</td>
</tr>
<tr>
<td>van der Hal-van Raahte, van Ijzendoorn, and Bakermans-Kranenburg (2008)</td>
<td>Sample of 203 child survivors which derived a significant, but small, positive correlation with the re-experiencing subscale (r = 0.15, p &lt; 0.05), but no relationship with the avoidance (r = -0.00 [rounded]) or arousal (r = 0.06) subscales of the Posttraumatic Stress Diagnostic Scale.</td>
<td>Slight trend towards symptoms increasing with age.</td>
</tr>
<tr>
<td>Yehuda at al. (1997)</td>
<td>Derived a positive correlation between overall PTSD symptom levels and age among their sample of 100 survivors (r = 0.61, p &lt; 0.001). When the symptoms were examined individually, it was found that this effect was not uniform. Specifically, negative correlations with age were found for the PTSD symptoms of hypervigilance (p = 0.001), psychogenic amnesia (p = 0.008) and emotional detachment (p = 0.046). Distressing intrusive thoughts was the only individual symptom to have a statistically significant positive correlation (p = 0.013). Correlation coefficients were not reported for these individual symptoms. Clearly the majority of the remaining symptoms all had relationships in the positive direction to create the overall statistically significant positive effect.</td>
<td>Overall PTSD symptoms increase with age, but a few specific symptoms decrease with age.</td>
</tr>
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</table>
Table 2. Studies Assessing the Impact of Survivor Age Categorically

<table>
<thead>
<tr>
<th>Study</th>
<th>Nature of Age Categories</th>
<th>Findings</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bower (1994)</td>
<td>Comparison of survivors aged 16 or younger (n = 100) during the Holocaust to survivors aged 20 years or over (n = 100).</td>
<td>Aged 16 or younger group = 66% depression, 55% anxiety. Aged 20 years or over = 76% depression, 52% anxiety.</td>
<td>Depression increasing with age. No effect for anxiety.</td>
</tr>
<tr>
<td>Brom, Durst and Aghassy (2002)</td>
<td>Clients of AMCHA (an organisation aimed at providing psychological help to Holocaust survivors). AMCHA adult group (n = 60) = average age of 75 at the time of the study and were therefore aged 21 on average at the end of the war. AMCHA child group (n = 28) = average age of 64 and therefore were aged 10 on average at the end of the war.</td>
<td>Child group = Total IES Score (M = 33.60, SD = 14.30), Avoidance (M = 13.90, SD = 10.00), Intrusion (M = 19.10, SD = 10.80), Adult group = Total IES Score (M = 31.00, SD = 13.20), Avoidance (M = 10.30, SD = 7.30), Intrusion (M = 20.70, SD = 10.20), No statistically significant differences.</td>
<td>PTSD score decreasing with age.</td>
</tr>
<tr>
<td>Hafner (1968)</td>
<td>Differing categories for each analysis.</td>
<td>Aged 13 at start of persecution (n = 37) = 9% chronic depression diagnosis, 60% anxiety neurosis and other neurotic reactions diagnosis. Aged 14 to 21 (n = 104) = 24%, 59%, and 1% Aged 22 to 30 (n = 98) = 26%, 59% and 1% Aged 31 to 50 (n = 92) = 40%, 49% and 1% Aged 51 and over (n = 4) = 50%, 50% and 0% Approximations from a graph (specific data not cited) Aged 0 to 8 years (n = 12) = 15% symptom of depression, 31% symptom of free floating anxiety Aged 9 to 13 years (n = 26) = 26% and 39% Aged 14 to 16 years (n = 33) = 31% and 19% Aged 17 to 21 years (n = 68) = 35% and 39% Aged 22 to 30 years (n = 93) = 40% and 25% Aged 31 to 50 years (n = 88) = 39% and 38% Aged 51 and over (n = 4) = 50% and 50%.</td>
<td>Depression increasing with age. Mixed results for anxiety.</td>
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</table>
Factors Influencing Differential Resiliency Among Holocaust Survivors

<table>
<thead>
<tr>
<th>Study</th>
<th>Nature of Age Categories</th>
<th>Findings</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keilson and Sarfatie (1992)</td>
<td>Age when separated from mother during the Holocaust.</td>
<td>0 to 18 months = 7% chronic-reactive depression diagnosis, 13% anxiety-neurotic development diagnosis 13 months to 4 years = 12% and 27% 4 to 6 years = 8% and 25% 6 to 11 years = 19% and 12% 11 to 14 years = 12% and 39% 14 to 18 years = 32% and 20%.</td>
<td>Mixed findings for anxiety and depression.</td>
</tr>
<tr>
<td>Matussek (1975)</td>
<td>Review of compensation files of 63 survivors aged under 30 at the start of their incarceration in a camp versus 81 survivors who were over 30 at the time.</td>
<td>Aged under 30 = 32% depressive mood, 33% permanent anxiety state Aged over 30 = 30% and 38% Neither of these differences was statistically significant using odds ratio analysis.</td>
<td>Little difference for depression Anxiety increasing with age.</td>
</tr>
<tr>
<td>Robinson, Rappaport, Durst, Rappaport, Rosca, Metzer, and Zilberman (1990) and Robinson, Rapaport-Bar-Sever and Rapaport (1994)</td>
<td>Two studies deriving sample from the same source (Yad Vashem records) 1994 study group restricted to survivors aged less than 13 (n = 103) when persecution began 1990 study group contained adult survivors (n = 86).</td>
<td>Younger group = 42% depression, 43% anxiety Older group = 42% depression, 44% anxiety No statistically significant differences.</td>
<td>No effect.</td>
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Table 3. Summary of Results from the Literature Based on the Nature/Type of Holocaust Experiences Endured by Survivors

<table>
<thead>
<tr>
<th>Study</th>
<th>Operationalisation of Nature of Experiences</th>
<th>Findings</th>
<th>Trend</th>
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<tbody>
<tr>
<td>Ben-Zur and Zimmerman (2005)</td>
<td>30 concentration camp (CC) survivors versus 30 survivors with other Holocaust experience (includes labour camps).</td>
<td>Negative Affect Scale CC 3.26 versus Other 2.92 Statistically significant difference.</td>
<td>Concentration Camp survivors more depressed than non camp survivors and labour camp survivors.</td>
</tr>
<tr>
<td>Brody (1999)</td>
<td>Camp (CC) versus non-camp (NC) and also correlation with length of imprisonment for camp group.</td>
<td>Geriatric Depression Scale, SCID-Depression, PTSD Checklist for Civilians Intrusion, Avoidance and Hyperarousal Subscales GDS = CC 7.00, NC 6.67 SCID-D = CC 6.40, NC 6.13 Overall PTSD Severity = CC 32.60 NC 30.73 Intrusion = CC 1.73, NC 1.40Avoidance = CC 1.47, NC 1.00 Hyperarousal = CC 1.47, NC 1.07 Positive correlation of r = 0.31 between PTSD symptom severity and length of imprisonment for the camp group. This correlation just missed out on statistical significance (p &lt; 0.06). Some of the symptoms have higher incidence levels in the non-camp group. Specifically these are flashbacks (20% versus 7%), loss of interest in pleasurable activities (20% versus 13%), emotional detachment (13% versus 7%), foreshortened future (27% versus 13%), hypervigilance (27% versus 20%) and exaggerated startle (30% versus 27%).</td>
<td>Camp survivors have higher depression and PTSD symptoms scores, but some individual symptoms are more common among the non-camp group with higher levels of symptoms such as hyper-vigilance and exagg-erated startle, potentially ex-plained by extended periods in hiding.</td>
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### Table 3. (Continued)

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<thead>
<tr>
<th>Study</th>
<th>Operationalisation of Nature of Experiences</th>
<th>Findings</th>
<th>Trend</th>
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<tbody>
<tr>
<td>Clarke, Colantonio, Rhodes, Conn, Heslegrave, Links and van Reekum (2006)</td>
<td>47 concentration camp survivors (CC) 52 work camp, ghetto or hiding survivors (WGH) 76 resistance fighters or other Holocaust experience survivors (OT).</td>
<td>Geriatric Depression Scale, PTSD diagnosis GDS = CC 18.2, WGH 18.9, OT 19.9 % with PTSD = CC 35%, WGH 27%, OT 13.2% (significant).</td>
<td>Camp survivors have higher PTSD diagnosis, but no significant difference in depression severity.</td>
</tr>
<tr>
<td>Cohen, Dekel, Solomon and Lavie (2003)</td>
<td>26 camp survivors (C) 65 survivors who had been in hiding (H).</td>
<td>Current PTSD symptom levels using the PTSD Inventory PSTD symptom levels = C 7.65, H 5.95 Statistically significant difference.</td>
<td>Camp survivors suffer more from PTSD symptoms than survivors who were in hiding.</td>
</tr>
<tr>
<td>Cordell (1980)</td>
<td>Correlations with length of confinement in concentration camp among 20 Holocaust survivors.</td>
<td>No statistically significant correlations between length of confinement and depression as measured by Heimler Scale of Social Functioning. Correlation co-efficients not quoted.</td>
<td>No trend can be noted due to lack of data.</td>
</tr>
<tr>
<td>Favaro, Rodella, Colombo and Santonastaso (1999)</td>
<td>Italian political prisoners who had been interned in a camp (n = 51) (C) Former partisans (n = 47) (P).</td>
<td>Incidence of major depressive disorder, depressed mood, PTSD diagnosis, intrusion, avoidance and hyperarousal Major depressive disorder = C 33%, P 4% Depressed mood = C 55%, P 6% PTSD Diagnosis = C 13%, P 2% Intrusion = C 48%, P 28% Avoidance = C 15%, P 6% Hyperarousal = C 37%, P 28% All differences are statistically significant using odds ratio analysis.</td>
<td>Political camp prisoners more depressed and more likely to suffer from PTSD symptoms than former partisans.</td>
</tr>
<tr>
<td>Hafner (1968)</td>
<td>An examination of restitution claim files. Discrimination (experienced effects of economic and social laws imposed but emigrated before enduring more extreme experiences) = n = 95 (D) Illegal residence (survivors in hiding or using assumed identity) = n = 70 (IR) Ghetto = n = 54 (G) Concentration camp = n = 158 (CC).</td>
<td>Incidence of Chronic depressive reactions and chronic anxiety neurosis Chronic depressive reactions = D 22%, IR 31%, G 19%, CC 30% Chronic anxiety neurosis = D 19%, IR 41%, G 52%, CC 34%.</td>
<td>Illegal residence and camp highest on depression and Illegal residence and ghetto highest on anxiety.</td>
</tr>
<tr>
<td>Study</td>
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<tr>
<td>Joffe, Brodaty, Luscombe and Ehrlich (2003)</td>
<td>Mild experience group - generally removed from high risk situations such as living anonymously in the countryside or with non-Jewish families or living on Aryan papers ((n = 15)) Moderate group - usually in ghettos or labour camps but not in death camps, had some freedom and were able to forage for food ((n = 39)) Severe group - in concentration or death camps or in inhumane conditions hidden for months and often years, at constant risk of being discovered or killed. ((n = 46)) Subjectively determined by the authors.</td>
<td>Severe Depression scale of the General Health Questionnaire (SD-GHQ) Withdrawn Depression scale of the Brief Psychiatric Rating Scale (WD-BPRS) Anxiety and Insomnia scale from the General Health Questionnaire (AI-GHQ) SD-GHQ = Mild 0.70, Mod 0.80, Sev 1.70 WD-BPRS = Mild 2.00, Mod 2.90, Sev 4.80 AI-GHQ = Mild 1.40, Mod 2.10, Sev 4.10 There are statistically significant differences for all three scales.</td>
<td>Hiding survivors less anxious and depressed than labour camp or ghetto survivors who are also less anxious and depressed than concentration/death camp survivors.</td>
</tr>
<tr>
<td>Kuch and Cox (1992)</td>
<td>Review of 123 compensation files. They delineated their sample into concentration camp ((n = 78)) and non-concentration camp (labour camps or hidden) survivors ((n = 45)) and further divided their camp sample into tattooed (Auschwitz) ((n = 20)) and non-tattooed camp survivors ((n = 58)).</td>
<td>PTSD diagnosis: 47% of the total sample met the criteria for diagnosis, 51% of the concentration camp sample 65% of the tattooed group. The tattooed camp survivor group had a statistically significantly higher number of PTSD symptoms as well ((M = 9.40 \text{ versus } M = 6.70)). A list of each of the PTSD symptoms is also provided and the tattooed camp survivor group always had a higher incidence for each symptom than the non-tattooed group.</td>
<td>Implication of differences in PTSD rates depending on severity of camp conditions.</td>
</tr>
<tr>
<td>Kuch, Rector and Szacun-Shimizu (2005)</td>
<td>Review of 350 compensation files. Ghetto versus tattooed camp survivors.</td>
<td>Hamilton Depression and Anxiety Scales Tattooed Auschwitz survivors did not score statistically significantly differently from ghetto survivors on either scale. No descriptive data was reported.</td>
<td>No statistically significant difference between ghetto and camp survivors, but no trend can be noted due to lack of data.</td>
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</table>
Table 3. (Continued)

<table>
<thead>
<tr>
<th>Study</th>
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<tbody>
<tr>
<td>Leon, Butcher, Kleinman, Goldberg and Almagor (1981)</td>
<td>Camp survivors ($n = 27$) versus other ($n = 15$).</td>
<td>MMPI Depression Scale&lt;br&gt;Depression = CC 61.89, Other 64.13&lt;br&gt;NB – Means here were averaged across gender groups by the current author to aid brevity.</td>
<td>Survivors with non-camp experiences such as hiding have higher depression than camp survivors.</td>
</tr>
<tr>
<td>Letzter-Pouw and Werner (2005)</td>
<td>$N = 96$ Survivors of labour camps (LC), concentration camps (CC) and hiding (H) compared but no sub-sample sizes reported.</td>
<td>Impact of Events Scale – avoidance and intrusion subscales&lt;br&gt;Intrusion = LC 2.88, CC 3.82, H 3.05 (significant difference)&lt;br&gt;Avoidance = no significant difference and no means quoted.</td>
<td>Concentration camp experience associated with highest intrusion levels.</td>
</tr>
<tr>
<td>Lev-Wiesel and Amir (2000)</td>
<td>Child survivors - average 12 years old in 1945. Survivors who were in a concentration camp ($n = 35$) (CC), In hiding ($n = 46$) (H) Adopted by a Christian family ($n= 52$) (A) Cared for in a Christian orphanage or monastery ($n = 37$) (OM).</td>
<td>Depression, Anxiety, Phobic Anxiety scales of SCL-90&lt;br&gt;PTSD Scale - Intrusion and Full or Partial PTSD (%)&lt;br&gt;Depression = CC 0.59, H 0.59, A 1.07, OM 0.78&lt;br&gt;Anxiety = CC 0.51, H 0.50, A 0.89, OM 0.76&lt;br&gt;Phobic Anxiety = CC 0.51, H 0.21, A 0.41, OM 0.27&lt;br&gt;Intrusion = CC 3.86, H 2.88, A 3.75, OM 4.38&lt;br&gt;Full or Partial PTSD Diagnosis = CC 49%, H 48%, A 50%, OM 19%&lt;br&gt;All scale scores differ statistically significantly across the groups.</td>
<td>Survivors adopted or cared for in a Christian institution have higher levels of depression and anxiety than survivors who hid or were in camps. Survivors in institutions have notably lower levels of PTSD diagnosis, but have highest intrusion rate.</td>
</tr>
<tr>
<td>Nathan, Eitinger and Winnik (1964)</td>
<td>Sorted through Jerusalem’s Talbieh Psychiatric Hospital’s patient records for the period 1949 to 1959 and found the files of 157 concentration camp survivors and 120 survivors who had spent most of the war in exile in the Soviet Union.</td>
<td>Incidence of major depressive disorder, dysphoria, depressive signs, anxiety attacks, free floating anxiety&lt;br&gt;MDD = C 13%, E 10%&lt;br&gt;Dysphoria = C 45%, E 21% Statistically significant difference&lt;br&gt;Depressive signs = C 49%, E 37% Statistically significant difference&lt;br&gt;Anxiety attacks = C 3%, E 1%&lt;br&gt;Free floating anxiety = C 15%, E 5% Statistically significant difference&lt;br&gt;However, the reader should bear in mind that the camp group appear to have a slightly older age profile than the exile group, meaning age could be a possible confound in this study.</td>
<td>Camp survivors have higher incidence of depression and anxiety than people who spent time in exile in the USSR.</td>
</tr>
<tr>
<td>Study</td>
<td>Operationalisation of Nature of Experiences</td>
<td>Findings</td>
<td>Trend</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>Robinson, Rapaport, Durst, Rapaport, Rosca, Metzer and Zilberman (1990)</td>
<td>49 death camp survivors (C) versus 37 non-camp survivors (NC).</td>
<td>Depression and anxiety diagnoses&lt;br&gt;Depression diagnosis = C 55%, NC 24%&lt;br&gt;Anxiety diagnosis = C 55%, NC 27%&lt;br&gt;Both differences are statistically significant when analysed via odds ratio analysis</td>
<td>Camp survivors more likely to be diagnosed with depression or anxiety than non-camp survivors.</td>
</tr>
<tr>
<td>Robinson, Rapaport-Bar-Sever and Rapaport (1994)</td>
<td>Child survivors who had been in camps (n = 43) versus those who had been in hiding (n = 44).</td>
<td>Depression Diagnosis&lt;br&gt;Camp group 48%&lt;br&gt;Hiding group 31%&lt;br&gt;Not statistically significant.</td>
<td>Camp group more likely to be diagnosed with depression than hiding group.</td>
</tr>
<tr>
<td>Rozen (1983)</td>
<td>Concentration camp group (n = 47) (C) versus hiding group (n = 53) (H).</td>
<td>Beck Depression Inventory and Spielberger Trait-Anxiety Scale.&lt;br&gt;BDI = CC M = 10.02, H = 11.45&lt;br&gt;STAS = CC M = 41.64, H = 43.66.</td>
<td>Hiding group more depressed and anxious than camp group.</td>
</tr>
<tr>
<td>Schreiber, Soskolne, Kozohovitch and Deviri (2004)</td>
<td>Camp survivors (n = 25) (C) vs. ghetto/hiding survivors (n = 25) (GH)&lt;br&gt;Evacuated before experiencing the whole gamut of possible traumas (n = 13) (E).</td>
<td>Impact of Events Scale&lt;br&gt;Based on a study whose main interest was differences before and after open heart surgery among a group of Holocaust survivors. The before surgery scores are reported here. These results must be affected by the heart problems obviously being experienced by the survivor sample.&lt;br&gt;Total PTSD score = C 17.00, GH 16.40, E 17.40&lt;br&gt;Intrusion = C 9.60, GH 8.60, E 12.90 Statistically significant difference between GH and E&lt;br&gt;Avoidance = C 6.80, GH 8.40, E 4.50 Statistically significant difference between GH and E.</td>
<td>Seemingly incongruous result that survivors who only experienced early persecution phase are more affected by PTSD symptoms, but this study is affected by sample with heart problems awaiting surgery.</td>
</tr>
<tr>
<td>Silow (1993)</td>
<td>Correlations with length of confinement in ghettos and/or camps (whole sample n = 38)&lt;br&gt;Auschwitz survivors (n = 25) (A)&lt;br&gt;Survivors of other camps/ghettos (n = 13) (C/G).</td>
<td>Impact of Events Scale&lt;br&gt;Correlations between avoidance and intrusion symptoms and length of confinement in ghettos and/or camps.&lt;br&gt;Minimal relationship between these variables was found with the highest correlation being 0.19 between avoidance and number of months confined in camps.&lt;br&gt;Intrusion = A 25.72, C/G 27.39&lt;br&gt;Avoidance = A 16.00, C/G 14.54.</td>
<td>Varied results for each PTSD symptom cluster when comparing Auschwitz to other survivors.</td>
</tr>
<tr>
<td>van der Hal-van Raalte et al. (2008)</td>
<td>Correlations with length of persecution and number of transitions (movements such as from ghetto to camp) 203 child survivors.</td>
<td>Length of persecution = Re-experiencing subscale (r = 0.18, p &lt; 0.05), avoidance (r = 0.14), arousal (r = 0.13) subscales of the Posttraumatic Stress Diagnostic Scale.&lt;br&gt;Number of transitions = Re-experiencing subscale (r = 0.18, p &lt; 0.05), avoidance (r = 0.17, p &lt; 0.05), arousal (r = 0.23, p &lt; 0.05) subscales.</td>
<td>More transitions and longer persecution related to higher symptom levels.</td>
</tr>
</tbody>
</table>
Table 3. (Continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Operationalisation of Nature of Experiences</th>
<th>Findings</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yehuda, Schmeidler, Siever, Binder-Brynes and Elkin (1997)</td>
<td>Camp ( (n = 70) ) versus hiding ( (n = 30) ).</td>
<td>None of the 17 symptoms listed on the Clinician Administered PTSD Scale statistically significantly differentiated between their sample of survivors who had been in hiding and camp survivors. No descriptive data were reported.</td>
<td>No trend can be noted due to lack of data.</td>
</tr>
</tbody>
</table>

**Empirical Study Results**

The potential confound between nature of Holocaust experiences and survivor age was noted in the Introduction. This confound was not addressed statistically by any of the studies discussed in the review above; however it was addressed with the data for our empirical study. ANCOVAs with age as a covariate were conducted with all variables as well as standard ANOVAs. As can be seen in Table 4, the results for both depression and anxiety were not significant irrespective of this control measure. However, the result for the IES-R was no longer significant when conducted as an ANCOVA with age as a covariate. Disappointingly, as only one participant indicated being part of a partisan or resistance group, differences between this group and those who had been in camps or in hiding could not be conducted. This group has generally either not been included in study samples (either by design or by difficulties in recruitment), or has been embedded within a more generic ‘non-camp experience’ group.

**Table 4. Influence of Nature of Holocaust Experiences on Anxiety, Depression and PTSD Symptoms**

<table>
<thead>
<tr>
<th></th>
<th>Escape prior to 1945 ( (n = 6) )</th>
<th>Camp ( (n = 10) )</th>
<th>Hiding/Other ( (n = 8) )</th>
<th>ANOVA</th>
<th>( \eta^2 )</th>
<th>ANCOVA (con-trolling for age)</th>
<th>( \eta^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASS Anxiety</td>
<td>3.50 (5.50)</td>
<td>5.22 (7.93)</td>
<td>5.50 (4.34)</td>
<td>( F(2,20) = 0.20, p = 0.82 )</td>
<td>0.019</td>
<td>( F(2,19) = 0.22, p = 0.81 )</td>
<td>0.022</td>
</tr>
<tr>
<td>DASS Depression</td>
<td>6.50 (8.17)</td>
<td>5.78 (6.24)</td>
<td>6.25 (5.75)</td>
<td>( F(2,20) = 0.02, p = 0.98 )</td>
<td>0.002</td>
<td>( F(2,19) = 0.47, p = 0.63 )</td>
<td>0.047</td>
</tr>
<tr>
<td>IES-R Total Score</td>
<td>2.08 (2.10)</td>
<td>5.05 (2.90)</td>
<td>1.79 (1.81)</td>
<td>( F(2,21) = 5.03, p &lt; 0.05 )</td>
<td>0.324</td>
<td>( F(2,20) = 1.76, p = 0.20 )</td>
<td>0.150</td>
</tr>
</tbody>
</table>

**Country of Origin**

**Review of Existing Literature**

Only one study was located that addressed the potential influence of a survivor’s country of origin on their symptom levels. Letzter-Pouw and Werner (2005) report that survivors who were born in Eastern Europe reported significantly higher levels of intrusion \( (M = 3.54, n = \)
78) than survivors born in Western Europe ($M = 2.43$, $n = 18$, $F (1,85) = 15.9$, $p < 0.01$). Avoidance symptoms were also recorded, but no details were reported because no significant differences were found.

**Empirical Study Results**

For the data collected for the empirical study, survivors were grouped according to regions created by Lurie-Beck to reflect similar wartime experiences, because there were insufficient numbers to look at individual countries. These groupings were: Germany and Austria; Poland, Latvia and Lithuania; Belgium and the Netherlands; and Hungary. Table 5 reports the group means and significance testing for these groups. The results were largely mixed, owing in large part to the small samples.

**Table 5. Influence of Country of Origin on Anxiety, Depression and PTSD Symptoms**

<table>
<thead>
<tr>
<th>Country</th>
<th>Anxiety</th>
<th>Depression</th>
<th>PTSD Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>5.80 (7.07)</td>
<td>7.00 (7.75)</td>
<td>3.75 (2.06)</td>
</tr>
<tr>
<td>Austria</td>
<td>3.75 (2.06)</td>
<td>6.00 (6.38)</td>
<td>1.28 (1.20)</td>
</tr>
<tr>
<td>Poland</td>
<td>7.30 (7.42)</td>
<td>5.60 (6.66)</td>
<td>2.67 (3.75)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>7.00 (7.75)</td>
<td>6.00 (6.38)</td>
<td>1.28 (1.20)</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1.00 (1.15)</td>
<td>4.00 (4.08)</td>
<td>4.60 (1.54)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1.00 (1.15)</td>
<td>4.00 (4.08)</td>
<td>4.60 (1.54)</td>
</tr>
<tr>
<td>Belgium</td>
<td>1.00 (1.15)</td>
<td>4.00 (4.08)</td>
<td>4.60 (1.54)</td>
</tr>
<tr>
<td>Hungary</td>
<td>1.00 (1.15)</td>
<td>4.00 (4.08)</td>
<td>4.60 (1.54)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Significance Test Results</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kruskal Wallis</td>
<td>0.120</td>
</tr>
<tr>
<td>$X^2 (3) = 2.67$, $p = 0.45$</td>
<td></td>
</tr>
<tr>
<td>$F (3,19) = 0.25$, $p = 0.86$</td>
<td></td>
</tr>
<tr>
<td>$F (3,20) = 1.21$, $p = 0.33$</td>
<td></td>
</tr>
</tbody>
</table>

Note: The Kruskal Wallis test was conducted because of homogeneity of variance breach.

**Loss of Family Members/Sole Survivorship**

**Review of Existing Literature**

Six studies were located that considered the effect of the loss of family members during the Holocaust. The results of these studies are outlined in Table 6. Disappointingly, two studies detected no significant relationship and so did not report any descriptive data that could be examined for an overall trend. Of the remaining studies, three declared a positive relationship between loss of family members and symptom levels, whereas one found a negative relationship.

**Empirical Study Results**

The data collected for our empirical study enabled an investigation of both sole survivor status and the effects of time spent alone during the Holocaust. There was one statistically significant difference between sole-survivors and non-sole-survivors with non-sole survivors scoring significantly higher on depression than sole-survivors (see Table 7). However, it is interesting to note that, similar to Hafner’s study (1968), in all other variables (apart from anxiety which has a similar result to depression), it was the sole-survivors and the survivors, who actually had a family member with them at all times, who scored higher on these psychopathology measures, albeit not statistically significantly.
Table 6. Summary of Results from the Literature Based on the Loss of Family Endured by Survivors

<table>
<thead>
<tr>
<th>Study</th>
<th>Operationalisation of Loss of Family/Sole Survivorship</th>
<th>Findings</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brody (1999)</td>
<td>Number of family members killed 30 Holocaust survivors and 10 control participants.</td>
<td>$r = 0.35, p &lt; 0.05$ with severity of PTSD symptoms Impure sample – control group included in analysis (who had lost family members but had not directly experienced Holocaust trauma).</td>
<td>Positive relationship between loss of loved ones and PTSD symptoms.</td>
</tr>
<tr>
<td>Cordell (1980)</td>
<td>Survivors who were alone versus survivors who had some family with them in a concentration camp.</td>
<td>No significant differences found. No descriptives reported.</td>
<td>No trend can be noted.</td>
</tr>
<tr>
<td>Hafner (1968)</td>
<td>Comparison of survivors who had lost some family members (L) (n = 106) to those who had not (NL) (n = 107).</td>
<td>This data was provided only in a chart without exact numbers quoted so must be considered approximations and not exact. Recurrent depression: 18% (NL) versus 24% (L) Chronic depression: 38% (NL) versus 26% (L) Free floating anxiety: 40% (NL) versus 28% (L).</td>
<td>Hafner (1968) suggested that the higher level of anxiety and depression, among survivors who did not lose family members, may be due to interaction with family members also being traumatised which may be stronger than the impact of losing family members.</td>
</tr>
<tr>
<td>Lis-Tulejska et al. (2008)</td>
<td>Correlation with loss of parents (none, 1 or both).</td>
<td>Separate results for 64 Jewish and 148 non-Jewish Survivors using the Posttraumatic Diagnostic Scale and the Beck Depression Inventory Jewish survivors PTSD Severity $r = 0.22$, Criteria B symptoms $r = 0.08$, Criteria C symptoms $r = 0.31$, Criteria D symptoms $r = 0.26$, Depression Severity $r = 0.03$ Non-Jewish survivors PTSD Severity $r = 0.43$ ($p &lt; 0.05$), Criteria B symptoms $r = 0.42$ ($p &lt; 0.05$), Criteria C symptoms $r = 0.30$ ($p &lt; 0.05$), Criteria D symptoms $r = 0.28$, Depression Severity $r = 0.20$.</td>
<td>Positive relationship between loss of parents and PTSD and depression symptoms.</td>
</tr>
<tr>
<td>Silow (1993)</td>
<td>38 Jewish Holocaust survivors divided into sole survivors, survivors with 2-3 surviving relatives (including self) and survivors with 4-18 surviving relatives.</td>
<td>One-way ANOVAs conducted for intrusion and avoidance. Neither significant. No descriptives reported.</td>
<td>No trend can be noted.</td>
</tr>
<tr>
<td>van der Hal-van Raalte et al. (2008)</td>
<td>203 child survivors Correlation with loss of parents (none, 1 or both).</td>
<td>Re-experiencing subscale ($r = 0.18$, $p &lt; 0.05$), avoidance ($r = 0.15$, $p &lt; 0.05$), arousal ($r = 0.17$, $p &lt; 0.05$) subscales of the Posttraumatic Stress Diagnostic Scale.</td>
<td>Positive relationship between loss of parents and PTSD symptoms.</td>
</tr>
</tbody>
</table>
Table 7. Sole Survivorship and Loss of Family and its Influence on Anxiety, Depression and PTSD Symptoms

<table>
<thead>
<tr>
<th>Sole surviving member of family after the Holocaust</th>
<th>Spent time without any family members during the Holocaust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes ( (n = 3) )</td>
<td>No ( (n = 20) )</td>
</tr>
<tr>
<td>DASS Anxiety</td>
<td>Significance Test Results ( \eta^2 = 0.08 ) t ( (21) = 1.43, \ p = 0.17 )</td>
</tr>
<tr>
<td>(0.58)</td>
<td>(6.20)</td>
</tr>
<tr>
<td>Yes ( (n = 10) )</td>
<td>No ( (n = 9) )</td>
</tr>
<tr>
<td>DASS Depression</td>
<td>Significance Test Results ( \eta^2 = 0.008 ) t ( (17) = 0.054 )</td>
</tr>
<tr>
<td>(0.58)</td>
<td>(6.39)</td>
</tr>
<tr>
<td>Yes ( (n = 10) )</td>
<td>No ( (n = 9) )</td>
</tr>
<tr>
<td>IES-R Total Score</td>
<td>Significance Test Results ( \eta^2 = 0.027 ) t ( (18) = 0.24, \ p = 0.081 )</td>
</tr>
<tr>
<td>(2.70)</td>
<td>(2.86)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The aim of the research presented in this chapter was to establish the extent to which a number of demographic and situational variables could explain differential levels of post-war adjustment among Holocaust survivors, or in other words, to identify the most affected and the least affected (or most resilient) survivor sub-groups. Given the large amount of time that has passed since the Nazi Holocaust, the relatively few studies that have examined some of the potential key reasons for differential adjustment represents a lost opportunity to more completely understand which sub-groups were truly the most vulnerable or most resilient. However, the research conducted to date (incorporating the empirical study conducted by the first author) does offer at least a tentative profile of the most and least affected subgroups.

Based on the results of the review of existing literature, as well as the results of this empirical study undertaken by Lurie-Beck, it can be argued that, in general, symptom levels among Holocaust survivors increase rather than decrease with age. This suggests that the older a survivor was during the Holocaust, the more they suffer from symptoms. Perhaps Kestenberg’s (1993) argument that children are more able to ‘bounce back’ (are more resilient) than adults has an element of truth with respect to this population.

The general view that survivors who spent time in camps are the most detrimentally affected sub-group is also generally borne out by the results of the review and empirical data presented in this chapter. However, the lack of detailed assessment of survivors who were members of partisan or resistance groups is also noted. Perhaps camp survivors and survivors who were in hiding are more readily recruited for research studies (and certainly this was the case for the empirical study discussed in this chapter). It would, however, be of interest to explore some of the arguments pertaining to active versus passive roles in similar community level traumas.

A survivor’s country of origin has very important implications for the nature and duration of their suffering during the war and yet has been left relatively unconsidered in the literature. Only one published study was located that examined this issue and even then the issue was addressed quite generically by comparing survivors from Western, versus Eastern, Europe. The sample from our empirical study could similarly only be stratified in regional form due to small sample numbers. No significant differences were found within this data set, again.
largely due to small sample numbers. It is clear that this is a variable of import that should have been examined, and could still be if researchers, who have conducted research with Holocaust survivors in the past, re-examined their data sets (given that the majority of studies list the countries of origin of their sample, if for no other reason than sample description). Clearly, in order to stratify a Holocaust survivor sample down to country level, a very large overall sample would be required.

Finally, while it is fairly intuitive to argue that loss of family would be quite convincingly related to increases in symptom levels, this was by no means the conclusion that can be made based on the current state of available evidence with the Holocaust survivor population. While three studies suggested that a positive relationship between familial loss and symptom level exists, two studies (including the one conducted by the authors) suggested that increased symptoms are associated with having surviving family members rather than not. Hafner (1968) hypothesised that interacting with surviving family members exacerbated symptoms of survivors. For example, it can be imagined how a survivor’s hyper-vigilant and anxious state could easily be intensified, reinforced, and indeed normalised, by the presence of another survivor in the household who shares the same level of anxiety with similar concerns.

The lack of clarity in the role of a number of potentially key demographic factors, in explaining differential post-war adjustment among Holocaust survivors, points to the need to more thoroughly investigate analogous factors in research with survivors of recent similar traumas in different parts of the world. The value in determining the specific moderating role of such factors is the ability to more readily identify at risk sub-groups, so that limited support services can be directed to where they can be the most beneficial. Results such as those suggesting symptoms increase with age, rather than decrease, and that increased symptoms may be associated with having survivor family, rather than not, mean that intuition alone cannot necessarily be relied upon to help determine who these vulnerable sub-groups might be.

Thus in determining priority cases among more recently traumatised populations (such as those from African, European and Asian countries), it is clearly important to not just assume who the most at risk sub-groups are. Right from the first studies conducted with traumatised groups, the focus should not have been only on investigating their overall symptom and functioning levels, but also on identifying the most and least affected sub-groups. This focus was not present in many of the early studies conducted with Holocaust survivors, with a large number of researchers treating them as a homogenous group to be compared to control groups. The results of the review presented in this chapter show how few studies were conducted that actually considered these potentially moderating variables and their influence on the post-war psychological health of Holocaust survivors. Further, the fact that the empirical study results reported herein represent one of the first studies to address the potentially highly important moderator of country of origin and to statistically control for the confounding relationship between age and nature of experiences - despite being conducted 60 years after the Holocaust -also adds to the feeling of missed opportunities.
CONCLUSION

This chapter sought to elucidate the resilient and vulnerable sub-groups of the Holocaust survivor population via a detailed review of the existing literature examining demographic differences in this population, as well as further analysis made possible by the collection of further raw data. Overall findings suggested that vulnerability to post-war symptomatology increased with age, and was associated with spending time in concentration camps (rather than in hiding or other experiences). At least partial evidence was found for the confounding relationship between age and nature of experiences, such that when age was controlled for, the strength of differences relating to the nature of experiences was weakened for some symptom types. It is important to note that even the most contemporaneous studies find a difference in symptom levels between control groups and Holocaust survivors (whether or not those differences reach statistical significance). Therefore the factors that explain differences in these symptom levels remain relevant to this day. Thus researching the role of resiliency across age groups is very important for treatment and support programs.

Differences relating to country of origin (an indirect measure of differences in duration and rapidity of the persecution process) were hinted at, but unable to be examined fully, due to the small sample sizes in both the empirical study and the one existing study found to consider this issue. Findings in relation to the loss of family members were somewhat mixed, and not at all consistent with the intuitive idea that more bereavement or sole-survivorship would be associated with higher symptomatology. While we have dwelled on the negative impacts on the survivors, it is relevant to note that the Holocaust survivor population provides many positive examples of the resources inside a person that assist them to lead a fulfilling post-trauma life.

REFERENCES


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Chapter 14

EXPLORING COPING FACTORS ON PSYCHOLOGICAL DISTRESS OF PRACTISING RELIGIOUS FLOOD VICTIMS

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¹Queensland University of Technology, Australia
²Consulting Psychologist, Regional Australia

ABSTRACT

One of the resources that has been accepted as assisting people in times of natural disasters is that of adhering to a positive religious belief system. Indeed over time, it could be argued that the practice of one’s religion could empower believers to be more resilient. The researchers took the opportunity to approach a severely flooded community in central and western Queensland (Australia) to find out what psychological effects the flood had had on residents who nominated that they were church goers, as distinct from people who professed an adherence to a religion, but who no longer practised that religion. The purpose of the current study was to explore the effects of natural disaster-related coping self-efficacy, global religiosity, religious meaning-making, and religious control factors on psychological distress. In the study, we found that religious coping strategies predicted distress outcomes beyond the effects of demographics, coping self-efficacy, and intrinsic religiosity. Important unique risk factors for increased distress outcomes for Christian flood victims were lower flood-related coping self-efficacy and greater use of negative religious coping strategies.

Keywords: Flood, Natural Disasters, Self Efficacy, Intrinsic Religiosity, Religious Coping Strategies
INTRODUCTION

“God said ‘… I establish my covenant with you, that never again … shall there be a Flood to destroy the earth … for all future generations’” (Genesis 9: 8-17)

Religion appears to be particularly relevant for natural disaster victims, given its salience in dealing with stressful life events, especially where human limitations are highlighted (Harrison, Koenig, Hays, Eme-Akwari, and Pargament, 2001; Pargament, Ano, and Wachholtz, 2005). Some researchers suggest that the high communal prevalence of religion makes it an important consideration for research on coping with community stressors such as natural disasters (Smith, Pargament, Brant, and Oliver, 2000; see also Hollifield et al., 2009). According to the 2001 Australian Census Survey, 69% of Australians are affiliated with Christian religions (27% Catholic, 21% Anglican, and 21% other Christian denominations) while just over a quarter of all Australians have no religious affiliation (Australian Bureau of Statistics, 2006). Despite its high prevalence, religion has historically been ignored in psychological research apparently because of its subjective nature (Foskett, Marriott, and Wilson-Rudd, 2004; Pargament, 1997). However research exploring religious dimensions has increased substantially in the past 25 years (Paloutzian and Park, 2005) and is now considered by some researchers to be at the frontier of stress and coping research (Miller and Thoresen, 2003).

Religion is a multidimensional construct consisting of global religious dispositional characteristics that typically apply across situations (e.g., beliefs, practices), and adaptive and maladaptive religious strategies used to manage specific life stressors (Pargament, 1997; Park, 2005b). Religious coping strategies have traditionally been categorized using an outcomes approach where components are judged as positive or negative in accordance with the adaptive or maladaptive outcomes they produce (Pargament, 1997). Recent meta-analyses and reviews, of predominantly U.S. Christian-Judeo data, report that positive and negative religious coping strategies are generally associated with lower and higher levels, respectively, of depression, anxiety, general distress, and traumatic distress (Ano and Vasconcelles, 2005; Harrison et al., 2001). Yet religious research has largely focused on physical illness, loss, and bereavement stressors, despite the fact that religion has been frequently reported as an important coping strategy by natural disaster victims (see Weaver, Flannelly, Garbarino, Figley, and Flannelly, 2003), and recommendations that researchers of disasters investigate the impact of religious and non-religious dimensions on post-disaster adjustment (Gibbs, 1989).

Whilst a breadth of religious coping factors are typically used in combination rather than alone (Pargament et al., 2005), size restrictions in the current study prevented a detailed investigation of all factors. Only religious coping factors associated with finding meaning and gaining control were explored in the current study for two reasons. Firstly, positive religious coping strategies associated with finding meaning and gaining control are most consistently employed by Christians to deal with a variety of negative life events (Burker, Evon, Sedway, and Egan, 2004; Pargament, Koenig, and Perez, 2000) and are more reliable predictors of psychological outcomes, than are other religious coping strategies (Harrison et al., 2001). Secondly, when faced with uncontrollable life events such as natural disasters, particularly salient coping factors appear to include gaining control and mastery over the stressor (Kumagai, Edwards, and Carroll, 2006) and religious meaning-making strategies, such as
attributing the event to God’s will (Fichter, 1981; Sattler, De Alvarado, De Castro, Van Male, Zetino and Vega, 2006; Sattler, Preston, Kaiser, Olivera, Valdez and Schlueter, 2002).

To date, religious research on coping with natural disasters has generally employed global measures of religion as a report of participant demographics, rather than as predictor variables (e.g., Benight and Harper, 2002; Sattler et al., 2002). One exception is a longitudinal study of Protestant and Catholic church members exposed to floods in Missouri and Illinois, who completed questionnaires at 6 weeks ($n = 209$) and again at 6 months post-flood ($n = 131$) (Smith et al., 2000). Results showed that greater levels of global religiosity and the positive religious meaning-making strategy of attributing the flood to a loving God, with a benevolent purpose (benevolent God reappraisal), were associated with lower levels of general distress (measured by the General Health Questionnaire-12 [GHQ-12]) at both time periods. In contrast, greater use of the negative religious control strategy of pleading or bargaining with God (pleading for direct intercession) was slightly negatively, but not significantly, associated with greater general distress at both times.

That study also ascertained that positive and negative religious coping factors accounted for between 15% - 17% of general distress variance at both time periods, beyond the effects of demographics (gender, education) and non-religious variables (flood exposure). Important and unique protective factors for lowered general distress were less flood exposure and greater use of positive religious coping factors (including the benevolent God reappraisal strategy). Conversely, important risk factors for greater general distress were increased use of negative religious coping factors, including attributing the flood to a punishing God (punishing God reappraisal) and pleading for direct intercession. Finally, the beneficial effect of global religiosity on general distress at six weeks post-flood, was indirectly influenced by the flood victims’ increased use of positive religious coping factors, including benevolent God reappraisals.

**Limitations of Religious Research on Natural Disasters**

Smith et al.’s (2000) study was based on data collected from the 1996 Missouri and Illinois floods. Consequently, findings from more recent research examining the operationalization of religious measures imply that the following limitations exist in generalizing Smith’s conclusions to the current study. Firstly, global religiosity was measured using three unique items (frequency of church attendance, frequency of prayer, religious salience) which generally captured positive components of religion. Whilst consistent with the historical view of religion as a unidimensional phenomenon, much empirical research using this approach across a wide variety of stressors has yielded mixed results (Pargament et al., 2005), with some studies reporting beneficial psychological outcomes with higher levels of religiosity, while others provided empirical evidence of no psychological effect or poorer psychological outcomes (see Pargament, 1997 for review). A recent meta-analysis of 35 studies suggested that differential findings were due to an inconsistency in operationalization of religiosity (Hackney and Sanders, 2003). Furthermore, a review of religious research by Hill and Hood (1999) identified 125 different religiosity measures and 17 different religious dimensions.

Secondly, when compared to the recently developed Religious Coping Scale (RCOPE; Pargament et al., 2000), results from the study provide only a limited exploration of the full
depth and breadth of religious coping strategies related to meaning-making and gaining control. For example, religious meaning-making strategies were only assessed by unique, single items (e.g., God’s will). Additionally, religious control strategies were measured by the Religious Coping Activities Scale (Pargament, Ensign, Falgout, and Olsen, 1990) which does not incorporate any positive control strategies, and represents negative religious control factors by a single strategy (pleading for direct intercession). A detailed examination of the 49 religious coping studies published between 1967 and 2005, that were included in Ano and Vasconcelle’s (2005) meta-analysis, revealed that many studies also used the Religious Coping Activities Scale or other measures adopting a breadth as opposed to depth approach to religious coping factors (e.g., the Religious Problem Solving Scale [Pargament, Kennell, Hathaway, and Grevengoed, 1988] and the Brief RCOPE [Pargament, Smith, Koenig, and Perez, 1998]). Thus, it is now recommended that researchers adopt a breadth and depth approach to religious coping to allow more robust conclusions to be drawn (Thune-Boyle, Stygall, Keshgat, and Newman, 2006).

In summary, to better determine the effects of religious dimensions on psychological distress of flood victims, the current study aims to employ more psychometrically rigorous and well-validated measures of global religiosity and religious coping measures that encompass a greater breadth and depth of meaning-making and control strategies.

Global Religiosity

Psychometrically rigorous measures of religiosity are commonly based on Allport and Ross’s (1967) intrinsic and extrinsic religiosity dimensions. According to this dichotomy, intrinsically religious individuals are committed to living their religion, which plays a central role as a master motivator in their lives. In contrast, despite endorsing religious beliefs and attitudes, extrinsically religious individuals use religion in a peripheral role to conveniently satisfy personal needs such as solace and social approval (Hill and Hood, 1999). The Revised Religious Orientation Scale (I-E/R; Gorsuch and McPherson, 1989) is regarded as “the single best current measure of religious orientation” as it combines Allport and Ross’s (1967) original Religious Orientation Scale with results from two decades of intrinsic-extrinsic research (Hill, 2005, p. 54).

Although not extended for natural disaster research, empirical research using psychometrically rigorous measures of religiosity provide quite robust findings on the effect of global religiosity on psychological adjustment to a range of bereavement, loss, and physical illness stressors. Several meta-analyses show that intrinsic and extrinsic religiosity are typically associated with lower and higher levels, respectively, of maladaptive psychological outcomes including depression and psychological distress (Batson, Schoenrade, and Venti, 1993; Harrison et al., 2001; Smith, McCullough and Poll, 2003). Based on the assumption that intrinsic religiosity reflects higher levels of global religiosity when compared to extrinsic religiosity, results are consistent with global religiosity findings from Smith et al.’s (2000) study of flood victims.
Religious Coping

Coping self-efficacy has been shown to mediate the effects of negative cognitions in people who have suffered from traumatic effects (c.f., Cieslaka, Benight, and Caden, 2008) and established coping scales have been utilized in a wide variety of situations. However, we were particularly interested in measures specially designed to tap the concept of religious coping. Thus the RCOPE, which had been developed by Pargament et al. (2000), was considered to be suitable for our study. The RCOPE was developed and tested with 540 college students who had experienced a serious life event in the previous three years (e.g., bereavement, loss, physical illness) and 551 elderly hospital patients experiencing a moderately severe medical illness. Despite also being conducted largely within a loss and physical illness context, empirical studies that have used the RCOPE to measure religious coping strategies related to meaning-making and gaining control were likely to provide the most robust inferences in the current study for several reasons.

Firstly, the RCOPE is considered the most comprehensive measure of religious coping strategies (Thune-Boyle et al., 2006), with 21 subscales of 5-items providing both breadth and depth of positive and negative strategies across five religious coping factors, including religious meaning-making and religious control. Secondly, the development of the RCOPE was based on previous theory, empirical support, and well-established religious coping scales, thus providing a psychometrically rigorous measure of religious coping. Thirdly, categorization of individual RCOPE strategies as positive or negative was empirically based on their effects on psychological distress outcomes, including general psychological distress (measured by the GHQ-12) and emotional distress (measured by two items). Finally, although the relatively recent development of this measure limits the scope of empirical research, results from studies which have employed RCOPE measures are generally consistent with meta-analysis and review findings of studies that have used a breadth approach to religious coping across a variety of stressors and psychological outcomes (see Ano and Vasconcelles, 2005; Harrison et al., 2001).

Religious meaning-making strategies. Consistent with findings from Smith et al.’s (2000) study on flood victims, the RCOPE identified the positive religious meaning-making strategy as attributing stressful events to a benevolent and loving God with an important lesson to teach (benevolent God reappraisal). Negative religious meaning-making strategies involve attributing stressors to the devil (demonic reappraisal), punishment from God for committed sins (punishing God reappraisal), and reappraising God as limited in answering prayers and influencing stressful situations (reappraising God’s powers); however demonic reappraisal was not included in the current study, as it is rarely used (Pargament et al., 2000). Results support suggestions that benevolent God reappraisal is an active coping strategy that enables individuals to perceive stressors in a less distressing light (Park, 2005a), whereas negative religious meaning-making strategies may increase feelings of fear and guilt in individuals, resulting in maladaptive psychological consequences (Pargament, 1997).

Religious strategies to gain control. The RCOPE identified positive religious strategies related to gaining control over negative life events, such as actively sharing problem-solving with a supportive God (collaborative religious coping), and passing control to God after problem-solving personally controllable aspects of the situation (active religious surrender). Negative strategies involve passing problem-solving responsibility to God (passive religious deferral) and, consistent with Smith et al.’s (2000) findings with flood victims, attempting to
gain control by influencing or working through God (pleading for direct intercession). Results are consistent with findings that active and passive coping skills by flood victims are associated with beneficial and detrimental psychological distress outcomes, respectively (Smith, 1996).

Coping by taking total responsibility for problem-solving without God’s involvement (self-directed coping) has also been widely considered as a religious coping strategy to gain control. However, consistent with research reporting mixed results (Thune-Boyle et al., 2006), the RCOPE identified self-directed coping as a multidimensional strategy. Conflicting psychological outcomes appear to be due to ambiguous interpretations of reasons for employing self-directed religious strategies. Recent research by Phillips, Pargament, Lynn, and Crossley (2004) found that this strategy is better operationalized by distinguishing between the maladaptive strategy of excluding God in problem-solving because the individual perceives that God has abandoned them (self-directed due to an abandoning God), and the adaptive strategy of excluding God in problem-solving, because God is perceived as a supportive, non-intervening deity that has provided the individual with the required problem-solving skills (self-directed due to a supportive God).

Aims and Hypotheses

This study extended existing religious coping research beyond the predominant contexts of bereavement and physical illness stressors and attempted to lessen the shortcomings of previous religious research on flood victims, by using psychometrically rigorous measures of global religiosity and religious coping measures that provided breadth and depth of meaning-making and control strategies. Based on previous research, it was expected that:

- **Hypothesis 1**: Higher levels of flood-related coping self-efficacy, intrinsic religiosity, positive religious meaning-making strategies (benevolent God reappraisal), and positive religious control strategies (collaborative religious coping, active religious surrender, self-directed coping due to a supportive God) would each be associated with lower levels of general and traumatic psychological distress.
- **Hypothesis 2**: Higher levels of extrinsic-personal and extrinsic-social religiosity, negative religious meaning-making strategies (punishing God reappraisals, reappraisal of God’s powers), and negative religious control strategies (passive religious deferral, pleading for direct intercession, self-directed coping due to an abandoning God) would each be associated with higher levels of general and traumatic psychological distress.
- **Hypothesis 3**: Religious coping strategies would uniquely predict levels of general and traumatic psychological distress after controlling for demographics (gender, education), non-religious coping factors (flood-related coping self-efficacy), and global religiosity (intrinsic, extrinsic-personal, extrinsic-social).
- **Hypothesis 4**: Greater levels of intrinsic religiosity would be associated with greater use of positive religious meaning-making and control strategies, which in turn, would be associated with lower levels of general and traumatic psychological distress.
Hypothesis 5: Greater use of positive religious coping strategies by stronger intrinsically religious individuals would be associated with lower levels of general and traumatic psychological distress, partly through increasing levels of flood-related coping self-efficacy as shown in Figure 1.

![Image](image.png)

Figure 1. Hypothesized Path Model of the Relationships Between Global Religiosity, Religious Coping Strategies, Flood-Related Coping Self-Efficacy, and Psychological Distress.

**METHOD**

**Design**

The study used a cross-sectional, correlational design with global religiosity as the independent variable, flood-related coping self-efficacy and religious coping strategies as mediators, and general and traumatic psychological distress as the dependent variables. An exploratory factor analysis (EFA) assessed the suitability of the religious coping measures for an Australian sample and validation of the factor structure for the selected religious coping strategies. Correlational analyses determined the association between all variables of interest, with hierarchical regression analyses being utilised to identify important, unique predictors. Mediation procedures determined whether religious coping strategies indirectly affected the influence of global religiosity on distress outcomes. Path analyses established whether the mediating effect of religious coping strategies would influence distress outcomes partly by changing perceived levels of flood-related coping self-efficacy. Finally, appropriate between-group statistical analyses assessed whether religious and non-religious flood victims experienced different levels of distress.
Participants

Of a total of 260 flood victims, 149 were allocated to this study because they indicated an affiliation with the Christian religion. Individuals less than 18 years of age, diagnosed with PTSD, or with a history of psychiatric illness not associated with the impact of the floods, were advised not to participate. Most participants were female (67%), religiously-affiliated (72%), Australian (91%), lived in the flooded towns (99%), did not require temporary or permanent relocation (68%), and had not experienced any other traumas in the previous 12 months (88%). The mean age of participants was 49.41 years (SD = 15.52, range = 18 to 93 years) and questionnaires were anonymously completed at an average of 11.12 weeks post-flood (SD = 3.69). For participants, who indicated that social support was applicable, the majority were either satisfied or very satisfied with levels received from friends (92%), family (90%), community (82%), and church (72%). Participants represented a variety of education levels, living arrangements at the time of the floods, and levels of material damage and insurance coverage.

Procedure

Survey packets informed the prospective participants of the study’s purpose, potential risks, eligibility criteria, and consent information. Informed consent for written questionnaires was indicated by return of reply paid surveys, while online participants had to advise informed consent before being presented with survey questions. Questionnaires were presented in two parts with all participants requested to complete Section A (demographics, general natural disaster questions, flood-related coping self-efficacy, general distress, and traumatic distress). Participants who nominated a religious affiliation in Section A were instructed to complete Section B religious measures (global religiosity, religious coping).

Targeted areas were the Western and Central QLD flood-affected areas of Charleville, Emerald, and Mackay. Approximately six weeks post-flood, online participation was sought via e-mail distribution from consenting rural organisations and universities, and through Queensland radio and newspaper media releases. Christian churches in flood-affected areas were identified by yellow pages and internet directories, and leaders were contacted by mail and follow-up phone calls to request their help in recruiting participants. Consenting leaders of 13 flood-affected churches distributed survey packets to interested congregation members following church services. Owing to a low return rate, and after consultation with some of the flood victims, the lead author then placed 1000 questionnaires directly into the letter boxes of houses in Mackay flood-affected streets ten weeks post-flood. Streets were randomly selected from all major geographical areas that the local newspaper had identified as flood-affected.

1 The total sample was analysed with respect to overall coping strategies and those results have been published elsewhere.
Measures

The Natural Disaster Coping Self-Efficacy Scale (NDCSE; Benight and Harper, 2002) is a ten-item measure of coping self-efficacy in dealing with floods. Participants indicated perceived capability on successfully dealing with natural disaster demands (e.g., “Dealing with all the disruptions caused by the natural disaster”). Items were answered using a 7-point Likert-scale ranging from 1 (not at all capable) to 7 (totally capable) and summed to produce a total score. Cronbach’s alpha of .92 and test-retest reliability of .69 across a 1 year-period were reported for bushfire and flood victims (Benight and Harper, 2002).

The Religious Intrinsic-Extrinsic Scale – Revised. (I-E/R; Gorsuch and McPherson, 1989) is a 14-item measure of global religious orientation based on the original Religious Orientation Scale (Allport and Ross, 1967). Respondents indicated the extent of their religious beliefs using a 5-point Likert-type scale from 1 (I strongly disagree) to 5 (I strongly agree). Mean scores were calculated for the three subscales of eight intrinsic items (e.g., “I enjoy reading about my religion”), three extrinsic-personal items (e.g., “Prayer is for peace and happiness”) and three extrinsic-social items (e.g., “I go to church mostly to spend time with my friends”). The intrinsic subscale has three reverse-scored items (“It doesn’t much matter what I believe so long as I am good”, “Although I am religious, I don’t let it affect my daily life”, and “Although I believe in my religion, many other things are more important in life”). Recently reported reliability estimates based on 251 college students were .83 for intrinsic, .72 for extrinsic-personal, and .68 for extrinsic-social (Salsman and Carlson, 2005).

Religious Coping Scale (RCOPE; Pargament et al., 2000). Coping strategies related to religious meaning-making and control were measured by the 5-item subscales; however, for reasons discussed in the introduction, the RCOPE self-directed coping strategy was assessed by the 6-item self-directed subscales of the Deistic and Supportive God Scale (DSGS) and the Abandoning God Scale (AGS; Phillips et al., 2004). A factor analysis was undertaken in the current study to validate the factor structure of the selected subscales. Participants indicated how often religious coping strategies were used to deal with the floods by using 4-point Likert-type items ranging from 0 (not at all) to 3 (a great deal), with mean scores calculated for all subscales. Religious meaning-making subscales were benevolent God reappraisal (e.g., “Saw my situation as part of God’s plan), punishing God reappraisal (e.g., “Wondered what I did for God to punish me”), and reappraisal of God’s powers (e.g., “Questioned the power of God”). Religious control subscales were collaborative religious coping (e.g., “Worked together with God as partners”), active religious surrender (“Did what I could and put the rest in God’s hands”), passive religious deferral (e.g., “Didn’t try to do much; just assumed God would handle it”), pleading for direct intercession (e.g., “Prayed for a miracle”), self-directed due to a supportive God (e.g., “I feel that God grants me the courage to act on a situation myself”), and self-directed due to an abandoning God (e.g., “I deal with events of my own because God has left me alone”). Evidence of internal validity and adequate internal consistency are supported by Cronbach alpha’s ranging from .78 to .92 for the RCOPE subscales (Pargament et al., 2000), and .86 to .87 for the DSGS and AGS subscales, respectively (Phillips et al., 2004).

The General Health Questionnaire (GHQ-12; Goldberg, 1992) is a 12-item measure of general psychological distress. Participants indicated frequency of psychosomatic symptoms experienced over the last few weeks (e.g., “Have you lost much sleep over worry?”). Responses were measured using a 4-point Likert format (0 = less than usual to 3 = much
more than usual) and summed to produce a total score, with higher scores indicating greater levels of general distress. Cronbach alphas ranging from .82 to .90 have been reported across a variety of populations (Goldberg and Williams, 1988).

The Impact of Events Scale – Revised (IES-R; Weiss, Marmar, Wilson, and Keane, 1997) is a 22-item measure of traumatic psychological distress. Participants reported frequency of symptoms over the past seven days that were specifically related to experiencing the flood. Items were rated on a 5-point Likert-type scale (0 = not at all to 4 = extremely). Mean scores were calculated for the three subscales of intrusion (8 items e.g., “I thought about it when I didn’t mean to”), avoidance (7 items e.g., “I tried not to talk about it”), and hyperarousal (7 items e.g., “I had trouble concentrating”). Cronbach’s alpha for the subscales ranging from .72 to .92 have been reported across a variety of traumatic events (Sundin and Horowitz, 2002).

RESULTS

Analyses for the practising religious group (N = 149) explored relationships between flood-related coping self-efficacy, religious variables, and psychological distress. No data was missing for the practising religious sample, ensuring that the same participants were maintained across analyses.

Table 1. Descriptive Statistics for Religious, Non-religious and Distress Measures

<table>
<thead>
<tr>
<th>Practising Religious Group (n = 149)</th>
<th>M</th>
<th>SD</th>
<th>SE Mean</th>
<th>α</th>
<th>Obs. Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood-related coping self-efficacy</td>
<td>50.46</td>
<td>12.87</td>
<td>1.05</td>
<td>.93</td>
<td>17 - 70</td>
</tr>
<tr>
<td>Global Religiosity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic</td>
<td>3.64</td>
<td>.96</td>
<td>.08</td>
<td>.83</td>
<td>1.25 - 5</td>
</tr>
<tr>
<td>Extrinsic (Personal)</td>
<td>3.25</td>
<td>1.12</td>
<td>.09</td>
<td>.75</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Extrinsic (Social)</td>
<td>2.08</td>
<td>.92</td>
<td>.07</td>
<td>.72</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Religious Coping Strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Religious Coping Methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share burden</td>
<td>1.51</td>
<td>1.02</td>
<td>.08</td>
<td>.97</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Self-directed due to supportive God</td>
<td>1.52</td>
<td>.95</td>
<td>.08</td>
<td>.91</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Benevolent God reappraisal</td>
<td>1.29</td>
<td>.97</td>
<td>.08</td>
<td>.92</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Negative Religious Coping Methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passive religious deferral</td>
<td>.26</td>
<td>.59</td>
<td>.05</td>
<td>.92</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Pleading for direct intercession</td>
<td>.52</td>
<td>.71</td>
<td>.06</td>
<td>.88</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Self-directed due to abandoning God</td>
<td>.10</td>
<td>.40</td>
<td>.03</td>
<td>.97</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Punishing God reappraisal</td>
<td>.10</td>
<td>.31</td>
<td>.03</td>
<td>.89</td>
<td>0 – 2.2</td>
</tr>
<tr>
<td>Reappraisal of God’s powers</td>
<td>.32</td>
<td>.59</td>
<td>.05</td>
<td>.86</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Distress Outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Distress</td>
<td>12.59</td>
<td>6.71</td>
<td>.55</td>
<td>.92</td>
<td>1 – 36</td>
</tr>
<tr>
<td>Traumatic Distress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance distress</td>
<td>.87</td>
<td>.83</td>
<td>.07</td>
<td>.89</td>
<td>0 – 3.75</td>
</tr>
<tr>
<td>Hyperarousal distress</td>
<td>.75</td>
<td>.87</td>
<td>.07</td>
<td>.89</td>
<td>0 – 3.33</td>
</tr>
<tr>
<td>Intrusion distress</td>
<td>.98</td>
<td>.88</td>
<td>.07</td>
<td>.91</td>
<td>0 – 3.50</td>
</tr>
</tbody>
</table>

\(^{a}n = 259.\)
Descriptive Statistics

Practising religious participants were, on average, more intrinsically than extrinsically orientated towards religion; and extrinsically religious participants identified more with an extrinsic-personal rather than an extrinsic-social religiosity (see Table 1). Positive religious coping strategies (benevolent God reappraisal, share burden, self-directed due to a supportive God) were used ranging from a little bit through to quite a bit to cope with the floods, whereas negative religious coping strategies (passive religious deferral, pleading for direct intercession, reappraisal of God’s powers, punishing God reappraisal, self-directed due to an abandoning God) were hardly used at all. Further, consistent with the pattern of results for the entire sample, practising religious participants felt capable of coping with the demands of the flood, experienced general distress levels the same as usual over the previous few weeks, and experienced only a little bit of all traumatic distress outcomes in the previous week.

Factor Analysis

An EFA was conducted on the 47 religious coping items using a principal component analysis (PCA) extraction and oblique rotation (direct oblimin) to replicate the approach taken in the RCOPE’s development (Pargament et al., 2000). Suitability for factor analytic techniques was verified by the Meyer-Olin statistic of .84, significant Bartletts’s test of Sphericity ($p < .001$), and anti-image correlation matrix showing multiple correlations were $> .5$ and partial correlations were $< .2$ (Field, 2005).

The PCA, with a recommended minimum loading exclusion criteria of .32 (Tabachnick and Fidell, 2007), produced a pure factor solution which accounted for 78% of the total item variance. The relatively large number of high loading ($> .80$) marker variables infer that the sample size ($n = 149$) was sufficient for a reliable factor solution. Results supported the multidimensional view of the RCOPE self-directed religious coping strategy and confirmed the factor structure of the religious meaning-making and control strategies for Australian flood victims; however two highly correlated positive religious control subscales (collaborative religious coping, active religious surrender, $r = .83$) loaded onto one factor. The combined factor, named “share burden” for the purposes of this study, is theoretically intuitive, as it perceives gaining control over stressors as a shared responsibility between self and God, either collaboratively or after doing all that was humanly possible. All religious coping subscale scores were calculated using raw scores, rather than factor scores, to allow for comparison to previous studies.

Correlational Analyses

Pearson bi-variate correlations revealed that greater levels of flood-related coping self-efficacy were quite strongly associated with decreased distress outcomes. Stronger intrinsic religiosity and greater use of the share burden religious control strategy were quite moderately associated with decreased general distress. Further, flood victims with stronger intrinsic beliefs generally used greater levels of positive, as opposed to negative, religious

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coping strategies and reported lower distress outcomes. Conversely, higher levels of all distress outcomes were most strongly related to greater use of negative religious coping strategies (self-directed coping due to an abandoning God, punishing God reappraisal, and reappraisal of God’s power). Greater pleading for direct intercession was also moderately associated with greater traumatic distress only.

**Determination of Religious Model**

A large number of significant Pearson bivariate correlations at $p < .05$ were found for the practising religious sample (see Table 2). To control for increased risk of Type I errors due to the large number of variables in the current study, only variables which correlated with at least one of the distress outcomes at an adjusted $\alpha = .01$ were chosen as important for further exploration. Using the more stringent error control, Table 2 shows that the model used for further statistical analyses consisted of intrinsic religiosity, flood-related coping self-efficacy, and religious coping methods of share burden, pleading for direct intercession, self-directed due to an abandoning God, punishing God reappraisal, and reappraisal of God’s powers. Note that although not included in the model, benevolent God reappraisal shared a large amount of variance with intrinsic religiosity and share burden.

**Hierarchical Regression Analyses**

Hierarchical regressions checked the unique contribution of the religious coping strategies (selected for further analysis) in predicting general and traumatic distress beyond the effects of demographics (gender, education), flood-related coping self-efficacy, and intrinsic religiosity. Results demonstrated a similar pattern of results for general distress (see Table 3) and traumatic distress (see Table 4).

Step 1 revealed that demographic factors accounted for significant variance (5% - 9%) in all measures of distress ($p < .05$) due to gender, such that females experienced greater distress. Step 2 found that flood-related coping self-efficacy was a strong and significant predictor of all distress outcomes beyond the effect of demographics ($p < .001$) accounting for an additional 18% to 23% of variance. Intrinsic religiosity was entered next and accounted for significant, but small amounts of additional variance in general distress ($3\%, p = .01$) and hyperarousal distress ($2\%, p = .04$) The final step showed that the five religious coping strategies significantly predicted changes in all distress outcomes beyond the effects of demographics (gender, education), flood-related coping self-efficacy, and intrinsic religiosity ($p < .001$); however they appeared to be more important in predicting traumatic distress (explaining an additional 12% to 19% of variance) than general distress (explaining an additional 6% of variance). Collectively, all predictor blocks accounted for significant variance (34 - 41%) across distress outcomes.
Table 2. Correlations for Practising Religious Group (n = 149)

<table>
<thead>
<tr>
<th>Variables</th>
<th>IV's 1</th>
<th>IV's 2</th>
<th>IV's 3</th>
<th>Mediators 1</th>
<th>Mediators 2</th>
<th>Mediators 3</th>
<th>Mediators 4</th>
<th>Mediators 5</th>
<th>Mediators 6</th>
<th>Mediators 7</th>
<th>Mediators 8</th>
<th>Mediators 9</th>
<th>Mediators 10</th>
<th>Mediators 11</th>
<th>Mediators 12</th>
<th>DV's 13</th>
<th>DV's 14</th>
<th>DV's 15</th>
<th>DV's 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intrinsic</td>
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<td>16. IES-R Intrusion</td>
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</table>

Note. Bolded items represent significant correlations at p < .01 and variables included in the Religious Model.
* p < 0.05 (2-tailed), ** p < 0.01 (2-tailed).
At $p < .001$, final beta coefficients revealed that lower flood-related coping self-efficacy was typically the strongest predictor of distress outcomes. However, greater levels of negative religious coping strategies were also important unique predictors of increased distress, albeit to a lesser degree. Specifically, important religious predictors were reappraisal of God’s powers ($p = .01$) for general distress; pleading for direct intercession ($p = .03$), punishing God reappraisals ($p = .01$), and reappraisal of God’s powers for avoidance distress ($p = .001$); and pleading for direct intercession and punishing God reappraisal for hyperarousal distress (at $p = .01$) and intrusion distress (at $p < .05$).

**Table 3. Hierarchical Regression Results for General Distress (n = 149)**

<table>
<thead>
<tr>
<th>Step 1 – Demographics</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
<th>$t$</th>
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<tbody>
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<td>.09**</td>
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<td>Flood-related coping self-efficacy</td>
<td>.32***</td>
<td>.23***</td>
<td>-0.20</td>
<td>0.04</td>
<td>-.39***</td>
<td>-5.23</td>
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<td>Step 3 – Global Religiosity</td>
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<tr>
<td>Intrinsic religiosity</td>
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<td>.03*</td>
<td>-0.48</td>
<td>0.68</td>
<td>-.07</td>
<td>-0.71</td>
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<tr>
<td>Step 4 – Religious Coping</td>
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<tr>
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<td>.06*</td>
<td>-0.10</td>
<td>0.66</td>
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<td>.15</td>
<td>1.90</td>
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<tr>
<td>Reappraisal of God’s powers</td>
<td>2.36</td>
<td>0.90</td>
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<td>.21*</td>
<td>2.61</td>
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Note. Coefficients reported for final model. Gender: Male = 1, Female = 2. *$p < .05$, **$p < .01$, ***$p < .001$.

**Mediation Analyses**

Mediation procedures were conducted in accordance with Baron and Kenny’s (1986) guidelines. Minimal criteria to explore mediation effects - when independent, mediator, and dependent variables are all significantly correlated - was assessed using a more stringent error level of $p < .01$, and identified share burden, self-directed due to an abandoning God, and reappraisal of God’s powers as potential mediators of the relationship between intrinsic religiosity and general and hyperarousal distress.

**Table 4. Hierarchical Regression Results for Traumatic Distress (n = 149)**

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<tr>
<th>Avoidance Distress</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
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<tr>
<td>Flood-related coping self-efficacy</td>
<td>.23***</td>
<td>.18***</td>
<td>-0.02</td>
<td>0.01</td>
<td>-.24***</td>
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<td>Intrinsic religiosity</td>
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<td>.01</td>
<td>-0.01</td>
<td>0.08</td>
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<td>-0.16</td>
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<td>Share burden</td>
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<td>.19***</td>
<td>-0.01</td>
<td>0.08</td>
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<td>-0.13</td>
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<td>Pleading for direct intercession</td>
<td>0.20</td>
<td>0.09</td>
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<td>.17*</td>
<td>2.14</td>
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<td>Self-directed due to abandoning God</td>
<td>0.13</td>
<td>0.15</td>
<td></td>
<td>.06</td>
<td>0.88</td>
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Exploring Coping Factors on Psychological Distress of Religious Flood Victims

| Punishing God reappraisal | 0.52 | 0.20 | .20** | 2.63 |
| Reappraisal of God’s powers | 0.36 | 0.11 | .26** | 3.30 |

### Hyperarousal Distress

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### Intrusion Distress

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</table>

Note. Coefficients reported for final model. Gender: Male = 1, Female = 2. *p < .05, **p < .01, ***p < .001.

However, the mediating effects of *reappraisal of God’s powers* for general, hyperarousal, and avoidance distress were explored due to the important unique predictive ability of this religious coping strategy for these distress outcomes.

Regression results are summarized in Figure 2. The first regression found that intrinsic religiosity was a moderate and significant predictor of *reappraisal of God’s powers* (\( p < .001 \)). Step 1 of hierarchical regression equations revealed that intrinsic religiosity was a significant, although low to quite moderate, predictor of general distress (\( p = .001 \)), avoidance distress (\( p = .04 \)), and hyperarousal distress (\( p = .004 \)), and accounted for 3% to 7% of variance across distress outcomes. Step 2 of hierarchical regressions demonstrated that (a) the indirect influence of *reappraisal of God’s powers* significantly, and moderately to quite strongly, predicted general, avoidance, and hyperarousal distress at \( p < .001 \), and (b) that the direct influence of intrinsic religiosity no longer significantly predicted any of the distress outcomes (at \( p > .05 \)). Further, the mediated pathway explained an additional 12% to 22% of variance across distress outcomes. Although the direct effects of intrinsic religiosity were not reduced to zero once the mediator was considered in the models, the non-significant results suggest *reappraisal of God’s powers* fully mediated the effect on distress outcomes (Preacher and Hayes, 2004). Sobel’s two-tailed tests using unstandardized coefficients confirmed the mediated pathways were significant for general distress (\( z = -3.06, p = .001 \)), avoidance distress (\( z = -3.38, p < .001 \)), and hyperarousal distress (\( z = -2.97, p = .003 \)).
In summary, mediation results supported the model that flood victims with lower levels of intrinsic religiosity experienced greater levels of general, avoidance, and hyperarousal distress through greater reappraisal of God’s powers.

**Path Analyses**

Path analyses examined the mediating effect of the scores on reappraisal of God’s powers. Regression results for significant pathways are summarized in Figure 3. The first regressions explored pathways to each distress outcome. Results revealed that when all pathway variables were included in the model, intrinsic religiosity did not directly affect any distress outcome (at $p > .05$). However, significant direct contributions were found for reappraisal of God’s powers and flood-related coping self-efficacy on all distress outcomes (at $p < .05$). Further, beta coefficients showed that the inclusion of flood-related coping self-efficacy in the model had reduced the moderate to quite strong mediating effect of reappraisal of God’s powers (see Figure 2) to a low to moderate mediating effect (see Figure 3).

The second regression explored pathways to flood-related coping self-efficacy. Results showed intrinsic religiosity did not have a significant direct influence ($p = .73$); however, reappraisal of God’s powers was a significant and moderately strong predictor of flood-related coping self-efficacy. The first and second regression equations thus infer that reappraisal of God’s powers had a direct and indirect (through flood-related coping self-efficacy) influence on distress outcomes. The third regression which explored the intrinsic religiosity pathway to reappraisal of God’s powers was reported in mediation results and shown in Figure 2.

![Diagram of Path Analyses](Complimentary Contributor Copy)

Note: Numbers indicate standardized beta weights. Numbers inside parentheses are for unmediated model. *$p < .05$, **$p < .01$, ***$p < .001$.

Figure 2. Mediation Model: Indirect Influence of Reappraisal of God’s Powers on the Relationship between Intrinsic Religiosity and Psychological Distress.
Exploring Coping Factors on Psychological Distress of Religious Flood Victims

Note: Numbers indicate standardised beta weight. **p<.01, ***p<.001.

Figure 3. Actual Path Model of Significant Pathways: Relationships between Intrinsic Religiosity, Reappraisal of God’s Powers, Flood-Related Coping Self-Efficacy and Psychological Distress.

In summary, path analyses support the model that flood victims, with weaker intrinsic religiosity, used greater reappraisal of God’s powers which was directly related to increased general, avoidance, and hyperarousal distress, as well as indirectly via lowered flood-related coping self-efficacy.

**DISCUSSION**

A factor analysis supported the multidimensional view of the self-directed religious coping strategy and the suitability of the religious meaning-making and control strategies for Australian flood victims. Furthermore, the positive religious control strategies of collaborative religious coping and active religious surrender were combined into one factor, named “share burden” for the purposes of this study. Pargament et al. (2000) suggest that both strategies are adaptive for coping with uncontrollable stressors; however, whether Queensland flood victims perceived no difference between the two individual strategies or employ both strategies could only be established by further research.

Given the large number of significant correlations between variables that is commonly found with exploratory research, application of a more stringent error control identified intrinsic religiosity, flood-related coping self-efficacy, religious meaning-making strategies of punishing God reappraisal and reappraisal of God’s powers; and religious control strategies of share burden, pleading for direct intercession, and self-directed due to an abandoning God, as important variables for further analyses. As predicted, greater levels of flood-related coping self-efficacy, intrinsic religiosity and positive religious control strategies (share

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burden) were generally associated with decreased general and traumatic distress. Further, greater use of negative religious meaning-making attributions (punishing God reappraisal, reappraisal of God’s powers) and negative religious control strategies (pleading for direct intercession, self-directed due to an abandoning God) were generally associated with increased distress outcomes. Results support the differential impact of positive and negative religious factors on psychological adjustment that has been reported for a variety of life stressors (Ano and Vasconcelles, 2005; Hackney and Sanders, 2003; Harrison et al., 2001; Pargament, 1997; Pargament et al., 2005).

Negative religious strategies were used much less frequently than positive religious strategies to cope with the floods. The same pattern of results has been reported by research with other life stressors (Pargament et al., 2000; Phillips et al., 2004) and are not surprising, given that perceptions of God as an angry, forsaken, or punishing deity are more difficult to incorporate into stable religious belief systems that are based on a loving and caring God (Pargament, 1997; Park, 2005a).

As predicted, religious coping variables uniquely predicted variance in general and traumatic distress, after controlling for demographics (gender, education), flood-related coping self-efficacy, and intrinsic religiosity. With a focus on depth and breadth of religious coping strategies, important unique religious predictors were reappraising God’s powers for predicting general and traumatic-hyperarousal distress, and punishing God reappraisal and pleading for direct intercession for predicting all traumatic distress outcomes.

CONCLUSION

Results highlight consistent findings from disaster research that avoidance-focused methods and assignment of blame negatively impact psychological distress of victims (Norris, Friedman, Watson, Byrne, Diaz and Kaniasty, 2002). Findings also support the stronger predictive ability of religious coping strategies, rather than global religiosity, when exploring psychological adjustment to stressors (Pargament et al., 2005) and emphasise the importance of even infrequent use of negative religious coping strategies on psychological maladjustment to stressful life events (Ano and Vasconcelles, 2005; Harrison et al., 2001).

Non-religious factors were also extremely important in coping with the floods. Indeed, flood-related coping self-efficacy was typically the strongest predictor of psychological distress of Queensland flood victims. Consistent with previous natural disaster research, females and individuals with lower perceived flood-related coping self-efficacy typically experienced greater general and traumatic distress (Benight and Harper, 2002; Benight, Swift, Sanger, Smith and Zeppelin, 1999). Results support suggestions that religious and non-religious factors each offer something important and distinctive to the coping process (Oman and Thoresen, 2005).

As predicted, religious coping strategies mediated the relationship between intrinsic religiosity and psychological distress (see Figure 2). However, contrary to hypotheses, negative (reappraisal of God’s powers), rather than positive, religious coping strategies had a salient influence on the effect of intrinsic religiosity. Results need to be interpreted in context before inferring that positive religious coping strategies were not important for Queensland town dwelling flood victims. Firstly, the statistical power of positive religious coping

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strategies (benevolent God reappraisal, share burden) may have been overshadowed by the large amount of shared variance with intrinsic religiosity. Secondly, correlational analysis implied that share burden may also be an important mediator of the relationship between intrinsic religiosity and psychological distress, albeit to a lesser degree than reappraisal of God’s powers. Finally, as inferred by previous research on other stressor types (Ano and Vasconcelles, 2005; Pargament, 1997; Phillips and Stein, 2007), positive religious coping strategies may have been more salient in improving flood victims’ adaptive psychological outcomes, such as spiritual or stress-related growth, rather than lowering the maladaptive outcome of psychological distress.

The negative religious coping strategy of reappraisal of God’s powers was an important mediator in the current study. Previous research, when taken together, provides possible explanations for why less intrinsically religious flood victims experienced increased distress through greater reappraisal of God’s powers. For example, reappraisal of God’s powers represents a form of religious doubt and struggle, where individuals question God’s power and view God as limited in influencing stressful situations (Pargament et al., 2000). In turn, individuals who cope with stressors by doubting their religious beliefs experience greater maladaptive outcomes due to an increased internal religious struggle and discordant integration into their existing belief systems (Exline and Rose, 2005; McConnell, Pargament, Ellison, and Flannelly, 2006; Park, 2005a). Intrinsically religious individuals are likely to be more highly committed to integrating stressors into valued religious belief systems than extrinsically religious individuals. Yet, when compared to stronger levels of intrinsic religiosity, individuals with weaker intrinsic religious beliefs have a more insecure relationship with God and are more vulnerable to religious doubt and discordant integration of stressors (Hill and Pargament, 2003), resulting in increased psychological distress.

Finally, path analyses suggested that the mediated effect of greater reappraisal of God’s power on increased general and traumatic distress for less intrinsically religious individuals was partly achieved by reducing flood-related coping self-efficacy. Results infer empirical support for Hill and Pargament’s (2003) speculation that religious struggle affects psychological outcomes by lowering coping self-efficacy, and are theoretically intuitive when results from separate studies are considered together. For example, lower levels of intrinsic religiosity, greater use of negative religious coping methods (Maltby and Day, 2003), and lower levels of coping self-efficacy (Benight and Bandura, 2004) have all been associated with more threatening perceptions of stressors, which social cognitive theory posits promotes feelings of helplessness and emotional distress (Bandura, 1986).

REFERENCES


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Exploring Coping Factors on Psychological Distress of Religious Flood Victims


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A SOLDIER’S TALE: RESILIENCE AS A COLLECTIVE, RATHER THAN AS AN INDIVIDUAL, RESPONSE TO EXTREME CHALLENGE

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ABSTRACT

This chapter explores the role of cohesion in fostering resilience, resourcefulness, creativity and unique problem solutions in the most challenging of environments - the battlefield. The loss of either vertical or horizontal cohesion, or both, affects the fighting spirit, and rapidly destroys the strongest and most resilient of soldiers in otherwise excellent fighting units. This is a core element that can result in the much talked about, but little understood, phenomenon of Combat Stress Reaction, which eventually is the root cause of that very disabling mental health condition in soldiers: Post-traumatic Stress Disorder. Sharing data from his field research in specialized military settings, the author discusses various stress factors, their complex interactions, and what is needed to offset them in challenging situations. The author offers real-world examples that may explain why some soldiers thrive in the exceptional rigors of military life, while others succumb to relatively mild exposures of what may well be described as minor stressors. In particular, the role of cohesion and the soldier’s perception of the military in the aftermath of combat are explored, with specific reference to the interaction of stressors and how these can serve to bring about the survival and wellness responses, which are prerequisites for maintaining resilience and creativity in resolving the major challenges that arise from the stress of battlefield engagements.

Keywords: Extreme Challenge, Soldiers’ Resilience, Military Cohesion, Unit loyalty

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INTRODUCTION

The general public, and even social scientists, know little of the complexities that result in the decision by ruling governments to engage in military operations at home and/or abroad. Political rhetoric and security requirements often obscure the vast and complex decision-making machinations that take place behind closed cabinet doors, in military operational planning centres, and in the various government departments involved in the funding and support of military operations. While the fact that human lives are being put on the line is seldom forgotten, these fighting soldiers are often mere numbers on a page, ordering their deployment and potentially, their demise. That is, after all, the role of governments: to send their most able, fit, and healthy young people to face “The Enemy”, however, and for whatever purpose, so defined. The political intrigue that result in the waging of combat operations, regardless of whether they are coined “peacekeeping” or not, presupposes that within the military there exists a culture, a trait, and a special attribute that would enable otherwise normal functioning people to venture out and face adversity at its most extreme, in settings that may well cost them their lives.

Against this background, the constructs commonly referred to as resilience and resourcefulness take on a whole different meaning from the definitions offered in psychology text books and general dictionaries. This chapter explores how these two constructs manifest in the military, and offers suggestions that may set the stage for returning combat soldiers to find meaningfulness in society even when they are no longer members of the armed forces they have served so valiantly.

The main thesis of this book series postulates that resilience can be broadly understood, as enabling people to maintain stability and enhance continuity. In turn, resourcefulness triggers creative responses to novel and challenging situations. Potentially, these two constructs lead to opposite directions; but optimally, they are mutually enhancing. While researchers in various fields have, over the years, developed excellent models to attempt to explain the differences in reaction to challenging situations, these models can result in oversimplification of very complex issues, or they may complicate understanding of otherwise very basic human behaviour. The large body of literature that currently exists on the work of noted researchers and authors such as Aaron Antonovsky, who is generally credited with introducing the concept ‘sense of coherence’ and which is augmented by Michael Rosenbaum’s thesis on ‘learned resourcefulness’ is testimony to the search to find an explanation as to why exceptional human behaviour may manifest itself particularly in adverse circumstances, whereas in other situations it is totally absent.

1 Dr. Gouws both researched and gained extensive firsthand experience, of the resourcefulness required from soldiers and their commanders, when faced by the insurmountable obstacles posed by the stress of being deployed in combat zones (complicated by the pressures from the international political arena, the reactions of the civilian population to the casualties of battle, as well as the strain placed on society in general), during long term sustained military operations. Against these odds, a number of stressors, mostly unknown to outsiders, play a dualistic role: in some cases, they undermine morale and combat readiness, whereas in other situations they actually contribute positively towards the maintenance of the fighting spirit. This latter response is motivated, not so much by political rhetoric and support pledged at the home front, but by the strong bonds that exist between the soldiers themselves, as well as with their immediate leaders, and the mutual trust and loyalty they have in, and towards, each other.

2 The editors of this book have produced two other books concurrently and subsequently with this text. Both are published by Nova Science and can be found in the reference list under Celinski and Gow, 2011, and Gow and Celinski, 2011.
As useful as these concepts of resilience and resourcefulness are, in the main stream of psychological research, they are not new in the context of the military forces around the world. Indeed, there is no organisation more adept at developing resilience and resourcefulness in its people than the military. After all, there are no comparable models for having human beings endure the most challenging of rigours - those of combat - and then expecting them to go on with their lives, as if unaffected by the carnage inflicted upon them as much as what they had inflicted on “The Enemy”.

Military trainers, long before psychologists, psychiatrists and sociologists came on stage, have known that, for as long as a few crucial factors are present, soldiers will face impossible odds and even in the eye of certain death, will follow through to complete the allotted tasks. A key to this phenomenon is found in the terse statement by Lieutenant General Hal Moore when he elucidated the events that took place during the battle at Ia Drang in November 1965:

American soldiers in battle don’t fight for what some president says on T.V., they don’t fight for mom, apple pie, the American flag... they fight for one another.¹

More than anything else, the above quote places a perspective that is easily overlooked when studying the underlying motives for soldiers to endure, time and time again, the rigours of not just military life, but also the chaos and carnage of combat. Yet, none said it as poignantly in the aftermath of a horrendous battle, as Specialist ⁴ Ray Tanner of Alpha Company, 1st Battalion, who had served under then Lieutenant Colonel Hal Moore:

We stood in formation, with some units hardly having enough men to form up. Colonel Hal Moore spoke to us and he cried. At that moment he could have led us back into the Ia Drang. We were soldiers, we were fighting men, and those of us who were left had the utmost love and respect for our Colonel and for one another. As I reflect on those three days in November, I remember many heroes but no cowards. I learned what value life really had. We all lost friends but the bravery they showed on the battlefield will live for ever (Moore and Galloway 1992, p. 346).

This statement (and the sentiments it espouses) is by no means a novel or rare occurrence. Countless individual accounts of combat over the centuries reflect a similar willingness to go back into the jaws of hell and repeat the same actions with the same group of combat veterans. This is a manifestation of a very deep and profound relationship that exists among soldiers, which most outsiders find extremely difficult to comprehend, especially when observing the military performing its rituals at parades and remembrance ceremonies, the latter in particular to what is referred to as “The Cult of Death” and “The Cult of the Fallen”⁵ (Fornari, 1975, p. 24). More than that, in the striking and well known poem by John McCrae, In Flanders’ Fields⁶, the call goes out from those who had gone before to those who are now following to:

³. Paramount Pictures DVD 2002: We were Soldiers, fathers, brothers, husbands and sons. Special Features: Getting it Right behind-the-scenes of We Were Soldiers.
⁴. Specialist 4 refers to an infantry rank in the US Army.
⁵. The cult of death is a label referred to by Fornari from the work of other authors. The cult of the fallen refers to the remembrance rituals of war (e.g., Nov 11 at 11th hour), as referenced in the book.
⁶. This may be the most authentic publisher of the original work: Project Gutenberg's In Flanders Fields and Other Poems, by John McCrae. Title: In Flanders Fields and Other Poems with an Essay in Character, by Sir Andrew
Take up our quarrel with the foe;
To you from failing hands we throw
The torch: be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders' fields.

It would therefore seem that, at least in the case of the combat soldier, several factors play a role in bringing about both resilience and resourcefulness. However, this is a form of learned resourcefulness as much as learned resilience (resulting in a sense of coherence and cohesion), which serve to bring about that special breed of human beings who can resolutely face incredible adversity. However, certain factors, when absent or dysfunctional, almost certainly result in a breakdown of both resourcefulness and resilience. The role of cohesion will now be examined as the paramount factor in developing and maintaining the unit’s resilience and resourcefulness both inside and outside of combat.

Cohesion Factors

Initially an enlisted member in the US Army during World War I, S.L.A. Marshall subsequently became an exceptional military analyst, and journalist. During World War II he served as an official army historian. He published a landmark work in 1947, “Men Against Fire”, in which the problem of Battle command was carefully examined. In his assessment of why men fight, Marshall stated it quite unambiguously:

Man is a gregarious animal. He wants company. In his hour of greatest danger his herd instinct drives him towards his fellows. It is a source of comfort to him to be close to another man; it makes danger more endurable, like hugging a two-inch sapling while sitting out an artillery barrage (p. 141).

However, Marshall goes much further, as he assesses the role of leadership and, in particular, the way in which soldiers model themselves after other soldiers. In this regard, he states:

Once again, however, it might be well to speak of the importance of enthusiasm, kindness, courtesy, and justice, which are the safeguards of honour and the tokens of mutual respect between man and man. This last there must be if men are to go forward together, prosper in one another’s company, find strength in the bonds of mutual service, and experience a common felicity in the relationship between the leader and the led. Loyalty is the big thing, the greatest battle asset of all. But no man ever wins the loyalty of troops by preaching loyalty. It is given him by them as he proves his possession of the other virtues (p. 200).

There can be little debate that the military utilises the very weaknesses and vulnerabilities in humans to develop a cohesive and professional fighting machine, which is glued together by a common purpose: the survival of the group in the most adversarial of circumstances. At
its core, military training fosters both resilience and resourcefulness, with both becoming learned behaviours, which then become established as enduring personality traits. This is the reason why soldiers, even when established back in civilian life; seem to stand out as markedly different from the rest of society.

It took researchers several decades to identify the incredible stressors brought to bear on soldiers in combat that would inevitably lead to their withdrawal from combat and the unit. This was especially difficult in light of Marshall’s shocking findings published in 1947 that, contrary to popular belief, unless they are forced to do so by circumstances, only about a quarter of soldiers would actually fire their weapons at the enemy when engaged in combat (p. 50). Marshall quotes from various other sources to indicate that the lack of appropriate and proper leadership was to blame for this state of affairs (p. 53).

Regardless of the reasons for the apparent reluctance to fire on the enemy, studies on the improvement of military unit performance support a two-factor theory. It postulates that the strongest support factors for continued unit operations are leadership and unit cohesion. Support for these two factors go back to the 1940s and even earlier. Noy (1991) quotes from Spiegel (1944) who stated that:

A soldier keeps fighting for his comrades rather than against the enemy. He is afraid to lose his comrades if he lets them down. If he does, he may remain without their support against the prevailing anxiety as well as feel ashamed and guilty (p. 513).

Even so, Noy pointed out that, based on the available research data, the pressures of combat are often overwhelming, and even the most resilient of soldiers can succumb to combat stress reaction. Even so, units with effective leadership and cohesion could at least endure the experience and go on functioning marginally for almost twice as long as noncohesive units in situations of extreme sleep deprivation (p. 513). Noy further noted that:

In combat the social support network is of crucial importance. Expressed in a high level of unit cohesion and in the trust in effective leadership, it instigates a sense of optimism and hope for survival... As long as the soldier can trust that his commander and unit are leading him to survival, he can feel secure in his dependency. When this trust fails, the dependent soldier is bound to feel even more anxiety and act with helplessness and rage (p. 513).

Interestingly, however, Noy observed that despite extensive studies to identify personality factors that play a role in the development of combat stress reaction, or what is now commonly referred to as post-traumatic stress disorder, numerous studies found that psychologists could not predict from pre-war tests who was going to become a stress casualty. Controlled studies found no personality predisposition, but Noy deduced that:

While personality may play little if any role in the predisposition to succumb to the stressors and rigours of combat deployments, it may play a more crucial part in the recovery (p. 515).

Research by Noy and others in the 1980's and even earlier made it clear that unit cohesion plays a primary role in the development of what is termed an “excellent unit”. Unit cohesion consists of two distinct factors. The first is trust in leadership, or vertical cohesion. Noy points out that one study had determined that:

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Soldiers ranked commanders’ competence in combat as the single factor which gave them the most security, whereas combat stress reactions were most prevalent where the trust in the commander was problematic (p. 514).

The second factor is horizontal cohesion, or the relationship that exists between and amongst the soldiers. Since this has already been extrapolated upon earlier, it will not be further discussed. What is undisputed is that both vertical and horizontal cohesion are attained through training and an emphasis on excellence in achieving not just training objectives, but functioning in everyday life in a way that supports cohesive and task focussed behaviours.

The development of an excellent, cohesive, unit is no small matter. It may, in fact, take several years to bring about the full development in which a unit grows from its inception to becoming an excellent small unit, this according to the four phase, small unit developmental model, postulated by Bartone and Kirkland (1991). However, the most significant factors identified in the development of cohesion in such units are competence, caring, respect, commitment, and feedback from leadership to their subordinates. If nothing else, these authors demonstrated that resilience and resourcefulness indeed are skills taught and acquired in military training, by the application of training techniques, adapted to the maturity level of the unit, as it goes through developmental phases from its inception to a mature unit. Acquiring such skills, however, is not an easy task, but requires daily exposure over what sometimes amounts to years of rigorous training. That is why such skills are often most prevalent in specialist forces and small units within the military, such as submariners, fighter pilots, Special Forces, and the like.

**INDIVIDUAL STRESS FACTORS AFFECTING MILITARY OPERATIONS**

In an unpublished doctoral thesis, Gouws (1986) identified a number of specific stress factors that were crucial in the successful selection, training and development of specialist military units within the South African military context at the time. In this regard, the nature and demands of the particular work setting and job tasks were significant in determining the degree to which an individual would fit in and function, within a particular setting. This, of course, came as no surprise from what is standard practice in most human resources departments. However, Gouws found that several other factors greatly affected the ability of soldiers to consistently demonstrate resilience and resourcefulness, even when placed optimally. A major factor that adversely affected soldiers is the negative influences that were impacting them from outside (e.g., lack of civilian support, such as the Vietnam War experience in the USA).

Based on the data obtained in this research, Gouws identified that a prominent factor undermining both resilience and resourcefulness, was the development of a conflict between perceived political motives (originating with the political leadership and senior command) and the soldier’s personal beliefs, the latter which reflected a willingness towards self-sacrificing involved in military operations. For soldiers who were serving in specialist capacities, it became commonplace to question the political motives involved in operational decision-making that cost the lives of others on both sides of the conflict. It became clear over
time in that particular setting that this was a major contributor towards the breaking down of the vertical cohesion component: the trust in, and loyalty towards, the executive (a.k.a. senior military and political) leadership. This added a very important component to the puzzle: the personal beliefs with which individuals join the military quickly become merged into a collective belief set that “the unit is doing the right thing”, this regardless of the carnage combat may inflict upon it and vice versa. Indeed, the data Gouws collected, supported the notion that there was a wide acceptance of what the author labelled ‘the pathology inherent in military operations’ as a standalone factor that would affect, not so much the operational tasks, but the way in which individuals learn to live normal lives afterwards, even with the impact of these experiences being ever present.

The data from this research project further supported that, for individuals with the capacity to adapt to challenging and ever changing operational circumstances, coping with adverse memories was less traumatic and disruptive than for those who lacked, in particular, the resourcefulness to assign positive rather than negative meaning to these experiences. Not surprisingly, the data from this project indicated that when there was a disintegration of the personal belief system, in particular as it pertains to personal religious/moral values, and their collapse in the light of the extreme challenges brought to bear by sustained high intensity military operations, individuals who were otherwise seen as exceptionally resilient and resourceful, would begin to question all of their actions and eventually decompensate. Once they have reached this point, they have fallen victim to the pathology of military operations and were no longer able to continue to participate in military operations.

THE PATHOLOGY OF MODERN MILITARY OPERATIONS

The pathology of military operations is mostly seen as the trauma responses of some soldiers to their combat experiences. The process is tragically, but strikingly illustrated in an unusual and somewhat controversial World War II memoir of a German foot soldier’s experiences during the Russian Campaign (Sajer, 2000). It is worthwhile quoting from it here, because of the poignant questioning of one’s place in the world, and a life lost in war. The author’s preface is particularly striking:

Guy Sajer - who are you?
My parents were country people, born some hundreds of miles apart - a distance filled with difficulties, strange complexities, jumbled frontiers, and sentiments which were equivalent but untranslatable.
I was produced by this alliance, straddling this delicate combination, with only one life to deal with its manifold problems.
I was a child, but that is without significance. The problems I had existed before I did, and I discovered them.
Then there was the war, and I married it because there was nothing else when I reached the age of falling in love.
I had to shoulder a brutally heavy burden. Suddenly there were two flags for me to honour, and two lines of defence-the Siegfried and the Maginot- and powerful external enemies. I entered the service, dreamed, and hoped. I also knew cold and fear in places never seen by Lilli Marlene.
A day came when I should have died, and after that nothing seemed very important.

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So I’ve stayed as I am, without regret, separated from the normal human condition.

The most telling, however, is in the Epilogue, when the author summarises his tale of memories of the terrible experiences he had described earlier about this war:

... and I shall never forget the names of Hals, or Lindberg, or Pferham, or Wollers. Their memory lives with me.
There is another man, whom I must forget. He was called Guy Sajer (p. 465).

Indeed, as one reads this memoir one is struck by the fact that it took an incredible amount of sheer guts to write up this history of one soldier’s experience. It highlights the suffering on both sides endured by the troops, and the immense resilience and resourcefulness that carried them through adversity that they could not have been faced or survived on their own. However, once the bond is broken, the unit disbanded, some of these people find the inner strength to move on, to survive, and for some to even tell their story. Unfortunately others do not, and they become and remain the long suffering victims of modern warfare techniques.

MODERN WARFARE TECHNIQUES

In the short summary of the table of contents to their book, “The Nature of War”, Keegan and Darracott (1981) illustrated some of the impact of modern warfare techniques. The harsh reality of war and the manner in which man conducts war operations are often portrayed in an almost romantic image in films and books; yet, the battlefield reality is far removed from marching music and heroic pondering about the next feat. It is here where the ability to survive and endure is tested to the limits of human capacity.

Keegan and Darracott noted that, whereas man, in his primitive state, had to curtail operations in order to provide the basic needs of food and shelter, modern warfare enables armies to do battle until one finally succumbs:

Taking the field to conduct war was once governed by the cycle of season and harvest. But with time and invention, campaigns gradually became sustainable through greater military self-sufficiency. Now, with the advent of modern weaponry, war is increasingly characterised by a terrifying mastery over nature and the elements (p. vi).

Not only has technology provided mankind with the means to do battle wherever and whenever he wishes, but he now also has the ability to organise and plan the execution of operations across the globe. In utilising such technology, a stalemate situation may easily result, as was illustrated during the decade-long Iran-Iraq war where neither country was capable of exhibiting organisational and technological superiority. On the other hand, during the Gulf War I campaign, Iraq had to relinquish its hold on Kuwait before the superiority of the allied forces. Thus, Keegan and Darracott described it aptly as:

The battlefield is the no-man's land of rough justice, where both parties give consent, however contrived, to do battle. When societies combine logistical authority with the urge for territory,
the stage is set for conquest through battle. And victory will generally go to the side with organisational and technological superiority (p. vii).

Doing battle, particularly in certain cultural contexts, is seen as the ultimate human endeavour. Combined with religious or ideological zeal, it becomes a much sought after and revered form of glory. The many references to Jihad serve as one such example in current times. However, death is never glorious, on the battlefield it becomes horror incarnated; as so well articulated by Keegan and Darracott:

Despite the exaltation of death among extreme warrior cults, death in battle is rarely glorious. It is usually lonely and terrifying. Many cultures deemed it a point of honour to retrieve the dead and provide decent burial and permanent memorial. But whatever solace memorials may provide, the horrors of war remain an unspeakable litany of carnage (p. vii).

Having been exposed to the horror of the battlefield and the massive carnage witnessed, and all this being done in the name of some or other cause, the absolute worst outcome is the realisation that all the suffering, all the pain and all the effort was in vain; the battle, and perhaps the war, is irrevocably lost and only two options are open: death or surrender. At this point, those doing battle are forced to develop a new insight, again aptly elucidated by Keegan and Darrcott:

The most dangerous of all moments of war is that of surrender - it is a final act of blind trust or desperation in the face of a hostile enemy. While the rules of warfare have varied, the actual rituals of surrender are as universal as those of diplomatic rupture. Now, with an over-abundance of super weapons, vision of aftermath perhaps oblige a sober agreement never to fight battles again (p.vii).

The nature of war is such that nobody, who has been exposed to it, can honestly and truly want to be a part of it ever again, unless some other inner, abnormal forces are at work. As these quotations illustrate, the impact of war and battle cannot be aptly described in words, because the experiences of war and its weapons are too ghastly and traumatic. Yet, as previously noted, many soldiers come back from the battlefield and seem to be apparently doing fine despite their experiences, at least psychologically. This is again where the issue of resilience and resourcefulness, ingrained in training, likely accounts for the capacity of the majority of soldiers to adequately deal with their traumatic memories and related emotional reactivity.

RESOURCEFULNESS AND RESILIENCE

This chapter attempted to shed some light on an area of human endeavour of which little is understood, except for the ever expanding body of research on trauma and trauma reactions in soldiers. While there is no doubt a need for such research and its application to assist soldiers with the mental health issues resulting from military deployments, the emphasis on prevention and treatment obscures the many positive aspects of personality development in the military.

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It is easily forgotten that, while a small percentage of soldiers suffer immense mental and physical disability from the memories and mental scars of combat and the stressors of sustained military operations, all soldiers carry these experiences with them. There are those who have so integrated the resilience and resourcefulness they had learned in the military into their personality, that they indeed can be deemed to have developed an ‘enduring’ personality, which is a change from how they had functioned before these experiences. This is the result of their having been exposed to catastrophic and/or excessive prolonged stress, for which they have been prepared in training, both mentally and physically. It would appear that family members observe in many of these soldiers evidence of a definite and visible change in their pattern of perceiving, relating to, or thinking about, the environment, as well as how these soldiers view themselves. This change in personality characteristics is significant and especially associated with flexible and adaptive behaviour not necessarily present before their exposure to military training and subsequent deployments and combat operations. Unfortunately this positive outcome is not studied to the same degree as the negative outcomes, such as posttraumatic stress. In the process an opportunity to learn from these soldiers who have been able to redirect their normal reactions to extreme abnormal circumstances in healthy ways is missed. With that the application value to not just those soldiers who did not master these coping skills, but also to civilians, is also lost.

An excellent illustration of how the combat experiences play out more positively than negative over several decades can be located in the recent follow-up work by the revered General Hal Moore, who in his 86th year, chronicled his own journey and that of his remaining unit when they went back to the battlefields of Vietnam, and in particular Ia Drang, where in November 1965 he and 450 men had faced an overwhelming North Vietnamese force of over 2000 well-entrenched soldiers. They survived the incredible ordeal, while just two and a half miles away another American unit was massacred. Dealing with this incredible carnage and its aftermath, became an important task for bringing closure for both sides that were party to the events of those terrible days of conflict:

Our old commander, then Lt. Col. Hal Moore, had vowed years before that one day we would go back to the Ia Drang, those blood-soaked clearings in the Vietnamese jungles, and walk that ground and do our duty of confronting our demons and freeing the souls of all who perished there...

So much has come to pass in all our lives in these four decades. Some who survived the worst that hand-to-hand combat threw at them have died, and we miss them terribly. Many would be surprised, thirty years later, to receive medals of valor for their actions in the Ia Drang...

Life, as they say, went on day by day for all of us. We took the good with the bad and kept moving ahead, each in his own way, always with an inner understanding that we had already seen both the best and worst that men can do to other men, and that nothing - not even the passage of four decades - can fully erase those images (p. xvii).

This quotation aptly illustrates how for these soldiers the combat experiences they had became an integral part of their lives, and allowed them to continue to live their lives in a positive manner despite the traumatic nature of these events.
CONCLUSION

This chapter ever so briefly touched the surface of some of the stress factors related to military operations and their complex interaction, and how these can be offset in challenging situations by essentially learned resilience and resourcefulness. In particular, the role of cohesion and the soldier’s perception of the military, in the aftermath of combat, were explored with brief references to the interaction of stressors and how these can serve to bring about the survival and wellness responses, which are prerequisites for maintaining resilience and creativity in resolving major challenges, later in life. This also explains why some soldiers are able to thrive in the exceptional rigours of military life, while others succumb to relatively mild exposures of what may well be described as minor stress. However, the answer to many of the questions on resilience is found in the following simple, direct and terse statement in the preface to *We are soldiers still* in the recognition of an identity and an enduring set of attitudes, with which life is faced and its challenges taken on after the combat experience:

> What all of us know is that we are soldiers still. Some of us revisit the battlefield in nightmares. Some of us wear scars, visible and invisible, that mark us as changed men who walk unseen among our neighbours, who have never known what it is like to hold a dying boy in their arms and watch the life fade from his questioning eyes. The world may now know something of the events that changed us, but thankfully most are spared the experiences that are ours and the burden that is the province of men who have killed other men at the bidding of political leaders more concerned with personal pride and national honor than with peace.

> Yes, we were soldiers once, when we were young. Now that we are old we are soldiers still. We are soldiers who mourn for young men and women dying on other battlefields in other parts of our world four decades and more after our war ended so badly. A generation of political leaders who studiously avoided service in our generation’s war seemingly learned nothing from that history and thus consign a new generation of soldiers to “preemptive” wars of choice, condemning them to carry their own memories of death and dying through their lives.

> May God bless and keep all soldiers, young and old, and may that same God open the eyes of all political leaders to the truth that most wars are a confession of failure - the failure of diplomacy and negotiation and common sense and, in most cases, leadership.

> We who still dream of war in our troubled nights hope against hope for peace and its blessings for all (Moore and Galloway, 2008. pp. xix, xx).

And thus, in conclusion, as this chapter shows, the loss of either vertical or horizontal cohesion, or both, will have a devastating effect on the fighting spirit. It undermines and rapidly destroys the strongest and most resilient of soldiers in otherwise excellent fighting units, thus bringing about the core elements that eventually result in the much talked about and little understood phenomenon of Combat Stress Reaction, which eventually is one of the root causes of that destructive mental health condition in soldiers: Post-traumatic Stress Disorder. The maintenance of horizontal and vertical cohesion, on the other hand, ensures that the unit, even once its members have moved on to new positions in civilian life, can sustain and maintain these learned skills and transfer them to a new life setting, where they can continue to successfully face challenges and overcome adversity. If nothing else, these
soldiers teach us how their learned resilience and resourcefulness act as a protective shield, making for better adjustment after even very traumatic deployments.

Based on what we have learned from the military, no other conclusion is possible, but that resilience and resourcefulness are a mindset taught and integrated into personality in which preparedness, strength of beliefs, and above all, the meaning of life as defined on the battlefield, result in the ability to select optimal approaches to various challenging life situations and circumstances, regardless of their nature.

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Chapter 16

**HOW EMERGENCY SERVICE WORKERS COPE WITH, AND GROW FROM, WORK-RELATED STRESS AND TRAUMA**

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**ABSTRACT**

Due to the nature of their work, emergency service personnel constantly work in challenging situations that elevate their levels of arousal, excitement, satisfaction and also distress. Regardless of the theoretical lens, the work associated with being a member of the ambulance, fire, police, defence, or any other similar emergency service organisation, can put a person at an elevated risk for psychological distress. This distress is directly related to the levels of exposure to potentially traumatising experiences that such personnel may have. However, for many reasons, most people in these occupations are resilient to the potential stress and trauma they face and many develop and grow as a person following the unique exposure to hardship and sometimes horror that they are confronted with. This assertion does not discount the initial impact of trauma, or belittle horror, or discount the ongoing distress that is experienced by many; it simply states the reality that most people in emergency service occupations weather the psychological storms associated with traumatic experiences, and ultimately adjust and even grow, as a result of the struggle they engage in. Indeed, throughout this chapter, evidence is presented that supports this assertion and more importantly, describes the ways in which people and their organisations can promote the likelihood of successful adaptation.

**Keywords:** Emergency Services; Ambulance Officers; Police; Post-traumatic Growth; Resilience
INTRODUCTION

In this chapter, the focus is on ways in which emergency service workers deal with the struggles they encounter in order to make sense of the wide range of experiences they have when executing their roles. Such occupations face tremendous challenges at times, and because of this, the chapter focuses on the personal richness that such a role can afford. This does not suggest that growth is an automatic by-product of trauma, or that it occurs for all people by any means. Indeed, the journey to growth is sometimes very long and for some, does not happen at all. A further caveat is that such an approach to research and to clinical intervention does not trivialise the difficulties that emergency service workers encounter, but rather promotes adaptation as a more common outcome to stress and an outcome that can be promoted through psycho-education and ongoing professional support. This approach to research and intervention (e.g., through staff support services) is a relatively recent shift from solely framing investigations of well-being and psychoeducation within a pathogenic paradigm to explorations based in a salutogenic paradigm. These differing approaches are now outlined.

From the diagnostic criteria for Posttraumatic Stress Disorder in the Diagnostic and Statistics Manual-IV-TR (DSM-IV-TR, APA, 2000), to a broad and well established literature base (e.g., Figley, 1995; Marmar, Weiss, Metzler, Delucchi, Best, and Wentworth, 1999; Salston and Figley, 2003; Violanti, 2004), there is consensus that being exposed to stressful and traumatising events within the course of a work role (e.g., bearing witness to trauma), can have significant impacts on an individual’s mental health. The vast majority of psychosocial research examining emergency service personnel (e.g., police, fire, and ambulance officers) to date, has focused on ways in which such personnel may suffer as a result of the relatively high levels of exposure to stress and trauma that they encounter in the course of their work-role. Understanding predictors and correlates of Post Traumatic Stress Disorder (PTSD), depression, and suicidal ideation, are commonly targeted (e.g., Mealer, Shelton, Berg, Rothbaum, and Moss, 2007; Patterson, 2003; Violanti, 2004). The catalyst for these responses, within the context of emergency service work, is referred to as a critical incident. The incident is defined by the nature of the event (e.g., respiratory difficulties, chest pain) or by the individual’s response to the event. In other words, the incident may be clinically challenging and/or psychologically confronting and individual resources and strategies are brought to the fore in order to deal with a particular experience.

In recent years, there has been a small, but steady, flow of research that focuses on factors that underpin successfully negotiating such work-related challenges (e.g., Shakespeare-Finch, Gow and Smith, 2005; Shipley and Gow, 2006). Rather than using a traditional pathological framework, such research is tending to embed itself within a salutogenic paradigm where the interest is in the origins of health and ways in which successful post-stress and post-trauma adaptation can be maximised. Within a pathogenic framework, the goal may be to identify predictors of mental health problems, and the absence of those problems (regarded as resilience). The salutogenic paradigm allows for the concurrence of distress and personal development including the development of wisdom (Calhoun and Tedeschi, 2006).

Beyond variables such as individual characteristics, organisational factors, and the nature of the event, the group of variables that have been supported as essential in promoting mental
health are those that come under the broad banner of coping. In this chapter, differences in the way emergency service personnel cope, compared to the general population, are highlighted, as is the need for psycho-education and ongoing support of emergency service personnel to enhance the potential for positive post-critical incident adaptation and growth. As the chapter is placed within a salutogenic paradigm, a comprehensive cognitive model of psychological growth is briefly outlined first.

**POSTTRAUMATIC GROWTH**

Posttraumatic growth is a term that was promoted by Richard Tedeschi and Lawrence Calhoun (1995) in a landmark text called “Trauma and Transformation”. Posttraumatic growth refers to a variety of ways in which people may perceive positive changes, not as a result of experiences trauma per se, but as a result of the struggles engaged in post-trauma. Publication of the Posttraumatic Growth Inventory the following year (Tedeschi and Calhoun, 1996) encouraged a wave of research that has investigated positive post-trauma outcomes in survivors of a myriad range of experiences. Calhoun and Tedeschi’s most recent iteration of their model of positive post-crisis changes (2006) called “Posttraumatic Growth (PTG)”, is a useful model to understand within the context of this discussion, as the model comprises processes that can lead to the perception of positive life change as an outcome, but not at the expense of ignoring ongoing distress.

The PTG model incorporates a number of factors that influence post-trauma outcomes, such as the severity of the experience, types and timing of ruminative processes, self-disclosure, and social support. The foundation of the PTG model posits that an event needs to be perceived as sufficiently seismic in nature, in order for it to be a catalyst for positive change. Existing schemas are devastated in light of the experience. The event triggers automatic and intrusive rumination, through which existing schemas, that may no longer be applicable to the survivor in light of current events, are replaced with schemas that then incorporate the experience (Calhoun and Tedeschi, 2006). The initial intrusive nature of rumination regarding the traumatic event gradually becomes more deliberate. It is these deliberate thoughts that contribute to the development of new schemas and hence, to a new altered life narrative. Eventually the experience is woven into the new narrative and the survivor may also gain wisdom. As previously stated, they may also endure ongoing distress. To use simplistic terms, some days are good days and some days are not so good for many survivors of trauma, be they the direct survivors or a person who has come to their aid.

A strong relationship between the impact of an event and distress (i.e., the more severe the event, the more severe the problems that arise) has been demonstrated in some research (e.g., Chung et al., 1999). However, many other variables have also been implicated in determining post-trauma outcomes. For example, personality characteristics (e.g., Shakespeare-Finch et al., 2005) and organisational factors (e.g., Brough, 2004) have been demonstrated to account for some of the variance in post-trauma outcome variables in ambulance and police officers respectively. In terms of positive post-trauma changes, Calhoun and Tedeschi (2006) concur that the nature of the event is not a sufficient determinant of post-trauma outcome. They propose that rather than the trauma itself being
predictive of post-trauma outcome, it is the struggle post-crisis that is crucial in producing posttraumatic growth. Within that struggle, strategies and resources for coping are paramount.

**Coping and Posttraumatic Growth**

Different ways in which people cope relate to the sorts of outcomes experienced post-trauma when looking at positive adaptation. For example, posttraumatic growth taps varying areas of personal development and the Posttraumatic Growth Inventory (Tedeschi and Calhoun, 1996) measures five distinct components of growth: changes in (i) relating to others, (ii) appreciation of life, (iii) personal strengths, (iv) new possibilities, and (v) religious or spiritual beliefs. Research suggests that specific ways or styles of coping are related to these dimensions in different ways. For example, research with ambulance officers has found that only the new possibilities and relating to others factors were significantly correlated to a variety of coping approaches, such as work-related cognitions, positive reframing, engagement of non-work activities, and emotional support (Shakespeare-Finch, 2003). Such differential findings are also evident in other populations. Morris and colleagues (2007) studied posttraumatic growth and dimensions of coping in survivors of cancer. While positive appraisals were predictably associated with all dimensions measured by the Posttraumatic Growth Inventory (Tedeschi and Calhoun, 1996), only the new possibilities and relationships with other dimensions of the inventory were correlated with ways of coping, including the perception of emotional and instrumental support, active coping, and expressing emotions (Morris et al., 2007).

**Coping**

Coping is widely considered to be a transactional process between individuals, the context, and the post-trauma or post-stress outcome. The process involves appraisals as to whether a situation is a threat, a challenge, or a loss, and perceptions of what can be done to alter the situation (including if it can be altered) or to minimise the threat. Following the initial appraisal of the situation, coping strategies are implemented (Lazarus and Folkman, 1984). Lazarus and Folkman (1984) first described the basis of this model of coping as a 2-stage theory. Initially, a primary appraisal regarding the degree of threat is made; if a situation is appraised as non-threatening, neither a coping response nor subjective experience of stress is prompted. However, if the situation is perceived to be threatening, a secondary appraisal process is engaged to evaluate one’s resources for coping. If coping resources are judged to be adequate, coping responses are activated and the experience of stress is minimal. In other words, the person is resilient to the potential of experiencing stress (Bonanno, 2008).

When resources are perceived to be inadequate, the individual attempts to cope, but simultaneously experiences notable levels of stress (Lazarus and Folkman, 1984). This model has been developed over time and now includes the need to attribute a sense of meaning to an experience in order to successfully cope with it (Folkman, 2008; Folkman and Tedlie Moskowitz, 2000). The PTG model is comparable to Folkman’s (2008) transactional theory of stress and coping whereby deliberate rumination occurs through assessing available
resources and coping strategies, and in the establishment of new meaning. The new sense of meaning incorporates the stressful or traumatic experience into a new life narrative. Perceiving benefits from adversity is one way of finding meaning in it (Tedeschi and Calhoun, 1996). This assertion has had support for many years; for example, Victor Frankl, the well known psychiatrist, counsellor and author who spent years in the horror of Nazi concentration camps during World War II, proposed that when an event is made understandable, it can be imbued with a sense of meaning. He further proposed that such a capacity is more common than a failure to be able to do so and that finding meaning can be learned (Frankl, 1984). The latter point is part of the rationale for psycho-education and support services in the emergency services. Assisting people to develop coping skills includes helping people to identify ways in which they can infuse an experience with a sense of meaning. Approaches in achieving this are highlighted later in this chapter, for example, in the discussion section regarding work-related cognitions.

Emergency service workers are a vital resource to the community and demonstrating concern for officer well-being, is in turn, showing concern for the well-being of the wider community. Trauma research in emergency service populations often investigates the officer’s experience as a vicarious or secondary traumatic event (e.g., Figley, 1995). However, it is important to remember that an emergency service worker may also be a direct trauma survivor (e.g., threat to officer’s own life), or an indirect survivor. Research over the past 30 years has clearly demonstrated that the post-trauma outcomes experienced by direct survivors can be mimicked in those who come to their aid, whether that outcome be seen as negative as is the case with compassion fatigue and PTSD (e.g., Figley, 1995; Marmar et al., 1999), or positive as is the case with posttraumatic growth (Shakespeare-Finch, 2003, Shakespeare-Finch et al., 2005).

So what are the more common ways of coping that are engaged in by those who, by virtue of their nature of their work, call on their coping resources and strategies frequently, and in what ways do they differ from those used by people whose work role does not ordinarily include challenges such as fighting bush fires, attending to motor vehicle accidents, assaults, acute illness, breaking tragic news and so on? Some strategies are consistent with the general population, but others do differ. In the following sections, some more common strategies and resources are outlined and then some of the differences in strategies and resources used in emergency service work, as opposed to the broader population, are identified and discussed. The selection of coping strategies involves appraisals of a stressful event and bestowing the situation with meaning. These ways of coping are different from the typical global meaning assessed when measuring levels of PTG (Cann et al., 2009; Folkman, 2008; Frankl, 1984).

Folkman and Tedlie Moskowitz (2000) highlight three adaptive coping strategies that help to explain how people in general cope with adversity, rather than just understanding that they cope: positive reappraisal, problem-focused coping, and the creation of positive events. Positive reappraisal refers to the cognitive process through which people focus on the good of the event; this notion is also regarded as effortful rumination within the model of PTG (Calhoun and Tedeschi, 2006). Problem-focused coping includes thoughts and instrumental behaviours and is particularly effective where the individual perceives control over the situation. Thirdly, the creation of positive events is an adaptive strategy whereby an individual infuses ordinary events with a positive meaning, for example, the use of humour, or awareness of the beauty of an unfurling fern leaf. Problem-focused, or active coping, is a
key coping strategy during a traumatic event, because it engenders a sense of control and is related to direct and indirect notions of social support (Patterson, 2003; Solomon et al., 1999).

The following section expands further on the coping resources mentioned here and briefly discusses the influence of social support on post-trauma adjustment.

Social Support and Interpersonal Relationships

Perceived social support is a coping resource that can influence an individual’s judgment of coping adequacy (Vaux and Harrison, 1985). The beneficial effects of social support are well documented, with higher levels of support being linked to more adaptive coping strategies and lower levels of distress (e.g., Brown, Nesse, Vinokur, and Smith, 2003; Cohen and Wills, 1985; Folkman and Teddie Moskowitz, 2000; Lindsey and Yates, 2004). Seeking support from peers, friends, or family is an important coping activity (Shakespeare-Finch, Paton, and Violanti, 2003) and has been consistently identified as a predictor of successful post-critical incident adaptation in emergency service workers (e.g., Shakespeare-Finch and Scully, 2004). A lack of social support has been positively correlated with PTSD symptoms and is listed as a primary stressor in ambulance personnel and police (Burke, Paton, and Shakespeare-Finch, 2008; Sparrius, 1992).

When talking about social support and its relationship to well-being, the receipt of support or perceptions of the availability of support are most often spoken about. But more recently, questions have been asked about how giving support actually impacts on well-being. In these studies, well-being has been operationalised in a number of ways including mortality (Brown et al., 2003), or satisfaction with life or with a work role. Within the context of emergency service personnel, being a peer support officer has been associated with enhanced perceptions of positive experiences (e.g., Beaton, Murphy, Johnson, Pike, and Corneil, 1999; Shakespeare-Finch and Scully, 2004). Peers are regarded by others as a vital avenue of support (Alexander and Klein, 2001; Gow, Shipley and Pritchard, 2008; Regehr, Goldberg, and Hughes, 2002) and have also been found to elicit higher scores on the Posttraumatic Growth Inventory (PTGI; Tedeschi and Calhoun, 1996) than officers who are not part of a volunteer peer support program (Shakespeare-Finch and Scully, 2004). For example, Table 1 depicts descriptive data, and results of a t-test conducted to ascertain if ambulance peer support officers elicited significantly different levels of self-reported posttraumatic growth than officers who did not occupy that role. As can be seen, trained peer support officers reported higher levels of PTG than officers who were not part of the peer support program. Results were significant at a probability level less than .001 (Shakespeare-Finch, 2003).

Table 1. Means, Standard Deviations, t-values, and Significance Levels for Ambulance Peer Support Officer Status on Levels of PTG

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Support officer</td>
<td>57.12</td>
<td>21.40</td>
<td>3.342</td>
<td>498</td>
</tr>
<tr>
<td>Not a peer support officer</td>
<td>47.67</td>
<td>21.26</td>
<td>3.326</td>
<td></td>
</tr>
</tbody>
</table>

Note: SD = Standard Deviation; df = Degrees of Freedom.
Humour

Finding humour in a traumatic event has long been associated with coping in emergency service occupations (e.g., Moran and Massam, 1997). The theory behind the somewhat prolific use of humour in the context of emergency service work is that critical incidents are charged with tension and that humour can be used as a mechanism to release that tension. The humour used in these instances is not consciously decided on, but rather is spontaneous in order to relieve the tension associated with the incident. The nature of the humour used also differs from that used in most social contexts. That is to say, humour used by emergency service workers to relieve tension is often referred to as ‘gallows humour’ or ‘black humour’. Such humour tends to be restricted in its use, with personnel tending to ensure that it is used out of the public ear (Moran and Massam, 1997). This is because the sometimes macabre nature of ‘jokes’ may be considered in bad taste at best by others, especially if they are onlookers, friends or relatives of the victim/victims.

Whereas much of Moran and Massam’s work has been with fire fighters, Regehr and colleagues (2002) examined ways in which ambulance officers deal with the traumatic and stressful events they attend. Earlier, Regher et al. (2002) had concurred with Moran and Massam (1997) claiming that gallows humour is a preferred coping strategy for ambulance officers. Responders said that using such humour relieved tension and assisted them in dealing with particularly horrific events. Scott (2007) agreed that the use of humour is generally a positive strategy that is often used in emergency contexts. In her study of humour in emergency and accident departments, Scott explains that using gallows humour has been normalised as a characteristic of working in organisational settings in which attending to extremely confronting events, that often involve gruesome sights and death, is relatively common.

Cognitive Appraisals

Various stressor appraisals may be related to growth, for example, primary appraisals include expectations or goals, and secondary appraisals such as the extent to which people think they can cope (Carver, 1998; Folkman, 2008; Folkman and Lazarus, 1984). Seeking to understand what factors predispose people to appraise a situation as a challenge, rather than as a threat, is a useful endeavour that has gained more attention over the past 15 years or so. For example, research has examined the actual coping mechanisms that link dispositions with a positive outcome following a stressful or traumatic situation, rather than examining coping as it relates to negative consequences (Folkman and Tedlie Moskowitz, 2000; Shakespeare-Finch et al., 2005). In an investigation of the impact of emergency service workers attending tornado disaster victims in America, nearly 80% of workers said that reminding themselves that they were providing help was their primary coping response (Miller, 1995).

Miller’s 1995 finding has been replicated in other more recent studies. For example, in a sample of 526 ambulance officers, cognitive appraisals around the work itself were found to be a significant correlate of growth and quite separate from other forms of appraisal (Shakespeare-Finch, 2003). This separation of cognitions relating to work as opposed to other cognitions (such as positive appraisals) was exemplified in a sample of experienced
paramedics through a Principal Components Analysis of the Coping Resources in Rescue Workers Inventory (CRRWI; McCammon, Durham, Jackson Allison, and Williamson, 1988).

Table 2. Principal Components Analysis: Four-Component Solution for the CRRWI

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>ITEM CONTENT</th>
<th>FACTOR LOADINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>COMPONENT 1</td>
</tr>
<tr>
<td>18.</td>
<td>Figure out the meaning of being in the job</td>
<td>F1</td>
</tr>
<tr>
<td>14.</td>
<td>Attempt to figure out when responses were irrational</td>
<td>.612</td>
</tr>
<tr>
<td>4.</td>
<td>Figure out things you feared really could have happened</td>
<td>.586</td>
</tr>
<tr>
<td>2.</td>
<td>Remind yourself things could be worse</td>
<td>.575</td>
</tr>
<tr>
<td>8.</td>
<td>Think of the meaning of life following the event</td>
<td>.531</td>
</tr>
<tr>
<td>1.</td>
<td>Remind yourself you are providing help</td>
<td>.523</td>
</tr>
<tr>
<td>16.</td>
<td>Figure out how things would have been different if you had acted in a different way</td>
<td>.486</td>
</tr>
<tr>
<td>22.</td>
<td>Think about what happened alone</td>
<td>.434</td>
</tr>
<tr>
<td>32.</td>
<td>Figure out life choices and how they relate to the event</td>
<td>.417</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.410</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMPONENT 2</td>
</tr>
<tr>
<td>26.</td>
<td>Seek increased emotional support from others</td>
<td>.693</td>
</tr>
<tr>
<td>12.</td>
<td>Put your feelings out of mind (R)</td>
<td>.657</td>
</tr>
<tr>
<td>19.</td>
<td>Put whole thing out of mind (R)</td>
<td>.653</td>
</tr>
<tr>
<td>10.</td>
<td>Let yourself experience all the feelings you had about the event</td>
<td>.651</td>
</tr>
<tr>
<td>11.</td>
<td>Talk to others about the incident</td>
<td>.560</td>
</tr>
<tr>
<td>27.</td>
<td>Look for someone to provide direction</td>
<td>.543</td>
</tr>
<tr>
<td>23.</td>
<td>Figure out why the incident made you feel as it did</td>
<td>.539</td>
</tr>
<tr>
<td>17.</td>
<td>Seek out other workers dealing with the same thing</td>
<td>.531</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMPONENT 3</td>
</tr>
<tr>
<td>21.</td>
<td>Develop positive attitude about the incident</td>
<td>.701</td>
</tr>
<tr>
<td>13.</td>
<td>Think about good things in life</td>
<td>.654</td>
</tr>
<tr>
<td>6.</td>
<td>Think about humorous parts of the event</td>
<td>.563</td>
</tr>
<tr>
<td>20.</td>
<td>Withdraw from people (R)</td>
<td>.479</td>
</tr>
<tr>
<td>3.</td>
<td>Look at the situation realistically</td>
<td>.467</td>
</tr>
<tr>
<td>9.</td>
<td>Work on expectations for the future</td>
<td>.425</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMPONENT 4</td>
</tr>
<tr>
<td>29.</td>
<td>Find new interests</td>
<td>.737</td>
</tr>
<tr>
<td>30.</td>
<td>Spend more time listening to music, writing or getting in touch with nature</td>
<td>.651</td>
</tr>
<tr>
<td>25.</td>
<td>Involve self in other activities</td>
<td>.599</td>
</tr>
<tr>
<td>31.</td>
<td>Do things impulsively to see if such activities would help</td>
<td>.577</td>
</tr>
</tbody>
</table>

Note: (R) indicates items 12, 19, and 20 were reversed.

The CRRWI comprises 32 items that are designed to assess; (i) seeking meaning, (ii) regaining mastery through individual action, (iii) regaining mastery through interpersonal action, and (iv) philosophical self-contemplation. Items are responded to on a four-point scale, with 1 representing “never having used the strategy” and 4 representing “using the strategy often”. Horn’s parallel analysis technique and interpretability were used by Shakespeare-Finch (2003) to ascertain the number of components to extract, and to decipher the extracted constructs. Kaiser-Meyer-Olkin (KMO) of 0.83 demonstrated the appropriateness of the data for the analytical techniques used and Bartlett’s test of sphericity also confirmed the adequacy of the data for analysis with an approximate chi-square of 3994.62 ($df = 496, p < 0.001$). Consistent with the scales’ developers (McCammon et al.,

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1988), Shakespeare-Finch found a four component solution (see Table 2). However, only 27 of the 32 items loaded above 0.4 in a four component solution, including one complex variable that loaded on Factors 1 and 4 (item No. 32).

These four components accounted for 38.54% of the variance. Component 1 reflected cognitions that specifically related to the work domain ($\alpha = 0.74$), component 2 represented emotional support and expression ($\alpha = 0.78$), component 3 supported positive reframing as a coping resource ($\alpha = 0.60$), and component 4 tapped a recreational form of coping ($\alpha = 0.65$).

In the solution, the first factor points to the use of cognitive strategies in coping with the traumatic experience. The second factor in this solution relates to the expression of emotion, including the seeking of social support, which is similar to factor three in the original solution. Positive reframing was demonstrated as the essence of factor three, and factor four refers to more individualised coping strategies, for example “Find new interests”.

The point to make here is that the first factor represents cognitions related to the critical incident, within the context of the work role as a strategy for coping, rather than more generalised cognitions. In other words, the work context can provide a framework for creating a sense of meaning (see later discussion on this) such as reminding one’s self why they joined the job in the first place. Further, by focusing on the incident itself and the way in which it was dealt with by the individual (e.g., ruminating on the responses made and how the outcome may have differed, if the responses had been different), the incident is placed squarely in the work context. This may assist in effectively compartmentalising the event and its potential impact from other areas of life (e.g., family life).

Regehr, Goldberg, and Hughes (2002) concur with Miller (1995) and Shakespeare-Finch’s (2003) findings that were discussed earlier. Regehr and colleagues found that the most frequently endorsed coping mechanism in Canadian ambulance officers was the deliberate use of cognitive strategies. The participants in this sample reported making conscious attempts during the actual traumatic event to compartmentalise their cognitions by effectively dissociating from their emotional reactions. As Charles Figley presented in 2009, dissociation occurs to some extent for all of us every day and can be harnessed as a very positive coping strategy at the time of the event. Indeed, this strategy may be vital for emergency service workers to be able to perform to the best of their capacity at the time of the event/s. This conscious and effortful use of cognitive process for a beneficial psychological health outcome also includes engaging at a later time with the material that was distressing; that is to say, at some point, an individual will need to revisit the experience, such as using the cognitive appraisals discussed, or in order to bestow the event with a sense of meaning.

**Bestowing Meaning**

It has been suggested that human beings spontaneously search for attributions to make sense of the situation at hand (Amirkhan, 1998) and that individuals tend to have a propensity to view the cloud as having a silver lining (Frankl, 1984; Janoff-Bulman, 2006; Tedeschi and Calhoun, 1995, 1996; Tennen and Affleck 1998). That is, positive aspects about life may not ordinarily be noticed, but the experience of a traumatic event promotes noticing or remembering the positive things in life. Finding meaning in the trauma and thus, hopefully a positive perspective, is related to finding benefit, or growing from the event (Calhoun and
Whereas elevated levels of rumination have been perceived as predictive of maladjustment post-crisis, higher levels of rumination about a traumatic event, soon after the event, has also been found to positively correlate with PTG (Calhoun, Cann, Tedeschi, and McMillan, 2000). This strategy to deal with difficulty was represented in components 3 and 4 in the above PCA.

Being exposed to the stressful and traumatic events that other people endure can essentially provide a catalyst for reflection on the emergency service worker’s own life. In a study of paramedics, who were part of the initial response to the survivors of the Indian Ocean tsunami in 2004, this reflection of the responders on their own lives was made clear. For example, upon returning from the tsunami ravaged area of Banda Ache, one paramedic noted that he had assisted an injured homeless person in a park and had a different sense of this assistance than he had had prior to his experience with the Tsunami survivors and victims. He expressed that he “now value[d] that person differently, not for what he isn’t, but for what he is” (Shakespeare-Finch and Scully, 2008, p. 97).

Religion and Spirituality

There is a large body of literature dedicated to studies of religiosity and spirituality and how beliefs may influence a person’s or a community’s mental health. Religious and spiritual beliefs are often implicated in successful negotiation of critical incidents and other stressful life events. Posttraumatic growth literature suggests that adopting religious and spiritual changes occurs for some people following trauma, and that such changes are also a predictor of positive adjustment (e.g., Calhoun and Tedeschi, 2006; Tedeschi and Calhoun, 1996). Research from other countries has been mixed. For example, perceiving positive religious changes as a result of engaging in the post-trauma struggle has not been found in Australian (e.g., Shakespeare-Finch and Morris, 2010) or European samples (e.g., Znoj, 2006). This is not to suggest that religious and spiritual changes are not used as a coping resource in these populations, but simply that the experience of trauma does not appear to act as a catalyst for the adoption of new religious or spiritual beliefs.

In many groups, from cancer survivors to police officers and refugees, relying on religious or spiritual beliefs to assist in coping, has been related to positive adaptation (e.g., Calhoun and Tedeschi, 2006; Shakespeare-Finch and Morris, 2010). Results however, are mixed; for example, in a study of 213 military veterans, Witvliet, Phipps, Feldman, and Beckham (2004) found that contrary to predictions, positive religious coping was significantly related to the severity of PTSD symptoms. Znoj has gone so far as to suggest that adopting a religious belief system as a means of dealing with trauma can be considered a sign of weakness (2005). Clearly this statement is contentious at best and more research is needed to examine the role of religion in post-trauma adaptation, with studies looking at an array of potential processes and outcomes rather than solely focussing on either positive or negative post-trauma changes. Religious and spiritual beliefs also need to be examined in the very different conceptualisations of coping strategy, as distinct from changing as a result of a critical experience.
How Emergency Service Workers Cope With, and Grow From …

Problem-Focused or Instrumental Coping

Livneh (1999) discusses a wide range of coping resources and claims that problem-focused coping is a better predictor of positive adaptation (i.e., experiencing lower levels of emotional distress), than other forms of coping. Other researchers have also found problem-focused or engagement strategies to be linked to post-trauma well-being (e.g., Scheier et al., 1999; Solomon et al., 1999). For example, active or problem-focused coping has been linked to positive changes (psychological growth and well-being) in ex-prisoners of war, rather than as a buffer against negative affect (Solomon et al., 1999). However, Patterson (2003) found a very different story when examining social support, emotion-focused, and problem-focused coping in a sample of police officers. Problem-focused coping was positively related to distress; that is to say, the higher the reported levels of engagement in problem-focused coping strategies were, the higher the recorded levels of distress. Exploring this notion further, the nature of the event is likely to have affected the results. For example, emotion-focused coping is an adaptive method of dealing with difficulty when the situation cannot be changed, whereas problem-focused coping is beneficial when the situation can be changed. In Patterson’s study, it may be that this strategy was being used in situations that could not be altered, and hence distress levels would be likely to increase. This research highlights the need to be cognisant of the context in which a specific strategy is used, because the nature of the event is critical to the efficacy or otherwise of the strategy employed to deal with a particular challenge.

A Varied Repertoire of Resources and Strategies

In the discussion to this point, a variety of coping resources and strategies that emergency service workers use to deal with the stress and traumas they confront has been outlined. Individuals may have a preferred approach to coping, but in emergency service work, evidence supports the conclusion that employing a varied repertoire of coping resources and strategies is more adaptive for individual officers than reliance on a single strategy (Gow, Shipley and Pritchard, 2008; Shakespeare-Finch, Smith, and Obst, 2002; Shipley and Gow, 2006; Violanti, 2004). In a controlled study, Shakespeare-Finch and colleagues (2002) compared the coping strategies that paramedics adopted to those used by a matched group of shift workers where exposure to potentially traumatising events was not part of the work role. Participants were matched on a number of variables including age, gender, family life cycle and number of dependent children. The dependant variable was particular elements of family functioning (i.e., conflict, intimacy and parenting style). Groups did not differ in family functioning scores, but did differ in the way they coped with life’s challenges; that is to say that positive family functioning (e.g., higher levels of intimacy and lower levels of conflict) in the control group of shift workers was predicted solely by social support, whereas the ambulance personnel’s family functioning was differentially related to a variety of strategies and resources such as social support, cognitive rationalisations, and self care.

Shipley and Gow (2006) conducted an investigation of the coping strategies employed by a sample of 84 State Emergency Service volunteers. Their research found that a variety of strategies, idiosyncratic and deliberate, were used in dealing with stressful events. For
example, participants reported intentionally engaging in self care behaviours (such as making time to rest and relax, attempting to regain a sense of control and re-establish routines), but relatively few reported using commonly perceived maladaptive strategies (e.g., substance abuse, denial, and self-blame). Violanti (2004) studied police officers in New York and proposed similarly that a range of coping resources and strategies were used by police officers in order to successfully negotiate work challenges.

**Psycho-Education**

Of the limited evidence available, there is a promising trend indicating that Employee Assistance Programs (EAPs) and other similarly titled services, can be a valuable avenue for the delivery of proactive and reactive strategies that maximise the likelihood of a successful resolution following a particularly challenging ‘job’. With few exceptions, emergency service personnel are self-selected to their vocations and have, at least in the first instance, a belief that they will deal with days that are slow in the need for their services, and days that will be overwhelming in terms of physical and psychological demands. When coupling that type of self-efficacy with well thought out and carefully constructed psycho-education and support programs, research has demonstrated that satisfaction is high and the percentage of personnel needing leave for psychological reasons, is extremely low (see Shakespeare-Finch and Scully, 2004). Conversely, Regehr and her colleagues (2002) report that emergency service organisations that do not have comprehensive programs of psycho-education and support, have personnel who report high levels of stress (i.e., 40% of participating ambulance personnel), and dissatisfaction with the services available.

**CONCLUSION**

In this chapter, various coping strategies and resources have been discussed and applied to the context of being an emergency service worker. Such work roles place personnel in potentially traumatising situations which may occur in the predictable environmental setting of a hospital emergency room, or in the unpredictable chaos of a street or foreign building. People are often in crisis, lives may be threatened or ended, scenes can be grotesque, dangerous, or simply devastatingly sad for a myriad of reasons. In such charged environments, having a varied range of strategies and resources is most useful, so that different ways of dealing with situations can be tailored to meet the variety of challenges faced. Having adequate preparation and support services is also beneficial. Although the literature has traditionally focussed on what can go wrong for emergency service personnel in terms of their mental health, there is an emerging body of literature that recognises that such work roles can also afford a unique opportunity for personal development and growth. As indicated in this chapter, from the limited research currently available, posttraumatic growth has been found to be a more prevalent outcome than posttraumatic stress in emergency service personnel. So in spite of the challenges that emergency service workers face in the course of their employment, most are resilient and some people grow. Most crucial to those

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positive outcomes are the way in which the person copes with the work demands they face. In reality, coping is paramount to their psycho-social resolution.

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Chapter 17

PSYCHOLOGICAL RESILIENCE TRAINING IN THE AUSTRALIAN DEFENCE FORCE

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ABSTRACT

The Australian Department of Defence (ADF) is currently confronted with modern-day veterans returning from Iraq and Afghanistan, who have been exposed to risks that may result in the development of mental health problems. In an attempt to mitigate the development of such problems in ADF personnel, psychological resilience has become an area of increasing interest. Psychological resilience in the military context is defined as the “sum total of psychological processes that permit individuals to maintain or return to previous levels of well-being and functioning in response to adversity”\(^1\). The development of psychological resilience training within the ADF begins with the theoretical and empirical foundations of psychological resilience. At the corner stone of psychological resilience training in the ADF is the stress and coping model (Lazarus and Folkman, 1984), and arousal and emotional regulation techniques. Resilience training based on these elements has been incorporated into ADF training programs in an effort to bolster each individual’s inner resources and strengths as a preventive measure to enhance future adjustment. The psychological resilience training program within the ADF is known as BattleSMART (Self Management and Resilience Training). This chapter will describe how the ADF is capitalising on the construct of psychological resilience in an effort to prevent psychological distress in its members.

Keywords: Psychological Resilience, Stress, Coping, Resilience Training, Arousal Management, Military

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\(^1\) Quote from Zamorski (2008, p. 7).
INTRODUCTION

Fundamental to being employed within the ADF is the requirement for personnel to be able to perform effectively in adverse and high-risk situations, whether they are in a war-zone or a disaster relief situation. In Australia and internationally, performance in adverse circumstances is now considered to be a product not only of physical preparedness, but also of psychological preparedness. The Australian Department of Defence (DoD), and specifically the Directorate of Mental Health (DMH) established in 2002, is attempting to provide ADF members with the psychological preparation needed early in training to facilitate psychological resilience.

The need for psychological preparedness has become particularly salient in recent years, with an increase in operational tempo associated with the Iraq (Operation KRUGER) and Afghanistan (Operation SLIPPER) wars and peace keeping activities in the Solomon Islands (Operation ANODE) and East Timor (Operation ASTUTE). Today, the Iraq and Afghanistan operations represent the most sustained combat operations since the Vietnam War (Litz, 2007). Operation SLIPPER is Australia’s contribution to the campaign against terrorism, with approximately 1550\(^2\) ADF personnel currently being based within Afghanistan. In addition, as of May 2010, approximately 65 ADF personnel contribute to the provision of security and support for the Australian embassy and its staff in Iraq (Department of Defence, n.d.).

The ADF is presently confronted with modern-day veterans returning from Iraq and Afghanistan who have been exposed to events that might put them at risk of developing mental health problems. There are several examples of research that demonstrate the relationship between combat exposure and mental health problems, such as post-traumatic stress disorder (Litz, Orsilli, Friedman, Ehlich, and Batres, 1997; Kaylor, King, and King, 1987; Maguen, Suvak, and Litz, 2006; Schlenger, Kulka, Fairbank, Jordan, Hough, et al., 1992). While a majority of military personnel experience good mental health across their lifespan, despite exposure to potentially traumatic situations, some will face long-term and debilitating impacts on their mental health (Maguen et al., 2006). As a result, occupational mental health strategies are designed to build resilience in all personnel. In an effort to deal with such challenges, a five nation (i.e., Australia, United States, Canada, the United Kingdom, and New Zealand) collaborative, referred to as The Technical Panel 13 (TP-13), of which the ADF is a member, was established; it aims to provide strategies for occupational mental health and resilience building. In this context, TP-13 defines psychological resilience as “the sum total of psychological processes that permit individuals to maintain or return to previous levels of well-being and functioning in response to adversity” (Zamorski, 2008, p. 7). TP-13 is part of a larger group of 80 technical panels that facilitate the sharing of information, research and policy amongst military organisations (Bowles and Bates, 2010).

This chapter will describe how the ADF is capitalising on the construct of psychological resilience. We begin with the theoretical foundations of the ADF’s approach to resilience training. The second section will describe the accumulating evidence in support of the utility of resilience training with the military. The third section of this chapter, will detail the current

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\(^2\) The population of Australia at 01.05.10 was 22 million, based on projections from the Australian Bureau of Statistics, 2009; the total full-time Defence force service personnel at that stage numbered approximately 89,000 (Australian Department of Defence, 2010).
state of resilience training in the ADF, and finally the future directions of resilience training within the ADF will be discussed.

**The Theoretical Origins of ADF Resilience Training**

The story of psychological resilience training within the ADF begins with the theoretical and empirical foundations of psychological resilience. Epidemiological studies have helped to identify the existence of psychological resilience as an observable human quality comprised of certain states, characteristics, and conditions (Garmezy and Streitman, 1974; Masten, Best, and Garmezy, 1990; Werner and Smith 1992). That is, despite exposure to trauma and distressing circumstances, a majority of people are able to adapt with minimal disruption to normal functioning (Alim, Feder, Graves, Wang, Westphal, Alonson, et al., 2008; Bonanno, 2004). In response to such findings, psychological resilience is broadly defined as an individual’s capacity to return to healthy levels of psychological and physical functioning in the aftermath of a stressful or potentially traumatic event (Bonanno, 2004; Layne, Warren, Watson, Shalev, Friedman, Keane and Resick, 2007).

Historically, the foundations of psychological resilience were laid in the developmental literature and efforts were primarily focused on the resilient qualities of children (Luthar, Cicchetti and Becker, 2000). In more recent years, psychological resilience in adults has become an area of increasing interest and empirical exploration. The concept of adult psychological resilience, and specifically the possibility that resilience could be embedded or strengthened through training, is attractive to the ADF, because it encompasses the notion that individuals have the capacity to perform effectively despite adversity, danger, or significant disadvantage.

At the foundation of psychological resilience training in the ADF is Lazarus and Folkman’s (1984) stress and coping model; resilience training in the ADF draws heavily from this model in several ways. Firstly, the stress and coping model focuses on the actual processes that assist people to manage situational demands, as opposed to a focus on personality dispositions from which coping processes are thought to be related (Kobasa, Maddi, and Courington, 1981; Kobasa, Maddi, and Kahn, 1982). The insights of Lazarus and Folkman (1984) and other authors, who have analysed the ability to teach resilience, have propelled the expectation that such training could be applied in an ADF population (Seligman, Schulman, DeRubeis, and Hollon, 1999; Seligman, Schulman, and Tyron, 2007).

Secondly, the processes identified in the stress and coping model (Lazarus and Folkman, 1984) are thought to be relevant to the management of stress in a broad range of situations. This becomes particularly important in a military context due to the great diversity of stressful situations in which ADF members may find themselves: from moving one’s family to another state to being deployed to the Middle East Area of Operations (MEAO), to sharing confined living arrangements on a ship at sea. Thirdly, cognitive appraisals of the situation are thought to mediate a person’s response to their environment. This is a central component of the stress and coping model and a key teaching point of psychological resilience training in the ADF.

The third point requires greater elaboration as it is central to both the stress and coping model (Lazarus and Folkman, 1984) and ADF resilience training; thus a clear understanding of this model will facilitate further description of the ADF resilience training approach. In
brief, according to the stress and coping model (Lazarus and Folkman, 1984), cognitive appraisals of the situation are thought to mediate a person’s response to their environment. A potentially stressful event prompts primary appraisal. The aim of this appraisal is to evaluate whether an event is a threat to the self (physical or psychological) or to significant others. A secondary appraisal is then made, evaluating what can be done to improve (e.g., create benefit) or prevent the event. That is, appraisals are made about the changeability or controllability of the event.

Coping is defined as the person’s cognitive and behavioural efforts to manage specific situations considered to tax an individual’s available resources (Lazarus and Folkman, 1984). Coping is recognised to have two major functions: (1) regulating the experience of stressful emotions (emotion-focused coping), and (2) altering the environment perceived to be the cause of distress (problem-focused coping). Specific strategies that have been identified as emotion-focused include positive re-appraisal, acceptance, seeking social support, wishful thinking and avoidance. Strategies identified within the problem-focused sphere include active coping and planning.

Problem-focused strategies have been broadly conceptualised as ‘approach’ strategies, along with a number of emotion-focused strategies such as positive re-appraisal and social support seeking (Moos, 1997; Roth and Cohen, 1986). Such strategies allow the person to manage their distressing emotions and facilitate a return to problem-focused coping (Carver, Scheier, and Weintraub, 1989). Folkman and Lazarus (1980) reported that both these forms of coping are typically employed during stressful encounters. However, some forms of emotion-focused strategies (i.e., wishful thinking, behavioural disengagement and denial) are considered to be avoidant strategies, and due to their orientation away from the stressor are believed to be maladaptive and associated with poorer mental health outcomes (Moos, 1997).

Past empirical work demonstrated the possible implications of appraisal style on the manner of coping employed. Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen (1986) found that the style of coping is related to the types of primary and secondary appraisals made about the situation; for example, perceived threats to physical health were associated with more social support seeking and escape-avoidance. In relation to secondary appraisals, participants used more planning and problem-solving, confrontive coping and positive reappraisal in encounters when events were judged as changeable. In contrast, more escape-avoidance was used in situations appraised as uncontrollable. Thus, variability in the use of coping strategies was a function of people’s primary and secondary appraisals.

In line with the early insights of Folkman and Lazarus (1980), it is generally agreed that in order to deal with the broad variety of stressors encountered in modern life, no single style of coping strategy is adaptive across all stressful situations. In contrast, it is flexibility in the application of these strategies that is thought to contribute to resilient functioning (Bun Lam and McBride-Chang, 2007). Recent research demonstrates that flexibility in coping strategies allows an individual to attain such adaptability and resilience. Bun Lam and McBride-Chang (2007) examined whether coping flexibility would buffer the adverse effects of stressful life events; the findings demonstrated that coping flexibility mitigated the impact of stressful life events on psychological distress. In other words, individuals who were able to use a broader range of coping strategies experienced less psychological distress after the onset of a stressful life event, compared to those who did not employ flexibility in coping styles.

Since this time, research has demonstrated the importance of coping style on mental health outcomes in the ADF. For example, Dawson (2000) demonstrated a link between

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coping strategy use and levels of emotional distress amongst trainees in Australian Army recruit training. Specifically, ‘avoidant’ coping styles (i.e., self-blame, denial, rumination and venting) were predictive of poorer psychological adjustment and failing to complete recruit training. Alternatively, recruits who engaged in problem-focused coping strategies (i.e., planning and problem-solving) reported less emotional distress, and were more likely to complete training. On the basis of these findings, Dawson (2000) recommended that cognitive-behavioural interventions be implemented in the initial weeks of ADF recruit training to teach recruits adaptive styles of coping in the training context.

Resilience training has been incorporated into the Australian Army recruit training program in an effort to bolster each individual’s inner resources and strengths as a preventive measure, in order to enhance future adjustment. The notion of resilience and its link to mental well-being is gaining prominence; enhanced resilience is widely thought to be associated with better psychological and physiological adaptation following stress. Currently, the ADF is implementing and evaluating a resilience training program encompassing four central elements. These elements are depicted graphically in Figure 1.

Figure 1 depicts the cascade of occurrences that an ADF member may experience in response to a stressful or traumatic situation. This cascade involves four domains (i.e., physical reactions, thoughts, behaviours, and emotions). Participants in the program are asked to test or assess whether their responses or the responses of their peers, in these four domains, are helpful in dealing with the current stressful or dangerous situation. If a response, or responses, in these domains are identified as problematic, participants are taught methods to adjust their responses or the responses of others to the stressful situation. In order to teach adjustment, the BattleSMART program employs the core principles of cognitive-behaviour therapy and arousal regulation strategies to promote appropriate management of physiological arousal during, or after, stressful or dangerous encounters. The model depicted in Figure 1 is used in the BattleSMART program as a teaching tool to visually assist participants in the program, in working through the process of testing and adjusting their responses to stressful encounters. Finally, these adaptive coping strategies are reinforced during the ADF training system.

The sections following the figure document previous research and thinking that has led to the development of the ADF’s current resilience training program.
THE EVIDENCE FOR COGNITIVE BEHAVIOURAL INTERVENTIONS

The ADF has sought to capitalise on the stress and coping literature by attempting to apply these insights during training sessions. Training programs based on the cognitive-behavioural therapy (CBT) based approach seemed a natural fit and related directly to the central tenets of the stress and coping model (Lazarus and Folkman, 1984). The appeal of CBT based programs is that the set of skills learned can be applied independently by the participant and after the cessation of face-to-face therapy (Seligman et al., 1999). Thus, the lasting ability to employ the skills and techniques is likely to apply to CBT based training programs as well. CBT has been demonstrated to be effective in the treatment of unipolar depression in adults and adolescents producing a marked relief in a majority of patients (Beck, Hollon, Young, Bedrosian, and Budenz, 1985; DeRubeis and Crits-Christoph, 1998; Dobson, 1989; Hollon, DeRubeis, Evans, Wiemer, Garvey and Grove, 1992; Kaslow and Thompson, 1998; Serfaty, Haworth, Blanchard, Buszewics, Murad, and King, 2009).

In relation to prevention programs, Seligman et al. (2007) noted that most programs are based on CBT principles. Thus, the concept of introducing preventive CBT-based programs into organisations generally (rather than stress management training for specific and disordered populations), while not new, has not been widely researched. The following discussion reviews program evaluation studies that highlight promising results with CBT-based preventive approaches in various situations.

Hampel, Meier and Kümmel (2008) assessed 302 school students prior to commencing a structured stress reduction program, immediately after completing it and then again three months later. The training program incorporated cognitive-behavioural techniques such as cognitive restructuring, self-control techniques, problem solving, modelling, role plays, and prevention of relapse. In essence, both emotion-reduction and problem-solving skills were addressed within the training content. The results of this study revealed significant beneficial effects on students’ perceived stress, coping, and self-efficacy, in addition to demonstrated improvements in adaptive coping strategies. The authors concluded that the training provided participants with “a flexible repertoire of coping strategies” (Hampel et al., 2008, p. 1022) that will enable them “to cope effectively with diverse stressors” (p. 1022).

A similar study examined the effects of a cognitive behaviourally-based stress prevention program on university undergraduate students (Iglesias, Azzara, Squillace, Jeifetz, Lores Arnais, Desimone, et al., 2005). In this research, 136 students were provided with psychoeducational resources, as well as training in coping skills including deep breathing, relaxation and guided imagery techniques, cognitive restructuring and time management. Significant reductions in stress levels across a range of physiological and cognitive emotional measures (including across anger, anxiety, and reactive physiological states) were evident following training. While it should be noted that testing was conducted immediately post training only, these results offer further support for the notion that preventive stress management programs can be effective, particularly when a combination of cognitive and behavioural skills is used.

Seligman et al. (1999) examined the effectiveness of a CBT based prevention program in university students identified at risk of depression. The prevention training was conducted over an eight week period and workshop attendance was two-hours per week. Participants

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were followed for a period of three years. The authors reported that the workshop group experienced significantly fewer episodes of generalized anxiety disorder, depressive and anxiety symptoms compared to the control group, and demonstrated a trend toward fewer major depressive episodes. Similar results using a CBT based prevention program have been reported by Jaycox, Reivich, Gillham and Seligman (1994).

Recent evaluations of a CBT based intervention in a work-place setting have also yielded promising results. Gardner, Rose, Mason, Tyler and Cushway (2005) compared the effectiveness of CBT with a behavioural coping model in the management of work-related stress and included a waiting list control design element. The CBT intervention consisted of teaching and practice in the cognitive model, identification of negative automatic thoughts, thought challenging, positive self-talk and relaxation imagery. The behavioural coping intervention consisted of teaching and practice in time management, assertion, problem solving, goal planning, healthy lifestyles, and progressive muscular relaxation. Each intervention was delivered within three 3-hour workshops, with the final workshop acting as a follow-up session three months later. Gardner et al.’s findings suggested that both intervention approaches were effective in reducing stress, as measured by the General Health Questionnaire (GHQ), although improvement at follow-up was greater for participants who participated in the CBT intervention.

In general, the evidence suggests that a combination of cognitive and behaviourally focused interventions can be effective in reducing anxiety and stress, particularly for individuals who have experienced trauma or who suffer from panic disorder. Some authors have identified a ‘cross over effect’ whereby training in one area with a specific purpose in mind (i.e., trauma related anxiety reduction) can lead to additional benefits in other areas of mental processing. For example, in their extensive review of the relevant literature, Ruzek, Brymer, Jacobs and Layne (2007) reported that promotion of calming techniques can reduce trauma-related anxiety, as well as reduce high arousal, emotional numbing, or elevated emotionality. These elements can interfere with sleep, eating, hydration, decision-making, and performance of life tasks; prolonged experience in this state can lead to panic attacks, dissociation, PTSD, depression, anxiety, and somatic problems. Thus, exercises to improve emotion regulating strategies, such as relaxation, recovery, and distraction, are likely to have significant ‘add-on’ benefits for the individual when incorporated into stress management training.

The Evidence for Cognitive Behavioural Interventions in the Military

To date, there have been few studies exploring the efficacy of cognitive-behavioural interventions in the military. Those studies that have been conducted, however, have revealed preliminary support for the use of cognitive behavioural interventions. Linkh and Sonnek (2003) demonstrated the efficacy of a cognitive behavioural intervention program for anger management amongst military members. Results showed that the intervention was successful in achieving a desired reduction in anger at a statistically significant level and added support to the efficacy of using brief cognitive behavioural intervention methods for anger management in a military context.

Another study, conducted in 2003, and reported in Cohn and Pakenham (2008), evaluated the efficacy of a brief cognitive behavioural program in modifying causal attributions,
expectancy of control, coping strategies and psychological adjustment in a sample of Australian Army soldiers undergoing the 45 day recruit training program at ARTC. The results indicated that compared to the control group, those who received the brief coping skills intervention reported more helpful and realistic attributions for their problems during training, showed less use of self-blame and reported better psychological adjustment at the end of training. The coping skills program, developed by Cohn and Pakenham was introduced to Army recruits as of 1 July 2006.

**THE EVIDENCE FOR TEACHING AROUSAL MANAGEMENT SKILLS IN PSYCHOLOGICAL RESILIENCE PROGRAMS FOR ADF MEMBERS**

Most people witnessing a traumatic event, such as a serious motor vehicle accident, natural disaster, exposure to interpersonal violence, witnessing human degradation or combat, will experience a degree of stress response. Crucially, in the period (up to two weeks) following the critical incident or potentially traumatising event, a number of those people will experience more significant psychological distress and heightened levels of fear, anxiety, and/or emotional ‘numbing’ than others. For a small proportion of these individuals, the emotionality or distress will persist, and remain severe for an extended period of time, restricting everyday functioning.

Research demonstrates that the persistent presence of these symptoms in the weeks following a potentially traumatising event is highly prognostic of the subsequent development of serious mental illness, such as Acute Stress Disorder (ASD) and Post Traumatic Stress Disorder (PTSD) (Bryant and Harvey, 2000). Other factors are being identified as important to the predictive equation as well. For example, a recent Australian study examined over 1000 patients admitted to hospital following traumatic injury (Bryant, Creamer, O'Donnell, Silove and McFarlane, 2008). When examining those who subsequently developed PTSD, it was found that increased physiological arousal (as measured by heart and respiration rate), at the time of, and immediately following, the traumatic event, was a significant predictor of the development of the disorder. The results of research in this area suggest that strategies to reduce physiological stress reactions following trauma may lead to improved adaptation in the period following the event.

**Military Research in Arousal Management**

Promotion of arousal regulation strategies to enhance an individual’s ability to manage their own anxiety levels would appear to have wider application beyond the context of managing trauma reactions (Bryant and Harvey, 2000; Veach, Rahe, Tolles, and Newhall, 2003). Any intervention that focuses on minimising the persistence of extreme high levels of emotionality (hyper-arousal and emotional lability) to levels that allow the individual to perform daily functions with a sense of competence and efficacy, is likely to promote productivity and efficiency in the military context. Certainly, frontline interventions with combatants with acute stress reactions demonstrate that providing individuals with the skills
to achieve a relaxed state is a critical treatment goal (Hobfall, Watson, Bell, Bryant, Brymer and Friedman, 2007).

In a recent study of stress levels in Italian peacekeepers deployed to Afghanistan, Di Nicola, Occhiolini, Di Nicola, Vellante, Di Mascio, Guizzardi et al. (2007) detected elevated anxiety levels in peacekeepers when compared to a similar group of military personnel stationed at home. These authors concluded that providing deploying troops with tools to enhance their perception of control over their experience, including their internal response to stress (i.e., anxiety), would be of value as a stress prevention strategy. Di Nicola et al. (2007) argued that training in specific psychological techniques “would develop and increase the level of concentration and increase the capacity to quickly respond to stimuli, to limit and to prevent the loss of control that results from ambiguous and unpredictable situations” (p. 143).

What Works?

There is some evidence to suggest that short-term intensive coping skills training programs are of particular benefit to active duty service members who are engaged in high operational tempo. For example, Jones, Perkins, Cook and Ong (2008) conducted a study of over 300 deployed service personnel who participated in an intensive outpatient training program. Results found that undergoing the structured one week training program gave participants new skills to assist their overall coping and enabled them to sustain reduced levels of anxiety and depression over at least 30 days (the specified follow up period). Developing target-specific training, such as this, may be effective in reducing anxiety levels in deployed personnel, and may offer a resource-efficient approach to arousal reduction in pre-deployed and returning troops as well.

A range of arousal regulation skills have been shown to be effective in reducing anxiety. To reduce the intensity of emotional and physical reactions following exposure to trauma, strategies such as diaphragmatic breathing, muscle-relaxation techniques, stress-inoculation training, yogic breathing, cognitive restructuring and normalisation of stress reactions have been recommended (Beck, Stanley, Baldwin, et al., 1994; Brown and Gerbarg, 2005; Dattilo, 2001; Bryant and Harvey, 2000; McCraty, Atkinson, and Tomasino, 2003; Whelan, Ruzek, and Southwick, 2008).

Some researchers have questioned the effectiveness of certain techniques for specific anxiety conditions (e.g., breathing training for panic disorder; Meuret, Wilhelm, Ritz and Roth, 2003; Taylor, 2001). Additionally, there is evidence to suggest that training in more than one form of arousal reduction technique, particularly ensuring that physiological effects as well as cognitions are considered, may be more effective than training in one technique alone (Maynard, Hemmings, Greenlees, Warwick-Evans and Stanton, 1998). These recommendations are consistent with the range of skills currently taught in the ADF Critical Incident Mental Health Support (CIMHS) framework that is implemented following a potentially traumatic event.

It is unrealistic to aim to eliminate anxiety from the military. The very nature of the employment demands that members are at higher risk of exposure to stress and trauma, and even more so in a high operational tempo environment. Nevertheless, there is a growing literature concerning psychoeducational interventions designed to enhance the coping skills of personnel at risk for elevated anxiety, as well as other mental health issues such as depression.
and anger control problems. In particular, it is vital that strategies are chosen for their proven effectiveness in reducing anxiety and also for their inherent appeal to the individual ADF member. The literature suggests that a stress prevention program that is skills-based and utilises both cognitive and behavioural techniques is likely to be most effective in building on an individual’s existing repertoire of coping skills and internal resources. This approach is consistent with existing psychoeducational programs in the ADF that target trauma-related anxiety and is in line with the therapeutic model adopted by ADF mental health professionals generally.

**Psychological Resilience Training in the ADF**

The Australian Army psychological resilience program is known as BattleSMART (Self Management and Resilience Training) and begins at recruit or officer training with two sessions focusing on cognitive behavioural coping skills training, including arousal regulation training. These sessions are then later built upon at other points within the training continuum and throughout the personnel’s service career. Thus, the teaching points are reinforced continuously and reinforced from multiple sources. For example, recruit or officer training instructors will also be trained in the BattleSMART program to facilitate resilient leadership. In a recent technical report it was noted that “instructors are in a unique position to reinforce good mental health behaviours, such as support seeking, active coping, and thought re-appraisal” (Crane, 2010, p. 32). It is the ADF’s goal to develop a holistic resilient training program that is intertwined with current training practices.

Cognitive behavioural interventions have been shown to be effective across a range of cultural groups and have evidenced success in addressing post-trauma mal-adaptation (Whelan, et. al., 2008). Moreover, the range of characteristics currently identified as relevant, when distinguishing between people who develop PTSD and those who do not, are focused on an individual’s cognitions and beliefs, as well as their experience of physiological and emotional arousal (stress) associated with the event.

The aim of the BattleSMART program is to encourage emotional and behavioural outcomes in response to adverse events that are considered to promote resilient psychological functioning. BattleSMART highlights several important lessons in adjusting one’s coping strategies to fit the adverse situation. The training identifies four key response areas (i.e., physical, thoughts, emotions and behaviours) that may be affected by a stressful or potentially traumatic event. ADF members are taught to identify adaptive or mal-adaptive responses in each of these response areas. The program then teaches personnel a series of ways to adjust the response if required.

**The Future of Resilience Training in the ADF**

Researchers within the ADF have commenced trials evaluating the efficacy of the BattleSMART program in specific training establishments. This research is being conducted in collaboration with USA military researchers (Crane, Wren, Cohn, and Hodson, 2009). The data from the Australian and USA studies will be used to determine the effectiveness of the
training and direct future modifications in areas where the training is unsuccessful. In addition to the introduction of BattleSMART at the initial period of an ADF member’s career, other versions are being developed in 2010 for delivery to members at other important points in their career (i.e., embarking on and returning from deployment, and during preparation for transition out of the ADF into civilian life).

CONCLUSION

Psychological resilience training in the ADF represents a step toward preventative mental health strategies for ADF members. Although it is clear that adverse or stressful events arising from military service often cannot be prevented, it may be within the capacity of the ADF to assist in the prevention of mental health issues identified as being associated with the experience of adverse events. This chapter has reviewed some of the theoretical and empirical contributions that have informed the ADF’s current approach to resilience training. The evidence-based BattleSMART psychological resilience training program represents the ADF’s attempt to teach its personnel a suite of adaptive and behavioural coping strategies to assist them in dealing with a range of potentially stressful situations they may encounter during military service. The program is being rigorously evaluated and future versions will reflect advances in our understanding of the factors that determine psychological resilience in ADF members. The BattleSMART program aims to give the personnel protecting and representing Australia the broadest repertoire of coping strategies and the ability to psychologically adjust to the challenges faced by ADF members in military service.

REFERENCES


PART 4:

SURVIVING WORK PRESSURES AND ORGANISATIONAL LIFE
ASPECTS OF THE PRESENT DAY WORKPLACE REQUIRE INCREASED RESOURCEFULNESS FROM A DIVERSITY OF EMPLOYEES. THIS CHAPTER PRESENTS AND TESTS A CAUSAL MODEL OF RESOURCEFULNESS AS REFLECTED IN ADAPTIVE PERFORMANCE WITHIN AN ENVIRONMENT WHICH POSES INCREASED DEMANDS ON TEAM TASK PERFORMANCE IN AN AIRPORT SIMULATION. WE SOUGHT TO UNDERSTAND RESOURCEFULNESS FROM MULTIPLE ANGLES, FROM A DISPOSITIONAL, PREDICTIVE PERSPECTIVE AND FROM A PREDICTED OUTCOME PERSPECTIVE. FOR THE FORMER AIM, WE FOCUSED ON DISPOSITIONS, SUCH AS ADAPTABILITY, THAT CONFER RESILIENCE. RESILIENT DISPOSITIONS WERE POSITED TO INFLUENCE OUR OUTCOME - RESOURCEFULNESS (I.E., ADAPTIVE PERFORMANCE) - THROUGH TWO MECHANISMS: STRESS APPRAISALS AND SELF-EFFICACY. FOR THE LATER AIM, RESOURCEFULNESS WAS OPERATIONALIZED AS AN OUTCOME BY ASSESSING SUBJECTIVE ASSESSMENTS OF ADAPTIVE PERFORMANCE AND TRACKING OBJECTIVE TASK PERFORMANCE. THE FINDINGS SUGGEST THAT RESOURCEFULNESS INCLUDES AN ADAPTIVE PROFILE REQUIRING COGNITIVE AND AFFECTIVE COMPONENTS, AS CONCEPTUALIZED BY ROSENBAUM (1990), AND THAT THESE DISPOSITIONS OPERATE THROUGH STRESS APPRAISALS AND SELF-EFFICACY BELIEFS ABOUT ONE’S PERSONAL ADAPTABILITY TO INFLUENCE ADAPTIVE PERFORMANCE IN MIXED-CULTURE TEAMS. IMPLICATIONS FOR SELECTING AND TRAINING TEAM MEMBERS ARE PRESENTED.
INTRODUCTION

The dramatic changes occurring in jobs and organizations today, such as technology influx, team-based jobs, cultural diversity, and global competition (Connaughton and Shuffler, 2007; Ilgen and Pulakos, 1999; Quinones and Ehrenstein, 1997) place increasing demands on workers to be adaptable or resourceful (Chan, 2001). The term ‘resourcefulness’ stems from cognitive-behavioral therapy aimed at providing individuals with a broad coping repertoire to help treat stress-related disorders and to serve as a preventative by providing people with coping skills that can reinforce their ability to resist vulnerability to novel stressors (Rosenbaum, 1990). Specifically, learned resourcefulness refers to an acquirable set of skills that people can access to regulate their emotions and cognitions, which otherwise might interfere with behavioral performance (Rosenbaum, 1990). In the workplace, resourcefulness can be thought of as a way to promote organizational health, by instilling employee confidence, creativity, and flexibility.

This concept is similar to a work-domain concept, ‘adaptive performance,’ which refers to the ability to change behaviors, in response to stressors in the environment, so that performance is not negatively influenced. Adaptability is recognized as a crucial aspect of effective teamwork (Burke, Stagl, Salas, Pierce, and Kendall, 2006; Chen, Thomas and Wallace, 2005), but a consistent definition is lacking (for a review, see Stokes, 2008). Defining worker adaptability is complicated by its construal as either a predictor (similar to learned resourcefulness) or as an outcome.

This chapter presents a model of worker adaptability construed as a predictor, and borrows from Rosenbaum (1990) to conceptualize resourcefulness as a criterion - the ability to creatively respond to novel and challenging situations, so as not to degrade performance. As such, we offer a model which simultaneously examines the relatively stable dispositional factors that confer resilience, or the ability to maintain stability, in challenging situations and their influence on resourcefulness. Specifically, the model includes predictors to understand what types of worker characteristics facilitate resilience which can aid in the selection of team mates for inclusion in mixed-culture teams, or teams comprised of members from different cultures. Mixed-culture teams are increasing because global teams, such as those on peace-keeping missions, are becoming more pervasive. Further, the inclusion of mediators provides insight about how we might train team members to exhibit more adaptive behaviors when teams encounter novel difficulties. Overall, this model provides a more complete picture of how diverse (mixed-culture) teams function optimally as situational demands increase.

We begin the chapter with a discussion of resilience and resourcefulness, and offer a model describing how these variables should be related given present theory and research. Then, we present a study which included a team-based task that required interdependence to meet team goals. All teams were comprised of individuals from different cultural backgrounds. We discern the fit of the data to the hypothesized model and Rosenbaum’s (1990) conceptualization of resourcefulness. Lastly, we provide implications for application of the findings.
RESILIENCE

Stable antecedents of resourcefulness include individual difference variables such as cognitive ability and personality, as well as aspects of the situation (Rosenbaum, 1990). The same antecedents - cognitive factors, personality traits, and aspects of the situation - have predicted adaptive performance. General and specific cognitive abilities (Allworth and Hesketh, 1999; LePine, Colquitt, and Erez, 2000; Pulakos et al., 2002) and personality factors (Allworth and Hesketh, 1999; Griffin and Hesketh, 2003; LePine et al., 2000; Pulakos et al., 2002) have consistently predicted adaptive performance. Of the Big Five, the personality factors Openness to Experience and Emotional Stability (the positive analogue of Neuroticism) are the best predictors of better adaptive performance (Allworth and Hesketh, 1999; LePine et al., 2000; Pulakos et al., 2002). Higher levels of Conscientiousness and Extraversion have received marginal support as predictors of better adaptive performance (Griffin and Hesketh, 2003; Pulakos et al., 2002). Beyond the traditional global constructs cognitive ability and personality, change-related self-efficacy and prior experience with adaptive situations predict better adaptive performance (Allworth and Hesketh, 1999; Griffin and Hesketh, 2003; Pulakos et al., 2002). Lastly, situational factors such as low job complexity and management support predict better adaptive performance (Griffin and Hesketh, 2003).

Adaptive Worker Profile. Can we identify who would be most adaptable, regardless of the situation? Research conducted by a NATO research team sought to uncover the profile of adaptive workers (Svensson, Lindoff, Anderson, Norlander, and Sutton, 2005). The researchers focused on data collection sites where there was a high need for workers to be adaptive. The goal of their research was to identify latent factors comprised of personality and cognition that characterize adaptive workers, rather than predict adaptive performance. The data reduction and modeling efforts revealed three factors: 1) Instability, 2) Adaptability, and 3) Need for Structure (Svensson et al., 2005).

Instability, the first factor, comprises Fear of Invalidity and Neuroticism. People who are high in Personal Fear of Invalidity (PFI) are driven by a concern with committing errors when confronted with decision-making (Thompson, Naccarato, Parker, and Moskowitz, 2001). They are preoccupied with the consequences and perceived risks associated with an undertaking and are apprehensive of evaluation. To avoid potential decision-making mistakes, people high in PFI vacillate between options and resist commitment to situations or options, resulting in response delays (Svensson, et al., 2005). The second component of Instability, Neuroticism, is an inverse indicator of emotional instability.

Adaptability, the second factor, is composed of Emotion Regulation and Cultural Adjustment (Svensson et al., 2005). The NATO research team used a general measure of cultural adjustment skills that facilitate adaptation and cultural adjustment (Matsumoto et al., 2001). Four constructs comprise effective intercultural adjustment: emotion regulation, openness, flexibility, and critical thinking. Emotion regulation is concerned with the experience of negative emotions and overly emotional reactions to the environment. Cultural adjustment consists of the three remaining constructs: openness, flexibility, and critical thinking. Openness is tantamount to the personality factor of openness to experience. Flexibility is intended to assess flexibility with regard to traditional ideas and social roles. Critical thinking (or creativity) assesses a desire for self-direction and freedom from arbitrary
constraints. The Method section, presented below, reveals that items assessing critical thinking actually appear more face valid for assessing creative processes rather than critical thinking.

The third factor was Need for Structure, composed of Personal Need for Structure and Need for Cognitive Structure (Svennson et al., 2005). Personal Need for Structure (PNS) is the degree to which people generally prefer structure and clarity in situations and dislike ambiguity (Thompson et al., 2001). On the other hand, Need for Cognitive Structure, represents people’s tendency to use cognitive structuring for decision-making in situations involving uncertainty. People high in NCS rely more on scripts, schemas, and past experiences to cognitively structure a situation in an effort to gain certainty (Bar-Tal, 1994; Svensson et al., 2005). People low in NCS use more complex decision-making processes such as hypothesis generation, and are more willing to reconsider decisions when given new information. The PNS is a general preference for structure, whereas the NCS is specific to decision-making. Those higher in dispositional adaptability will have the appropriate abilities and characteristics needed to respond to a complex situation, which aligns with the notion of person-environment fit (Dawis and Lofquist, 1984; Griffin and Hesketh, 2003).

Mediators of Adaptive Performance

Beyond stable individual-level factors, state-related person factors should confer advantages toward being more resourceful. The present model offers two mediators that have been linked to performance in past research. People’s evaluations of task importance, relative to their ability to cope with that task (i.e., stressor appraisals), predict task performance (Schneider, 2008), but have not been examined in the context of resourcefulness, or adaptive performance. Additionally, people’s confidence in their ability to be adaptable in a particular situation, or their self-efficacy as it pertains to adaptive performance, should be a proximal predictor of adaptive performance (Gist and Mitchell, 1992; Mathieu, Martineau, and Tannenbaum, 1993). Along with examining distal predictors (dispositions), the model proposed here included more proximal predictors of adaptive performance. By combining the characterization of adaptability with a goal toward understanding mediators of these traits that link dispositions to adaptive performance, we hope to uncover malleable factors that could increase resourcefulness for all types of people.

Stressor Appraisals. Rather than viewing the notion of ‘fit’ as determined solely by an observer, individuals themselves evaluate whether their skills and abilities are commensurate with situational requirements. Such evaluations, stressor appraisals, are comprised of primary and secondary appraisals (Lazarus and Folkman, 1984; Schneider, 2008). Primary appraisals are evaluations of the personal relevance of a situation in relation to individual goals, values, and beliefs. Secondary appraisals are evaluations of resources for coping with the demands of the situation. Primary and secondary evaluative components combine to produce a continuum of appraisal outcomes where appraisals range from challenge to threat (Blascovich and Mendes, 2000; Schneider, 2008). Challenge appraisals result when individuals construe their resources as proportionate to, or exceeding, situational demands. Threat appraisals result when individuals believe their resources, including skills and abilities, are outweighed by the demands of the situation. Threat and challenge appraisals differentially affect performance.

**Adaptive Self-Efficacy.** Self-efficacy is often identified as a significant predictor of adaptive performance (Allworth and Hesketh, 1999; Griffin and Hesketh, 2003; Kozlowski et al., 2001; Pulakos et al., 2002), but to our knowledge, it has not been examined as a mediator between adaptability dispositions and adaptive performance. Research has found that self-efficacy is often a proximal predictor of general performance, while more stable individual attributes tend to be distal, or antecedent to self-efficacy (e.g., Gist and Mitchell, 1992; Mathieu, Martineau, and Tannenbaum, 1993). For the proposed model, we characterized self-efficacy as beliefs which pertain to adaptive behaviors (Griffin and Hesketh, 2003). This characterization corresponds well to dimensions of the adaptive performance taxonomy (Pulakos et al., 2000).

**Resourcefulness Revealed in Adaptive Performance**

In past research, adaptability has been construed as a stable individual-difference predictor variable to enable the profiling of who would be more adaptive in highly demanding work situations (Svensson et al., 2005). Our proposed model expands upon this research by including criterion measures of adaptive performance. When construed as an outcome, adaptability, hereafter referred to as adaptive performance, has been assessed using different methods including subjective self-reports of the ability to adapt to difficult situations and outcome measures that represent performance on tasks with increasing novelty and difficulty (e.g., Griffin and Hesketh, 2003; Kozlowski et al., 2001; LePine, 2005; Pulakos, Schmitt, Dorsey, Arad, Hedge, and Borman, 2002; Zaccaro and Banks, 2004). The model proposed here, then, allows us to simultaneously examine the predictive validity of an adaptive profile and retain adaptability as a predictor variable with its own measurement. In addition, we have modeled factors that should mediate the link between adaptability (an individual-difference variable) to adaptive performance.

**Aims and Hypotheses**

The purpose of this research was to test a model of adaptive performance which includes dispositional factors that should facilitate adaptive performance, as well as potential mediators of the link between trait adaptability and actual adaptive performance, namely stress appraisals (where higher scores denote threat) and self-efficacy (see Figure 1). Our model predicts that stress appraisals and self-efficacy will mediate the relationship between dispositional adaptability (Need for Structure, Adaptability, and Instability), and adaptive performance (Subjective and Objective). We expect that people higher in dispositional adaptability will appraise demanding and complex situations as challenging. People lower in Need for Structure are better able to embrace the uncertainty and spontaneous nature of changing situations (Svensson et al., 2005), and should be less reactive to uncertainty, novelty, and increasingly demanding situations, and thus have lower threat appraisals. People higher in adaptability should appraise adaptive situations as more challenging, which should
foster higher self-efficacy to manage such situations. People higher in instability should appraise tasks as more threatening, in alignment with past research findings (Schneider, 2008).

Figure 1. Hypothesized Causal Model.

**METHOD**

The context for this inquiry about team member adaptability and resourcefulness has two components. First, the focus of analysis is solely on mixed-culture teams, as they make up a greater proportion of the workplace in the U.S.A. Second, the team scenario requires interdependent work through a computer-mediated interface.

**Participants**

Data presented here are part of a larger study including 275 people (59% female; 41% male) recruited from a Midwestern university who volunteered in exchange for course credit ($n = 200$) or who received $30US ($n = 75$) for participating. The sample was culturally diverse with 64% Caucasian, 16% African American, 17% international students (mostly Indian), and 3% other. Ages ranged from 18 to 49 ($M = 21$). To focus on mixed-culture teams, the hypothesized model presented in Figure 1 included 25 teams consisting of 5 members for each team (125 individuals).

**Materials**

We borrowed from Rosenbaum (1990) and Svensson et al. (2005) to investigate the importance of both cognitive (e.g., low Need for Structure) and affective (high Emotional

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Predicting Adaptability in Mixed-Culture Teams in an Airport Simulation

Stability) components of adaptability. Depicted in Figure 1, these measures were intended to capture adaptive profiles. Except where noted, participants rated their agreement with questionnaire items using a 5-point scale (1 = strongly disagree, 5 = strongly agree), and scales are scored such that higher scores represent higher values of that construct.

Need for Cognitive Structure (NCS): The NCS, a 20-item scale, assesses people’s tendency to use cognitive structuring for decision-making, especially if the situation involves uncertainty. A sample item is “I don’t like to work on a problem that does not have a clear-cut solution.” The reliability for the scale was acceptable, α = .86. This scale was reverse scored when testing the actual causal model so that higher scores denote lower NCS and thus higher tolerance for uncertainty in decision-making tasks (and higher cognitive adaptability as denoted in Figure 3).

Personal Need for Structure (PNS): The PNS, a 12-item scale, assesses people’s preferences for structure and clarity in situations and their dislike of ambiguity (Thompson, Naccarato, Parker, and Moskowitz, 2001). An example item is “I become uncomfortable when the rules of a situation are not clear.” The reliability was acceptable, α = .84. This scale was reverse scored when testing the causal model so that high PNS reflects preferences for flexibility and thus higher adaptability (or higher cognitive adaptability, see Figure 3).

Cultural Adjustment (CA): The Intercultural Adjustment Potential Scale (ICAPS; Matsumoto et al., 2001) is a generalizable measure of cultural adjustment that taps psychological skills that facilitate cultural adjustment. The ICAPS includes four components as necessary for intercultural adjustment: flexibility, critical thinking, openness, and emotional regulation. Six items assess flexibility about traditional ideas and social roles (example item: “I think women should have as much sexual freedom as men”). The 6-item critical thinking (or creativity) subscale assesses a desire for self-direction and freedom from arbitrary constraint (a sample item: “The average citizen can influence governmental decisions”). Openness as measured by ICAPS is tantamount to the personality factor of openness to experience and items were obtained from the International Personality Item Pool – Five-Factor Model (IPIP-FFM: http://ipip.ori.org/). The factors of flexibility, creativity, and openness (as measured by the IPIP) were combined to create a single index of cultural adjustment (α = .75), where higher scores denote higher adaptiveness (or higher cognitive adaptability, see Figure 3).

Emotion Regulation (ER): The ICAPS subscale assessing emotion regulation was used as a separate measure to load on the latent variable of adaptability (Svensson et al., 2005). Emotion regulation, a 9-item scale, assesses the experience of negative emotions and overly emotional reactions to the environment (example item: “I get angry easily. High scores denote poor emotion regulation. The reliability was acceptable (α = .77) after deleting one item. This scale was reverse scored when testing the causal model so that higher scores denote less ER and better adaptability (or higher affective adaptability as denoted in Figure 3).

Neuroticism: A subscale from the IPIP-FFM (http://ipip.ori.org/) assesses Neuroticism as an indicator of Instability. Participants were asked to rate their agreement with each item based on a 5-point scale (1 = strongly agree, 5 = strongly disagree). The reliability was acceptable, α = .82. This scale was reverse scored when testing the causal model, so that higher scores denote lower Neuroticism and higher emotional stability (or higher affective adaptability as denoted in Figure 3).

Personal Fear of Invalidity (PFI): The PFI is a 14-item measure. A sample item is “I wish I did not worry so much about making errors.” The reliability was acceptable, α = .79.
This scale was reverse scored when testing the causal model so that higher scores denote lower PFI and higher emotional stability (or higher affective adaptability as denoted in Figure 3).

**Stress Appraisals:** Ten items assessed stress appraisals (Schneider, 2008). Seven assessed primary appraisals (example item: “How threatening do you expect the upcoming task to be”, \( \alpha = .74 \)), and three assessed secondary appraisals (“How able are you to cope with this task,” \( \alpha = .86 \)). Ratios were calculated (primary/secondary), where higher scores denote more threat.

**Self-Efficacy:** The 14-item scale measures specific beliefs about adaptive behaviour (Griffin and Hesketh, 2003). Items were modified to align with the team scenario, for example, “Rate your level of confidence in being able to adjust to new processes or procedures” and “…form good relationships with people of different cultures.” Participants rated their confidence (1 = not at all confident to 5 = certain) in their ability to achieve each of the behaviors relating to the task. Example items are “Rate your level of confidence in being able to adjust to new processes or procedures” and “form good relationships with people of different cultures.” The scale was administered after training and had acceptable reliability, \( \alpha = .94 \).

**Subjective Adaptive Performance:** Participants rated their beliefs about their own and each team mate’s abilities in adaptive situations (i.e., handling crisis situations, problem solving, new learning, interpersonal adaptability, cultural adaptability, coping with uncertainty, and coping with stress; Griffin and Hesketh, 2003). Performance ratings were made on a 7-point scale (1 = very poorly to 7 = very well). An example item: “Integrated well with team mates of a different background or culture.” A single-factor ANOVA was calculated to ensure ratings were similar across self and peers, \( F(5, 1125) = 2.22, \) ns. They were similar, so ratings of subjective adaptive performance were collapsed to create a single score per subject. The reliability was acceptable, \( \alpha = .97 \).

**Objective Adaptive Performance:** Ten individual performance scores were calculated: five aircraft in session 1, three in session 2, one for the repurposing in session 2, and one for the communication breakdown in session 2 (see scenario description below). The scores were standardized to allow comparison across aircraft and events. Performance for the first eight aircraft were considered standard as they related to the training, but performance scores for the repurposing and communication failure were considered adaptive due to their increased complexity. Because these two adaptive events overlapped, a composite score was created to represent adaptive performance.

**Manipulation check:** We wanted to ensure that the adaptability requirements of the task were perceptible. After each session participants rated their need for resourcefulness on a 5-point scale (1 = not at all, 5 = extremely). Two items assessed resourcefulness requirements: “In your opinion, how difficult was this task?” and “To what degree do you feel you had to adjust or adapt your behavior to cope with the task demands?”

### Description of Team Scenario for Study

Computer-based Aerial Port Simulation (CAPS) is a team simulation of the logistics operations associated with an aerial port squadron (Lyons, Stokes, Palumbo, Boyle, Seyba, and Ames, 2008). The CAPS hardware included five networked PCs that participants used to perform their unique, but interdependent, task and a sixth PC was for experimenter

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monitoring. Teams consisted of five functional stations: (a) passenger services, (b) fleet services, (c) cargo services, (d) ramp services, and (d) air terminal operations flight (ATOF). Participants had to coordinate and communicate their individual activities to achieve the shared goal of preparing each of five aircraft for takeoff. Teams had six minutes to complete all required tasks, beginning when the aircraft landed. After six minutes, a message was sent to all team members indicating that the aircraft departure was not on time. The stations were interdependent, for example, fleet services could not clean the aircraft until passenger services had unloaded all the passengers. Similarly, cargo services could not process in-bound cargo until ramp services transported and unloaded the cargo. Due to the high degree of communication required, a vital component of the CAPS software was the instant message (IM) system. By using particular chat boxes on the computer interface, participants were able to communicate needed information to team members individually or to all members globally. Figure 2 details the communication pathways required for Passenger Services.

![Communication requirements for Passenger Services.](image)

**Procedure**

Participants were randomly assigned to a PC station as they entered the laboratory, where they completed questionnaires and performed all tasks. After obtaining consent, questionnaires were administered to assess adaptability and demographics. There was a
general and specific training, and a practice session. Participants completed the stressor appraisal scale and self-efficacy measures before each of two 30-minute task sessions. After each task session, manipulation checks were administered. At the end of the second session, participants completed the subjective adaptive performance questionnaire.

Session one included five aircraft. Session two included three aircraft, but was more complex involving a destination change and subsequent communication breakdown requiring adaptive responses. Specifically, when ATOF departed the third aircraft, an IM was sent to all team members stating the destination for that aircraft had changed and all passengers and cargo already loaded onto the aircraft had to be removed and new passengers and cargo uploaded for the revised destination. Further, the communication breakdown in the IM system occurred two minutes into the repurposing event. With certain communication links down, participants had to reroute information through previously unused communication paths, and had to discover these paths on their own, adapting to new situational demands.

RESULTS

Analysis overview: We tested a path model with structural equation modeling (SEM), to investigate the influence of the proposed adaptive performance profile on adaptive performance, mediated by self-esteem and stressor appraisals. Scale scores were created by averaging across items that contributed to that particular scale; these composite scores were used in subsequent analyses. Before testing the path model, which included mediators of the adaptive profile to adaptive performance link, we ensured that the airport scenario employed for the present study required enhanced adaptive performance, then we examined the measurement model which suggests that the adaptive profile has a three-factor structure (Svensson et al., 2005).

Manipulation Check: As expected, participants perceived the second session as more difficult ($M = 3.03$, $SD = 1.15$) than the first session ($M = 2.81$, $SD = 1.23$; $t(230) = -.257$, $p < .05$), and the second session as requiring more adaptive performance ($M = 3.55$, $SD = .96$) than the first session ($M = 3.09$, $SD = 1.07$; $t(226) = -5.78$, $p < .05$).

Profiling adaptive workers: Before testing the path model, we examined the measurement model for the three-factor structure of adaptability which comprises Instability, Adaptability, and Need for Structure, postulated by Svensson et al. (2005). This three-factor model was not supported (CFA: $N = 263$, $\chi^2(6) = 41.89$, $p < .001$; CFI = .94, NCP = 35.9, RMSEA = .15, confidence intervals ranged from .11 to .19, and PCLOSE = .00). However, there was a strong correlation ($r = .80$) of Emotional Regulation and Neuroticism suggesting that these factors comprise the same latent factor - Instability. The residual covariance matrix indicated high covariance of Cultural Adjustment with Need for Personal Structure (-.54) and with Need for Cognitive Structure (-.52), both exceeding the cut point of 2.58 (Byrne, 2001), suggesting that switching the loading for Cultural Adjustment to the Need for Structure latent variable is more representative of the population data.

After verifying conceptual clarity, we specified a second-order model where Need for Structure was conceptualized as ‘Cognitive Related Adaptability’ and Instability was re-conceptualized as ‘Affective Related Adaptability’ (see Figure 3). Both are indicators of the second order construct - Adaptability - to reflect general adaptive tendencies. Need for
Cognitive Structure and Need for Personal Structure were reverse scored with positive scores denoting less preference for structure to align with Cultural Adjustment and load positively on ‘Cognitive Adaptability’. To ensure that the higher order structure was identified, equality constraints were placed on the higher order residuals after verifying their similarity: discrepancy of .01 in estimated variances with a critical ratio < 1.96, suggesting the two residual variances are equal in the population. There was significant reduction in the model’s chi-square: \( \chi^2 \text{difference}(2) = 32.37, p < .05 \). Fit indexes for this model were superior, indicating good fit: \( N = 263, \chi^2(8) = 9.52, p = .30; \text{CFI} = .99, \text{NCP} = 1.5, \text{and RMSEA} = .03 \) with confidence intervals ranging from .00 to .08 and PCLOSE \(^1\) = .70. Thus we retained this two-factor model to test the larger causal model which included mediators and adaptive performance. This model had superior fit and aligns well with Rosenbaum’s (1990) construal of learned resourcefulness as manifest through cognitive and affective self-control, and specifically through problem-focused coping and mood regulation.

Note. All paths are significant at \( p < .01 \). (R) = reversed scored. Standardized estimates reported. Error and residual terms were included in the analysis but are not depicted above due to space constraints.

Figure 3. Results for the Hypothesized Causal Model of Adaptive Performance.

Testing the Path Model: The statistical program AMOS was used to analyze the proposed structural equation model presented in Figure 1, the results of which are presented in Figure 3. Note that the respecified second-order measurement model replaced the original measurement model depicted in Figure 1. As both subjective and objective adaptive performance measures are intended to capture the same underlying construct, they likely share a common omitted cause, therefore their disturbance terms were permitted to covary (Klein, 1998). To test for mediation, we compared two models: an indirect effects model, with all possible paths specified, was compared to a direct effects model, where only direct paths from all variables to subjective and objective adaptive performance were specified. The direct effects model did not fit the data well: \( N = 125, \chi^2(31) = 89, p < .001; \text{CFI} = .87, \text{NCP} \).

\(^1\) PCLOSE tests the null hypothesis that RMSEA is no greater than .05 (the lower RMSEA is, the better the model fit) (http://faculty.chass.ncsu.edu/garson/PA765/semamos1.htm).

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However, the indirect effects model indicated superior fit: $N = 125, \chi^2(28) = 30, p = .36; \text{CFI} = .99, \text{NCP} = 2.1, \text{RMSEA} = .03$ with confidence intervals ranging from .00 to .08 and $\text{PCLOSE} = .74$. Furthermore, the chi-square difference test between the two models indicated that the indirect effects model significantly improved the representation of the data: $\chi^2_{\text{difference}}(3) = 59, p < .001$. In accord with Kline (1998), strong support for mediation was further indicated by significant indirect paths relative to non-significant direct paths from adaptability and stress appraisals to subjective and objective adaptive performance. Given the non-significant direct paths, a final trimmed model with the direct paths eliminated was analyzed (Figure 3). The trimmed model did not differ from the full indirect effects model, $\chi^2_{\text{difference}}(5) = 7, \text{ns}$. This model is more parsimonious and supports the hypothesized model with the modified two-factor structure of adaptability.

The path model supports a latent structure of the adaptive profile that includes cognitive and affective adaptability components, which denote higher adaptability. Those higher in this adaptive profile evaluated the scenario as less threatening (i.e., more challenging). Those higher in threat had lower self-efficacy, and conversely those higher in challenge (the polar opposite of threat) had higher self-efficacy. Higher self-efficacy fostered better subjective and objective adaptive performance. The supported model shows that these two mediators link the adaptive profile to both subjective and objective components of adaptive performance. Succinctly, the adaptive profile fosters challenge appraisals, which in turn foster higher self-efficacy perceptions that lead to better adaptive performance.

**DISCUSSION**

The present research expanded upon past research by investigating a more complete causal model of resourcefulness (i.e., adaptive performance). Specifically, we identified an adaptive profile, assessed new mediators that linked adaptive antecedents to adaptive performance in situations requiring such resourcefulness, and tested this new causal model in a sample comprised of mixed-culture teams. First, this research provided some support of Svensson et al.’s (2005) identification of resilience-conferring traits that profile adaptive people, and we provided confirmation that the slightly modified profile predicts adaptive performance. Although the three-factor configuration (specified by Svensson et al., 2005) was not supported, a second-order model, with trait indicators that align more with Rosenbaum’s conceptualization of those who might be more adaptable, was supported. The present research represented general adaptability as a higher-order factor with the latent indicators of cognitive and affective adaptability. This refined model fitted the data better and also offers conceptual clarity by positing a mutual cognitive and affective related influence on beliefs, attitudes, and behavior. These findings complement and expand upon the construct of learned resourcefulness which includes cognitive and affective components that facilitate adapting to novel stressors (Rosenbaum, 1990).

Secondly, the adaptive profile was posited to have an indirect influence on adaptive performance operating through mediators including stress appraisals and self-efficacy. Stress appraisals had not been examined in the domain of adaptive performance, but they have been examined in the stress literature where they predict performance (Schneider, 2004; Schneider,
The present research established the predictive validity of stress appraisals in adaptive performance research. Threat and challenge stress appraisals are based in evaluations of the personal relevance of the situation relative to individuals’ skills and abilities. These evaluations were expected to mediate the relationship between adaptability traits and adaptive performance. Indeed, people higher in adaptability were less threatened by the task which increased their adaptive performance. Self-efficacy was also expected to mediate the relationship between adaptability and adaptive performance. Self-efficacy here was specific to individuals’ beliefs about their ability to cope with situations requiring adaptability. This more fully developed causal model of adaptive performance, as opposed to general task performance, was supported. The significance of these mediators points to clear avenues for training to enhance adaptive performance, particularly in mixed-culture teams. Lastly, subjective and objective adaptive performance have been considered interchangeable proxies (Bommer, Johnson, Rich, Podsakoff, and Mackenzie, 1995). The present research demonstrates that they covary, but do not completely overlap (their correlation is less than .70).

Implications. The results of the present research offer guidance in terms of selection and training directed at increasing adaptive performance in mixed-culture teams. Selection can be geared at assessing and picking mixed-culture team members who are high in cognitive and affective adaptability, which aligns with Rosenbaum’s (1990) conceptualization of learned resourcefulness. However, dispositional adaptability did not directly influence adaptive performance; it was indirectly related through mediators. Consequently, the supported causal model suggests that training interventions directed at altering these mediators would be most effective at increasing adaptive performance. The present results suggest that training interventions for members of mixed-culture teams should increase stress-related beliefs, as has been done to enhance learned resourcefulness (Rosenbaum, 1990). Stress appraisals and self-efficacy are malleable beliefs to target in training interventions. Training can include ways to reappraise stressors as challenges by fostering beliefs about the personal importance of the task and beliefs that trainees can and should focus on what they can do to meet task demands. Training interventions can also strive to build adaptable self-efficacy beliefs in trainees. Trainees can build efficacy beliefs with practice and with success experiences in situations requiring adaptability. Future research should investigate whether samples, matched on adaptability traits, are influenced differently by such a training intervention.

The present sample consisted of mixed culture teams performing a task requiring adaptability. Thus participants had to adapt to the changing task requirements and to interpersonal interactions stemming from the different cultures in their teams. Consistent with Matsumoto (2007), we focused on the underlying dispositional traits associated with different cultures, not culture defined as nationality. Such an approach permits acknowledgment of the subtleties and variability inherent in cultures (Connaughton and Shuffler, 2007). However, an investigation of cultural beliefs and their influence on adaptability is warranted. For example, people from collectivist cultures may be inherently less threatened in team tasks, offering a lower baseline level of stress appraisals, compared to those who are members of individualistic cultures.

Limitations. This research had some limitations. For example, the data were collected in a laboratory. Research is needed that confirms generalization of results to more germane settings, such as in the field. This is particularly true given the selection, training, and cultural issues raised above. Matsumoto (2006) noted that culture is likely to have a greater influence
on self-report data as opposed to actual behavior. However, we did not assess culture per se; rather, we investigated adaptive profiles and adaptive performance in culturally diverse teams. It is unclear whether the aspects of the study that were self-report were influenced more by culture, or some other generic factor. A study with greater power would be needed to examine Matsumoto’s (2006) assertion. Another limitation was the neglect of situational influences on adaptive performance. Although it was beyond the scope of this study, future research should explore situational variables as potential moderators of adaptive performance.

Despite these limitations, the causal model provides clear guidance for the selection and training of mixed-culture teams. The present findings suggest that resourcefulness includes an adaptive profile requiring both cognitive and affective components, as originally conceptualized by Rosenbaum (1990), and that these dispositions operate through stress appraisals and self-efficacy beliefs about personal adaptability to influence adaptive performance.

**CONCLUSION**

In summary, the present research identified a model which reflects causal relationships and mechanisms through which adaptive performance is influenced. The support of the causal model in the present research offers a clear delineation of the antecedents and causal mechanisms that influence adaptive performance. People encounter adaptive situations with certain adaptable dispositional tendencies (i.e., resiliency factors). Such tendencies contribute to their appraisals of the situation as either a challenge or a threat, which in turn, influence an individual’s self-efficacy beliefs specific to their ability to adapt in novel or complex situations, and ultimately influences their ability to be more resourceful.

**ACKNOWLEDGMENTS**

The present research was supported by the Air Force Research Laboratory contract, FA8650-04-D-6546, DO #6. The authors would like to thank Captain Jason Seyba and David Ames for their programming support in developing the CAPS system. The authors would also like to thank Ms. Gaea Payton for her data collection support.

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Predicting Adaptability in Mixed-Culture Teams in an Airport Simulation


Chapter 19

COPING STRATEGIES AND HEALTH AMONG CALL CENTRE OPERATORS

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ABSTRACT

One of the most demanding jobs that modern workers have to cope with is that of working in busy, noisy, call centres and coping with the requests, complaints, and often the frustration and rudeness of customers. This chapter reports on the results of a study on how Australian call centre operators survive such a hectic job. The study of 65 internet respondents emphasised the stresses they faced; the coping strategies that call centre employees used ‘at work and at home’ indicated that they were under considerable stress and pressure at work. The results indicated that individuals used similar coping strategies overall in both home and work domains; however, ‘improving relationships’ and ‘seeking relaxing diversions’ were more common styles in handling stress at home. In the work domain, the coping style of ‘self-blame’ was related to increased doctors’ visits, whereas in the home and work domains ‘self-blame, worry and working hard’, related to ‘taking days off’, or separating oneself from the situation, were most evident. The main implications from the study were that effective coping strategies were definitely needed to cope with the stresses within the call centre environment. Employers could benefit from utilising these findings in selection processes and conduct training programs that emphasise skills development in some of the more useful coping strategies and skills that have been indicated in this study to be more likely to be valuable.

Keywords: Call Centre Employees, Stress, Health, Well-Being, Work-Home Life Balance

INTRODUCTION

Contemporary patterns of work, and the impact these patterns have on the family, have lead to increased interest amongst researchers in recent years (Hyman, Scholarios, and
Work in the call-centre industry is given attention in this chapter which reports on a study of call centre operators in Australia. There are more than 3800 call centres in Australia, employing more than 250,000 people (Barton, 2009), and these figures are growing rapidly at a rate consistent with world trends, at over 30% per annum (ATA, 2008; Barton, 2009). However, turn-over rates are also high around the world and, in Australia, are at more than 25% per annum overall and higher in some centres. Causes for the high turn-over have been reported to be related to the stressful, pressured nature of the work that often needs to be performed under strict time constraints and to the demanding performance levels set by organisations. Much of the current and earlier research has emphasised and continues to emphasise job redesign as a means of handling the stressful environment (cf., Grebner et al., 2003). However, it seems reasonable to assume that specific coping skills may help individuals to cope better in the call centre environment, but little is known about what these specific coping characteristics might be. The current study outlined in this chapter attempts to answer the question: “How do call centre employees cope in their workplace and how do their coping strategies vary across their work and home environments?”

What Do We Know about the Nature of the Call Centre Environment?

Generally the environment can be described as a communications centre from which companies service customers via real-time, long-distance, voice contact. The operators use a telephone with a computer base: earphones are used for hands free work on the computer; strict company scripts are followed; employees work in close proximity to others; there are low levels of control (operators are simply allocated the next caller); operators are expected to be always friendly (“as though smiling”); and there is usually high stress with time limits and/or performance demands on the operators (cf., Barton, 2009; Brown and Maxwell, 2002; Dormann and Zijlstra, 2003; Zapf, Isic, Bechtoldt, and Blau, 2003). This picture is true of most call centres although some, such as Lifeline\(^1\), operate differently because of the nature of their work.

In addition, the emotional demands of the environment could be detailed further and have been examined in numerous studies (e.g., Barton, 2002, 2009; Deery et al., 2010; Lewig and Dollard, 2003; Palmer and Carstairs, 2003; Swyny and Albrecht, 2003; Totterdell and Holman, 2003; Witt, Andrews, and Dawn, 2004). Holman (2002) highlighted the dissatisfactions identified by call centre operators: such dissatisfactions included the lack of variety, the repetitive nature of the work, lack of personal control and autonomy, often stringent time targets, and several other factors. Most of all, ‘emotional labour’ was identified as a major dissatisfier in call centre work. Emotional labour refers to the act of expressing appropriate emotions that align with the organization, with operators consistently being friendly on the phone, despite the sometimes forceful verbal abuse hurled towards them. This ‘friendly’ response style is about impression management - having to keep up a ‘nice face’. Adherence to such display rules alone can result in negative outcomes, as it may be emotionally difficult to deal with some of the anger and abuse that can come the way of the call centre worker. Subsequent negative personal outcomes include lack of engagement, and burnout, and withdrawal from the organisation. Barton (2002) found a relationship between

\(^1\) Lifeline Australia is a 24 hour telephone service available to all Australians for crisis counseling.
stress, working conditions, time off, and injury. Stress related disorders contribute to reduced productivity, low morale, high turn-over rates, and related mental health issues (Perrewe, Fernandez, and Morton, 1993).

In such an environment, it is perhaps clear that high turnover figures might be expected, as well as high rates in pre-turnover indicators such as absenteeism and health concerns. There has been a lot of research on the health impacts on call centre workers; these include studies showing physical demands and musculature impacts (e.g., Barton, 2002; Hyman et al., 2005; Krause, Burgel, and Rempel, 2010; McEwen and Mendelson, 1993; Taylor, Mulvey, Hyman, and Bain, 2002; generalised stress involving absenteeism (Barton, 2009; Dean and Rainnie, 2004; Hannif and Lamm, 2005; Holdsworth and Cartwright, 2003; Taylor, Baldry, Bain, and Ellis, 2003; Wallace, Eagleson, and Walderssee, 2000); and impacts on social relationships (Deery, Iverson, and Walsh, 2002, 2010; Holman, Chissick and Totterdell, 2002).

Not everyone, however, is suited to call centre work; and careful selection and/or cooperative group management have both been identified as ways of maintaining the workforce, keeping absenteeism low and generally helping maintain well-being (cf., Brown and Maxwell, 2002; Callaghan and Thompson, 2002; Deery, Iverson, and Walsh, 2010). More studies and applications about maintaining health and well-being in the centres are needed, and we need to know what coping strategies are actually used that are successful.

Coping Strategies and Health/Stress Indicators in Call Centre Staff

The main thrusts of most studies have been on the negative aspects of the work and the inability of many workers to cope within the call centre environment. Turnover rates are double that of the general retail and commercial industry (Barton, 2009) and attest to problems within the call centres, in terms of how most people cope. However, specific coping styles are not well documented and there are few studies about coping with the stress in call centre operators, and even fewer on whether coping styles used in the call centre workplace differ from those used at home. Deery et al. (2010) have recently examined how co-workers and supervisors used cooperative coping strategies to reduce absenteeism and to improve well-being among call centre workers; Korczynski (2003) examined the reactions to emotional labour (having to respond always in a friendly manner) suggesting that specific coping skills were needed to cope with this situation, and Hyman et al. (2005) suggested that coping strategy programs should be developed that allowed individuals to deal with the impact of stressors in the call centre environment. Nevertheless, few studies have examined the range of coping strategies used and how call centre operators generally respond to the demands of their environment, and even fewer seem to have studied both work and home comparisons. Hyman et al. (2005) used interviews to identify trends in work-home differences, but many more studies exist in relation to other occupations (e.g., Cooper and Payne, 1988; Vinokur, Pierce, and Buck, 1998).

This current study sought to address this gap in the research on call centre operators. The study thus investigated responses from current employees on what they did to cope with the demands of the work environment, and also examined whether their responses to home environment stressors were similar. The relationships of coping strategies to health symptoms were also examined.
Until the coping strategies most in use by incumbents are known, it is difficult to provide a rational basis for any specific strategies to be given prominence in training and development programs. Would there be a difference between coping strategies used in the call centre operations and at home by the same people? Given the difference in the structure of work and family, it was thought this would be the case, but no previous quantitative studies have been found that separated the home and work differences in these strategies. Hyman et al. (2005) conducted qualitative research related to this area; finding a coping strategies questionnaire that had sufficient types of coping strategies listed and that was not too long, was difficult; however, Frydenberg and Lewis’ (1997) Coping Scale for Adults did appear to meet the needs and was utilised in this current study.

The Coping Scale for Adults lists 18 separate scales and also gives a nineteenth scale ‘not coping’- for use when none of the other 18 scale categories is relevant. More information is given in the Method section on this scale, but it seemed extensive enough for this exploration into the coping strategies of call centre operators at home and at work. The first hypothesis examined whether there would be differences in the coping styles used at work and at home in the sample of call centre employees assessed.

However, health issues (including mental health issues) have long been a cause for concern among call centre workers, and as indicated above, have been identified in many research studies (e.g., Barton, 2002, 2009; Dean and Rainnie, 2004; Holman et al., 2002; Perrewe, et al., 1993). This study, therefore, also examined whether there would be relationships between the coping strategies used and health indicators, such as days off work, visits to medical practitioners and symptoms of stress. The hypothesis was that there would be significant differences between the coping strategies used and the nominated health indicators.

**METHOD**

The participants were call centre operators, aged between 18 and 61 years; they were mostly female (61 females; 4 males), from various backgrounds and marital status. All 65 participants completed the first of the two main questionnaires. Of these, 45 completed both ‘at work’ and ‘at home’ questionnaires.

**Materials**

A web site was developed, in order to place online the three self-report questionnaires, described next: the Biographical Questionnaire (personal); the Coping Scale for Adults; and the Personal Stress navigator, a scale assessing sources and symptoms of stress and stress vulnerability.

*Biographical Questionnaire:* This included: gender; age; relationship status; number of children; ages of children; education; type of remuneration; length of current employment; whether it was the first time they had worked in a call centre; if this were their first job since leaving school/tertiary education; number of medical and or clinical visits in the past year; number of days in hospital admission in the past 5 years; number of visits to a counsellor/psychologist in the past year; days off work due to illness in the past 12 months.

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Coping Strategies among Call Centre Operators

Coping Scale for Adults (CSA) (Frydenberg and Lewis, 1997). This is a self-report scale designed to measure individual coping behaviour; it was designed as both a research instrument and a clinical tool. This scale assesses a broad range of coping behaviours and focuses on what people do, rather than what they feel they should do. The Coping Scale measures 18 conceptually and empirically distinct coping strategies on a 5-point Likert scale, ranging from “Doesn’t apply or don’t do it” to “Used a great deal”. These coping strategies, including a nineteenth scale indicating “not coping”, are listed in Table 1.

The CSA is internally consistent - the Cronbach Alpha coefficients range from 0.70 to 0.92 for each of the scales. Test-retest generally ranges from 0.75 to 0.97. Frydenberg and Lewis (1997) stated that the 18 scales of the CSA compare favourably with other coping scales. Permission from the publishers (ACER) was obtained in order to convert the test to an online version. For the purpose of this study, the questions were asked twice, once in relation to the work environment and once in relation to the home environment.

Table 1. The 19 Coping Strategies of the Coping Scale for Adults

<table>
<thead>
<tr>
<th>Coping Strategy</th>
<th>Meaning of the Coping Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Seek social support</td>
<td>Sharing the problems with others and enlisting support in the management of the latter</td>
</tr>
<tr>
<td>2 Focus on solving the problem</td>
<td>Reflecting, planning and implementing a plan systematically</td>
</tr>
<tr>
<td>3 Work hard</td>
<td>Having commitment and ambition</td>
</tr>
<tr>
<td>4 Worry</td>
<td>Indicates a concern about the future in general</td>
</tr>
<tr>
<td>5 Improve relationships</td>
<td>Improving relationships with others</td>
</tr>
<tr>
<td>6 Wishful Thinking</td>
<td>Based on hope and anticipation of a positive outcome</td>
</tr>
<tr>
<td>7 Tension reduction</td>
<td>An attempt to make one feel better by releasing tension, e.g., using alcohol or cigarettes</td>
</tr>
<tr>
<td>8 Social action</td>
<td>Letting others know what is of a concern and enlisting support by writing petitions or organising an activity such as a meeting or a rally</td>
</tr>
<tr>
<td>9 Ignore the problem</td>
<td>Consciously blocking out the problem</td>
</tr>
<tr>
<td>10 Self blame</td>
<td>Being critical of one’s self for being responsible for the concern or worry</td>
</tr>
<tr>
<td>11 Keep to self</td>
<td>An individual’s desire to keep others from knowing about concerns</td>
</tr>
<tr>
<td>12 Seek spiritual support</td>
<td>Reflects prayer and belief in the assistance of a spiritual leader or God</td>
</tr>
<tr>
<td>13 Focus on the positive</td>
<td>Seeing the bright side of circumstances and seeing oneself as fortunate</td>
</tr>
<tr>
<td>14 Seek professional help</td>
<td>Using a personal adviser, such as a counsellor</td>
</tr>
<tr>
<td>15 Seek relaxing diversions</td>
<td>Describes leisure activities either alone or with others</td>
</tr>
<tr>
<td>16 Physical recreation</td>
<td>Relates to playing sport and keeping fit</td>
</tr>
<tr>
<td>17 Protect self</td>
<td>Support one’s self concept by constructive self-talk and looking after one’s appearance</td>
</tr>
<tr>
<td>18 Humour</td>
<td>Being funny as a diversion</td>
</tr>
<tr>
<td>19 Not cope</td>
<td>An inability to cope and the occurrence of psychosomatic illnesses</td>
</tr>
</tbody>
</table>

The Personal Stress Navigator (PSN) (Miller and Smith, 1999). This scale measures three separate areas: sources of stress, symptoms of stress and susceptibility to stress. Internal consistency coefficients for the PSN range from .60 to .90 and test retest reliability coefficients range from .70 to .90 with construct validity coefficients ranging from .40 to .70, all falling within the requirements of robustness for construct validity (Hair, Anderson, Tatham, and Black, 1998). Permission was granted by the authors to use the test on-line in exchange for sharing the data for cross cultural analysis purposes. The PNS, according to the authors, is used by the USA’s top 50 organisations for clinical and organisational purposes.
The test is a psychometric instrument that is said to account for 74% of an individual’s stress symptoms. The balance is explained by genetic predisposition, life history and physiological factors (Miller and Smith, 1999). The 264-item PSN consists of the following scales: (1) susceptibility to stress, by measurement on three subscales: lifestyle issues, health behaviours and coping resources; (2) sources of stress, by measurements on six sub-scales: job stress, family stress, personal stress, social stress, environmental stress and financial stress; (3) symptoms of stress, by measurement on seven subscales addressing physical and emotional and cognitive effects: muscular system, parasympathetic nervous system, sympathetic nervous system, emotional system, cognitive system, endocrine system and the immune system.

The PSN scale, symptoms of stress, was emphasised in the current study, along with questions on the number of general medical practitioner (GP) visits and days taken off work. Items were all measured using five-point Likert responses. Sources of stress and symptoms of stress items asked for past assessment and future prediction, using a five-point Likert scale where 1 is “not stressful” and 5 “very stressful”. Participants could skip questions that did not apply to them by ticking a box (NA) (not applicable).

Procedure

Participants completed the three on-line self-report measures, developed for the specially designed web page. Participants were able to access the web-based questionnaires in their own time.

RESULTS

Three methods of analyses were employed; a paired sample t-Test to explore coping across the two domains (Work/Home); a bi-variate correlation to explore coping (Work/Home) versus the items of the Symptoms of Stress scale; and a stepwise regression model to examine the dependent variables (health outcomes): symptoms of stress, number of medical or clinical visits in the past year, days off work due to illness in the past year and their relationship to the independent variable, coping.

Hypothesis 1, that coping strategies used in the home environment would differ from coping strategies used in the work environment, was tested by using a paired sample t-test on the Coping Scale for Adults, examining mean scores and standard deviations across the two domains at work and at home (Table 2). The results essentially supported the hypothesis, given the number of differences in emphasis on the strategies that occurred. However, when the pattern of use is noted over all 18-19 scales, there is also a strong similarity; nevertheless, the attention in this study was on whether differences, in emphases in the use of the strategies, occurred. This was demonstrated to be the case.
Table 2. Paired Samples t-tests for comparing Coping at Home and at Work- displaying the means, standard deviations, t scores, probability and effect size on all the scales of the Coping Scale for Adults

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seek Social Support</td>
<td>Home</td>
<td>69.11</td>
<td>17.20</td>
<td>2.89</td>
<td>12.55</td>
<td>1.55</td>
<td>.13</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Work</td>
<td>66.22</td>
<td>17.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focus on Solving the Problem</td>
<td>Home</td>
<td>81.60</td>
<td>12.69</td>
<td>1.07</td>
<td>7.55</td>
<td>.95</td>
<td>.35</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>Work</td>
<td>80.53</td>
<td>13.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Hard</td>
<td>Home</td>
<td>87.42</td>
<td>14.44</td>
<td>-4.82</td>
<td>10.85</td>
<td>-2.98</td>
<td>.01</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td>Work</td>
<td>92.24</td>
<td>12.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worry</td>
<td>Home</td>
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Note: N = 45, df = 44. Effect size coefficient -.01+ = small effect, .06+ = moderate effect, .14+ = large effect.

The findings showed that individuals in this study utilised the following three coping mechanisms more at work than at home (see Table 1 in Method section, for a brief definition of these strategies): (i) work hard, (ii) take social action, and (iii) seek professional help.

In the home domain, this study found that individuals utilised the following nine coping strategies significantly more often at home than at work: improving relationships, wishful thinking, tension reduction (alcohol, smoking), ignoring the problem, self-blame, seeking...
spiritual support, focusing on the positive, seeking relaxing diversions, and physical recreation.

The results showed there was a reduced subset of coping styles at work compared to those used at home to manage stress. The most commonly used strategies for coping at work (as distinct from differences between work and the home fronts) included working hard, focusing on solving problems and, to a lesser extent, seeking social support, and focusing on the positive (above 65 in Table 2). In the home domain, the same strategies were used, but in addition improving relationship and seeking relaxing diversions were strongly represented. A comparison of the lowest used strategies suggests that tension reduction (resorting to alcohol and smoking), taking social action, seeking spiritual support, and seeking professional help are the least used.

Table 3. Correlations: Predictor (Independent) Variables in Relation to Dependent Health Outcome Variables

<table>
<thead>
<tr>
<th>Home Stress</th>
<th>M-Visits</th>
<th>Days-Off</th>
<th>Work Stress</th>
<th>M-Visits</th>
<th>Days-Off</th>
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<td>.09</td>
<td>-.34*</td>
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<td>.02</td>
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<td>.33*</td>
<td>-.38**</td>
<td>.26</td>
<td>.19</td>
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<td>.02</td>
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<td>.40**</td>
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<tr>
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<td>.47***</td>
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<td>.32*</td>
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<td>.29*</td>
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Note: ** Significant at the 0.01 level (2-tailed); * Significant at the 0.05 level (2-tailed). N = 45, Stress = Symptoms of Stress; M-Visits = Number of medical or clinical visits in the past year; Days-Off = Days off work due to illness in the past year.

Hypothesis 2, that there would be a significant relationship between coping strategies used and stress and health indicators, was examined through inter-correlation analyses, and the identification of appropriate predictors to be incorporated in regression analyses. That is, we examined the extent to which coping strategies accounted for differences in health outcomes (stress, number of medical or clinical visits in the past year, and days off work due to illness in the past year); regression analyses were conducted in turn for each dependent variable. This was a step-by-step procedure to eliminate less significant variables and retain/identify the most important variables that predicted each of the items in health outcomes.

Examination of the correlation matrix (Table 3) for both domains (Home/Work) found 9 items correlating with the dependent variable Symptoms of Stress, 7 items with Clinical

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Visits and 12 items with Days Off Due to Illness. It can be noted in Table 3 that “Not Coping” as a ‘strategy’ was highly significantly related to symptoms of stress, medical visits, and days off work due to illness. It can also be noted in Table 3 that worrying as a strategy and seeking professional help are both associated with stress, medical visits and days off due to illness at home, but are related only to taking days off (worry) or medical visits, at work. Another main difference between home and work correlations is the use of self-blame which is more strongly correlated with more medical visits and days off in the work than the home situations. Days off work is now examined in more detail.

Days off Work

An inter-correlation analysis (Table 4) was conducted to examine the relationships between the coping strategies and to determine if data reduction was necessary for predicting ‘Days off work due to illness in the past year’. Table 4 shows the correlation matrix.

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Note: * Significant at the 0.05 level (2-tailed); ** Significant at the 0.01 level (2-tailed). N = 45.
No strategies were removed for the regression analysis. Eight items were found to be very highly correlated suggesting multicollinearity. ‘Not Cope’ at work correlated with ‘Not Cope’ at home (.90); ‘Self-Blame’ at work correlated with ‘Self-Blame’ at home (.82); ‘Worry’ at work correlated with ‘Worry’ at home (.90), and ‘Work Hard’ at home correlated with ‘Work Hard’ at work (.68). In addition, the self-blame and worry categories overlapped substantially. Therefore these scales were integrated to create composite scores in new undifferentiating variables: ‘Not Coping’, ‘Self-Blame and Worry’ at Home and ‘Work Hard’.

The reduced data set was re-examined for multicollinearity and the standards required were met. A stepwise regression with the dependent variable ‘Days off work due to illness in the past year’ was conducted to complete the model for analysis (see Table 5).

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</table>

Two variables contributed to explaining ‘Days off work due to illness in the past year’. ‘Self-Blame and Worry’ plus ‘Work Hard’ explained 40% ($R^2 = .404$) of the total variance in the model. Examining the beta coefficient for Work Hard ($\beta = -.447$, $p > .001$) showed a negative direction, indicating participants do not “work hard” as a coping strategy when dealing with ‘Days off work’. This outcome appears reasonable, but it is noted also that self-blame and worry constitute a major role in predicting illness (days off). None of the other variables included in Table 5 reached significance levels. In predicting ‘days off work’, it is self blame and worry that constitute the main predictors, and it is noted that these two strategies relate both to the work and the home environments.

Another area of interest in relation to coping strategies and symptoms of stress is exactly what the relationship is between the 18 different coping strategies used by the call centre operators in our sample, and specific symptoms that people might demonstrate. These symptoms are listed generally in the headings of Tables 6a and 6b referring to the sympathetic and parasympathetic nervous systems, and emotional cognitive and muscular systems. A correlation analysis was conducted to explore the use of coping styles across domains (Work/Home) and their relationship to the 7 items of ‘Symptoms of Stress’: Muscular, Parasympathetic, Sympathetic, Emotional, Cognitive, Endocrine and Immune (Tables 6a and 6b). Just seven coping scales correlated with the ‘Symptoms of Stress’ scales in the Work domain (‘Seek Social Support’, ‘Worry’, ‘Wishful Thinking’, ‘Tension Reduction’, ‘Social Action’, ‘Self-Blame’ and ‘Not Cope’) (See Table 6a). There was considerable similarity in the two situations, with all those relating in the at-work situation also relating in the at home situation. Twelve scales from the coping styles correlated significantly with the ‘Symptoms of Stress’ scales in the Home domain (‘Seek Social Support’, ‘Focus on Solving the Problem’, ‘Worry’, ‘Improve Relationships’, ‘Wishful

There was considerable similarity in the two situations, with all those relating in the at-work situation also relating in the at home situation. While some of the findings might be in error (despite the more stringent .01 level being used to test for significance), there is evidence that the kinds of coping style used are associated with the different physical and emotional stress symptoms identified.

The most commonly occurring relationships showed that worrying correlated with emotional, cognitive and endocrine responses; tension reduction through use of alcohol and related relaxants was associated with similar areas, including also with elevated scores on the sympathetic nervous system and the immune system. ‘Not coping’ was associated with the highest number of the stress symptoms including, both at work and at home, weakened muscular, emotional, cognitive, and immune responses.

The relationships underline the importance of conducting research into coping styles in the workplace, as the health reactions to the coping styles used suggest the seriousness of the health problems experienced by these call centre workers (and no doubt similar results could be found in other work groups).

Table 6a. Correlations: Coping variables (Work Domain) in relation to categories of the ‘Symptoms of Stress’ Scale, as shown by reported effects on emotional, cognitive, muscular, parasympathetic and sympathetic nervous systems, endocrine and immunity systems

<table>
<thead>
<tr>
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<th>Sym</th>
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<th>Work</th>
<th>Cog</th>
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Note: * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed).
N = 45, Mus = Muscular, Para = Parasympathetic, Sym = Sympathetic, Emot = Emotional, Cog = Cognitive, Endo = Endocrine, Imm = Immune.
Table 6b. Correlations: Coping variables (Home Domains) in relation to categories of the ‘Symptoms of Stress’ Scale, as shown by reported effects on emotional, cognitive, muscular, parasympathetic and the sympathetic nervous systems, endocrine and immunity systems

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<th>Cog</th>
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Diversions

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Note: * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed).

DISCUSSION

The focus of this study was to promote a further understanding of coping strategies used in call centres and at home, and to examine where the differences occurred. In addition, the relationship of the coping strategies to health (especially taking days off work due to illness) was examined. This study looked at individual coping strategies in the two domains, as did Cooper and Payne’s (1988) research. They studied role, socialisation and spill-over processes across the two domains, but did not, however, examine coping strategies and resources directly. It could be that the spill-over process impacts more on the home environment in our study, where additional strategies were used and perhaps were needed to cope. Another explanation may be that the workplace does not allow as much flexibility in the use of a variety of strategies for coping. Obviously, more research is needed in this area.

This study of call centre employees and their coping strategies appears to have somewhat similar findings to those of Vinokur et al. (1999) who studied the mental health of women in the air force and their work and family conflicts. They found that job stress was significantly related to parenting stress and impacted on work and family conflict. The current research, however, has indicated that different coping strategies are used at home and at work (or that
the strategies are given different emphases in the two environments). The effectiveness of
those strategies has not been examined and this is also an area for further research.

This current research found that strategies focusing on avoidance (tension reduction,
using alcohol) were strongly used by the call centre employees both at home and at
work. This result is consistent with research by Deisinger, Cassisi and Whitaker (1996) and
Gianakos (2002) who also noted that avoidance coping was used in the workplace. There are
consequent results physiologically, as was shown in Tables 6a and 6b.

The results in this current research also showed that alcohol use and smoking (tension
reduction) were used as a coping mechanism in this sample of call centre workers. This issue
was addressed by Hyman et al. (2005) who suggested that the pressure from work and
management impacted on individuals’ home environments, with balancing domestic and
work obligations becoming increasingly complicated and requiring complex strategies to deal
with the many facets. This current study has included both home and work environments and
seems to verify Hyman at al.’s qualitative findings (from interviews and reports) that there
were differences in coping styles across environments. The current study has demonstrated
that there are differences in the emphases that are given to the different strategies at work and
at home.

Impacts on health visits. Coping styles have been shown to be varied in the different
domains and more limited in the work quarter. This has impacted on the amount of time off or
number of days off that a person will take and how many visits they have to the GP (as shown
by the symptoms of stress scale where the stress symptoms were manifested in the various
physiological and psychological symptoms cited). This current research found that there was
a significant relationship between stress symptoms to visits to the medical practitioner (GP)
and days off work. This is consistent with Barton’s (2002) call centre study which found that
37% of the staff reported taking days off work due to stress. Previous research had also
discerned that call centre staff were susceptible to increased sleeping disorders, digestive
system disorders, depression, and skeletal, eyesight, and ear related problems (Barton, 2002;
Hyman et al., 2005; Taylor et al., 2002).

This current study also determined that, in particular, self-blame at work, visits to the
medical practitioner (GP), and stress symptoms that affected the cognitive domain and the
endocrine system were related. McEwen and Mendelson (1993) determined that, with
continuing stressors, some hormones and bodily systems may be affected and result in a host
of different physical conditions from viral to bacterial, or significant illnesses such as allergic
reactions, coronary heart disease, high blood pressure, and decrease in intestinal functioning.
Call centre employees have been shown to have high rates of illness, linked with their
working role (Hannif and Lamm, 2005; Hyman et al., 2005; Taylor et al., 2002).

Overall, this current study has obtained results generally consistent with previous
literature on call centres and on different (work/home) environments. For this call centre
sample, similar levels of stressful reactions have been identified and it has been possible to
compare the coping strategies used in the two environments. Further, the relationship between
coping strategies used (at home and at work) and health and stress variables has been clarified.

Some of the general limitations and weaknesses of this current study included the small
sample; this was due partly to the reluctance of call centres to allow staff to be assessed
within the time constraints for the current study. In addition, it was time consuming and
costly to develop the electronic interface, especially where an electronic version was not available.

The PSN Stress Navigator contributed to the overall study by showing the relationships to coping strategies. Two of the scales of the PSN, ‘sources of stress’ and ‘susceptibility to stress’, showed non-significant relationships to the coping data. However, the symptoms of stress scale identified significant areas of concern. The health issues associated with different coping styles suggests that further study of the coping and health-stress reactions is urgently needed, and underlines the importance of developing appropriate medical and psychological interventions, if further research supports the correlations found here. Replication of the call centre study using the questionnaires from this study and others, such as the Occupational Stress Inventory-Revised which was specially designed for cross-occupational studies might be a valuable next step (Hicks, Fujiwara, and Bahr, 2006). In the meantime, there is support in the current results for the development of appropriate training courses in the improvement of coping strategies used by employees.

The implications of the current study are that there are distinct coping styles across varying domains and these differences may have social and physiological impacts. Interventions might be geared to address needed coping strategies in both the working environment and in the home environment. The development of an intervention that is more holistic in its approach would help individuals develop functional coping strategies which could be of benefit to them both at work and home. However, it may be that more attention needs to be given to coping strategies used in the home environment, given the findings from this research (thereby taking into account spill-over effects and, moreover, addressing stressors that are imparted from work to home). The outcome from this may be that there is less annual staff turnover in call centres, and fewer sick days. The overall benefit to both individuals and organisations would be clear and would likely increase productivity and reduce expenditure. Special attention to the effective use of the variety of functional and positive coping strategies available should have positive all-round benefits. Future studies need to identify clearly what stress actually refers to, and a set of standardised coping styles developed, to help in comparisons.

CONCLUSION

The Coping Scale for Adults enabled individual coping styles at home and at work to be examined closely, and also allowed prediction of health and stress symptoms. Further research is needed into this new system of workplace organisation - the call centre - especially given the many reports of stressed individuals, stressed environmental concerns and the spill-over effects on the family. There is evidence in the current study that individuals are stressed and that effective strategies are used in coping. Selected differences between coping styles at work and at home suggest there may be a need for further training of individuals in the use of more effective strategies. For example, more use is made at home of building relationships as a strategy to assist in coping than at work; more attention to facilitating cooperative work environment strategies from management may be helpful in making it more likely that these people-related strategies are used more often, as the work of Deery et al. (2010) and Barton (2009) suggests.
Further, the high levels of worry and self-blame and of avoidance coping (tension reduction) strategies across both work and home environments, suggest the importance of training and support in what are known to be more effective strategies - which also were used by many in our sample: problem-solving orientation, focusing on the positive, and seeking social support. Often self-blame and worry may predominate in some, clearly to their detriment; thus strategies of cognitive behavioural therapy or positive and logical thinking can help relieve such stress.

We will hear much more about the call centre environment and its workers in the years ahead. Call centres are now an established part of the workplace scene and help provide many positive services, despite the current problems associated with them. Reports, such as those of Barton and of Deery and colleagues, can lay a foundation for workplace changes that will benefit all call centre workers and their families. The current study has highlighted that there are similarities and differences in coping strategies used across work and home environments; appropriate skills need to be developed to deal with the impacts on these environments, especially skills to deal with the stresses associated with the work environment.

REFERENCES


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EMPLOYEE PERCEIVED WORKPLACE STRESS:
EXAMINING CORE SELF-EVALUATIONS, POLITICAL SKILL, COPING STRATEGIES AND SUPPORT

Deborah Farrell¹ and Kathryn Gow²
¹Queensland University of Technology, Australia
²Consulting Psychologist, Regional Australia

ABSTRACT

In order to provide effective workplace training and psychological assistance, it is first essential to understand more about the factors that influence the development of occupational stress. This chapter reports on a study that explored the role of core self-evaluations, political skill, coping strategies and workplace support in relation to workers’ perceived stress. The findings from a sample of 131 white-collar workers indicated that perceived stress is predicted by core self-evaluations, supervisor informational support, interpersonal influence, emotion-oriented coping, and role conflict. While there were no significant between-group differences for gender on perceived stress, regression analyses pinpointed that supervisor informational support, core self-evaluations, task-oriented coping, and emotion-oriented coping predicted perceived stress for men; whereas role conflict, emotion-oriented coping, supervisor emotional support, and co-worker emotional support were significant predictors of perceived stress for women. Thus, interventions designed to improve employees’ core self-evaluations and increase their array of coping strategies should assist in reducing occupational stress. Organisational efforts to reduce role conflict and strengthen employee/supervisor support (particularly informational for men and emotional for women) should be similarly beneficial to the stressor-strain relationship.

Keywords: Work Stress, Core Self-Evaluations, Political Skill, Coping
INTRODUCTION

Over the past few decades, a large body of literature has accumulated on the damaging effects of occupational stress, with both human and financial costs being investigated in the literature (Caulfield, Chang, Doolard and Elshaug, 2004). Nevertheless, the individual suffering, both physical and psychological, together with the subsequent flow-on effects to other spheres of life, including relationships within the family, at work and socially, make occupational stress an issue worthy of continued research. From an individual perspective, stress is connected to the six leading causes of death – heart disease, cancer, lung ailments, accidents, cirrhosis of the liver and suicide. From an organisational perspective, job stress costs billions of dollars every year in employee disability claims, absenteeism, and lost productivity (Xie and Schaubroeck, 2001).

Stress and Coping

Some researchers claim that environmental aspects are more powerful than personal or biographical factors in explaining stress development (Maslach and Schaufeli, 1993), while others highlight the consistently low-moderate association (<.30) between stressor exposure and strain (Cohen and Edwards, 1989) preferring to focus on personality traits or coping strategies (Wiebe and Smith, 1997). Consequently, a number of theories and conceptual models of stress have been proposed to help us understand the development of occupational stress (e.g., French, Caplan, and Harrison, 1982; Lazarus and Folkman, 1984; McGrath, 1976). While a full discussion is beyond the scope of this chapter (see Jex, 1998), common to each framework is a process whereby an event is cognitively appraised as harmful or threatening (stressor), inducing a set of psychological responses (coping strategies), and resulting in consequences affecting well-being (stress) (Kahn and Byosiere, 1992). Thus, stress is defined as a “relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus and Folkman, 1984, p. 19).

According to the Transaction Theory of Stress (Lazarus and Folkman, 1987), cognitive appraisal is a two-part process involving primary appraisal (benefit, challenge, threat, or harm/loss) and secondary appraisal (available coping resources and options), whereby a perceived inequity between demand and coping resources produces an increase in stress levels. The magnitude of the stress response and the type of coping strategies employed is primarily determined by the individuals’ appraisal of the situation (Pearlin, 1982). Some individuals are highly resilient to environmental stressors, while others are sensitive to even modest demands (Suls, 2001). In effect, one must consider how the individual appraises what is happening, in order to understand his or her emotional and physiological reactions (Perrewé, Zellars, Ferris et al., 2004).

Coping strategies are designed to reduce stress (Lazarus, DeLongis, Folkman, and Gruen, 1985) and therefore play a significant role in the stressor-strain relationship. Coping refers to the “cognitive and behavioural efforts made to master, tolerate, or reduce external and internal demands, and conflicts among them, when individuals meet difficult tasks” (Lazarus, and Folkman, 1987, p. 141). To elucidate this complex process, many researchers have
attempted to reduce all possible coping responses to a set of parsimonious coping dimensions (e.g., Brandstädter, 1992; Rothbaum, Weisz, and Snyder, 1982; Taylor, 1983). For example, Lazarus and Folkman (1984) discriminate between problem-focused and emotion-focused coping. Problem-focused coping (altering the stressor) is linked to better health and high self-efficacy, whereas emotion-focused coping (regulating distressing emotions associated with the stressor) is related to greater stress, depression, anxiety, and poor recovery from illness (Gianakos, 2002). This conceptualisation has proven too simplistic for some researchers (e.g., Carver, 1997; Endler and Parker, 1994) who identified a third basic dimension – avoidance coping. Avoidance-oriented coping strategies are aimed at escaping from, or disengaging from, a stressful situation either emotionally or behaviourally (Welbourne, Eggerth, Hartley, Andrew and Sanchez, 2007) and can involve social diversion (seeking out other people) or distraction (engaging in a substitute task) (Endler and Parker, 1990a). Avoidance-coping has been associated with depressed mood and lower job satisfaction (Smith and Sulsky, 1995).

Although researchers have studied a wide range of variables in the stressor-strain relationship, it has rarely been examined by targeting variables that have demonstrated empirical evidence for malleability, even though the value of stress management interventions (SMI) in the workplace is well supported (e.g., Bekker, Nijssen, and Hens, 2001; Bond and Bunce, 2000; Meichenbaum and Jaremko, 1983). Based on Lazarus’s (1991) transactional theory, and the conceptual framework outlined in Table 1, this study investigated environmental antecedents (role conflict, role ambiguity), and resource variables (core self-evaluations, political skill, coping strategies and social support) in relation to perceived stress.

<table>
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<tr>
<th>Environmental Antecedents</th>
<th>Resources</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Stressors</td>
<td>Core Self-Evaluations</td>
<td>Stress</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>Political Skill</td>
<td></td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>Social Support</td>
<td></td>
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<tr>
<td></td>
<td>Supervisor</td>
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<td></td>
<td>Co-Worker</td>
<td></td>
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<tr>
<td></td>
<td>Partner/Family/Friends</td>
<td></td>
</tr>
<tr>
<td>Coping Strategies</td>
<td>Task-oriented</td>
<td></td>
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<tr>
<td></td>
<td>Emotion-oriented</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoidance-oriented</td>
<td></td>
</tr>
</tbody>
</table>

ENVIRONMENTAL ANTECEDENTS

Research indicates that although stress is mediated by subjective appraisal, workplace factors such as role stressors are experienced as stressful by most individuals (Perrewé et al., 2005).
Role Stressors

Role stress refers to the physiological and psychological reactions to demands encountered at work (Ferris, Davidson et al., 2005) and results from an incongruity between perceived characteristics of a specific role and what is actually occurring within the role (Lambert, Lambert, and Ito, 2004). Role Ambiguity is defined as a lack of clear information about job responsibilities and expectations, and has been linked to increased tension, frustration, anxiety, and propensity to leave (Bedian and Armenakis, 1981), and decreased job satisfaction (Pearson, 1991), motivation, quality of work life, and individual and group productivity (Blau, 1981; Dougherty and Pritchard, 1985; Rizzo, House and Lirtzman, 1970). Role Conflict occurs when an individual is expected to assume conflicting roles or where expectations from multiple supervisors/managers differ. Research demonstrates that employees often experience stress as a result of multiple authority figures (Rizzo et al., 1970) and role conflict has been strongly related to somatic complaints (Fusilier, Ganster, and Mayes, 1987). Hence, it was expected that role conflict and role ambiguity would be positively related to perceived stress.

RESOURCES

Core Self-Evaluations

Core self-evaluations is a rudimentary “appraisal of one's worthiness, effectiveness, and capability as a person” (Judge, Bono, Erez, and Locke, 2005, p. 257), and is indicated by four well-established personality constructs: (a) self-esteem, (b) generalised self-efficacy, (c) emotional stability (Judge, Van Vianen and De Pater, 2004), and (d) locus of control (Judge, Locke and Durham, 1997). These are the most widely studied personality concepts in psychology, having been the subject of more than 50,000 studies (Judge and Bono, 2001). However, researchers generally study these traits in isolation with no discussion of their interrelationships or possible common core (Judge, Erez, Bono, and Thoresen, 2003), potentially overlooking the combined/interactive effects that may be apparent using an idiographic approach (Grant and Langan-Fox, 2006). Current research demonstrates that this newly developed personality taxonomy has proven to be a more consistent predictor of job behaviours than each component used in isolation (Erez and Judge, 2001). Since an individual’s core self-evaluations provide the lens through which cognitive or subjective appraisals are construed (Judge et al., 1997), and influences one’s assessment of constraints in the organisational environment, this construct was particularly suited to the aims of this study.

An individual who scores high on core self-evaluations is someone who is well adjusted, positive, self-confident, efficacious, and believes in his or her own agency (Judge, et al., 2005). Low scores on core self-evaluations is related to increased stress (Best, 2003), burnout (Best, Stapleton, and Downey, 2005), and depression (Judge et al., 2002), and decreased life satisfaction (Judge et al., 2002), motivation (Erez and Judge, 2001), job performance (Judge and Bono, 2001), leadership (Eisenberg, 2000), job and life satisfaction and work performance (Judge, Locke, Durham and Kluger, 1998). Thus, it was expected that core self-evaluations would be negatively related to perceived stress.

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Political Skill

Political skill is defined as “the ability to effectively understand others at work and to use such knowledge to influence others to act in ways that enhance one’s personal and/or organisational objectives” (Ahearn, Ferris, Hochwarter, Douglas, and Ammeter, 2004, p. 311). While related to social, emotional and practical intelligence, it is distinctive (Ferris, Perrewé, and Douglas, 2002) and the first construct specifically aimed at workplace behaviour (Ferris, Perrewé, Anthony, and Gilmore, 2000). Political skill is determined by four dimensions including social astuteness (the ability to read and understand people), interpersonal influence (the ability to act on social cues using a wide variety of influence strategies), networking ability (the ability to form and effectively utilise connections, friendships and alliances) and apparent sincerity (sincere and genuine communication and image) (Ferris, Treadway et al., 2005). Although conceptualized as being partially inherent in a person, political skill is also partially environmental and can be developed and shaped (Perrewé and Nelson, 2004) through a combination of both formal and informal training, together with the learning from experience (Ferris, Davidson et al., 2005).

Knowledge of an individual’s personality assists in understanding their predisposition to react in particular ways to certain situations, and their interpersonal relationships are critical to work performance and career success (Fredrickson, 1998; Kogut and Zander, 1992). More importantly, interpersonal relationships enhance an individual’s ability to cope with stressful job demands (Perrewé, Ferris, Frink and Anthony, 2000). Ferris et al. (2005) argue that politically skilled individuals enjoy a sense of personal security and self-confidence because of their prior experience and mastery over interactions with both individuals and work environments, and it is this self-confidence that contributes to a reduction in stress and strain (Perrewé et al., 2005).

Political skill is positively associated with job satisfaction and stress management (Perrewé et al., 2004), effective leadership and team performance (Ferris, Davidson et al., 2005), and attenuating the dysfunctional effects of role overload (Perrewé and Nelson, 2004; Perrewé et al., 2004). Therefore, it was expected that political skill would be negatively related to perceived stress.

Social Support

Organisational research has generally discovered positive consequences of workplace support, with both buffering and direct effects being demonstrated (Cohen and Wills, 1985) across a diverse array of populations (DeLongis and Holtzman, 2005). Research indicates that social support can reduce the sense of stress at work (Etzion, 1984; Oginska-Bulik, 2005) by assisting with general coping (Kulik and Mahler, 1989) and increasing the variety of coping strategies used (DeLongis and Holtzman, 2005). Social support acts as a “protective” factor, reducing people’s vulnerability to both physiological and psychological symptoms of stress (House, Umberson and Landis, 1988; Moyle, 1998).

In the workplace, social support is primarily provided by instrumental assistance in problem solving or emotional support (Cohen and Wills, 1985). House (1981) suggested that support from work-related sources (e.g., co-workers and supervisors) played a critical role in reducing occupational stress, while Swanson and Power (2001) found employees with strong

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managerial support were less likely to report role conflict, role ambiguity, and work overload. Supervisor support alleviates strain to a greater extent than co-worker support (Ganster, Fusilier, and Mayes, 1986; Luszczyska and Cieslak, 2005), possibly owing to the supervisor’s ability to clarify roles or actually reduce the workload (Thompson, Kirk and Brown, 2005). Supervisor support has been associated with reduced stress (Etzion and Westman, 1994), burnout (Eastburg, Williamson, Gorsuch, and Ridley, 1994), health problems related to work, and work-family conflict (Thomas and Ganster, 1995). Gottlieb (1983) found that interventions that include social support alleviate distress and facilitate adjustment in stressed individuals. It would appear that irrespective of whether the support is used or not, the mere existence of social support networks act as a buffer against stress (House, 1981). Hence, it was expected that workplace social support would be negatively related to perceived stress.

Coping Strategies

As discussed above, researchers have identified three basic dimensions of coping - task-focused coping, emotion-focused coping, and avoidance-focused coping. Task-oriented (instrumental) strategies include attempts to solve the problem or reconceptualise it cognitively (Endler and Parker, 1990a, 1990b; Shipley and Gow, 2005) and tend to predominate when people feel they are able to do something constructive (Folkman and Lazarus, 1980). Emotion-focused (passive) strategies include self-preoccupation, daydreaming or emotional regulation (Endler and Parker, 1994) and tend to predominate when individuals feel they have little or no control over the situation (Folkman and Lazarus, 1980). Avoidance strategies tend to predominate during periods of higher levels of perceived work stressors (Snow, Swan, Raghaven, Connell, and Klein, 2003). Strategies may be person-orientated or task-orientated and include social diversion (seek out other people) or distraction (engage in a substitute task) (Endler and Parker, 1994).

Whether workers focus on altering a stressful situation (task-oriented coping) or managing the associated emotional distress (emotion-oriented coping) seems to influence the extent to which they will experience illness, emotional exhaustion, job dissatisfaction (Bhagat, Allie, and Ford, 1995) and job performance difficulties (Kobasa, 1982). Thus, it was predicted that task-focused coping strategies would be negatively related to perceived stress.

Stress

An individual’s response to a stressor is not based exclusively on the intensity or quality of the event, as it is also determined by personal and contextual factors (Cohen, Kamarck, and Mermelstein, 1983, p. 386), with stress resulting when demands are appraised by the individual as exceeding their available coping resources (Lazarus and Folkman, 1984). As discussed previously, a number of personal, environmental and situational factors interact in the stressor-strain relationship and accordingly, this study measured ‘perceived stress’ acknowledging that stress is an individual experience with similar life events tending to affect people differently.

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Research Hypotheses

Based on the previously outlined research literature and the conceptual rationale developed above, it was hypothesised that perceived stress would be significantly predicted by role conflict, role ambiguity, core self-evaluations, political skill, task-oriented coping strategies, and workplace social support.

METHOD

Study Design and Collection of Data

A cross-sectional survey design was used for data collection from Australian white-collar workers located in Brisbane, Sydney and Canberra, using a web-based questionnaire. The survey, requiring open-ended, dichotomous and Likert-scale responses was administered by SurveyMonkey, a purpose built web-site using secure socket layer/encryption technology to prevent unauthorised access to data. The rationale for utilizing web-based research technology was to provide participants with convenient, time effective access to questionnaires and access to a larger target audience. Additionally, as many organisations are using web-based research (Schaefer and Dillman, 1998; Stanton and Rogelberg, 2001), this format is now familiar to many people. Participants were assured of confidentiality with results to be printed in aggregate form only. Data was analysed using bi-variate correlation, stepwise regression, and t-tests.

Participants

The participants comprised 81 women and 50 men (N = 131) working in both public and private organisations in three states of Australia. The median age group was 30 - 40 years (42.3%; 18-29 = 14.8%; 41 – 50 = 27.5%; 51 – 60 = 13.4%; 60+ = 2.1%). Education levels ranged from primary school to higher degrees (Primary 0.7%; High School 20.4%; TAFE/Diploma 26.8%; Bachelor 23.2%; Post Graduate 20.4%; Higher Degree 8.5%). Tenure ranged from less than one year to more than twenty years (>1yr = 12.7%; 1 – 3 = 16.9%; 4 – 6 = 21.8%; 7 – 10 = 7.8%; 10 – 19 = 29.6%; 20+ = 11.3%). A wide variety of occupations were represented in this study including Management, Finance, Community Service, Office/Administration Support, Counselling/Social Work, Public Relations/ Advertising, Healthcare, Education, and Military.

Procedure

All participants were sent a letter of invitation by electronic mail, either individually from the researchers or via mass mail-out from human resources or management contacts at their place of employment. The invitation, containing a link to the on-line survey, included a brief explanation of the study together with information in relation to ethical concerns. Data
collection was conducted at the participants’ leisure and convenience, with submission of the completed survey being accepted as consent to participate. The debriefing sheet appeared on-screen after the submission of the final page of the survey.

**Measures**

Eight measures and a demographic questionnaire were used in this study.

*Demographic Questionnaire.* The demographic questionnaire sought information on age, gender, occupation, education, and employment factors.

*Role Ambiguity and Role Conflict.* Rizzo et al.’s (1970) measures of Role Ambiguity (6-items) and Role Conflict (8-items) use 7-point Likert scales and are the most widely used instruments for studying role stressors (Jackson and Schuler, 1985). Cronbach alpha levels have been reported as ranging from .65 to .82 (Bauer, 2002). Scoring was reversed so that high scores indicate high role ambiguity and high role conflict.

*Political Skill Inventory (PSI).* Designed by Ferris, Treadway et al. (2005), this 18-item self-report measure uses a 7-point Likert scale designed to assess respondents’ level of political skill. The PSI consists of four scales: NA = Networking Ability; II = Interpersonal Influence; SA = Social Astuteness; and AS = Apparent Sincerity. Responses are averaged into composite scores to produce either an overall political skill score or four scale scores with higher scores indicating higher levels of ability. The authors report internal consistency reliability indices ranging from .78 (II) to .87 (NA) and evidence for construct validity (see Ferris, Treadway et al., 2005 for a review).

*The Core Self-Evaluations Scale (CSES).* The CSES is a 12-item self-report measuring core self-evaluations using a 5-point Likert scale. The authors (Judge et al., 2003) report that test-retest reliability was .81, with coefficient alpha reliability estimates being above .80.

*Coping Inventory for Stressful Situations – Situation Specific Coping (CISS: SSC).* The CISS: SSC (Endler and Parker, 1994) is a 12-item self-report inventory using a 5-point Likert scale to assess coping in specific situations. The CISS: SSC consists of three scales: task-oriented, emotion-oriented, and avoidance-oriented coping. The authors report internal alpha reliability coefficients for the modified CISS Task, Emotion, and Avoidance scales as .85, .75, and .72 for men, and .84, .77, and .71 for women, respectively.

*Support Appraisal for Workplace Stress (SAWS).* The SAWS (Lawrence, Gardner and Callan, 2007) is a 12-item self-report inventory using a 4-point Likert scale to assess respondents’ levels of workplace support. The SAWS consists of three scales: emotional support, informational support, and appraisal support, from each of three sources: direct supervisor, work colleagues, and partner/family/friends. The authors report evidence of content validity, reliability, discriminate and criterion-related validity, predictive validity and construct replication across samples, with Cronbach’s alpha scores ranging from .76 (informational support from colleagues) to .90 (appraisal support from supervisor).

*Perceived Stress Scale (PSS).* The PSS (Cohen and Williamson, 1988) is a 10-item questionnaire composed of negatively and positively worded items designed to assess perceived stress using a 5-point Likert scale. The authors report an internal alpha reliability coefficient for the scale of .78.
RESULTS

Descriptive Statistics

Data was analysed using SPSS 15.0. The means and standard deviations for the continuous variables are shown in Table 2.

Table 2. Means and Standard Deviations for Continuous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Stress</td>
<td>127</td>
<td>29.20</td>
<td>4.92</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>131</td>
<td>24.42</td>
<td>9.21</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>131</td>
<td>29.87</td>
<td>6.90</td>
</tr>
<tr>
<td>Core Self-Evaluations</td>
<td>131</td>
<td>3.38</td>
<td>0.61</td>
</tr>
<tr>
<td>Political Skill</td>
<td>130</td>
<td>5.34</td>
<td>0.78</td>
</tr>
<tr>
<td>Task-Oriented Coping</td>
<td>130</td>
<td>3.63</td>
<td>0.57</td>
</tr>
<tr>
<td>Emotion-Oriented Coping</td>
<td>126</td>
<td>2.32</td>
<td>0.60</td>
</tr>
<tr>
<td>Avoidance- Oriented- S. Diversion</td>
<td>131</td>
<td>2.89</td>
<td>0.74</td>
</tr>
<tr>
<td>Avoidance-Oriented – Distraction</td>
<td>131</td>
<td>2.35</td>
<td>0.86</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>124</td>
<td>2.32</td>
<td>0.84</td>
</tr>
<tr>
<td>Co-Worker Support</td>
<td>125</td>
<td>2.75</td>
<td>0.68</td>
</tr>
<tr>
<td>Non-Work Support</td>
<td>126</td>
<td>2.57</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Correlations

Bi-variate correlations were carried out in order to ascertain the relationships between the variables of this study. Perceived stress was significantly moderately related to: (1) role conflict \( (r = .36, p = .00); \) (2) role ambiguity \( (r = .24, p = .00); \) (3) core self-evaluations \( (r = -.46, p = .00); \) (4) all aspects of supervisor support [emotional \( (r = -.39, p = .00)\), informational \( (r = -.41, p = .00)\), and appraisal \( (r = -.31, p = .00)\)] and; (5) emotion-oriented coping \( (r = .32, p = .00)\). Political skill, task-oriented coping and co-worker support were not significantly related to perceived stress as depicted in Table 3.

Table 3. Significant Bi-variate Correlations for Perceived Stress

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Self-Evaluations</td>
<td>-.46**</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>.36**</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>.24**</td>
</tr>
<tr>
<td>Political Skill</td>
<td>-.07</td>
</tr>
<tr>
<td>PS – Networking Ability</td>
<td>-.07</td>
</tr>
<tr>
<td>PS – Interpersonal Influence</td>
<td>-.01</td>
</tr>
<tr>
<td>PS – Apparent Sincerity</td>
<td>-.07</td>
</tr>
<tr>
<td>PS – Social Astuteness</td>
<td>-.04</td>
</tr>
<tr>
<td>Task-Oriented Coping</td>
<td>-.07</td>
</tr>
<tr>
<td>Emotion-Oriented Coping</td>
<td>.42**</td>
</tr>
<tr>
<td>Supervisor – Emotional Support</td>
<td>-.39**</td>
</tr>
<tr>
<td>Supervisor – Informational Support</td>
<td>-.41**</td>
</tr>
<tr>
<td>Supervisor – Appraisal Support</td>
<td>-.31**</td>
</tr>
<tr>
<td>Co-Worker – Emotional Support</td>
<td>-.01</td>
</tr>
<tr>
<td>Co-Worker – Informational Support</td>
<td>-.08</td>
</tr>
<tr>
<td>Co-Worker – Appraisal Support</td>
<td>-.02</td>
</tr>
</tbody>
</table>

Note. ** p< 0.01(2-tailed), * p< 0.05 (2-tailed).
Perceived Stress

To assess whether perceived stress was predicted by the variables of interest (role conflict, role ambiguity; core self-evaluations; political skill – networking ability, interpersonal influence, apparent sincerity, and social astuteness; task-oriented coping; emotion-oriented coping; avoidance-oriented coping-social diversion; avoidance-oriented coping-distraction; supervisor support – emotional, informational, and appraisal; co-worker support – emotional, informational, and appraisal; and non-work support – emotional, informational, and appraisal), a stepwise regression was performed. The results are shown in Table 4. Perceived stress was significantly predicted by core self-evaluations ($\Delta R^2 = 20.1\%$, $F(1,113) = 29.73$, $p = .00$), supervisor informational support ($\Delta R^2 = 8.0\%$, $F(1,112) = 12.62$, $p = .00$), interpersonal influence ($\Delta R^2 = 4.9\%$, $F(1, 111) = 8.13$, $p = .01$), emotion-oriented coping ($\Delta R^2 = 3.8\%$, $F (1,110) = 6.74$, $p = .01$), and role conflict ($\Delta R^2 = 3.8\%$, $F (1,109) = 7.03$, $p = .01$). Contrary to expectations, political skill and task-oriented coping were not significant predictors of perceived stress. This study highlights the fact that perceived stress decreases as core self-evaluations and supervisor informational support increase, and increases as interpersonal influence, emotion-oriented coping, and role conflict increase. Thus, the hypothesis was partially supported by the data.

Gender was entered as the selection variable into the model for perceived stress and the variables of interest examined above. Perceived stress for men was significantly predicted by supervisor informational support ($\Delta R^2 = 30.6\%$, $F(1,46) = 20.242$, $p = .00$), core self-evaluations ($\Delta R^2 = 13.0\%$, $F(1,45) = 10.33$, $p = .00$), task-oriented coping ($\Delta R^2 = 15.9\%$, $F(1, 44) = 17.31$, $p = .00$), and emotion-oriented coping ($\Delta R^2 = 3.8\%$, $F (1,43) = 4.50$, $p = .04$). Thus for men, perceived stress decreases as supervisor informational support and core self-evaluations increases and increases as task-oriented and emotion-oriented coping increase, as shown in Table 5.

Table 4. Stepwise Regression for Perceived Stress

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Self-Evaluations</td>
<td>-.23</td>
<td>-2.36</td>
<td>.02</td>
</tr>
<tr>
<td>Supervisor Informational Support</td>
<td>-.26</td>
<td>-3.38</td>
<td>.00</td>
</tr>
<tr>
<td>Interpersonal Influence</td>
<td>-.18</td>
<td>-2.240</td>
<td>.03</td>
</tr>
<tr>
<td>Emotion-Oriented Coping</td>
<td>.27</td>
<td>3.04</td>
<td>.00</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>.21</td>
<td>2.65</td>
<td>.01</td>
</tr>
</tbody>
</table>

Table 5. Stepwise Regression for Perceived Stress – Males ($n = 50$)

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor Informational Support</td>
<td>-.42</td>
<td>-4.20</td>
<td>.00</td>
</tr>
<tr>
<td>Core Self-Evaluations</td>
<td>-.52</td>
<td>-3.67</td>
<td>.00</td>
</tr>
<tr>
<td>Task-Oriented Coping</td>
<td>.52</td>
<td>4.44</td>
<td>.00</td>
</tr>
<tr>
<td>Emotional-Oriented Coping</td>
<td>.27</td>
<td>2.12</td>
<td>.04</td>
</tr>
</tbody>
</table>

Perceived stress for women was significantly predicted by role conflict ($\Delta R^2 = 15.7\%$, $F(1,65) = 12.10$, $p = .00$), emotion-oriented coping ($\Delta R^2 = 11.2\%$, $F(1,64) = 9.76$, $p = .00$),
supervisor emotional support ($\Delta R^2 = 6.7\%$, $F(1, 63) = 6.33, p = .01$), and co-worker emotional support ($\Delta R^2 = 7.7\%$, $F(1,62) = 8.10, p = .01$). Thus for women, perceived stress increases as role conflict, emotion-oriented coping and co-worker emotional support increase and decreases as supervisor emotional support increases, as shown in Table 6.

Table 6. Stepwise Regression for Perceived Stress – Females ($n = 81$)

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Conflict</td>
<td>.31</td>
<td>-3.11</td>
<td>.00</td>
</tr>
<tr>
<td>Emotion-Oriented Coping</td>
<td>.38</td>
<td>3.79</td>
<td>.00</td>
</tr>
<tr>
<td>Supervisor Emotional Support</td>
<td>-.41</td>
<td>-3.64</td>
<td>.00</td>
</tr>
<tr>
<td>Co-Worker Emotional Support</td>
<td>.32</td>
<td>2.85</td>
<td>.01</td>
</tr>
</tbody>
</table>

**Gender**

The differences between men and women ($\chi^2 = 7.34, p = .00$) on each of the variables of interest were assessed through independent samples t-test analysis. Significant between-group differences were found for tenure ($t(129) = 6.51, p = .01$), having one person at work who acts as a stress inducer ($t(129) = -3.24, p = .00$), avoidance-oriented coping – social diversion ($t(129) = 3.70, p = .00$), avoidance-oriented coping – distraction ($t(129) = 2.06, p = .04$), and co-worker emotional support ($t(123) = 2.04, p = .04$).

Table 7. Means and Standard Deviations for Significant Gender Differences

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>Female</td>
<td>81</td>
<td>3.33</td>
<td>1.55</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>50</td>
<td>4.04</td>
<td>1.52</td>
</tr>
<tr>
<td>A Social Diversion</td>
<td>Female</td>
<td>81</td>
<td>3.07</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>50</td>
<td>2.60</td>
<td>.69</td>
</tr>
<tr>
<td>A Distraction</td>
<td>Female</td>
<td>81</td>
<td>2.48</td>
<td>.87</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>50</td>
<td>2.16</td>
<td>.82</td>
</tr>
<tr>
<td>Co Emotion</td>
<td>Female</td>
<td>76</td>
<td>2.96</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>49</td>
<td>2.69</td>
<td>.72</td>
</tr>
<tr>
<td>Stress Inducer</td>
<td>Female</td>
<td>81</td>
<td>1.36</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>50</td>
<td>1.64</td>
<td>.48</td>
</tr>
</tbody>
</table>

An examination of means reveals that men reported a longer duration of tenure in their current position and were more likely to report working with someone who acts as a stress inducer. Women report higher use of avoidance-oriented coping – social diversion, and avoidance-oriented coping – distraction strategies and higher co-worker emotional support as shown in Table 7.

**Stress Reducers**

Chi-square analysis ($\chi^2 = 5.56, p = .018$) pinpointed a significant difference between the number of people who reported having someone who acted as a stress reducer and those who
reported not having someone who reduced their stress level at work. An independent samples t-test identified perceived stress \((t (125) = 2.56, p = .01)\), political skill – networking ability \((t (129) = 2.07, p = .04)\), political skill – interpersonal influence \((t (127) = 2.09, p = .04)\), avoidance coping – social diversion \((t (129) = 2.32, p = .02)\), avoidance coping – distraction, \((t (129) = 2.33, p = .02)\), co-worker emotional support \((t (123) = 3.27, p = .00)\), co-worker informational support \((t (123) = 2.35, p = .02)\), and co-worker appraisal support \((t (123) = 2.45, p = .02)\) as significant. An examination of means reveals that those participants who reported having someone who acted as a stress reducer reported higher networking ability, interpersonal influence, a higher use of avoidance-oriented coping – social diversion and distraction, and higher co-worker emotional, informational and appraisal support, as shown in Table 8. Interestingly, they also reported higher levels of perceived stress.

Independent samples t-test using data for female employees who reported having a person who acted as a stress reducer at work identified avoidance coping – distraction, \((t (79) = 2.21, p = .03)\), co-worker emotional support \((t (74) = 2.48, p = .02)\), non-work informational support \((t (75) = 2.39, p = .02)\) and perceived stress \((t (76) = 2.25, p = .03)\) as significant. An examination of means reveals that females who reported having someone in the workplace who acted as a stress reducer reported higher use of avoidance-oriented coping – distraction, higher co-worker emotional support, and higher non-work informational support. Interestingly, they too also reported higher levels of perceived stress \((t (76) = 2.25, p = .03)\), just like the men.

Independent samples t-test using data for male \((n = 50)\) employees that reported having one person at work who they feel reduces their stress level identified avoidance coping – social diversion \((t (48) = 2.17, p = .04)\) as significant.

**Table 8. Means and Standard Deviations for Reduce Stress on Study Variables**

<table>
<thead>
<tr>
<th>Reduce Stress</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS – Networking Ability</td>
<td>Yes</td>
<td>52</td>
<td>5.09</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>79</td>
<td>4.62</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>Yes</td>
<td>52</td>
<td>30.52</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>75</td>
<td>28.29</td>
</tr>
<tr>
<td>PS – Interpersonal Influence</td>
<td>Yes</td>
<td>50</td>
<td>5.83</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>79</td>
<td>5.55</td>
</tr>
<tr>
<td>Avoidance – Social Diversion</td>
<td>Yes</td>
<td>52</td>
<td>3.08</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>79</td>
<td>2.77</td>
</tr>
<tr>
<td>Avoidance – Distraction</td>
<td>Yes</td>
<td>52</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>79</td>
<td>2.22</td>
</tr>
<tr>
<td>Co-Worker Emotional Support</td>
<td>Yes</td>
<td>51</td>
<td>3.10</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>74</td>
<td>2.68</td>
</tr>
<tr>
<td>Co-Worker Information Support</td>
<td>Yes</td>
<td>51</td>
<td>2.94</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>74</td>
<td>2.64</td>
</tr>
<tr>
<td>Co-Worker Appraisal Support</td>
<td>Yes</td>
<td>51</td>
<td>2.82</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>74</td>
<td>2.49</td>
</tr>
<tr>
<td>Non-Work Appraisal Support</td>
<td>Yes</td>
<td>51</td>
<td>2.88</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>75</td>
<td>2.63</td>
</tr>
</tbody>
</table>
An examination of means reveals that males who reported having someone that reduced their stress levels in the workplace reported higher use of avoidance-oriented coping – social diversion (M = 2.88).

**DISCUSSION**

This study showed that perceived stress decreases as core self-evaluations and supervisor informational support increase, and increases as interpersonal influence, emotion-oriented coping, and role conflict increase.

Role conflict and role ambiguity were significantly correlated with perceived stress and this outcome is congruent with previous research which established that most individuals experience role conflict and role ambiguity as stressful (Perrewé et al., 2005). However, regression analyses showed that only role conflict was significant in the prediction of perceived stress, suggesting that the previously identified detrimental effects of role ambiguity may impact on individual well-being differently.

Core self-evaluations was the strongest predictor of perceived stress, and this finding was in-line with previous research (e.g., Best, 2003; Judge et al., 2002) and contributes to the growing body of research which demonstrates that personality mediates the stressor/strain relationship through its impact on primary and secondary appraisal processes (e.g., Lazarus and Folkman, 1987; Perrewé et al., 2002; Suls and Rittenhouse, 1990).

While task-oriented coping was not a significant predictor of perceived stress, emotion-oriented coping was associated with increased levels of stress. Generally, studies have linked task-oriented coping strategies to better health and high self-efficacy, whereas emotion-focused coping has been associated with greater stress, and psychopathology (Parker and Endler, 1992). The association of emotion-oriented coping to increased perceived stress in this study is in accord with such findings; however the lack of findings in relation to task-oriented coping suggests that it may be an over-reliance on emotion-oriented coping strategies, rather than a deficit in task-oriented coping, that leads to increased workplace stress.

Although there were no significant between-group differences for gender on perceived stress, stepwise regression ascertained that different predictors were significant. For men, supervisor informational support was the strongest predictor, together with core self-evaluations, and task-oriented coping, with emotion-oriented coping making a relatively small contribution to the model. For women, role conflict was the strongest predictor of perceived stress, emotion-oriented coping accounted for a far greater portion of variance than for men, and emotional, rather than informational, support from the supervisor was predictive of perceived stress. In addition, co-worker emotional support was related to increased stress levels for women. Supervisors are often in a better position to contribute to reducing the stressor, whereas co-workers may inadvertently exacerbate the problem through non-productive sympathy. A better understanding of the emotional component of workplace support could be explored through further research in the workplace.

These findings demonstrated that while supervisor support is a significant predictor of perceived stress for both genders, men find informational support more beneficial in reducing stress, whereas women find emotional support more helpful. This study adds to previous
research (e.g., Ganster, et al., 1986; House, 1981; Luszczynska and Cieslak, 2005; Swanson and Power, 2001) by identifying specific types of support in relation to gender. Additionally, this study demonstrated that women use emotion-oriented coping strategies more than men and that higher use of emotion-oriented coping strategies predicted higher perceived stress levels. For men, the high use of task-oriented coping strategies was linked with high levels of stress. This is contrary to a number of studies that associated task-oriented coping strategies with physical health and general well-being (e.g., Park and Adler, 2003). However, some researchers (e.g., Dienstbeir, 1989; Glass, 1977) have determined that when individuals insist on trying to control uncontrollable or unsolvable events, task-oriented coping may become a burden and may elevate health risks. This aspect of controllability or solvability becomes particularly relevant in relation to the workplace where one can imagine a number of events that would fall into these categories (i.e., downsizing, restructuring, protocols, etc.) and where emotion-focused coping may be more adaptive (Latack, 1986). This study provides support for developing both task-oriented and emotion-oriented coping strategies to increase the array of strategies available to the individual. Cohen (1987) claimed that flexibility in coping is critical, and Kaluza (2000) suggested that stress management training should be tailored to the individual participants with a focus on broadening and balancing individual coping profiles.

For women, co-worker support and avoidance-coping strategies were associated with higher levels of perceived stress, suggesting that having someone in the workplace who they feel acts as a stress reducer may not actually be achieving that. Perhaps the time associated with the relationship, or the type of assistance offered may actually detract from the real benefits in relation to workplace stress and this finding needs further investigation. However for men, social diversion coping was associated with having someone in the workplace who they feel reduces their stress levels, and indicates a positive effect from this relationship.

CONCLUSION

The knowledge gained from this study may be used to expand the array of responses available to management to alleviate or pre-empt consequences of workplace stress and enhance employee well-being. These findings also increase our understanding of factors that may be of relevance when designing individual stress management interventions, adding in particular, a better awareness of gender differences in relation to the development of stress.

REFERENCES


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Chapter 21

STRESS AND STRESS RESILIENCE, EMOTIONAL INTELLIGENCE, AND PERFECTIONISM IN AN AUSTRALIAN WORKPLACE SAMPLE

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ABSTRACT

As part of the ongoing psychological and sociological investigation with respect to wellbeing in the workplace and stress management, exploring the combination of the variables of resilience, emotional intelligence and perfectionism adds a different perspective to our understanding of wellbeing on the job. Clarifying predictors of occupational stress and identifying correlates of resilience to stress are instrumental as bases for increasing personal and organizational well-being and reducing costs. This study surveyed 80 employees in an Australian workforce sample via convenience and snowball sampling, using the Occupational Stress Inventory Revised, the Frost Multidimensional Perfectionism Scale, The Emotional Intelligence Questionnaire, and the Stress Resilience scale from the Apollo Profile. Results showed that lower scores on the Emotional Intelligence (EI) trait independently accounted for 11% of perceived stress in Occupational Role and 10% in Personal Resources.

Keywords: Occupational Stress, Neuroticism, Perfectionism, Emotional Intelligence, Resilience

INTRODUCTION

Why is the study of stress at work, and how to manage it, of importance and why should we be studying the area? Research by Ongori and Agolla (2008) indicated that people who are stressed fail to perform to their highest levels, and that good performers in organisations tend to terminate their employment, if they experience continuous, or perceived unreasonable,
levels of occupational stress. Further, the cost of occupational stress has been reported from the International Labour Organisation as being up to 10% of Gross National Product (ILO; as cited in Ongori and Agolla, 2008). It seems important, therefore, to identify predictors of occupational stress, in order to have a base from which to help improve employee welfare, performance, and retention of valued staff. Once predictors are identified, effective interventions can target key areas of improvement in the organisation including occupational roles, stressors, and support programs.

As Lambert and Hogan (2009) have also identified, occupational stress is a key contributor to employee absenteeism, mental health problems, lower productivity and turnover, and is costly in termination payouts, subsequent recruitment processes and training of new employees. Personality attributes that contribute to resilience or its reverse, disenchantment in the workplace, have focused on the “five factor” or “Big Five” model of personality (Costa and McCrae, 1992; Digman, 1990; McCrae, 2005) which sets out the five factors as conscientiousness, neuroticism, extraversion, openness to experience and agreeableness; it is important then that we consider the significance of these personality factors in many occupations. The research has shown that people are most satisfied at work (and therefore less stressed) when their personalities and the workplace match (Holland, 1992; Tokar, Fisher, and Subich, 1998) and they perform better (Barrick and Mount, 1991; Tokar, et al., 1998).

A review of recent research is available in Judge, Heller, and Mount, 2008. However, high scorers on Neuroticism, one of the Big Five, have been identified as likely to over-react to stress, in comparison with most people (Mroczek and Almeida, 2004) and therefore to compromise their performance. High scorers on Conscientiousness (being dependable and hardworking) and Extraversion (being sociable and active) have been among the most successful performers in the workplace (Barrick and Mount, 1991; Judge, et al., 2008). Probably mental health (including low neuroticism) is one of the most important factors in the workplace, as it is in personal life. Colling and Hicks (2007) identified relationships between health and well-being and the Big Five in their research, highlighting more than 20 personality attributes and mental health variables. Among the variables that differentiated between those who scored high and low on general mental health were resilience, extraversion, openness/innovativeness, and achievement orientation.

However, recent research has added to the studies of personality and stress in the workplace, placing a focus on relationships between ‘new’ attributes, such as perfectionism and emotional intelligence, and stress (Christopoulos and Hicks, 2008; Jackson and Hicks, 2008; Petrides and Furnham, 2006; Slaney, Pincus, Uliazeck, and Wang, 2006; Zeidner, Matthews, and Roberts, 2009). The ability to adapt under stress (stress resilience) seems pivotal in creating positive changes and improved performance in the workplace. However, there have been few studies examining these variables (stress resilience, perfectionism, and emotional intelligence) along with personality variables, with regard to how people handle or experience stress at work.

This current study examined these relationships, including how occupational stress was related to resilience, perfectionism and emotional intelligence. The aim was to identify which of these factors were predictors of occupational stress and personal strain, and how these were linked to personal coping resources.

Neuroticism, or non-resilience and non-adaptability, not being ‘Stress Resilient’ or demonstrating high levels of mental adjustment, is a strong predictor of experienced stress.
both in personal life (Shafran and Mansell, 2000) and in the workplace (Judge, Heller, and Mount, 2008). Stress Resilience negatively correlated with Neuroticism in studies conducted by Smith (2005) and reported by Smith and Hicks (2007). These authors compared the Apollo Profile scales (including Stress Resilience) and the Costa and McCrae (1992) questionnaire measuring the ‘Big Five’- the NEO-PI-R (including Neuroticism). The studies completed full comparisons of all Apollo Profile and all NEO-PI-R variables (Smith, 2005). Stress Resilience is considered a coping mechanism effective in modifying behaviour in the workplace (the Apollo Profile, Apollonean Institute, 2008). Neuroticism has a negative nature and results in people being quick to perceive possible threats in personal and work circumstances, and requires duties and responsibilities to be clear and structured to reduce threat - as a variety of procedures or flexible unclear arrangements may raise anxiety and affect performance (Costa and McCrae, 1992).

In addition to Neuroticism and Stress Resilience, perfectionism has also been identified as a predictor of stress (Christopoulos and Hicks, 2008; Mead and Hicks, 2010; Rice, Ashby, and Slaney, 2007). This factor of perfectionism was also studied in the currently reported project. Perfectionism has been defined as a trait that involves high personal standards and achievement with a focus on personal integrity (Dunn, Whelton, and Sharpe, 2006). Perfectionism has been correlated with personality pathology with the goal of achieving perfection in personal presentation, the expectations of others, as well as the need to conceal personal imperfections from others (Jackson and Hicks, 2008; Sherry, Hewitt, Flett, Lee-Baggley, and Hall, 2007). Research by Sherry et al. (2007) described perfectionism as a vulnerability factor, that is, the characteristic impacts negatively on workplace and personal quality of life, and appears to be directly related to increased occupational stress, as suggested also by Dunkley, Blankstein, Halsall, Williams, and Winkworth (2000) in their studies of perfectionism and hassles in the workplace.

The influence of perfectionism is related to how an individual appraises a perceived stressor, ‘the threat’, whether in personal health or workplace settings (Goubert, Crombez, and Damme, 2004; Wang, Yuen, and Slaney, 2009). When compared with the Big Five personality traits, including neuroticism, perfectionism revealed distinctly unique information (Hill, McIntyre, and Bacharach, 1997; Sherry et al., 2007), mostly relating directly to those who scored at the high end of the scale. This indicates a negative tenor to perfectionism overall, although perfectionism scores were also linked to high scores on conscientiousness and low scores on agreeableness and extraversion (see Stoeber and Otto, 2006, for a discussion of positive and negative aspects related to adaptive or healthy perfectionists and maladaptive or unhealthy perfectionists).

However in achieving goals, the desire to excel and the need for perfection are not the same as the desire to excel associated with adaptive perfectionists and the need for perfection with maladaptive perfectionists (cf., Khawaja and Armstrong, 2005).

Jackson and Hicks (2008) reported strong relationships between Maladaptive Perfectionism and high levels of stress, anxiety, and depression with implications for workplace mental health issues and therefore performance. This can be understood with Maladaptive Perfectionistism being tied to a personal need for perfection (Sherry et al., 2007). Jackson and Hicks also reported a strong relationship between high need for perfectionism and low levels of emotional intelligence.

Emotional intelligence has been increasingly researched in relation to stress at work (Dunn, Whelton, and Sharpe, 2006; Mikolajczak, Lenil, and Luminet, 2007, Petrides and
Furnham, 2006; Zeidner, Matthews, and Roberts, 2009). In general, emotional intelligence is seen as a buffer in handling otherwise stressful circumstances (Extremera, Duran, and Rey, 2007; Salovey, Stroud, Woolery and Epel, 2002). This is because emotional intelligence abilities and competencies or awarenesses are largely about understanding our own emotions and those of others, and managing ourselves and our relationships with others (Lynn, 2001; Petrides and Furnham, 2004). While research studies have thus identified correlations between personality and stress, perfectionism and stress, and emotional intelligence and stress, two questions arise: are these aspects independent of one another? Moreover, how does each (resilience, perfectionism, emotional intelligence) contribute to stress and/or wellbeing at work?

Thus, trait Emotional Intelligence (EI) was included in this study as an element that might predict occupational stress in a sample of Australian employees. Lynn (2001) defined emotional intelligence as our ability to manage ourselves and our relationships with others. The theory of emotional intelligence as a trait, rather than an ability, has a controversial history, but developed from recognising emotional intelligence as being more like personality attributes or traits than ability (Petrides, Furnham, and Frederickson, 2006).

Relationships between trait EI and stress reactivity were found by Salovey, Stroud, Woolery and Epel (2002). The ability to attend to and regulate emotions, perceiving stressors as less threatening, helps lower stress arousal and requires fewer coping strategies (Salovey, et al., 2002). However, low levels of emotional intelligence activate high levels of physiological arousal and have a propensity to lead to stress (Salovey, et al.). In line with these suggestions, previous research has found that high emotional intelligence is a personal coping resource which can help in managing occupational stress (Extremera, Duran, and Rey, 2007; Paspaliaris and Hicks, 2010). Extremera et al. (2007) explained coping regulation as requiring reflection about one’s thoughts, feelings and mood; consequential awareness would facilitate discrimination of feelings, and emotion regulation, thus becoming a coping resource.

Maladaptive Perfectionists disassociate from emotion as an avoidance coping mechanism (Sherry et al., 2007). Disassociating from emotions can interfere with the ability to attend to emotions, thus affecting one’s ability to discriminate and regulate. Hence, low levels of emotional intelligence (EI is considered in the study to be a trait thus relatively stable) are likely to be present when Maladaptive Perfectionists are experiencing personal stress. This study examined the strength of these relationships.

The overall aim of the research was therefore to gain knowledge about Stress Resilience, Maladaptive Perfectionism, and trait EI and the ability of each separately and in combination, to predict occupational stress. The Results should be useful in helping to develop appropriate employment procedures and policies.

**Hypotheses**

Based on previous research, it was proposed as follows:

- Hypothesis 1A: that Stress Resilience (a personality attribute) would be associated with low levels of occupational stress in this workplace sample;
Hypothesis 1B: that high levels of Maladaptive Perfectionism would be associated significantly with low levels of trait EI.

Hypotheses 2A, 2B, 2C, that Stress Resilience, Maladaptive Perfectionism and trait EI would be significant predictors of occupational stress across each of the three domains being measured (A. Occupational Role; B. Personal Strain; and C. Personal Resources).

Regression analyses were used to determine relative contributions of stress resilience, maladaptive perfectionism and emotional intelligence to stress outcomes (2A, 2B) or resources (2C).

**METHOD**

**Participants**

The 80 participants consisted of 31 (39%) males and 49 (61%) females with a mean age of 40.16 (SD 11.17; range 19-65). It was a requirement for participants to be 18 years of age or older and currently working in the Australian workforce. The participants were recruited through personal contact initially with fellow workers in airport and travel industries and then through snowballing. They were all in full-time employment and 80 percent were ‘white-collar’ workers. The mean length of time in the workforce was 18 years, but the periods ranged from 3 to 45 years.

**Measures**

The general Bio-data questionnaire consisted of three areas of interest including Personal Details, Education History, and Occupation Details.

The Occupational Stress Inventory Revised (OSI-R; Osipow, 1998) is a 140 item questionnaire that measures occupational stress utilising three individually scored questionnaires for three inter-related stress domains. The three domains consist of four to six subscales, Occupational Role (role overload, role insufficiency, role ambiguity, role boundary, role responsibility, and physical environment), Personal Strain (vocational strain, psychological strain, interpersonal strain and physical strain); and Personal Resources (recreation, self-care, social support, and rational/cognitive coping).

The Apollo Profile Questionnaire (Hicks and Bowden, 2003; Apollonean Institute, 1996) was used to measure Stress Resilience; the scale comprised 13 items and showed a Cronbach Alpha coefficient of 0.70.

The Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart and Rosenblate, 1990) was used to measure perfectionism functionality. Maladaptive Perfectionism was emphasized in the current study and was operationalised using four dimensions of the six-dimensional FMPS: being concern over mistakes, personal standards, parental expectations, and parental criticism. The four subscales concern for mistakes, personal standards, parental expectations and parental criticism comprised 25 items in total.
The subscales have each demonstrated sound levels of internal consistency and reliability (Frost et al., 1990).

The Trait Emotional Intelligence Questionnaire (TEIQue; Petrides and Furnham, 2004) is a 153 item scale that measures participants’ understandings of their emotions and the emotions of others. Trait EI was operationalised for the current study by using the full version of the TEIQue. There are four domains (and 15 subscales): the domains measure emotional well being, the ability for self control, positive and negative emotionality, and sociability with others. Previous research (Mikolajczak, Olivier, Leroy, and Roy, 2007) had highlighted gender differences, in that males scored higher than females on self control and sociability and females scored higher than males on the domain of emotionality. The interest in the current study was in global or total emotional intelligence. The total score for Emotional Intelligence, as used in this current study, came from summing the four composite scales or domains: well being (including subscales of self esteem, trait happiness, and trait optimism); self control (emotion regulation, stress management, and low impulsiveness); emotionality (emotional perceptions of self and others, emotional expression, relationship skills, and empathy); and sociability (social competence, emotion management of others, assertiveness, adaptability, and self motivation). In this current study, only total EI was used, as the emphasis was on overall EI and its associations. Subsequent reports are planned on the possible differential aspects associated with the domains and the individual scales, but no attempt is made to examine this detail in the current chapter.

Procedure

Approval for this study was obtained through the Bond University Human Research Ethics Committee (BUHREC). Participants were recruited from the Australian workforce through working colleagues, convenience sampling and snowballing effect. Participants were administered a paper and pencil survey comprising an Explanatory Letter, Bio-data questionnaire, OSI-R, the Apollo Profile, the FMPS, and the TEIQue. Participation was voluntary and anonymous.

Design

This study used an Australian workforce sample to give results comparing stress resilience, personality, perfectionism and emotional intelligence as independent variables or predictors in an employee sample. The dependent variables were derived from the three questionnaires: the OSI-R Occupational Role stressors- ORQ; Personal Strain attributes - PSQ; and Personal Resources - PRQ. As described above, the specific independent variables were total trait EI; Maladaptive Perfectionism (MP); and Stress Resilience (SR). Correlational and regression analyses were the main statistical procedures used to analyse the data.
RESULTS

The data was screened for errors and analysed using the Statistical Package for Social Scientists version 17 (SPSS17). The assumptions of normality, linearity, and homoscedasticity were checked and all variables were deemed satisfactory (Tabachnick and Fidell, 2007). All scales and subscales in the current study showed moderate to strong internal consistency with Cronbach alpha coefficients equal to, or exceeding, the .70 cut off recommended by Tabachnick and Fidell (2007). The results were consistent with reported coefficients in the respective manuals and previous studies.

The means and standard deviations respectively of the scales under study were as follows: Occupational Role Questionnaire (91.1, 26.1), Personal Strain Questionnaire (99.3, 20.6), Personal Resources Questionnaire (132.9, 18.0), Stress Resilience (76.8, 10.3), Maladaptive Perfectionism (15.5, 4.1) and Trait EI (41.3, 2.5). These results are within the normal range of mean scores for these scales and indicate the sample was not significantly different in any scale from normal populations.

The Correlation Matrix in Table 1 reports relationships between variables. The results showed no problematic redundancy of scales with all coefficients below $r = .70$ in this instance, as recommended by Tabachnick and Fidell (2007) to avoid significantly overlapping scales.

In regard to hypothesis 1A, as predicted, there were moderate negative correlations found between Stress Resilience and the experience of Occupational Role pressures and Personal Strain (-.29 and -.26 respectively); and a positive, though moderate, correlation (.25) between Stress Resilience and Coping Resources used. Emotional Intelligence showed similar relationships with these occupational stress/resource variables, as did Maladaptive Perfectionism (although in the opposite directions consistent with the measurement).

In regard to hypothesis 1B, that high levels of Maladaptive Perfectionism would be associated significantly with low levels of trait EI, a significantly negative coefficient was found between Maladaptive Perfectionism and Emotional Intelligence ($r = -.30$).

Table 1. Pearson’s Correlation Matrix for Occupational Role (ORQ), Personal Strain (PSQ), Personal Resources (PRQ), Stress Resilience (SR), Maladaptive Perfection (MP) and trait Emotional Intelligence (EI)

<table>
<thead>
<tr>
<th></th>
<th>ORQ</th>
<th>PSQ</th>
<th>PRQ</th>
<th>SR</th>
<th>MP</th>
<th>trait EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORQ</td>
<td>1</td>
<td>-.68**</td>
<td>-.44**</td>
<td>-.29**</td>
<td>.31**</td>
<td>-.45**</td>
</tr>
<tr>
<td>PSQ</td>
<td>1</td>
<td>.30**</td>
<td>-.26</td>
<td>.34**</td>
<td>-.23</td>
<td></td>
</tr>
<tr>
<td>PRQ</td>
<td>1</td>
<td>.25*</td>
<td>-.24*</td>
<td>.42**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR</td>
<td>1</td>
<td></td>
<td>-.29*</td>
<td>.50**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MP</td>
<td>1</td>
<td></td>
<td></td>
<td>.30**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trait EI</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: **. Correlation significant at the 0.01 level (2-tailed); or: * - at the 0.05 level (2-tailed).

It can also be seen in Table 1, Maladaptive Perfectionism correlated significantly with each of the OSI-R stress questionnaire scores in the expected directions, as too did Emotional Intelligence. But how would each of these characteristics (MP and EI) combine with Stress...
Hypotheses 2A, 2B and 2C were examined using three separate standard regression equations, one for each of the predictor/criterion variables (ORQ, PSQ, PRQ). Before running the three standard multiple regressions, a Mahalanobis distance test was conducted to test for multivariate outliers (Tabachnick and Fidell, 2007). No outliers were found. Preliminary analyses were conducted and inspection of the standardised, residual plots, showed the assumptions of normality, linearity, multicollinearity, homoscedasticity, and independence of residuals were met. Due to the relatively small sample size adjusted R square was used when reporting variance to give a more conservative estimate of the population (Tabachnick and Fidell, 2007).

Hypothesis 2A, that Stress Resilience, Maladaptive Perfectionism, and Emotional Intelligence would combine to predict Occupational Role stress, was examined using a standard regression equation. The results are shown in Table 2.

Table 2. Prediction of Occupational Role Stress from Stress Resilience, Maladaptive Perfectionism and Emotional Intelligence: Regression Output

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>95% Confidence Interval for B</th>
<th>β</th>
<th>Sig.</th>
<th>R</th>
<th>R²</th>
<th>Adj. R²</th>
<th>R² Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress Resilience</td>
<td>-0.16</td>
<td>-0.75 to 0.43</td>
<td>-.06</td>
<td>ns</td>
<td>.49</td>
<td>.24</td>
<td>.21</td>
<td>-.00</td>
</tr>
<tr>
<td>Maladaptive</td>
<td>1.22</td>
<td>-0.14 to 2.57</td>
<td>.19</td>
<td>ns</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perfectionism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Intelligence</td>
<td>-18.32</td>
<td>-30.27 to -6.38</td>
<td>-.36</td>
<td>.003</td>
<td>-.31</td>
<td>.12</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Note: p < .05, N = 80.

The results in Table 2 revealed that ORQ was predicted by the combined set of data (adjusted $R^2 = .21$, $F (3, 79) = 7.90; p < .001$), with the combined variables accounting for 21% of the variance in ORQ. On further inspection of the standardised beta coefficients, trait EI ($\beta = .36; p < .05$) made the only significant contribution to predicting ORQ and accounted for 36% of the unique variance in ORQ scores when SR and MP were controlled for. On inspection of the semi-partial correlation coefficient score, trait EI uniquely explained 11% of the variance in ORQ with any overlap or shared variance removed.

Hypothesis 2A, regarding the correlations of Stress Resilience, Maladaptive Perfectionism and Emotional Intelligence with Occupational Role stress (ORQ), was supported (as indicated in the inter-correlations given in Table 1), but when combined, only Trait EI was a significant predictor of stress related to occupational roles.

Hypothesis 2B, that Stress Resilience, Maladaptive Perfectionism, and Emotional Intelligence would predict experienced Personal Strain (PSQ), was examined using a standard regression equation. The results were significant (adjusted $R^2 = .12$, $F (3, 79) = 4.49; p < .01$), with the combined variables accounting for 12% of the variance in PSQ. On further inspection of the standardised beta coefficients, Maladaptive Perfectionism ($\beta = .28; p < .05$) made the only significant contribution to predicting PSQ and accounted for 28% of the unique variance in PSQ scores when SR and EI were controlled for. On inspection of the semi-partial
correlation coefficient score, MP uniquely explained 7% of the variance in PSQ with any overlap or shared variance removed. This result is significant, but of moderate or low, effect only.

Hypothesis 2C, that Stress Resilience, Maladaptive Perfectionism, and Emotional Intelligence would combine to significantly predict Personal Coping Resources (PRQ), was examined using a standard regression equation. The results are shown in Table 3.

Table 3. Prediction of PRQ (Personal Resources) from Stress Resilience (SR), Maladaptive Perfectionism and Emotional Intelligence: Regression Output

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>95% Confidence Interval for B</th>
<th>β</th>
<th>Sig</th>
<th>R²</th>
<th>Adj. R²</th>
<th>R² Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress Resilience</td>
<td>.07</td>
<td>-0.35 to 0.49</td>
<td>.04</td>
<td>ns</td>
<td>.43</td>
<td>.16</td>
<td>.00</td>
</tr>
<tr>
<td>Maladaptive Perfectionism</td>
<td>-.53</td>
<td>-1.50 to 0.43</td>
<td>-.53</td>
<td>ns</td>
<td>.19</td>
<td>.16</td>
<td>.02</td>
</tr>
<tr>
<td>Emotional Intelligence</td>
<td>12.67</td>
<td>4.18 to 21.17</td>
<td>.36</td>
<td>.004</td>
<td></td>
<td></td>
<td>.10</td>
</tr>
</tbody>
</table>

The results in Table 3 revealed PRQ scores were predicted by the combined set of independent variables (adjusted $R^2 = .16$, $F$ (3, 79) = 5.857; $p < .001$), with the combined variables accounting for 16% of the variance in PRQ. On further inspection of the standardised beta coefficients, trait EI ($β = .36, p < .05$) made the only significant contribution to predicting PRQ and accounted for 36% of the unique variance in PRQ scores, when SR and MP were controlled for. On inspection of the semi-partial correlation coefficient score, trait EI uniquely explained 10% of the variance in PRQ with any overlap or shared variance removed.

The main hypothesis regarding the correlations of Stress Resilience, Maladaptive Perfectionism and Emotional Intelligence with Personal Resources was supported (as indicated in the inter-correlations given in Table 1), but when combined, there was only partial support. Trait EI alone was a significant, positive, and direct, predictor of Personal Resources; Trait EI's contribution (on the positive side) includes the contributions from Stress Resilience and from Maladaptive Perfectionism.

Further t-tests were conducted to explore gender differences; however, no significant gender differences were found for any of the variables reported in the current study (Stress Resilience, Maladaptive Perfectionism, Emotional Intelligence; and occupational role stress, personal strain, and coping resources.

**DISCUSSION**

The purpose of this study was to identify the relationships between measures of independent variables of stress resilience, maladaptive perfectionism and emotional intelligence and the three dependent variables: occupational role stressors, experienced psychological strain, and the personal resources available and used. Further, the effect of combining these independent variables to predict stress and coping was of interest.
The Hypothesis that stress resilience would be negatively associated with stress outcomes, was supported. This is in line with previous research linking Neuroticism (the low end of the Stress Resilience continuum) with different measures of stress (e.g., the depression, anxiety and stress scales, or other stress questionnaires).

Hypothesis 1B, in essence that maladaptive perfectionism and emotional intelligence would be negatively related, was also supported, confirming earlier studies in this area (cf., Jackson and Hicks, 2008). Since EI levels can be increased through training programs (implication: maladaptive perfectionist responses could be reduced), this is an important finding. That training can increase EI in practice suggests that EI is, at least in part, an ability, rather than a trait. The correlation between EI and MP in the current study was -.30, explaining 9% of the variations obtained when considering EI as a personality attribute. This is a significant, although low relationship, leaving some 91% of variation not explained. Thus, there is room for further exploration.

The EI and occupational role stressors and personal strain were related negatively (more stress experienced among those with lower EI), while EI and personal resources were related positively (the higher the emotional intelligence scores, the more effectively the personal resources, available to the employees studied, were used). In addition, maladaptive perfectionism was associated directly with occupational role stressors and personal strain (the higher the maladaptive perfectionism scores, the more they experienced stress and strain), while maladaptive perfectionism and personal resources were negatively related (those scoring high on maladaptive perfectionism developed and used fewer personal resources for coping).

Hypothesis 2A, that occupational stress (as a combination mainly of role overload, role insufficiency, role ambiguity, role boundary, and role responsibility) would be predicted by a combination of scores on stress resilience, emotional intelligence and maladaptive perfectionism, was supported, but only (trait) emotional intelligence was a significant predictor in the combination. Neither the stress resilience nor the maladaptive perfectionism scales contributed additional significant predictive ability once emotional intelligence was included in the predictions. This study advances previous research by Christopoulos and Hicks (2008) who found that there was a significant relationship between perfectionism and occupational role stress scores. When emotional intelligence is included as a predictive variable, maladaptive perfectionism scores become redundant. Similarly, although there was a significant correlation between stress resilience and lower scores on occupational role stress, when emotional intelligence was included as a predictor in the current study, the stress resilience scores became redundant. Emotional intelligence is the overarching key, in these relationships, to the management of occupational role stress.

Hypothesis 2C also implicated emotional intelligence as the only significant predictor, this time of personal coping resources of the employees. The hypothesis, that personal resources (as a combination of scores on recreation, self care, social support, and rational cognitive coping) would be predicted by a combination of scores on stress resilience, emotional intelligence and maladaptive perfectionism, was supported; but only (trait) emotional intelligence was a significant predictor in the combination. Again, neither the stress resilience nor the maladaptive perfectionism scales contributed additional significant predictive ability, once emotional intelligence was included in the predictions. While all three correlate with coping resources and their use, it is emotional intelligence which is the key when all three are considered together. The relationship found between trait EI and coping.
resources supports previous findings (cf., Extremera et al., 2007) that higher levels of emotional intelligence were associated with personal coping resources utilised in the management of occupational stress.

Hypothesis 2B, that personal strain experienced (as seen in the combination of scores on psychological strain, vocational strain, interpersonal strain, and physical strain, would be predicted by a combination of scores on stress resilience, emotional intelligence and maladaptive perfectionism, was supported; but this time, only maladaptive perfectionism was a significant predictor in the combination. Neither the stress resilience nor the (trait) emotional intelligence scales contributed additional significant predictive ability once maladaptive perfectionism was included in the predictions. While all three correlate with the personal strain experienced, it is the maladaptive perfectionism aspects that contributes most to the outcome strain experienced in the workplace. The implication is that belief systems and emotional involvement, and requirements for things to be perfect or nearly so, and to be done perfectly or nearly so, contribute most to the strains. While there are overlaps between maladaptive perfectionism and EI (and stress resilience), in terms of the strain experienced at work, the perfectionist attitudes override the contributions from the other two variables. The implication is that maladaptive perfectionist attitudes exacerbate any stress and strain experienced in the workplace and that therefore the (inappropriate or dysfunctional) attitudes and beliefs need to be dealt with in any personal development training or treatment programs.

In a separate additional gender analyses of the responses of the 80 employees in regard to Hypotheses 2A, 2B, and 2C, no significant gender differences were found across the three occupational stress domains or in the total and combined dependent variables (stress resilience, perfectionism, emotional intelligence) reported in this study.

Limitations. Despite the findings of the current study, there were distinct limitations. The first limitation was the method of sampling; the use of opportunity sampling via known individuals in the airport and travel industries, followed by snowball methods. The second limitation was the small number of participants in this study with just 80 workplace participants. The third limitation was the self-report nature of the measures. However, there is no reason to think that the respondents were any more or less accurate in their responses than respondents in many other studies using self-report inventories. Given these limitations, further studies with larger numbers of individuals, perhaps in targeted employment groups, would be needed to confirm the findings.

CONCLUSION

The study determined that Emotional Intelligence was most functional (useful) in helping individuals to anticipate and adapt to the demands of the occupational role, to lessen the personal strains experienced in the work setting, and to source and use the personal resources required in coping effectively. Perfectionist attitudes and beliefs (maladaptive perfectionism scores) were most dysfunctional and were associated directly with personal strain at work. These findings on maladaptive perfectionism at work are consistent with findings and suggestions from Rice et al. (2006) that maladaptive perfectionists in the workplace may show problematic task performance, and because they may demonstrate disagreeable and
egocentric characteristics at work, also have an impact on individual and group task performance.

Implications of these results, apart from the contribution to understanding the relationships in the workplace, include practical considerations. Employers could aim to recruit those people who have higher levels of emotional intelligence, lower levels of maladaptive perfectionist attitudes, strong skills and resources, and higher levels of stress resilience (Hicks and Bowden, 2008; Ongori and Agolla, 2008). However, current employees might also benefit from personal development and training in areas such as emotions management, interpersonal relationships, positive non-maladaptive thinking processes, and resource building skills. For example, to help with occupational role stress and the development of coping resources, the improvement of emotional intelligence awareness and skills should be given primary attention (see Lynn, 2001; Zeidner, et al, 2009). Such knowledge and skills should help reduce the incidences of role overload, role confusion and perceptions of excessive role responsibility and hassles evident in several management and professional and other positions (e.g., Dunkley, et al., 2000; Dunn, et al., 2006; Hicks, Fujiwara, and Bahr, 2006). To help with the experienced strain outcomes (psychological strain, interpersonal strain and related areas), specific attention to the attitude and belief systems that are dysfunctional should also be given attention (see Rice, et al., 2007; Shafran and Mansell, 2001; Sherry et al., 2007). In addition, attention should also be given to building resilience through developing personal resources and strategies that include use of rational cognitive coping, effective self-care, appropriate recreation, and social support that make a difference in response to stressful situations (Osipow, 1998).

Moreover, the information provided from this study might assist organizations to develop appropriate stress selection and ongoing staff audit measures targeting key predictors (cf., Ongori and Agolla, 2008). The results in effective applications of the findings could help in building more positive relationships with employees, management groups, clients and customers.

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Chapter 22

HOW RUN DOWN AND BURNED OUT EMPLOYEES PERCEIVE WORK STRESS AND ORGANISATIONAL BURNOUT

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\textsuperscript{2}Consulting Psychologist, Regional Australia

ABSTRACT

The purpose of this study was to develop an understanding of employees’ perceptions of being run down and burned out at work, as well as investigating the organizational factors influencing an employee’s development and experience of workplace burnout. The individual cost of burnout was also investigated. The data was obtained from health professionals and office workers who were allocated to two groups based on whether they had experienced workplace burnout, or had been run down or worn out at work. Qualitative responding of participants in the Burned Out Group indicated that they were also more likely to have experienced negative and stressful events at work, such as workplace bullying and harassment and a lack of support by Management in comparison to the Run Down Group. Factors assisting participants in the recovery process of burnout and other important findings in the recovery from burnout are highlighted. Furthermore, implications for workplace interventions are discussed.

Keywords: Work Stress, Coping, Burnout, Run Down Employees, Employee Health

INTRODUCTION

The relevance of this qualitative study is underpinned by the quantitative study published in our chapter in Continuity Versus Creative Response to Challenge: The Primacy of Resilience and Resourcefulness in Life and Therapy (Celinski and Gow, 2011). That report...
demonstrated several important distinctions between those who were run down, those who were burned out and those who were neither run down nor burned out. The consolidation of that report led to our understanding that in fact individuals who were run down or burned out were not, in fact, unresourceful. Indeed they drew on their own resources while they could and also sought external support, some within their own social networks and others through professional assistance via doctors, therapists and natural therapists. They were no different from the non run down or burned out group on self efficacy, coping strategies and having a temperamental weakness for burnout. Thus something else was at work here in their condition and state of mind and health.

**ORGANISATIONAL FACTORS AND BURNOUT**

According to Grosch and Olsen (2000), investigation into burnout tends to focus on two different bodies of research to explain how a person can become burned out. One body of research suggests that organizational factors, such as high workloads and lack of support by managers, will lead to the development of burnout in an employee. The other body of research suggests that it is factors within an individual, such as poor self-esteem, Type A behaviours and high idealism that may lead to a person being burned out. Grosch and Olsen (2000) have proposed the use of a model that integrates these two bodies of research to explain burnout. These authors state: “Our position is that burnout is understood best when the interplay between self and system is understood. It is the interplay of systemic factors with individual factors that together produce burnout” (p. 620). In other words, focusing on only organizational or personal factors to explain burnout could significantly limit the efficacy of treatment.

Maslach and Leiter (1997) have proposed a job-person fit model that encompasses the main research findings into the organizational antecedents of burnout, to provide an appropriate framework to understand burnout. Their model looks at the match or mismatch for six domains between the person and the job. They suggest that the greater the mismatch between the domains, the more likely burnout will occur. Burnout will result from the mismatch between one or all of these domains. The six domains they have developed are: (i) workload, (ii) control, (iii) reward, (iv) community, (v) fairness and (vi) values. The workload domain refers to the amount of work and demands placed on the employee; that is, if the workload is excessive, it is more likely to lead to burnout. The control domain is related to the reduced personal accomplishment aspect of burnout; that is, if the employees feel they do not have the resources to be able to do the work or the responsibility of the work is too high, burnout is more likely to occur. The reward domain of burnout refers to the mismatch between appropriate financial rewards and social rewards such as appreciation for work achieved. The fourth mismatch occurs when there is a lack of support in the job, when the work is isolating, or when there is ongoing conflict between staff members. The domain of fairness refers to whether the employee feels respected at work, or when there is an inequity in workload or pay. The final domain in the person-fit model is values, which is related to whether there is a conflict between the organizational values and practices with the employee’s values. The likelihood of burnout developing may also increase, if there is a discrepancy between the organization’s mission statement and the actual practice of the work.
Research into the person-fit model has begun to determine the relationships between the domains and whether there are employee differences in responding to these mismatches; that is, what mismatches are people prepared to tolerate at work? Other organisational influences are addressed further in this chapter.

Individual and Organizational Risk Factors for Burnout

Researchers into the burnout phenomenon have investigated the association of burnout with demographic characteristics such as age, gender, marital status (Byrne, 1991; Etzion and Pines, 1986; Maslach and Jackson, 1981); job characteristics such as workload, role conflict and ambiguity, lack of autonomy (Lee and Ashforth, 1993; Landsbergis, 1988); job-related attitudes including job dissatisfaction, poor commitment to the work organisation, unrealistic and high expectations (Um and Harrison, 1998; Richardson, Burke and Leiter, 1992; Stevens and O’Neil, 1983); the social environment of the workplace which includes level of social support in the workforce from colleagues and supervisors, and interpersonal conflicts at work and poor team cohesion (Buunk, 1990; Kruger, Botman and Goodenow, 1991; Leiter, 1991; van Dierendonck, Schaufeli, and Buunk, 1998); and personality characteristics such as learned resourcefulness, Type A Behaviour, poor self esteem, escape/avoidant coping style, self efficacy and empathy (Clanton, Rude and Taylor, 1992; Gross, 1994; Keinan and Melamud, 1987; Leiter, 1992; Poulin and Walter, 1993; Thornton, 1992). Griffin, Hogan, Lambert, Tucker-Gail and Baker (2004) pinpointed the different effects that job stress has on job satisfaction, involvement and commitment among correctional staff; emotional exhaustion, depersonalisation and emotional exhaustion were linked to stress and burnout.

Organizational Factors

A number of organizational factors have been associated with burnout in the literature including factors such as: harassment in the workplace (Frone, 2000; Rospenda, 2002); lack of support from Management and work colleagues (Bernier, 1998; Evans and Steptoe, 2001; Posig and Kickul, 2003); high workload, monotonous work, low job satisfaction, high job demands (Bishop et al., 2003; Elovanio, Kalliomaki-Levanto, Kivimaki, and Steen, 2003); and client contact hours (Vredenburgh, Carlozzi and Stein, 1999). Vredenburgh and colleagues (1999) investigated client contact hours in counselling psychologists and found a positive relationship between client contact hours and a sense of personal accomplishment. They suggested that as client load increase, the psychologist may perceive that they have a greater opportunity to help others, and if they are in private practice they have the potential to earn a higher income.

Shaddock, Hill and van Limbeek (1998) investigated job satisfaction in human service workers who supported persons with intellectual disabilities and found that there was a high association between low job satisfaction and burnout scores as measured by the Maslach Burnout Inventory (MBI). These researchers recommended that organizations need to take a proactive approach to ensure workers maintain their job satisfaction. Suggested actions that organizations could take to ensure that job satisfaction was maintained, included stress and...
time management courses for staff, opportunities for networking and the involvement of staff in decision-making processes.

Frone (2000) investigated interpersonal conflict at work among 319 young workers and detected that interpersonal conflict with their supervisors was linked to low job satisfaction, low organizational commitment and increased turnover intentions. Furthermore, the results revealed a significant association between interpersonal conflict with co-workers and increased somatic symptoms and depression and decreased self-esteem.

Van der Ploeg, Dorresteijn and Kleber (2003) determined that lack of information about work, insufficient communication from management and less autonomy at work were associated with burnout and fatigue. They concluded, “…management support is of vital importance in the implementation of a workplace intervention” (p. 165); furthermore, they found that chronic job stressors were associated with burnout.

In a study by Bernier (1998) on human service and other professionals who had taken at least one month off work due to workplace stress or burnout, it was ascertained that the main distressing aspect of the workplace was the organization and structure of the workplace; that is, the participants complained about heavy bureaucracy, administrative hassles and overloading of available staff. The next most frequently reported distressing aspect of the job was conflict in values between themselves and supervisors, co-workers or senior management. A further frequent source of problems was perceived lack of support by co-workers or management.

**Consequences of Burnout for the Organization**

Other consequences of staff burnout have been found to be potentially dangerous for the worker and for the organization. According to Schabracq, Winnubst and Cooper (1996), manifestations of burnout can be categorized into six major groups: mental, physical, behavioural, social, attitudinal and organizational. The costs of burned out staff to the employer have been investigated in a number of studies which have found that burnout is a factor in reduced quality of care provided to clients, job turnover, absenteeism, job dissatisfaction, intention to leave the job, poor work performance and low staff morale (Kalichman, Guertault-Chalvin and Demi, 2000; Maslach and Jackson, 1993; Maslach and Leiter, 2008; van Bogaert, Meulemans, Clarke, Vermeyen and van de Heyning, 2009; Van der Ploeg et al., 2003).

**Overview of Investigative Process**

The purpose of the study was to gain an understanding from employees into the participants’ reports of their observations and considerations of what it meant to be run down and burned out at work. As this was part of a larger overall study, in this chapter, our aim was to explore how employees identify burnout in their colleagues, what they could do to assist a colleague who appeared burned out, and determine their ideas on what workplace factors contributed to an employee feeling burnout, and why an individual would choose to stay in such a position. We also wanted to gain insight into how employees perceived the costs of burnout in the workplace, particularly to the employee.
METHOD

The sample selected was a convenience sample that involved a non-clinical group that were selected by a number of methods as outlined below.

Participants in this study were required to give qualitative responses to a number of questions based on their experiences and observations of being run down or burned out at work. Major themes and patterns in the qualitative responses were highlighted and categorised.

The study distinguished between two groups of participants based on their responses to two questions: the first question asked them whether they had ever felt run down or worn out at work either currently or in the past; and the second question asked whether they had ever felt burnout at work either at that time or in the past. Those participants who responded “no” to both questions were not included in this particular analysis set (see Robertson and Gow, 2011 for the extended analysis of the three groups), those who stated they had been worn out or run down, but not burned out, were allocated to Group A (run down group) and those who responded yes to both questions were allocated to Group B (burned out group).

Participants

Forty six participants (33% response rate), from Melbourne and the South-East Queensland areas, returned their completed questionnaires. Of these, 34 were health professionals and 12 were office workers. Nine were male, 37 were female and their ages ranged from 19 to 62 with a mean age of 38.2. Of the 29 participants in two groups, 12 participants were categorised as being in Group A (rundown group) and 17 were categorised as being in Group B (burnout group). (The other 15 participants formed Group C who were neither run down or burned out: see Robertson and Gow, 2011.)

Procedure

Approval was obtained for this study through the university ethics review board. The study was described as an investigation into “Workplace Stress and Burnout”. All the measures were included in the participant questionnaire package. For the purpose of this chapter, we report only on those questions that relate to our exploratory research questions outlined under the subsection titled “Overview of Investigative Process”.

RESULTS

The following tables were compiled from the responses from Group A (Rundown Group) and B (Burnout Group) with regard to their responses to certain questions as outlined in this section.
### Table 1A. Group A Responses: Work Place Factors that Contributed to Feeling Rundown/Worn Out

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conflict with manager; difficulty completing work to the standard I thought was satisfactory; insufficient skills to do all the job.</td>
</tr>
<tr>
<td>2</td>
<td>Increasing stress</td>
</tr>
<tr>
<td>3</td>
<td>The workload is very heavy</td>
</tr>
<tr>
<td>4</td>
<td>Nature of the job – constant sad stories; abuse or sex abuse callers.</td>
</tr>
<tr>
<td>21</td>
<td>Being bullied.</td>
</tr>
<tr>
<td>22</td>
<td>I believe it was because of heavy workload and ongoing conflict between one work colleague and the rest of the work team.</td>
</tr>
<tr>
<td>23</td>
<td>Working long shifts with aggressive client; working and studying full time.</td>
</tr>
<tr>
<td>26</td>
<td>People were constantly demanding things from me.</td>
</tr>
<tr>
<td>30</td>
<td>Illegal transactions; overtime – unpaid nor time in lieu; discrimination; verbal abuse</td>
</tr>
<tr>
<td>36</td>
<td>Deadlines that I felt I could not meet, heavy workload.</td>
</tr>
<tr>
<td>41</td>
<td>Lack of apathy, who cares?</td>
</tr>
<tr>
<td>44</td>
<td>I felt that my manager/s was/were not happy with my performance but were not communicating with me about this; politics of work – some colleagues/managers were seeking to discredit me/wanted to set my work team against me; My boss was a bully/aggressive/overly demanding. The above events happened at different times in different jobs.</td>
</tr>
</tbody>
</table>

### Table 1B. Group B Responses: Work Place Factors That Contributed To Feeling Rundown/Worn Out

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Reduction in staff hours. Excessive workload. Changes in work practice, i.e. accreditation. Lack of support from management. Excessive amount of paperwork. Harassment from boss. Poor communication and lack of information from management.</td>
</tr>
<tr>
<td>11</td>
<td>Last job – working 14-hour days and not being appreciated.</td>
</tr>
<tr>
<td>12</td>
<td>Dictatorship management. Demanding residents/relatives.</td>
</tr>
<tr>
<td>13</td>
<td>In my job, we don’t get holiday or sick pay so I am pushed to work even when I am sick or need a rest – I take one week’s leave at Christmas. If I don’t work I don’t eat!</td>
</tr>
<tr>
<td>14</td>
<td>The hours I was working. The responsibility. I was looked upon to ‘fix’ everything, even if it was out of my control.</td>
</tr>
<tr>
<td>15</td>
<td>Cuts in funding – resources stretched – limits placed on staff and type of job we could do. Unable to cover students, therefore, not doing the job well. Lack of support within system and with other agencies for students and families.</td>
</tr>
<tr>
<td>16</td>
<td>Yes, I was working with an extremely suicidal young person who was coping with undisclosed and untreated mental health issues.</td>
</tr>
<tr>
<td>24</td>
<td>Supervisors tended to give mainly negative feedback. Not enough praise. Also have demanding clients as well as university commitments.</td>
</tr>
<tr>
<td>29</td>
<td>A lot of changes to the way the business runs.</td>
</tr>
<tr>
<td>31</td>
<td>Pressure to do many things well. Unreasonable expectations.</td>
</tr>
<tr>
<td>33</td>
<td>Heavy caseloads; lack of effective leadership.</td>
</tr>
<tr>
<td>34</td>
<td>Bullied by supervisor. They didn’t listen; claimed my work as theirs; bitched behind everyone’s back; lied about work they had done.</td>
</tr>
<tr>
<td>35</td>
<td>Too much work.</td>
</tr>
<tr>
<td>37</td>
<td>Bullying in the workplace. Boss who was extremely unfair and constantly criticised my work.</td>
</tr>
<tr>
<td>38</td>
<td>Jealousy amongst colleagues, about my background especially with my supervisor. As a result, my supervisor continually harassed me and put me down.</td>
</tr>
<tr>
<td>39</td>
<td>Horrible people to work with. Lack of support from management. Boring job.</td>
</tr>
<tr>
<td>45</td>
<td>The workload expected to be completed, combined with high-pressure work. Also, working in a ‘stressy’ environment (i.e., where people think they need to act stressed and busy to look as though they are doing their job).</td>
</tr>
</tbody>
</table>

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The number of participants who answered a particular question is indicated at the top of table in the ‘response’ column of the tables. For example, in Table 1A, with respect to the question outlined above the table, 12 participants from Group A responded to this question (\( n \)=12). The number under the letter “P” in the left hand column of each table refers to the number allocated to that participant for identification and analyses purposes.

Major themes and point of interest are bolded in the text. The responses of the participants were categorized according to the main themes that seemed to be apparent in the participant responses. From categorizing the responses, the most popular themes that emerged will be summarised after each table set.

The responses to the question “Was anything occurring in the job that made you feel run down or worn out?” are outlined in Table 1A (for the run down group) and Table 1B (for the burned out group). The two main workplace factors that participants reported as contributing to their feeling rundown were problems with management and/or other work colleagues; and having a high workload, deadlines and/or long work hours. By far, the majority of respondents reported that problems with management and/or other colleagues contributed to their feeling rundown, so it was considered important to report on different categories of this factor. Specifically, this factor was broken down into bullying and discrimination by the boss or other work colleagues; not feeling supported or appreciated by management; conflict with colleagues or management; lack of communication from management; excessive demands and/or unreasonable expectations from management and office politics. There were no apparent differences in the groups’ responses except that Group B reported that they were more likely to feel unsupported and unappreciated by management in comparison to Group A.

### Identifying Burnout Symptoms in a Work Colleague

Another question asked participants how they would know whether a work colleague was burning out. Their responses to this question are outlined in Tables 2A and 2B.

**Table 2A. Group A Responses: Identifying Burnout Symptoms in a Work Colleague**

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>They would complain of being tired all the time. They might lose interest in doing a good job. They would change their level of caring about other people. Increased sick days and time off. They might start talking about changing jobs.</td>
</tr>
<tr>
<td>2</td>
<td>Headache, anxiety, depression.</td>
</tr>
<tr>
<td>3</td>
<td>Quick tempered; may be withdrawn from others and workplace.</td>
</tr>
<tr>
<td>4</td>
<td>Overly sensitive, emotional, aggressive, getting sick/flu all the time.</td>
</tr>
<tr>
<td>21</td>
<td>Inability to connect with client’s; tired; irritable; organisationally angry; aggressive.</td>
</tr>
<tr>
<td>22</td>
<td>Tiredness – withdrawal; lots of sick leave; lack of enthusiasm; negativity about performance.</td>
</tr>
<tr>
<td>23</td>
<td>Reluctance to interact with client. Appearance of ‘going through the motions’ or avoiding work through sick days.</td>
</tr>
<tr>
<td>26</td>
<td>Lack of interest in work and unwillingness to engage socially; poor performance at work; apathy in attitude</td>
</tr>
<tr>
<td>30</td>
<td>Loss of interest in job; low efficacy; errors high; emotional; angry.</td>
</tr>
<tr>
<td>36</td>
<td>Irritable, failure to meet deadlines, easily upset, looking tired and withdrawn.</td>
</tr>
<tr>
<td>41</td>
<td>Lacking motivation, not achieving goals, not caring, mental stress, not productive.</td>
</tr>
<tr>
<td>44</td>
<td>If the colleague does not appear to cope with every day tasks, is exhausted and stressed and emotional. Perhaps also taking lots of sick days</td>
</tr>
</tbody>
</table>
The pattern of responding between Groups A and B for this question was similar. The most common three themes that participants reported would allow them to identify whether a work colleague was burning out were: fatigue; being irritable, short tempered or aggressive; and poor work performance such as making mistakes and not completing tasks. Some other themes were increased sick days and time off work; not caring about doing a good job; being emotional; socially withdrawing from work colleagues; and making negative comments about the workplace.

Table 2B. Group B Responses: Identifying Burnout Symptoms in a Work Colleague

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Irritability. Becoming critical or cynical. Taking time off work. Not completing tasks.</td>
</tr>
<tr>
<td>11</td>
<td>Working to the degree that your efficiency suffers and it takes you longer and longer to get a job done. Eventually you are dragging yourself through the day with no joy or interest.</td>
</tr>
<tr>
<td>12</td>
<td>Tiredness, irritability, mistakes, unable to perform.</td>
</tr>
<tr>
<td>13</td>
<td>Tears, illness, irrational thoughts, feeling persecuted/picked on by management.</td>
</tr>
<tr>
<td>14</td>
<td>Emotional, frustrated, exhausted, not coping with normal duties.</td>
</tr>
<tr>
<td>15</td>
<td>Expression, words, attitude – non-performance of normal duties, sick days increasing.</td>
</tr>
<tr>
<td>16</td>
<td>I would notice an increase in their level of anxiety, a mistrust of their own judgements and decisions. A lack of interest in appearance and social engagement.</td>
</tr>
<tr>
<td>24</td>
<td>They would appear really tired, would make negative comments about the job, would talk about leaving the job</td>
</tr>
<tr>
<td>29</td>
<td>Irritable, less approachable, taking time off – getting sick or run down.</td>
</tr>
<tr>
<td>31</td>
<td>Making mistakes frequently. Tired and cranky.</td>
</tr>
<tr>
<td>34</td>
<td>Unable to complete even small tasks; increased sick days; emotional; everything was overwhelming them.</td>
</tr>
<tr>
<td>35</td>
<td>Change of personality. Irritable.</td>
</tr>
<tr>
<td>37</td>
<td>Physical appearance: looking tired, not eating properly. Mental symptoms: Presenting to be irritated, nervous and restless. Also crying.</td>
</tr>
<tr>
<td>38</td>
<td>I would only have to look at them and listen to what they have to say and how they say it. They would lack energy, enthusiasm, drive and motivation.</td>
</tr>
<tr>
<td>39</td>
<td>Lack of interest in work or in general – acting depressed or being overly uninterested in things to do.</td>
</tr>
<tr>
<td>45</td>
<td>If s/he was constantly tired for no apparent reason, or if s/he was working long hours and seemed quite stressed, but in reality s/he was quite unproductive.</td>
</tr>
</tbody>
</table>

Helping a Work Colleague Who Appears Burned out from Work

Another question asked participants what they would do to help a colleague who was burning out at work. Their responses to this question are outlined in Tables 3A and 3B.

The pattern of responding between the two groups on this question was similar. The two main approaches participants reported that they would use to help a person burning out were to talk to them and support them; and advise them to take a break or holiday. Other approaches were to encourage them to seek professional help; encourage them to talk to colleagues, or talk to management about their concerns for their colleague; increase their awareness of what burnout is; advise them to take care of themselves or to look for a new job; help them with work tasks; and advise them to decrease their workload.
Table 3A. Group A Responses: Helping A Work Colleague Who Appears Burned Out from Work

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Encourage them to seek professional help. Raise their awareness of what burnout is. Encourage them to do what they need to do to look after themselves.</td>
</tr>
<tr>
<td>2</td>
<td>Advise them to change jobs.</td>
</tr>
<tr>
<td>3</td>
<td>Offer an ear and let them talk. Only give advice if asked for.</td>
</tr>
<tr>
<td>4</td>
<td>Encourage a holiday or explore ‘stressors’.</td>
</tr>
<tr>
<td>21</td>
<td>Talk with them about my concerns for them – offer support i.e., counselling external to work – arrange leave.</td>
</tr>
<tr>
<td>22</td>
<td>Encourage them to talk to me or supervisor and take leave or action to care for themselves.</td>
</tr>
<tr>
<td>23</td>
<td>Try to alert them to the problem; talk with them about sources of stress; encourage them to seek further support.</td>
</tr>
<tr>
<td>26</td>
<td>Talk to them; refer them to a counsellor; provide support.</td>
</tr>
<tr>
<td>30</td>
<td>Talk to find out reason why; counselling; offering help.</td>
</tr>
<tr>
<td>36</td>
<td>I would take the person aside, preferably away from others and ask them what was wrong and whether I could help. I would try to help them with strategies and suggest that they talk to the boss and/or talk to a counsellor if that would help.</td>
</tr>
<tr>
<td>41</td>
<td>Talk to them, talk to management.</td>
</tr>
<tr>
<td>44</td>
<td>I would advise him/her to take time off work.</td>
</tr>
</tbody>
</table>

Table 3B. Group B Responses: Helping a Work Colleague who Appears Burned Out from Work

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Ask if anything is wrong. Suggest taking time out. Listen to concerns.</td>
</tr>
<tr>
<td>11</td>
<td>Tell them they need a holiday.</td>
</tr>
<tr>
<td>12</td>
<td>Encourage them to talk about it. Advise them to take leave.</td>
</tr>
<tr>
<td>13</td>
<td>No clue – tell them to rest, but if you can’t afford it, that advice is useless!</td>
</tr>
<tr>
<td>14</td>
<td>Talk to them and find out why they are not happy in the workplace. Offer support; help out if they need time off work.</td>
</tr>
<tr>
<td>15</td>
<td>Talk, guide them to getting appropriate support, listen and explore.</td>
</tr>
<tr>
<td>16</td>
<td>Ask them how they are. Acknowledge that our work can be stressful. Raise the concern I have for them.</td>
</tr>
<tr>
<td>24</td>
<td>Talk to them and explore their options of what they could do.</td>
</tr>
<tr>
<td>29</td>
<td>Suggest they take some time out and try to restore balance to their life.</td>
</tr>
<tr>
<td>31</td>
<td>Lighten their load or put them on leave.</td>
</tr>
<tr>
<td>34</td>
<td>Emotional support; encourage them to speak to supervisor; encourage them to take time out or less duties.</td>
</tr>
<tr>
<td>35</td>
<td>Ask them to take a walk with me, or go for coffee.</td>
</tr>
<tr>
<td>37</td>
<td>Listening and talking to the colleague. Asking if there is anything that I can do to make the situation better.</td>
</tr>
<tr>
<td>38</td>
<td>Advise them to listen to their body. Advise them to activate an alarm bell, if the body is starting to continually run down. Support them and offer assistance if appropriate.</td>
</tr>
<tr>
<td>39</td>
<td>Talk to them - suggest a break.</td>
</tr>
<tr>
<td>45</td>
<td>I would encourage them to take a holiday, look for a new job or a new career.</td>
</tr>
</tbody>
</table>

Understanding Workplace and Individual Factors that Contribute to Burnout

The responses to this question are outlined “In what ways do you think the workplace or the individual contributes to a person feeling burned out?” are outlined in Tables 4A and 4B.
Table 4A. Group A Responses: How The Workplace May Contribute to an Individual Feeling Burned Out

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provide regular supervision. Be aware of employee stress levels and their individual abilities to cope with that stress. Encourage self-care. Provide opportunities for employees to develop the skills they require. Not give them more work than they are capable of handling.</td>
</tr>
<tr>
<td>2</td>
<td>Attitude of employers.</td>
</tr>
<tr>
<td>3</td>
<td>Workload; roster; not having enough or right equipment; management not being approachable.</td>
</tr>
<tr>
<td>4</td>
<td>Type of job – duration, monotony; employer and employee personalities, attitudes, expectations; lack of or poor training.</td>
</tr>
<tr>
<td>21</td>
<td>Lack of support – high expectations- expecting things to be done well; no validation.</td>
</tr>
<tr>
<td>22</td>
<td>Not allowing employees to voice concerns and difficulties; not being aware of workplace pressures (or ignoring pressures) that impact on individuals.</td>
</tr>
<tr>
<td>23</td>
<td>May not provide supervision/debriefing; high expectations and low levels of support; unclear or vague job descriptions; not providing training, especially for difficult/challenging clients.</td>
</tr>
<tr>
<td>26</td>
<td>Workload; type of work; work environment – physical surroundings; expectations of management.</td>
</tr>
<tr>
<td>30</td>
<td>Lack of acknowledgment; lack of work; lack of satisfaction with job.</td>
</tr>
<tr>
<td>36</td>
<td>Unsupportive colleagues or environment; large demands; limited resources.</td>
</tr>
<tr>
<td>41</td>
<td>Lack of supervision, no clear goals regarding work performance.</td>
</tr>
<tr>
<td>44</td>
<td>If an individual is over-worked and given too much responsibility and expected to work erratic and/or long hours. If there is tension/conflict in the working environment or there is politics.</td>
</tr>
</tbody>
</table>

Table 4B. Group B Responses: How the Workplace May Contribute to an Individual Feeling Burned Out

<table>
<thead>
<tr>
<th>P</th>
<th>Response (n = 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Inability of management to listen to staff concerns. Frustration when paperwork seems more relevant than people. Constant changes. Expectations. Unpaid overtime. Lack of staff.</td>
</tr>
<tr>
<td>11</td>
<td>Keep giving a good employee more and more to do.</td>
</tr>
<tr>
<td>13</td>
<td>Not helping staff feel valuable. Not paying enough so people have to push themselves too hard. Not allowing time in a shift for self-care.</td>
</tr>
<tr>
<td>14</td>
<td>Unrealistic demands and expectations. Nonrecognition.</td>
</tr>
<tr>
<td>15</td>
<td>If felt to be non-supportive – disinterested – problems will always arise – being heard and validated is essential, even if problem can’t be solved. Communication.</td>
</tr>
<tr>
<td>16</td>
<td>Not acknowledging that this happens!</td>
</tr>
<tr>
<td>24</td>
<td>Too many demands on workers. Not enough positive feedback. Lack of awareness regarding that work is not the only commitment that people have in their lives.</td>
</tr>
<tr>
<td>29</td>
<td>Expecting more and more from fewer people.</td>
</tr>
<tr>
<td>31</td>
<td>The expectation that an employee will “do whatever it takes” to complete their tasks. Most job descriptions would require a clever person working quickly with no unforeseen problems in order to complete tasks within the allocated time.</td>
</tr>
<tr>
<td>34</td>
<td>Unrealistic demands; lack of support; lack of recognition; bullying from supervisor; lack of communication.</td>
</tr>
<tr>
<td>35</td>
<td>Too many expectations and lack of feelings.</td>
</tr>
<tr>
<td>37</td>
<td>Long working hours; unreliable staff members; poor communication with staff and supervisors; not being satisfied with job requirements.</td>
</tr>
<tr>
<td>38</td>
<td>Management – their mission, beliefs, values. Is what they say, do, and think in alignment? If they are only in it for themselves and their own needs that energy will filter down. Complete focus on the staff’s performance without looking at the human component.</td>
</tr>
<tr>
<td>39</td>
<td>Lack of support or opportunities for self-care.</td>
</tr>
<tr>
<td>45</td>
<td>The culture in a workplace has a lot to do with burnout. For example, if the best manager is calm and deals with things appropriately that makes a big difference to burnout. Also, not over-working staff is important.</td>
</tr>
</tbody>
</table>
The main theme that both Group A and B participants felt contributed to an individual feeling burned out were problems with management. Specifically, participants responded that the following factors contribute to an individual becoming burned out: expectations too high from management; unsupportive management; not feeling appreciated and/or acknowledged by management including not being given any positive feedback; poor communication by management or not allowing staff to voice their concerns; management lacking awareness of how stressful the work is; and general conflict between management and employees. Some other themes that were apparent in the participant responses were: too high a work load and job demands and/or long work hours; conflict, bullying or unsupportive work colleagues; lack of supervision; and monotonous work.

**Estimating the Cost of Burnout**

A number of themes emerged from participant responses to a question about the severity of the cost of burnout to the individual. The themes that emerged, in order of reported frequency, were: suicide/death; the end of their career or the loss of their job as well as extended leave from work and/or reduced ability to work; long term physical health problems; the development of mental health problems including mood and anxiety disorders; breakdowns/severe emotional damage and/or loss of or no self confidence/self worth; negative impacts on relationships with family/friends including family breakdowns; a general inability to function in daily life; increased susceptibility in the future to a reoccurrence of burnout; and increased substance abuse.

**Understanding Why Individuals Stay in a Job That Is Stressful**

In response to the question which asked participants, who stated they had felt so rundown and stressed in their work that they had intended to leave it, what factors had contributed to their remaining in the job, 23 participants (79.3%) reported that they had felt so run down in their current or previous job that they had had thoughts of leaving the job, or they had actually left the job due to the stress they were feeling. Of these, 16 participants were from Group B (burned out) and seven were from Group A (run down). An analysis of variance was conducted to see if there was a significant difference between Groups A and B on this variable. ANOVA results revealed that there was a statistical difference between the two groups, $F = 6.304$, ($d.f. = 1,27$), $p = 0.018$. In comparison to Group A participants, participants in Group B were more likely to have had thoughts about leaving work or they had left a job due to feeling rundown or stressed at work. The main reasons that people remained in a job that was stressful to the point that they had thoughts of leaving it were that they actually liked the work despite the stress, they needed to earn a living; jobs in their area of work or region where they lived were rare; and the conflict with the manager was resolved.
Other Factors Outside of Work that Might Contribute to Being Rundown

The responses to the question: “Did any factors outside of work, such as family conflict/medical illness, contribute to your feelings of being rundown?” are summarised below according to family/partner matters, medical illness and other factors. Ten participants (34.48%) reported that there were no other factors outside of work that contributed to their feelings of being rundown. Of these, three participants were from Group A (run down) and seven participants were from Group B (burned out), leaving 15 people to give further details.

Family/Partners (Group A: $n = 7$, Group B: $n = 8$). Seven participants from Group A responded that family/partner matters contributed to their feelings of being rundown. Of these, two reported that their partners required extra support due to a mental illness and chronic illness, respectively. The other five participants reported that family/partner conflict and/or responsibilities, combined with the general stress of working, contributed to their experience of being rundown at work. Eight participants from Group B reported that family/partner matters contributed to their feelings of being rundown. Of these, six participants recorded that they were experiencing family/partner conflict and/or high responsibilities, one participant reported they were caring for a relative who was ill and another participant noted a combination of family conflict and concern for an ill relative.

Medical Illness (Group A: $n = 4$, Group B: $n = 1$). Five participants from the two groups indicated that a medical illness contributed to their experience of being run down at work. Two participants from Group A reported that they suffered from depression, which in turn contributed to their feelings of being rundown at work. (There is no way of knowing whether the illness was a major factor in the burnout or vice versa.) The other two participants from Group A reported that they had suffered from a miscarriage, which resulted in further physical and hormonal imbalances and a bad case of the flu, respectively. One participant from Group B reported that having migraines contributed to her feelings of being rundown at work.

Other (Group A: $n = 3$, Group B: $n = 4$). A total of seven participants from both groups indicated that other external factors contributed to their feelings of being run down. Two participants from Group A reported that financial worries contributed to their experience of being run down at work. One participant from Group A and four participants from Group B reported stress from their studies as contributing to their experience of feeling run down.

Thus in summarising this additional information about the fact that 65% of the participants did indicate that external factors (other than the workplace) had some impact on their feeling rundown or burned out. However, we had no way of knowing to what extent we could apportion the causes/effects to either workplace factors or external factors.

**DISCUSSION**

What then can employers do with respect to the health of their workforce? The literature over time has brought to the attention of researchers a number of ways of intervening and treating these syndromes.
Streamlining The Burnout Measures

Having really good measures is important in assessing the extent and nature of the burnout in employees both from the professional and organisational perspectives. It is interesting that Maslach’s work on engagement and burnout has recently been extended by Schaufeli, Taris and van Rhenen (2008) who believe that they can provide evidence that “workaholism, burnout, and engagement are three different kinds of employee well-being rather than three of a kind” (p. 1); that is, there is a lot more to understanding the syndrome of burnout than originally believed. Also, in exploring the structure of the 22 item MBI with nurses in nine countries, Poghosyan, Aitken and Sloane (2009) concluded that future research could be improved if the two items related to stress and strain in the MBI were moved from the emotional exhaustion subscale to the depersonalization subscale. Perhaps exploring more about the engagement pole of the MBI (see Solcova and Kebza in this text) might also contribute more to our knowledge about the effects of burnout. Combining all the pertinent research findings on the nature of burnout may help in reducing and treating this health hazard in the workplace.

Intervention and Treatment

The burnout interventions that have mainly been used, since burnout was popularised in the 1970’s, can be distinguished by two main approaches: employee interventions and workplace interventions (Ross and Altmaier, 1994). Most of the intervention programs have focused on the individual and use methods such as relaxation techniques, cognitive stress management, time management, social skills training and attitude change (Pines and Aronson, 1988). Van Dierendonck, Schaufeli and Buunk (1998) conducted a study on a five-week burnout intervention program for professionals working with mentally disabled individuals. The program included an introduction about burnout, exploration of the participants’ goals and expectations at work and relaxation exercises. The findings of the study were that the program appeared to be effective in diminishing the burnout dimension of emotional exhaustion in the experimental group compared to control participants, and this finding persisted 12 months after the completion of the intervention program. There was no effect of the burnout intervention on the depersonalisation dimension of burnout and contrary to expectations, and personal accomplishment diminished in the experimental group after the program was completed, but this effect had disappeared after one year. It was also found that workers who perceived themselves as having low levels of support from supervisors looked for work outside the organization. These researchers suggested that persons with access to personal and social resources found it easier to deal with environmental demands.

Worker frustration is evident in the literature findings (Lewandowski, 2003) as well as in this study. Shaddock, Hill and van Limbeek (1998) advocate that organizations need to maintain staff and invest money in their staff to prevent burnout. They suggested conducting activities, such as giving staff an MBI to complete to heighten their awareness of burnout, and providing staff with opportunities to discuss workplace problems, as this could be beneficial in preventing burn out. They also advocated that individuals need to engage in ‘psychological self-maintenance’ for their own best interests and for their patients’ best interests.
One strategy to alleviate the stress from chronic job stressors that has been put forward is having a respite to bring relief for the employee affected by stress. Most studies have investigated vacations as the form of respite from work and have found that there is often less strain reported by employees during and immediately after the vacation (Westman and Eden, 1997). Etzion, Eden and Lapidot (1998) investigated the effect of taking respite from work in employees who are away from their job by being active in military reserve service. They postulated that if a vacation could alleviate symptoms of job stress, then it is possible that a change in venue from the job may be enough to provide relief from chronic stressors. Their results were consistent with their research hypothesis: employees who had been away from their jobs by being involved in reserve service perceived job stressors to be lower and their burnout scores were lower, as measured by the Burnout Measure. The duration of these effects was not investigated by the researchers, as the post-test was scheduled within a week after the employee returned to work.

Westman and Eden (1997) also investigated the effects of a vacation-respite from work, after employees returned to work. They discerned that three days after employees returned to work, their burnout scores, as measured by the Burnout Index, returned part of the way back to pre-vacation levels, and that by three weeks after their vacation, had returned to pre-vocation levels totally. These researchers recommended that future research might benefit from determining whether brief respites from work such as time off for physical exercise, ‘power naps’ and reflective thinking, are effective in combating burnout. Furthermore, given that respite effects fade over time, it was suggested that researchers could investigate ways to prolong respite relief.

To date, treatment programs for burnout have focused mainly on individual prevention strategies. If burnout is an interaction between personal and organizational factors, then it is likely that a treatment program which combines individual and workplace interventions, may be the most effective method to treat burnout (see Leiter and Maslach, 2005). More research is required into what programs are effective in preventing burnout and assisting the burnout recovery process and whether these should be targeted at an individual or organizational level. Due to the potential dangers of burnout for staff and the cost of burnout to organizations, it would seem imperative to develop work-based programs to combat and minimise the effects of burnout, without treating the employees as if they were ‘deficient’ workers because they are suffering from burnout.

CONCLUSION

The qualitative information obtained was illuminating with respect to the details about the issues relating to the workplace. Some employers may immediately refer to the external factors as impinging on the health of their employees and deny any blame for their ill health; indeed we wrestled with the idea of not including the last subsection of the Results where two thirds of the participants revealed in a truthful way what the external factors were that also made their rundown and burnout conditions more exacerbated. However, that would only have detracted from information needed for workplace interventions about preventing and alleviating these two stress conditions.
It is highly possible that such information concerning prevention and intervention programs about burnout does not get relayed to employers, especially at a time when budgets are being reduced along with workforce numbers. Within the global financial downturn, will employers be prepared to spend any money on such interventions? Can employers afford to care what happens to the health of their employees? The answer lies within the wider sphere of productivity, as ongoing decreases in productivity, from run down and burned out staff, are increasing exponentially. Such signs may be hard to recognise, but they are there and need to be addressed if the modern workforce is to survive the next two decades.

REFERENCES


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Chapter 23

Reframing Work-Life Interface Stressors as Challenges

Prudence Millear and Poppy Liossis
Queensland University of Technology, Australia

Abstract

The work-life interface is part of every working person’s life. Previous research has shown that increasing work and family demands lead to more negative spillover between work and family roles. However, there has been limited consideration of how the individual can balance and cope with those roles. In our study, full-time employers were interviewed to help us understand the choices and strategies that they were using in their everyday lives to balance challenging jobs with family needs. Using Grounded Theory, the underlying theme of individual actions, their work and family was identified as ‘an active person can design their own life’. These participants appeared to be able to take control of their busy lives by learning from their previous work experiences how to choose jobs that were more suited to their work and family needs, how to set boundaries on their time, and how to be better organized. Understanding their time constraints made the difficult balance between work and family easier to manage and accept, as did overcoming the ‘should be done’ with a pragmatic approach to what ‘could be done’. These individuals, not only appeared to survive life’s stressors, but to thrive on the multiple challenges that the work life interface surfaced daily.

Keywords: Work-Life Interface, Well-Being, Active Problem Solving, Control, Coping

Introduction

This chapter will focus on the choices and strategies that individuals have used themselves to overcome the challenges of the work-life interface. By exploring the everyday experiences of full-time employees managing work and family responsibilities, it is possible to determine that by taking control of their time and energy, individuals can find a satisfactory

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balance between their competing interests. The resourcefulness that each person displays in making these difficult decisions is a practical demonstration of being resilient in the face of demanding jobs and personal challenges.

Previous research has shown that greater obligations to the work role increased distress and conflict between work and family roles (Frone, Russell, and Cooper, 1992), and negative spillover was increased because of greater workloads among USA employees (Ilies, Schwind, Johnson, DeRue, and Ilgen, 2007). Low levels of job satisfaction have also been linked to burnout, low self-esteem, depression and anxiety (Faragher, Cass, and Cooper, 2005). However, positive interactions between work and family domains are important to the individual in order to improve their mental health and to assist them to manage their multiple roles (Grzywacz and Marks, 2000). An American academic (Miller, 1997) describes how she has balanced her roles of wife, mother, friend and daughter, calling herself a juggler. Miller notes that the analogy of keeping many balls in the air reflects the realities of having multiple roles, which she lists as ‘parental responsibility, professional success, basic household responsibilities, active community involvement, and time for self and spouse’ (p. 49). The tone of Millers’ chapter is, on balance, positive, noting that she and her family are busy with the challenges of their lives, but they are not overwhelmed by the shape of their lives. She is proud of the way that her family is coping with all that has to be done and the positive experiences between work and family that are an integral part of her work-life interface. This chapter uses interviewing processes to understand the complexities of managing multiple roles and to understand how an individual experiences their daily life. The narrative of real life, the joys and trials of the daily managing of work and family roles, and the choices made to cope with any difficulties that are encountered will broaden the basis of the study about the important influences on managing multiple roles.

The interviews began with considerations of how individuals manage their various roles, how and what make their life situations easier or more difficult to fit together, more or less satisfying, and how this affects the relative importance of what they were involved in (Clarke, Koch, and Hill, 2004). Women managers in the USA reported that, despite the challenges of combining schedules and managing time pressure resources, their personal roles enriched their professional roles (Ruderman, Ohlott, Panzer, and King, 2002). Among these women, the most common theme to emerge was that their personal roles provided opportunities to improve their interpersonal skills, such that they were more understanding of differences and able to motivate and direct others effectively in their work role (Ruderman et al., 2002). Spillover is a consideration in how individuals organise themselves and their families to accomplish their personal activities and the quality of interactions between those activities (Grzywacz and Marks, 2000). Couples can work together to develop strategies for managing their family’s activities, scaling back (particularly for those couples raising younger children), with limits being placed on work commitments and trading off career versus job, over time, to account for changing life course circumstances, and reducing their expectations for housework (Becker and Moen, 1999). For couples, where both have professional careers, the strategies were somewhat different (Bird and Schnurman-Crook, 2005). With both partners having a focus on career success, utilising problem and emotion focused coping strategies to deal with work stressors was more important to the couple than scaling back from work. Further, couples consciously separated work and family lives to ensure sufficient time for children, and lessened their expectations for housework standards or employed outside help to take over those tasks (Bird and Schnurman-Crook, 2005). In both these samples, people, both
as individuals and couples, sought to combine rewarding work with satisfying family relationships and strove to achieve a satisfying balance for their personal situations and life circumstances.

Parental choices and time for their children are part of the challenge of combining work and family roles. Interviews with European mothers found that time pressure and coordination of schedules were their major concerns. Scheduling was not just a matter of flexibility, but more of the need to motivate other family members in order to coordinate multiple schedules. When time was tight, the power to veto schedules or not contribute to the smooth running of the schedules (usually by fathers) was a source of considerable discord, as often the mothers’ schedules revolved around the family while the fathers’ did not (Baldock and Hadlow, 2004). In another English study of English fathers about parenthood and working, men reported that whilst they felt differently about work, they had not made any changes to their working arrangements, in contrast to their wives who had (Hatten, Vinter, and Williams, 2002).

Miller’s (1997) account of her life details the competing demands of workload and family obligations. Where workload and career ambitions leave little time for a personal life, individuals can have limited access to relationships and unintentional childlessness that can lead to mental health problems in later life (Koropeckyj-Cox, 2002). Past experiences from the choices about parenthood and employer attitudes to parenthood are expected to influence how roles are managed at this stage of life. Consideration will also be given to whether individuals have forgone parenthood in order to pursue career opportunities.

Social support from colleagues and managers, availability of resources such as autonomy and skill discretion and limited demands on the employee have all been associated with greater work-life balance, as well as more work engagement and less burnout. Interviews with managers found that their support of work-life programs was crucial for the practical implementation of work-life balance practices. Managers also recognised that supporting their employees could also improve the company’s productivity (Maxwell, 2005), an important consideration for today’s workplaces.

The salience of the work role has variable effects on the work-life interface. When interviewed, call centre workers reported that their jobs were seen only as a means to make money, with long tiring hours and a clear separation between work and family roles (Hyman, Baldry, Scholaris, and Bunzel, 2003). Working long hours may also reflect the ambition of individuals to earn high incomes, have a stimulating, challenging job, and have the opportunity to work in particular organizations to gain power and status (Hewlett and Luce, 2006). Workload then can have varying effects, depending on the individual’s attitude to their work role, and their previous work experiences.

An adaptive and optimistic adult sees stressors as challenges, rather than as problems and is thus less distressed by them. Taking control of one’s conditions and self-regulation toward goals are manifestations of active individuals and it is expected that examples of such behaviours will be shown by the study’s participants in how they experience fit and balance in their lives and the spillover between roles. It is also expected that there will be individual differences in the way that individuals manage their roles, allocating time to the areas they consider important. By examining the individual in situ, it is expected that there will be evidence of the person who is active (Thoits, 1994) in adapting their lives to suit their ongoing and evolving life situation, making choices about their work and their families, taking control of their own lives, rather than being passive about the direction and content of
what they were involved in. From Miller’s (1997) account of juggling all of life’s responsibilities, the impression was that life may be difficult, but it was ‘okay’. With a focus on the positive interactions of working and living, the emphasis in the interviews will be on what was successful, rather than what was problematic about coping with work and family roles. The aim of this study was to understand the personal experience of working adults and the strategies that adults use to balance occupational and personal roles and to increase their well-being.

**METHOD**

**Participants**

Participants were volunteers from two workplaces, a university (Organization 1) and a private school (Organization 2). The study was open to full-time employees over 18 years of age and was not limited by parental and marital status.

The university volunteers came from a staff email list that was focused on wellness, with the assistance of the coordinator of the group. At the time of the call for volunteers, approximately 250 staff members were part of the email list and 25 people replied (20 women and 5 men, response rate of 10.4%) and were then interviewed.

The staff members at the school (Organization 2) were approached by the headmaster, who explained the research project and asked for volunteers (N = 8 of 98 staff, 8.2% response rate) Two recordings of the school staff (one female, one male) were lost due to technical problems, leaving 6 participants from the school. The final sample comprised 31 participants.

**Materials and Methods**

The questions were developed to reflect the themes identified in the literature. For all questions, participants were prompted to explain further about their answers. First, participants were asked about their background, such as age, marital status, description of their job and their partner’s job if they were parents, the age and gender of their children (and their involvement with their children). Second, participants were asked about their functioning in their various roles and the fit and balance between roles, then about their involvement in, and value attached to, their roles. Participants were also asked: how they organized themselves; how household responsibility was shared with other family members; how humour was used by the participant; the nature of their work and their multiple roles; the situations that participants found stressful; and the strategies that they used to resolve the situations. Questions were modified to suit each participant, making the questions appropriate for fathers, mothers and non-parents alike (Hatten et al., 2002); for instance questions that did not relate to the individual, such as those about children for non-parents and about partners for single participants, were omitted as appropriate.

Interviews were coded using the NVIVO 8 program. Utilising the principles of Grounded Theory (Corbin and Strauss, 2008), free codes were assigned to the text, with the free codes then grouped into similar categories, with the categories then linked to themes, which formed...
components of the superordinate theory. Theoretical saturation (Corbin and Strauss, 2008) occurred when no new information came from successive interviews, and was achieved when interviewees began to express similar opinions about their work-life situation. Specifically, theoretical saturation was achieved when successive participants gave similar answers to the questions of fit and balance and vouched for using similar strategies to organize and manage their lives, regardless of parental and marital status (LaRossa, 2005).

RESULTS

The details of the participants are shown in Tables 1 and 2. The participants (N = 31, 83.9% female) ranged in age from 29 to 55 years (M = 42.55 years, SD = 7.73 years). There was a similar distribution of participants between the two organizations, and their occupations, as shown in Table 1. Jobs included teaching positions (school teachers or academics with teaching roles), management positions with higher levels of responsibility, and administrative positions with lower levels of responsibilities.

Table 1. Types of Occupational Positions and Institutions of Participants

<table>
<thead>
<tr>
<th>Employer</th>
<th>Teaching</th>
<th>Management</th>
<th>Administrative</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization 1</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>25</td>
<td>(80.6%)</td>
</tr>
<tr>
<td>Organization 2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>(19.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>11</td>
<td>12</td>
<td>31</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

The participants represented a broad range of combinations of working patterns and family arrangements: dual-career couples (n = 9), non-managerial couples (n = 8), blend of managerial-non-managerial couples (n = 4), traditional couples (n = 2) and individuals on their own (n = 8). Cross-tabulation found that participants’ self-rated work-life balance and work-life fit were significantly related to each other, Pearson’s $X^2 (4, N = 31) = 14.494, p = .006$, and just under half of the participants (n = 13, 41.9%) rated their balance and fit in the high range. There were no differences in the fit and balance of participants based on gender (Balance, $F(1,29) = 0.021, p = .887$; Fit, $F(1,29) = 0.367, p = .549$), type of job (Balance, $F(2,28) = 2.033, p = .650$; Fit, $F(2, 28) = .657, p = .526$), parental status (Balance, $F(1,29) = 0.000, p = .998$; Fit, $F(1,29) = 2.591, p = .118$) or the individual’s work patterns/family arrangements (Balance, $(F(4, 26) = 0.365, p = .813$; Fit, $F(4,26) = 0.831, p = .831$). It would seem that work-life balance and fit are therefore not linked to occupational, marital or parental status.

Table 2 shows the distribution of participants with and without children, and with and without partners, with similar proportions spread across the groups. Participants with children were slightly older than those without children, $F(1,29) = 3.887, p = .058$, with those parents having between 1 and 3 children ($M = 2.15, SD = .69$). Of the fathers among the interviewees, each had two children. The numbers of parents and non-parents should allow a reasonable comparison between the work-life experiences of both groups.

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Table 2. Distribution of participants with spouses or partners, with and without children

<table>
<thead>
<tr>
<th>Number of children</th>
<th>Spouse/partner (M, SD)</th>
<th>Spouse/partner</th>
<th>Single</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>11</td>
<td>2.18 (0.75)</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Men</td>
<td>3</td>
<td>2.00 (0.00)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>2.14 (0.66)</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

THE THEORY UNDERPINNING THE INTERVIEWS

Interviews were transcribed verbatim and analysed using Grounded Theory (Corbin and Strauss, 2008), as described and defined by LaRossa (LaRossa, 2005). The coding and thematic analyses began with open coping, where codes were assigned as free codes in response to issues raised by participants, relating to their experience of the workplace, their roles, and their relationships with family, friends and work colleagues. Codes were later grouped into similar concepts or thematic groups, which were then further grouped into major themes (e.g. working hours and workload belong in a major theme of Work) (LaRossa, 2005). The themes showed that the individual could take action to modify their work and the encroachment of one domain upon the other. As such, the underlying theory is that the individual is at the centre of the work and family variables, as the ‘active person is in charge of their own life’. From this insight, the participants’ understanding of themselves, choosing and changing jobs, managing workload and working hours, maintaining good relationships with family and work colleagues can be seen in the light of the individual who is taking decisions and actions that will enrich their own lives and those who are close to them.

The Individual

The individual is important to many aspects of life. The personal understanding and humour shown by the individuals underscores their active approach to life, rather than the individual just being a passive respondent to their work and family conditions. The participants gained a better understanding about themselves from overcoming challenges and the situations that have occurred to them over time. For example, losing jobs, working unreasonable hours for long periods, relationship breakdowns, and family tragedies helped the participants find perspective about what was meaningful in their lives. For many, the answer was that their family was more important to them, rather than their work, although pragmatic considerations such as their finances tempered any wild changes in direction.

I think that whole epiphany thing is that some stage in your career, everyone has [one] and you think ‘now I get it’. If you look at your working career, [and] I've worked for 20 years, I've got another 20 - 25 years to work [ahead]. I'm only half way there. (Male Manager, Married, Father of Two Adolescents)
Participants’ comments on the role of humour shows that the use of humour was widespread; most notably, humour was used as an interpersonal tool that increased group cohesion, improved relationships and released tension between people. Also, humour was used to make themselves feel better, telling jokes about themselves and showing how they included fun in their lives. Some of the participants had a strong sense of humour and incorporated play into their lives quite naturally. Humour was also used by the participants as stress relief from their current situation, and a number of participants offered the reason that “It’s good to have a laugh. Stress release really, isn’t it, either that or [you] cry, [it’s] better to laugh” (Female Manager, Married, Mother of Three), and “humour can be an effective tool in defusing situations and relieving stress” (Male Manager, Married, Father of Two). Humour was ubiquitous among the participants and provided a window into the way that individuals can manage their relationships and any distress their circumstances engender. By taking a lighter look at themselves and the world around them, humour increased their enjoyment and satisfaction with their lives and provided a sense of perspective that would otherwise be lacking.

**The Individual and their Personal Relationships and Interests**

Across all the participants in the current study, no one disliked their current jobs. Work was a source of pride and provided enjoyment as well as income. But whilst work was important, it was not everything and the people and relationships outside work were central to the participants’ lives.

Time-wise, 60%-work and 40%-family would be about the balance. If we are talking about value, my family would be the absolute priority in my life, so if there is something that were to go drastically wrong, then I would look at every situation where I could transfer some time over to family and take care of that side of things, and as important as work is to me, it is not that important, because the people in my life are more important than work. (Female Senior Manager, Married, Mother of Two Adult Children)

The importance of family relationships was also illustrated by the absence of family relationships, as work can become a haven for lonely single people and a way to fill time.

Work really, I think, to me has always been an escape…well I didn't have a family life, so that didn't count, nor a social life, so there was always a reason to work”. (Female, Financial Administration, Divorced)

Having a spouse or partner helped participants with the fit between their roles, as each partner contributed to the smooth running of the household. Participants spoke of the assistance of their partner to make their work-life balance easier and sharing the household chores: “we help each other and it gets done twice as quick and then we go out” (Female, Married, Mother of one Adult Son). When participants compared themselves to other couples, between whom there was little cooperation or help, they were more appreciative of their situation, valued their relationships more, and felt more balanced.
Childcare and the primary responsibility for the children depended on the work situations of both parents. For example, one father was the primary parent, as his wife was in a corporate position with inflexible hours, whilst a husband’s illness meant role reversal for one woman, as she was in full time work, and he managed their children’s activities. Being pragmatic about not doing everything perfectly, allowed one mother to reconcile what she could do with what she would like to do, and thus to accept the situation.

When it does get difficult, you just step up another cog. And you know that things sort of drop off like the house is not clean, so it’s a case of “Tough!” and accepting it, because it’s not always easy to accept that you can’t be doing this or that. (Female, Administration, Married, Mother of two Young Children)

Several of the women spoke of the choices facing them, in whether they would have children or not. There was recognition that having a young child would not be practical in some jobs or career paths, because of time constraints. Three women accepted the trade-off between job progression and parenthood. However, a fourth woman felt a gender bias, as she believed that women in senior management could not readily combine career and being a primary carer of a child because of their workload, whereas men could more easily achieve parenthood through their wives’ generosity and care giving for their children.

At the other end of the life cycle, older parents spoke of their relationships with their adult children and their own parents. All of the older parents reported good relationships with their children, mostly good relationships with their children’s partners, and they were interested in their children’s careers. Some still had children living at home, although this was more common where the children were in their early 20s. There was little evidence of participants having both young children and aging or infirm parents, as those with aging parents mostly had children in their 20s. Participants spoke of the worry of their parents’ aging and living in distant places and how they would be able to care for them, with the possibility of parents experiencing dementia being of most concern.

The Individual, Their Roles and the Work-Life Interface

Achieving balance between roles was not just a desire of participants with partners, but of the single participants as well:

One of the reasons that I did leave (my last job) was that I wasn’t happy with the balance between work and what was happening outside of work. I really wasn’t happy. (Male, Academic, Single)

The fit between work and family roles was better understood in relation to working conditions, as support from partners or reduced workload allowed work to be more easily accomplished. Also, not having children or having elderly relatives in good health reduced the individual’s non-work responsibilities, whilst young children or aging, unwell parents increased their responsibilities and made managing multiple roles more problematic.

Spillover between roles was shown when succeeding in one role helped the participant feel more successful in the other role. Participants gave examples of feeling competent at
work and therefore more capable of supporting their spouse or partner and of building their self-esteem. “The things I do I think all build on your self-esteem, so you feel better about yourself … there’s a skill someone has and that’s how they value themselves … it’s how you see yourself” (Female Manager, Married, no Children). Participants were also asked whether they had put work before their family, or their family before work; but for most people, there had not been many occasions when either scenario had occurred. With regards to putting work before family, these occasions were more likely to occur episodically, for specific projects to be completed, seminars to be conducted or to attend important work functions. Being heavily work focused was also likely to result in work being placed more often in front of family.

Putting their family before work was more likely when illness or injury occurred among family members. In each case, supervisors were supportive of the participants’ needs to be with their family and many participants spoke of making up the work time later. It was interesting that the participants had a ‘fair’s fair’ attitude to being with their family in work time and vice versa. When asked if they felt that they had enough time for themselves, most participants felt that they could make time for themselves, for example, through reading books, having a facial, going for a walk or run, or doing something unrelated to their work, such as a park volunteering or restoring a car. In these cases, participants were expressing private time as time to do what they liked, rather than what they were obliged to do for work, or as part of their family responsibilities.

The Individual and Their Workplace

In the interviews, participants described their work and the conditions that they dealt with and it was clear from early on in the interviews that individual actions were very important in the way that work was experienced. The participants who managed their work and family roles more easily were more likely to have actively created and sought to direct their career or job trajectories, by choosing particular jobs with more suitable hours, more reasonable workloads, and those that involved personally interesting challenges. However, when a participant was new to a position and unsure about what was expected of them, or where they were less self-confident, they were more likely to accept jobs without resolving the job issues or taking jobs despite the job’s drawbacks. In this way, the active participant could be seen as managing the components of their work (i.e., workload, hours, interpersonal relationships) by carefully choosing jobs (in comparison to previous jobs and by understanding their own ambition) that better suited their circumstances.

Participants showed more satisfaction with their present job situations when these were viewed positively in comparison to previous jobs, or the person had actively sought out their new jobs. Past, unhappy job experiences served as benchmarks for appreciating the benefits of how much better their work situation had become. Half of the participants who spoke about the reasons for choosing, or changing, their jobs listed better working hours as their reason for their actions; with such a decision being based on considerations that long hours did not allow them time for family concerns. Jobs were more attractive when they were perceived to be a better match for the person’s other responsibilities. For example, one woman took part-time work as a teacher, when her children were younger, but she moved into full-time work when the children were older.

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For others, this meant taking another job that did not involve or require overtime. Several participants had come to work in the university directly from private enterprise, in order to overcome expectations that long hours and a heavy workload were part of standard working conditions. Changing jobs, however, required the individual to understand and recognise that they were not as ambitious as their colleagues. Many saw that over commitment to work was considered necessary in some workplaces to ‘get ahead’ and to further any work ambitions.

I say ‘no’ more often because I’m not ambitious. You make more money, and have more power and influence and work 80 hours per week. I don’t know anyone who works 40 hours per week and is ambitious at the same time. (Female Manager, Married)

However, ambition for these participants was different from enjoying work and being work focused. Enjoying work involved work that was interesting and engaging. Spending time at work for these participants was not a burden for them.

I like (my job). I’ve been doing it for 30 years and I still love it. It’s such as asset. (Female, Teacher, Married)

I find it is challenging. It’s not a very stimulating topic to talk about, you know, I'm not a lawyer or a doctor or a nurse, but I enjoy what I do and I find that a lot of it is just personal challenges or career or skill development; I get a lot out of it (Female, Project Manager, Married)

Favourable comparisons to previous jobs also lead to greater satisfaction with current jobs, more work-life balance and less stress, as participants reported reduced workloads and fewer responsibilities. For participants who had previously worked for corporations, there was an understanding that their current environment was less onerous and that they found that the previous job challenges had given them insight into what was important in their lives. This man’s experiences lead him to question his reasons for working and to realise that his family was more important than his work role.

(Younger colleagues) have not had a lot of experience outside of this environment, so they talk about stresses of workload, but that’s not stress. You've part of a process. It'll go - it'll happen, whether you do it or not. The stress is getting on an aeroplane with a contract in your hand worth a couple of million dollars and going to meet someone and having to negotiate this contract for the sake of the 12 staff members that you are responsible for, because if you don't get that, then they can't get paid. That becomes a bit more pressing. When I left my last job, I had been working long days, long hours, travelling, away from the family all the time and then the company that I had been loyal to for 10 years basically turned around and said "so long" and it sort of hit me then, that no matter how hard you work, at the end of the day it’s a financial commercial transaction that you have entered with your company. They are paying you to do a service, in the hope that whatever you are doing will increase their standing or whatever (Male Manager, Married, Father of Two Adolescents).

Whatever their occupations, participants reported that being organized was associated with better management of their work and family roles and this reduced their stress. Examples of the strategies that participants engaged in were the use of calendars and diaries (electronic and paper versions), writing lists, being punctual, having a routine, keeping records of past
events to help with future planning, having plans and goals and preparing for these. When an individual realises that they are managing their roles as well as any other, despite having many demands on their time, the individual’s mastery and satisfaction with themselves and their lives is increased.

Being organized, you have to be. I know people, particularly when I was working full time, two children and husband away in another State, I still managed to get through everything and so it really has to be good organization. Then I heard what other people were doing and I was thinking Okay, I’m not doing too badly after all. And I think that is something that does make it easier, thinking that I have achieved it and accepting that yes, I have done this and I got through it and it was Okay.” (Female, Administration, Married, Mother of Two Young Children)

Being organized also required the effective management of the individual’s workload and the setting of boundaries on their work time to limit the encroachment of the workplace on the rest of their lives, for example by not working at night or on the weekends. Flexible schedules, such as starting or finishing work early or late, enabled the participants to fit around other demands, such as doctor’s appointments or their children’s activities. In their current jobs, several parents spoke of arranging their working time to allow attendance at school functions and to limit their children’s time in after-school care facilities.

Another aspect of setting boundaries is for an employee to tell their supervisors that there is not enough time to complete a task: “if you want me to do something, you need to give me enough time” (Female, Project Manager, Married). Many work tasks require coordination and cooperation from supervisors and co-workers and sensible organizations make the process smoother. Confidence and trust is necessary for this combination to occur, because “with grown-ups, you treat them like grown-ups” (Male, Manager, Married), and to be solved, “if it starts to pile up, there are routes for me to manage it effectively and either be able to change it, or delegate it” (Female, Manager, Married). Related to the ways in which participants managed their time, were their strategies for time management: being organized and planning tasks both at work and at home freed more time for personal activities; as well as using a schedule that allowed participants to fit in many activities into a limited time frame and spend the time that they wanted in each of their roles. Another strategy was to spontaneously take opportunities to see family and friends when time became available, even if this was quite limited (examples of a spare 20 or 30 minutes were given).

Interpersonal conflict within the workplace can increase perceived workload through the effort that is required to improve those relationships before the work can be done. The use of humour is particularly important here to increase cooperativeness and cohesion and to reduce conflict. Humour, however, appeared to be successful only when the work group was not in conflict. “People are just starting to talk to each other again and just starting to trust each other again. So it hasn't quite reached the point yet where we can have fun with each other” (Female Academic, Married).

Although the participants reported mostly pleasant interactions with their work colleagues and support as needed, friendships within the workplace were limited to lower levels in the organizational structure. Managers reported that they did not feel that they could seek friends amongst their subordinates because of the potential for conflict about work performance.

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There was a positive conjunction for participants between job choices (and therefore hours and workload), enjoyment of the work involved, and favourable comparisons between the current job and other jobs that gives the person a sense of mastery over their lives. The active person had taken steps to resolve the conflicts that arose between employer expectations and the value that individuals place on their family and non-work roles. These participants were also more likely to be personally well organized and to have taken control of their working conditions.

‘The Most Stressful Thing’

Finally, participants considered the situations or things that were the most stressful in their lives. There was a very diverse list, ranging from family problems, to money concerns, to time pressures from workload when deadlines were looming, along with the usual high work commitments, or when unexpected tasks were expected to be resolved or completed immediately. Within families, disagreements with siblings or in-laws were more likely to be considered stressful. However, there was evidence that participants were able to keep perspective about what was stressful and how stress could be dealt with.

If I start getting stressed out about things like at work, I often ask myself the question, "Now is anyone going to die?" That’s my measurement. I don’t fret about things unless people are going to die. We didn’t have an easy life as kids and having big challenges in the past, which were life and death situations, it sort of put things into perspective. I can step back and ask now, what are the real things? (Female Financial Manager, Married, Grew up in Africa)

[It is important to] focus on the facts, not the fears. (Female Manager, Married Mother of Two Young Children)

How the participants responded and approached stressful experiences was similar to, but more amplified, than the way that they approached everyday challenges. People who were resilient toward serious difficulties were more likely to be resourceful in less threatening situations, and to take steps to find jobs that suited their lives and allowed them to be more engaged in their family lives.

DISCUSSION

The themes that emerged from our study generally showed the importance of each person actively shaping and directly their own lives, so that they may be able to manage and cope with their responsibilities. By using Grounded Theory, our broader study extends the research on the work-life interface by explicitly placing the individual at the centre of the influences on the working adult. Coping with multiple roles was more difficult when long hours and higher workloads limited family involvement, whilst supportive families enabled both fit and balance between work and family roles. However, more important was the belief that an ‘active person designs their own life’, highlighting the role of the active participant in crafting their own work trajectories that best suited their individual needs. In this way, the individual
was a driver of their own survival in a busy world, rather than the passive recipient of set working conditions. The participants have shown that, despite their difficulties, they were able to make choices that allowed them to combine the family they loved with the work that they found interesting. Their actions highlight the link between greater job satisfaction and better mental health and avoidance of burnout (Faragher et al., 2005).

A number of participants exemplified these behaviours and provided great insight into the processes involved. These people included both parents and non-parents and employees across all levels of responsibility, although they were generally older and had used the experiences in their lives to gain greater understanding of themselves and others. These participants have shown how they could take the necessary steps to avoid repeating past mistakes, and in this way overcome unsatisfactory jobs, excessive hours, or failed relationships. Surviving everyday life to prosper and thrive meant that these individuals had to make pragmatic decisions about how they would live their lives. Coping with competing demands meant that the individual needed to understand themselves and their needs, such that their choices and strategies would fulfil their needs.

For each of the individuals involved in this study, there was an element of ‘make do’, of responding to difficult situations as they arose, which reflects adaptive self-regulation (Carver and Scheier, 1998). Being flexible and adaptable toward whatever happened to them, these individuals were best placed to manage their daily experiences, to be their own problem solvers, to be realistic about their abilities and options and to be flexible in their responses to changing situations (Aspinwall, 2005).

The participants of the study are similar to Miller’s (1997) description of her own life, as active individuals who have made their own solutions to the challenges they face and for whom life is, for the most part, functioning reasonably well. Being organized assisted with work-life balance and fit, such that established routines or habits minimised or prevented any daily hassles from becoming entrenched and turning into difficult problems, thus leaving more personal and environmental resources (Hobfoll, 1989, 2002) to deal with difficult situations as they arose, and to manage their lives in general. In addition to their own efforts, good support from partners and reasonable work hours and workload were factors that increased fit and balance, which is in line with previous research (Clarke et al., 2004; Voydanoff, 2004). Participants experienced both positive and negative spillover (Grzywacz and Marks, 2000), with more benefits (positive) than problems (negative) from having multiple roles. By selecting jobs that were better suited to personal needs and circumstances, individuals maximised their positive spillover and minimised the negative spillover that they experienced.

The precedence of the family role over the work role was common in the study, although for single participants, the lack of immediate family meant that they spent more time at work by default. Most of the participants reported that there was cooperation between family members to make the running of their lives smoother. As with previous interview studies with couples (Becker and Moen, 1999; Bird and Schnurman-Crook, 2005), parents in the study reported that they shared household chores and made decisions together about their children. One woman’s comments about accepting that she was not a perfect housekeeper and not a perfect mother, but managing fairly well in spite of all that she was doing, are a heartening example of a realistic assessment of coping with everyday life. People are busy with their myriad activities and there is not enough time to do everything ‘perfectly’ and thus reducing unrealistic expectations allows the individual to enjoy their life as it is, not as it ‘should’ be.
Consideration of family schedules influences the decision to have children, with four women involved in the study discussing their choices about children. Two women had changed to more flexible working conditions to allow time for child care, another had forgone parenthood to avoid the conflict and follow her career ambitions, and a fourth lamented that her workload would not allow time for childcare. As with female executives in the USA (Blair-Loy, 2001; Koropeckyj-Cox, 2002), ambition, expectations and workload can limit the available parenting options for women in senior positions. Without limiting individual careers for either gender, the difficulty for any person is combining the time commitment for a career with the time commitment for young children. In this sample, several fathers spoke of readjusting their hours to care for their children, as their wives were in senior positions with inflexible hours, whilst one mother was the breadwinner following her husband’s illness, reflecting the differing personal circumstances.

At work, there is a clear theme about people taking jobs for reasons that are based on their past experience and their current needs. Most of the participants had clear expectations of the hours and work that their jobs would require and were not surprised by the hours or workload that was expected of them. The participants found that their working hours were only ambiguous when they took promotions without relinquishing a previous job, where jobs were poorly defined and where out-of-hours work was expected, but not accounted for in a job description. With the diversity of jobs and family lives, managing working time pressures rested with being personally organized and effectively organizing workload tasks, whilst having sufficient staff and a realistic sense of what could be accomplished were also important. By taking action in this way, and in combination with less onerous jobs, individuals could minimise the detrimental effect of time pressure and exhaustion on themselves. As a result, they gave the impression that they had ‘just the right amount’ of time pressure (or feeling busy) to balance out between exhaustion and boredom. This is similar to the relationships found among accountants, where too little or too much work was detrimental to the individual (Teuchmann, Totterdell, and Parker, 1999).

They felt that the interpersonal relationships within the workplace were mostly pleasant and positive, although without the formation of close friendships. There was managerial support for employees and their work-family issues, with managers understanding and accommodating their employees’ family needs. These practical actions are in accord with research on the importance of managerial cooperation in the use and availability of family-friendly policies (Thompson, Beauvais, and Lyness, 1999) and of managers putting flexibility into practice and even enforcing leave entitlements.

**CONCLUSION**

The resourceful participants in this study, parents and non-parents alike, had taken active steps to take control of their lives. For them, it was not a matter of survival, it was a matter of coping with a series of simultaneous challenges. They were more likely to be more pragmatic about their lives and their life experiences, have worked for other employers (so they could compare jobs), to set boundaries on their time, be personally well organized, and to have taken control of their working conditions and their life choices. In particular, they had chosen jobs or constructed careers that better suited their lives, families and future goals.
The results of the study offer hope that each individual can take control of their own circumstances and craft a life that suits their own needs, in the midst of many demands on their time and energy. Whilst the older participants of the study were more likely to have achieved these aims, age alone was not a prerequisite to doing so, only the courage to do what was needed. The participants showed that despite the many challenges that they faced, they were able to find jobs that were interesting without being overwhelming, and without compromising satisfying family lives. From the abstract theory of an active person in charge of their lives, the participants in our research showed that each person, at any age, can achieve a balance in their lives by making decisions about their own life, by taking control of their time and by being reasonable about what they can achieve. Coping with the work-life interface requires the practical steps of setting boundaries on time and using available flexible work policies.

REFERENCES


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WORLPLACE SPIRITUALITY AND BURNOUT AMONG HUMAN SERVICE WORKERS

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ABSTRACT

Finding meaning in life is critical in making sense out of life’s challenges. Work takes up the majority of waking time for those people aged 24-60 and thus finding meaning in one’s work is important. Some professions are known to be highly demanding in terms of the needs of the people they serve and professionals working in those fields need to be able to tap into their own resourcefulness to survive the stresses and strain in those roles, otherwise over time they suffer from burnout. While people find purpose in life without belonging to religious groups, their meaning in life is often linked to their spiritual beliefs, even if those beliefs exert an influence on their values and behaviours out of the conscious awareness. In this chapter, we report on a study which investigated workplace spirituality, burnout, and personal coping resources (self-efficacy and proactive attitude), amongst a sample of 147 human service workers who worked with young people in the community.

Keywords: Workplace Spirituality, Personal Coping Resources, Burnout, Self Efficacy, Proactive Attitude

INTRODUCTION

Helping individuals integrate their work and spiritual lives might mean that the 100,000 or so hours that an individual will work in their lifetime are more joyful, balanced and meaningful and nourish their spirit rather than drain it. (Gibbons, 2000, p. 1)
Finding meaning and purpose in one’s work and enjoying a sense of community at work are not new concepts. What is new is that these concepts are being discussed and researched as dimensions of workplace spirituality. Workplace spirituality is broadly defined as ‘a journey toward integration of work and spirituality, for individuals and organisations, which provides direction, wholeness and connectedness at work’ (Gibbons, 2000). In order to provide an operational definition for research purposes, Ashmos and Duchon (2000) proposed workplace spirituality “as the recognition that employees have an inner life that nourishes and is nourished by meaningful work that takes place in the context of community” (p. 138). Beyer (1999, cited in Plowman and Duchon, 2005), argues that humans seek both belonging and meaning in their work:

Because humans are meaning-seeking animals, they seek meaning in their work. Because they are social animals, they also seek a sense of belonging to a social group through their work. These two intangibles – meaning and belonging – enhance the inner lives of individuals and give their work a spiritual dimension. (Plowman and Duchon, 2005, p. 8.)

Definitions of workplace spirituality tend to reflect a post-modern spirituality that makes a distinction between spirituality and religion (Gibbons, 2000). Although there continues to be debate over the exact nature or even validity of the distinction, spirituality is generally seen as the ‘broader construct’ (Becker, 2002; Gibbons, 2000; Powell, Sandhu and Painter, 2000; Slater, Hall and Edwards, 2001). For instance, Twigg, Wylde and Brown (2000) argue that spirituality transcends religion and is a basic human dimension that can be learned, understood, and incorporated into the workplace.

**Empirically Researching Workplace Spirituality**

Despite the growing interest in workplace spirituality amongst practitioners over the last decade (Ashar and Lane-Maher, 2002; Cavanagh, 1999; Neal and Biberman, 2003), the subject has largely been ignored by organisational scientists (Duchon and Plowman, 2005). Only recently have academics begun investigating workplace spirituality (Milliman, Czaplewski and Ferguson, 2003) which has suffered from a dearth of empirical research (Gibbons, 2000; Neal and Biberman, 2003). Furthermore, the scant literature on workplace spirituality has been criticised for being overly optimistic and lacking both intellectual rigour and critical analysis (Gibbons, 2000).

This state of affairs can partly be attributed to the rift between spiritual and scientific discourses that leads to a mutual denial of the significance and validity of the other’s perspective (Wilber, 1998). It is worth noting that the debate continues amongst workplace spirituality researchers as to the appropriateness of empirical methodology. While some researchers argue that the validity of workplace spirituality can only be assessed through scientific measurement (Giacalone and Jurkiewicz, 2003), other researchers maintain that empiricist methodology is insufficient to capture such an overarching construct (Fornaciari and Lund Dean, 2001). The authors concur with Benefield (2003) who argues that the path of empirical research needs to be explored, even if it turns out to be a ‘dead end’ (p. 368).

If workplace spirituality is to be empirical researched, then instruments are required that measure spirituality in the context of work (Gibbons. 2000). Although the psychology of
religion and spirituality has produced a large number of instruments that attempt to measure personal spirituality (Slater, Hall and Edwards, 2001), most of these measures are context-free (Gibbons, 2000). These measures of ‘general’ spirituality do not and cannot capture the contextual and relational dimensions of workplace spirituality, such as meaningful work, or sense of community at work.

In an attempt to define and measure the multiple dimensions of workplace spirituality, Ashmos and Duchon (2000) developed a self-report instrument, “The Finding Meaning and Purpose at Work” questionnaire. They reported that exploratory factor analyses on the questionnaire yielded 11 factors that seemed viable as subscales. At least two further studies have utilised subscales derived from the Finding Meaning and Purpose at Work Questionnaire to conduct multi-dimensional research into workplace spirituality (Duchon and Plowman, 2005; Milliman, Czaplewski and Ferguson, 2003). In this current study, we continue this line of inquiry and explore individuals’ perceptions of four dimensions of workplace spirituality: inner life, meaningful work, community at work, and alignment with organisational values. These dimensions can be viewed as reflective of workers’ involvement in workplace spirituality at four levels: spiritual identity (inner life), relationship with the work (meaningful work), relationship with the group (community) and relationship with the organisation (values).

**Inner life.** The foundation of workplace spirituality is the belief that employees have spiritual needs, just as they have physical, cognitive and emotional needs (Duchon and Plowman, 2005). In this study, inner life refers to an individual’s acknowledgment and experience of their own spiritual identity. Furthermore, inner life is viewed as a feature that individuals bring into the workplace, and while the workplace might enable its expression, the workplace does not create inner life (Ashmos and Duchon, 2000).

**Meaningful Work.** Frankl (1959) argued that a fundamental component of spirituality is finding meaning and purpose in life. Work is an important avenue through which people seek meaning and purpose in life (Milliman et al., 2003; Pines, 1993). In this study, meaning at work refers to an individual’s perception of experiencing meaning and joy in their work (Ashmos and Duchon, 2000). Meaningful work also includes the concept of contributing to the greater community (Fox, 1994).

**Community.** Work can be a source of community involving connection with others. In this study, community in the workplace refers to people’s perceptions of being part of a trusting community where they feel valued and supported, and fears and conflict are addressed in a healthy manner (Ashmos and Duchon, 2000).

**Organisational Values.** Another dimension of workplace spirituality is experiencing congruence between one’s personal values and the organisation’s mission and purpose (Milliman et al., 2003). In this study, the term organisational values refers to an individual’s perception of how much they are in alignment with their organisation’s values. It also includes the employee’s perception of the organisation’s ethics regarding care for their employees and the larger community (Ashmos and Duchon, 2000).

This study explores four dimensions of workplace spirituality: inner life, meaningful work, community and alignment with organisational values. The dimensions were chosen because they allow a multi-level exploration of the workplace spirituality construct and because of their potential relationship to burnout.
Workplace Spirituality and Burnout

Burnout is the index of the dislocation between what people are and what they have to do. It represents an erosion in values, dignity, spirit and will, an erosion of the human soul. (Maslach and Leiter, 1997, p. 17.)

Burnout is defined as ‘a psychological syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among people who work with other people in some capacity’ (Maslach, 1993, p. 20), and has long been recognised as a potential hazard for human service workers (Dollard, Winefield and Winefield, 2001; Schaufeli, Maslach and Marek, 1993). Emotional exhaustion is defined by feelings of being emotionally overextended and depleted of one’s emotional resources. Depersonalisation is defined as a negative, cynical, or overly detached response to other people who are usually one’s clients. Reduced personal accomplishment is marked by feelings of incompetence and lack of achievement in one’s work (Maslach, 1993).

Although initial research into burnout emphasised the psychology of the individual and the carer-client relationship, later research suggested that organisational and job-role aspects were the most influential factors affecting burnout (Dollard et al, 2001; Lonne, 2003; Maslach and Leiter, 1997). Current models of burnout tend to focus on the interaction between the individual and the work situation. For instance, burnout can be understood as resulting from a mismatch between the person and the job, where the job is conceptualised as including the work environment (Maslach and Leiter, 1997; Schaufeli and Enzmann, 1998).

The construct of workplace spirituality is well positioned for inclusion in current burnout research, with its emphasis on the individual’s personal experience of their work and their workplace.

It is worth noting that a small number of studies have investigated and reported a negative relationship between general measures of spirituality and burnout (Golden, 2002; Kirsch, 2001; Marsh, Beard and Adams, 1999; Persing, 2000). However, research exploring spirituality and burnout has tended to utilise context-free measures of spirituality, as distinct from spirituality in the workplace. Burnout is a work related phenomena and therefore, exploring the relationship between burnout and workplace spirituality may be a more relevant line of inquiry.

The relationship between burnout and workplace spirituality has been inferred within a number of sources. While workplace spirituality researchers argue that more ‘spirited workplaces’ will be associated with reduced burnout among workers (e.g., Duchon and Plowman, 2005; Garcia-Zamor, 2003; Thompson, 2000), burnout researchers have argued that meaningful work, community and shared values are key elements in preventing burnout (Cherniss, 1980; Maslach and Leiter, 1997; Pines, 1993).

Failure to find work meaningful has been posited as a key factor in burnout (Karger, 1981; Maslach and Leiter, 1997; Pines, 1993). For instance, Pine (1993) argued that failure to find meaning in one's work can lead to burnout, and alternatively, finding meaning in one's work prevents burnout. Karger (1981) argued that burnout among human service practitioners was related to a process of alienation in the contemporary workplace. He argued that their work loses personal meaning, when it becomes a market commodity. Maslach and Leiter (1997) argued that meaningful and valued work was a critical component of building engagement and avoiding burnout. In one of the few longitudinal studies looking at burnout,
Cherniss (1995) concluded that one of the critical factors in recovering from burnout and thriving at work was finding meaningful work or finding ways to make current work meaningful. Larger cross-sectional studies have found a negative relationship between meaningful work and burnout (Lieter, Harvie, and Frizzel, 1998) and a positive relationship between meaningless work and burnout (Powell, 1994).

The work environment is posited as a critical factor affecting burnout (Cherniss, 1980; Maslach and Leiter, 1997). Cherniss (1980) identified a number of key characteristics in human service work settings that were related to burnout. These included social isolation (lack of community) and incongruence between personal values and organisational goals. More recently, Maslach and Leiter (1997) identified a lack of, or breakdown of, community at work and conflict between personal values and organisational values as critical person-job mismatches. They argued that the greater the mismatch between a person and the job, the greater the likelihood of burnout; conversely, the greater the fit, the greater the likelihood of engagement with work. Furthermore, Maslach and Lieter (1997) argued that a strong organisational community prevented burnout and that the ‘best candidate for building such community (was) shared values’ (p. 147).

Based on this review, it seems likely that the dimensions of workplace spirituality in this current study will be associated with lower levels of burnout. To date, there has been no empirical research that has explored the relationship between the four workplace spirituality constructs (inner life, meaningful work, community and organisational values) and burnout in the same sample.

**Personal Coping Resources**

Burnout can be understood as an outcome of the interaction between the individual and the work situation. Not surprisingly personal coping resources are assumed to play a role in burnout (Schaufeli and Enzmann, 1998). At the same time, workplace spirituality is concerned with how the individual experiences their work. Personal coping resources may also be related to an individual’s experience of spirituality in the workplace. In this current study, two personal coping resources are explored: generalised self-efficacy and proactive.

Generalised self-efficacy is defined as a broad and stable sense of personal competence to deal efficiently with a variety of stressful situations (Schwarzer and Scholz, 2000). It can be viewed as a personal coping resource that individuals bring to work (Schwarzer and Scholz, 2000) and has been found to be associated with lower levels of burnout (Grau, Salanova and Piero, 2001). Trott (1996) also found that general self-efficacy was positively correlated with spiritual well-being in the workplace, suggesting that generalised self-efficacy may be related to dimensions of workplace spirituality.

Proactive Attitude is defined as a belief in the rich potential of changes that can be made to improve one’s self and one's environment, and includes the key aspects of resourcefulness, responsibility, values, and vision (Schwarzer, 1999). Schmitz and Schwarzer (1999) found that proactive attitude was inversely related to the three dimensions of burnout in a sample of teachers. Schwarzer and Taubert (2002) argue that proactive attitude is related to finding meaning and purpose in life, suggesting that proactive attitude may be related to finding meaning and purpose at work.
Research Aims and Hypotheses of the Present Study

This study investigates workplace spirituality, burnout, and personal coping resources amongst a sample of human service workers who work with young people.

1. Finding Meaning and Purpose at Work Subscales in an Australian Sample. The Finding Meaning and Purpose at Work subscales have recently been developed and tested on American samples only. Before testing the hypotheses, this current study investigates the factor structure of four Finding Meaning and Purpose at Work subscales (inner life, meaningful work, community and organisational values) in an Australian sample.

2. Workplace Spirituality, Burnout and Personal Coping. This study explores the relationship between workplace spirituality and burnout. It is predicted that workplace spirituality will be inversely correlated with burnout (Hypothesis 1), that is, workplace spirituality will be inversely correlated with emotional exhaustion and depersonalisation, and will be positively correlated with personal accomplishment.

3. Burnout, Workplace Spirituality and Personal Coping Resources. In this current study, two personal coping resources are explored: generalised self-efficacy and proactive attitude. It is predicted that these personal coping resources will be inversely correlated with burnout (Hypothesis 2) and will be positively correlated with workplace spirituality (Hypothesis 3). Furthermore, previous research (Golden, 2002) has found that spirituality predicted burnout over and above personal characteristics. This study predicts that workplace spirituality will contribute to the prediction of burnout over and above personal coping resources (Hypothesis 4).

4. Burnout versus Engagement. The MBI burnout subscales scores can be used to categorise participants as low, medium or high on each of the three burnout dimensions, using established cut-points. Maslach, Schaufeli and Leiter (2001) suggest that burnout is the antithesis of engagement and that engagement can be interpreted as the opposite pattern of scores usual for the three MBI dimensions; that is, low emotional exhaustion reflects high energy; low depersonalisation reflects high involvement; low reduced personal accomplishment reflects high efficacy. In order to derive a better picture of burnout versus engagement, this current study poses the following Exploratory Research Question: Will participants who score high on burnout differ from participants who score high on engagement, in regards to the workplace spirituality dimensions?

Methodology

Participants

Data was collected, via a written questionnaire, from 147 human service workers working in 16 organisations based in the greater Brisbane region. The sample contained 105 females (71.4%) and 42 males (28.6%). The mean age of participants was 34 years, with a standard deviation of 9.23 and a range of 19 to 58. Approximately 70% of the sample had a degree or higher level of education. The sample contained workers from both government organisations (54%) and non-government organisations (46%). The participants worked in the following...
areas: child protection work (n = 51), non-residential youth work (n = 42), residential youth work (n = 28), juvenile justice work (n = 16) and mental health work (n = 10).

Measures

Six self-report measures were used in the study, and these are outlined below.

_Maslach’s Burnout Inventory_ (Maslach, Jackson and Leiter, 1996) was used to measure three aspects of burnout: emotional exhaustion (9 items), depersonalisation (5 items) and personal accomplishment (8 items). Participants are asked to rate, on a 7-point Likert scale (0 = never; 6 = every day), how often they have feelings about their job characterised by statements such as ‘I feel emotionally drained from my work’ and ‘I don’t really care what happens to some recipients’.

_The General Perceived Self-efficacy_ (Schwarzer and Jerusalem, 2000) is a 10 item self-report scale. Participants are asked to rate, on a 4-point Likert scale (0 = not at all true; 4 = exactly true), how much they agree with statements such as ‘I can always manage to solve difficult problems if I try hard enough’.

_The Proactive Attitude Scale_ (Schwarzer, 1999) is an 8 item self-report measure. Participants are asked to rate, on a 4-point Likert scale (0 = not at all true; 4 = exactly true), how much they agree with statements such as ‘I am driven by a sense of purpose’ and ‘there are abundant opportunities that await me’.

Finding Meaning and Purpose at Work Subscales. This study utilised 4 subscales derived from the Finding Meaning and Purpose at Work survey (Ashmos and Duchon, 2000): inner life (5 items), meaningful work (7 items), community (9 items) and organisational values (8 items). This present study used the adapted version of the organisational values subscale (Milliman, Czaplewski and Ferguson, 2003). Participants are asked to respond on a 7-point Likert scale (1 = disagree strongly; 7 = agree strongly) to statements such as ‘I experience joy in my work’ and ‘My spiritual values influence the choices I make’.

RESULTS

Finding Meaning and Purpose at Work Subscales in an Australian Sample

This current study conducted exploratory factor analysis to investigate the factor structure of four Finding Meaning and Purpose at Work Subscales in an Australian sample. Principal axis factoring with an Oblimin rotation was performed through SPSS on the 29 items that make up the inner life, meaning at work, community and organisational values subscales of the Finding Meaning and Purpose at Work Questionnaire.

Five factors were extracted which accounted for 58 % of the variance. The factor loadings and communalities are reported in Table 1. Only items loading at .4 and above were interpreted (see Hair, Anderson, Tatham and Black, 1995). The factors were labelled as Organisational Values, Inner Life, Community, Personal Meaning, and Greater Purpose. The first three factors generally reflected the organisational values, inner life and community subscales. The fourth and fifth factors seem to reflect a split amongst the meaningful work...
subscales items. Factor 4 Personal Meaning collected four meaningful work subscale items, (plus one community subscale item) and is interpreted as tapping personal meaning and growth at work. Factor 5 Greater Purpose collected the two remaining items from the meaningful work subscale that seemed to tap the connection between work and a greater purpose.

Table 1. Factor Loadings and Communalities ($h^2$) for Principal Axis Factoring Extraction and Oblimin Rotation on the Finding Meaning and Purpose at Work Subscale Items

<table>
<thead>
<tr>
<th></th>
<th>1 Org. Values</th>
<th>2 Inner Life</th>
<th>3 Community</th>
<th>4 Personal Meaning</th>
<th>5 Greater Purpose</th>
<th>$h^2$</th>
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<tbody>
<tr>
<td>This organization has a conscience.</td>
<td>.902</td>
<td></td>
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<td>I feel connected with this organization's goals.</td>
<td>.869</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I feel positive about the values of this organization.</td>
<td>.858</td>
<td></td>
<td></td>
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<tr>
<td>I feel connected with the mission of this organization.</td>
<td>.803</td>
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<tr>
<td>This organization cares about all its employees.</td>
<td>.777</td>
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<td>.78</td>
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<tr>
<td>This organization is concerned about the health of those who work here.</td>
<td>.765</td>
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<td>.80</td>
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<tr>
<td>The organization I work for cares about whether my spirit is energized by my work.</td>
<td>.704</td>
<td></td>
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<td>.63</td>
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<td>This organization is concerned about the poor in our community.</td>
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<td>I consider myself a spiritual person.</td>
<td></td>
<td>.907</td>
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<td>.91</td>
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<td>My spiritual values influence the choices I make.</td>
<td></td>
<td>.779</td>
<td></td>
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<td>I care about the spiritual health of my co-workers.</td>
<td></td>
<td>.666</td>
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<td>Prayer is an important part of my life.</td>
<td></td>
<td>.628</td>
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<td>I feel hopeful about life.</td>
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<tr>
<td>At work we work together to resolve conflict in a positive way.</td>
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<td></td>
<td>.901</td>
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<td>.81</td>
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<td>When I have fears I am encouraged to discuss them.</td>
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<td></td>
<td>.630</td>
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<td>.51</td>
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<td>I am evaluated fairly here.</td>
<td></td>
<td></td>
<td>.629</td>
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<td>.73</td>
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<tr>
<td>I am valued at work for who I am.</td>
<td></td>
<td></td>
<td>.581</td>
<td></td>
<td></td>
<td>.62</td>
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<tr>
<td>I look forward to coming to work most days.</td>
<td></td>
<td></td>
<td>.538</td>
<td></td>
<td></td>
<td>.54</td>
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<tr>
<td>When I have a concern I represent it to the appropriate person</td>
<td></td>
<td></td>
<td>.507</td>
<td></td>
<td></td>
<td>.24</td>
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<tr>
<td>I feel part of a community in my immediate workplace.</td>
<td></td>
<td></td>
<td>.473</td>
<td></td>
<td></td>
<td>.44</td>
</tr>
<tr>
<td>My supervisor encourages my personal growth.</td>
<td></td>
<td></td>
<td>.422</td>
<td></td>
<td></td>
<td>.52</td>
</tr>
<tr>
<td>I am encouraged to take risks at work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.&lt;.4</td>
<td>.24</td>
</tr>
<tr>
<td>I have had numerous experiences in my job which have resulted in my personal growth.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.733</td>
<td>.54</td>
</tr>
<tr>
<td>I experience joy in my work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.696</td>
<td>.68</td>
</tr>
<tr>
<td>My spirit is energized by my work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.664</td>
<td>.50</td>
</tr>
<tr>
<td>I understand what gives my work personal meaning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.570</td>
<td>.55</td>
</tr>
<tr>
<td>I believe others experience joy as a result of my work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.561</td>
<td>.32</td>
</tr>
<tr>
<td>The work I do is connected to what I think is important in life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.720</td>
<td>.67</td>
</tr>
<tr>
<td>I see a connection between my work and the larger social good of my community.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.538</td>
<td>.47</td>
</tr>
</tbody>
</table>
It was decided to derive summated subscales based on the factor structure (as suggested by Hair et al., 1995). Items that loaded on the same factor, with loadings > .4, were grouped together (with equal weightings) to produce five workplace spirituality subscales (inner life, personal meaning, greater purpose, community and organisational values). For ease of interpretation, and to reflect a positive construct, the direction of the items was reversed for the personal meaning subscale.¹

Reliability Assessments and Descriptive Statistics

All subscales used in this study demonstrated reasonable to strong internal consistency, with Cronbach’s Alphas ranging from .69 to .94. The Cronbach’s Alphas and descriptive statistics for all the subscales are reported in Table 2. Cut-points have been established for categorising the MBI subscales as low, moderate or high (Maslach and Jackson, 1986). The means reveal that this sample of human service workers was in the moderate category for emotional exhaustion, depersonalisation and personal accomplishment. The means for the burnout dimensions were similar to those found in a sample of South Australian human services workers (n = 770) (Dollard et al., 2001).

Table 2. Descriptive Statistics for Workplace Spirituality, Personal Coping Resources, Compassion Satisfaction, Compassion Fatigue and Burnout

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Cronbachs alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Life</td>
<td>147</td>
<td>1.00</td>
<td>7.00</td>
<td>5.10</td>
<td>1.3983</td>
<td>.81</td>
</tr>
<tr>
<td>Personal Meaning</td>
<td>147</td>
<td>3.00</td>
<td>7.00</td>
<td>5.50</td>
<td>.8254</td>
<td>.82</td>
</tr>
<tr>
<td>Greater Purpose</td>
<td>147</td>
<td>3.00</td>
<td>7.00</td>
<td>6.00</td>
<td>.8732</td>
<td>.70</td>
</tr>
<tr>
<td>Community</td>
<td>147</td>
<td>2.88</td>
<td>7.00</td>
<td>5.45</td>
<td>.9334</td>
<td>.88</td>
</tr>
<tr>
<td>Organisational Values</td>
<td>147</td>
<td>1.13</td>
<td>7.00</td>
<td>5.24</td>
<td>1.3243</td>
<td>.94</td>
</tr>
<tr>
<td>General Self-efficacy</td>
<td>147</td>
<td>2.60</td>
<td>3.90</td>
<td>3.24</td>
<td>.31119</td>
<td>.80</td>
</tr>
<tr>
<td>Proactive Attitude</td>
<td>147</td>
<td>2.38</td>
<td>4.00</td>
<td>3.35</td>
<td>.35564</td>
<td>.74</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>147</td>
<td>.00</td>
<td>44.00</td>
<td>20.34</td>
<td>10.2613</td>
<td>.91</td>
</tr>
<tr>
<td>Depersonalisation</td>
<td>147</td>
<td>.00</td>
<td>21.00</td>
<td>7.03</td>
<td>4.8178</td>
<td>.69</td>
</tr>
<tr>
<td>Personal Accomplishment</td>
<td>147</td>
<td>18.00</td>
<td>48.00</td>
<td>36.57</td>
<td>6.3780</td>
<td>.82</td>
</tr>
</tbody>
</table>

Bivariate Correlations

Using SPSS, Pearson correlations were calculated to assess the relationships between the variables and are presented in Table 3. Before addressing the hypothesis tests, the authors draw the reader’s attention to the correlations amongst the workplace spirituality dimensions. These reveal that personal meaning, greater purpose, community and organisational values are all significantly correlated with each other at mostly moderate to high levels. However, inner life is only significantly correlated with personal meaning, at a moderate level.

¹ It is noted for comparison purposes, that the organisational values subscale used in this study is the same as the organisational values subscale used in USA research (Milliman, Czaplewski and Ferguson, 2003). The inner life and community subscales used in this study are very similar to the inner life and community subscales used in USA research (Duchon and Plowman, 2003).
<table>
<thead>
<tr>
<th></th>
<th>Innerlife</th>
<th>Personal meaning</th>
<th>Greater purpose</th>
<th>Community at work</th>
<th>Organization al values</th>
<th>General self-efficacy</th>
<th>Proactive attitude</th>
<th>Emotional exhaustion</th>
<th>Depersonalization</th>
<th>Personal accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innerlife</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.329*** .000</td>
<td>**</td>
<td>*</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Personal meaning</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.158 .057</td>
<td>.423** .000</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Greater purpose</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.156 .059</td>
<td>.474** .000</td>
<td>.257** .002</td>
<td>**</td>
<td>**</td>
<td>*</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Community at work</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.193* .019</td>
<td>.409*** .000</td>
<td>.372** .000</td>
<td>.628** .000</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Organization al values</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.129 .119</td>
<td>.309** .000</td>
<td>.211* .010</td>
<td>.200* .015</td>
<td>.302** .000</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>General self-efficacy</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.234** .004</td>
<td>.404** .000</td>
<td>.288** .000</td>
<td>.174* .036</td>
<td>.225** .006</td>
<td>.519** .000</td>
<td>*</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Proactive attitude</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>- .236** .004</td>
<td>- .296** .000</td>
<td>- .085 .304</td>
<td>- .514** .000</td>
<td>- .468** .000</td>
<td>- .238** .004</td>
<td>- .210* .011</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Emotional exhaustion</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>- .216** .009</td>
<td>- .219** .008</td>
<td>- .073 .381</td>
<td>- .212* .010</td>
<td>- .311** .000</td>
<td>- .293** .000</td>
<td>- .222** .007</td>
<td>- .602** .000</td>
<td>**</td>
</tr>
<tr>
<td>Depersonalization</td>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>- .278** .001</td>
<td>.522** .000</td>
<td>.374** .000</td>
<td>.185* .025</td>
<td>.238** .004</td>
<td>.372** .000</td>
<td>.467** .000</td>
<td>- .272** .001</td>
<td>- .223** .007</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

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The results, reported in Table 3, partially support hypothesis 1, indicating that all dimensions of workplace spirituality were significantly correlated with at least one dimension of burnout, being at low to moderate levels. Inner life, personal meaning and organisational values were inversely correlated with both emotional exhaustion and depersonalisation, and positively correlated with personal accomplishment. Greater purpose was positively correlated with personal accomplishment and community was inversely correlated with emotional exhaustion.

**Workplace Spirituality and Personal Coping Resources**

The results, reported in Table 3, partially support hypothesis 2. General self-efficacy was significantly correlated with personal meaning and organisational values. Proactive Attitude was significantly correlated with inner life, personal meaning, greater purpose and organisational values. The correlations were low to moderate.

**Burnout and Personal Coping Resources**

The results, reported in Table 3, partially support hypothesis 3. Personal accomplishment was significantly correlated with General Self-efficacy and Proactive Attitude at a moderate level. The other correlations, although in the expected direction were low.

**Prediction of Burnout from Workplace Spirituality and Personal Coping Resources**

A series of hierarchical multiple regression analyses were conducted to investigate whether workplace spirituality predicted burnout over and above personal coping resources. Using SPSS, three hierarchical multiple regression analyses were performed, entering each burnout dimension (emotional exhaustion, depersonalisation, personal accomplishment) as the dependent variable. Personal coping resources were entered in step 1. Workplace spirituality variables were entered in step 2. Only those variables that had been found to have a significant bivariate correlation with the dependent variable at p< .01 were entered into the analyses.

*Emotional exhaustion.* A multiple hierarchical regression analysis was performed with emotional exhaustion as the dependent variable. General self-efficacy was entered in step 1. Inner life, personal meaning, community and organisational values were entered in step 2. In step 1, general self-efficacy was found to account for 5.6% variance in emotional exhaustion ($R^2 = .056, F(1,145) = 8.682, p = .004$). In step 2, the addition of inner life, personal meaning, community and organisational values accounted for an additional 26.9% variance in emotional exhaustion ($R^2 change = .269, F(4,141) = 14.076, p < .001$). In step 2, the best predictor of emotional exhaustion was community ($β = -.365, p < .001$).

*Depersonalisation.* A multiple hierarchical regression analysis was performed with depersonalisation as the dependent variable. General self-efficacy and proactive attitude were
entered in step 1. Inner life, personal meaning, and organisational values were entered in step 2. In step 1, general self-efficacy and proactive attitude were found to account for 9.3% variance in depersonalisation ($R^2 = .093$, $F(2,144) = 7.344$, $p = .001$). In step 2, the addition of inner life, personal meaning and organisational values accounted for an additional 7% variance in depersonalisation ($R^2 \text{ change} = .07$, $F(3,141) = 3.921$, $p = .01$). In step 2, the best predictor of depersonalisation was organisational values ($\beta = -.214$, $p = .014$).

### Table 4. Hierarchical Multiple Regression Analyses Predicting Burnout from Personal Coping Resources and Workplace Spirituality

<table>
<thead>
<tr>
<th>Order</th>
<th>Emotional Exhaustion</th>
<th>Depersonalisation</th>
<th>Personal Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2_{\text{change}}$</td>
<td>Final $\beta$</td>
<td>unique $R^2_{\text{change}}$</td>
</tr>
<tr>
<td>1. Personal coping Resources</td>
<td>.056**</td>
<td>-0.98</td>
<td>-0.091</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive Attitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Workplace Spirituality</td>
<td>.269**</td>
<td>-0.140</td>
<td>-0.132</td>
</tr>
<tr>
<td>Inner Life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Meaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater Purpose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Org. Values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$</td>
<td>.326**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = $p<.01$, * = $p<.05$.

**Personal accomplishment.** A multiple hierarchical regression analysis was performed with personal accomplishment as the dependent variable. General self-efficacy, and proactive attitude were entered in step 1. Inner life, personal meaning, greater purpose and organisational values were entered in step 2. In step 1, general self-efficacy, proactive attitude and proactive coping were found to account for 24.2% variance in personal accomplishment ($R^2 = .242$, $F(2,144) = 22.931$, $p < .001$). In step 2, the addition of inner life, personal meaning, greater purpose and organisational values accounted for an additional 11.6% of the variance in personal accomplishment ($R^2 \text{ change} = .146$, $F(4, 140) = 8.375$, $p < .001$). In step 2, the best predictor of personal accomplishment was personal meaning ($\beta = .322$, $p = .001$).

The results, reported in Table 4, support Hypothesis 4, indicating that workplace spirituality significantly contributed to the prediction of burnout over and above, personal coping resources ($p < .05$).

### Workplace Spirituality: High Burnout Versus High Engagement

Participants were categorised as low, medium or high on each of the three burnout dimensions, using established cut-points. This study explored whether participants who scored high on burnout differed from participants who scored high on engagement (i.e., low
burnout), in regards to the workplace spirituality dimensions. Three separate independent-samples t-tests were conducted using SPSS. For each burnout-engagement dimension, the high engagement group was compared to the high burnout group on the five workplace spirituality dimensions.

The high energy group \((n = 59)\) compared to the high emotional exhaustion group \((n = 39)\) had significantly higher scores on inner life \((t(96) = 3.401, p = .001)\), personal meaning \((t(96) = 4.061, p < .001)\), community \((t(57.7) = 6.378, p < .001)\) and organisational values \((t(96) = 7.094, p < .001)\). The high involvement group \((n = 77)\) compared to the high depersonalisation group \((n = 20)\) had significantly higher scores on organisational values \((t(95) = 2.947, p = .004)\). The high efficacy group \((n = 63)\), compared to the low personal accomplishment group \((n = 34)\) had significantly higher scores on inner life \((t(95) = 3.372, p = .001)\), personal meaning \((t(95) = 6.209, p < .001)\) and greater purpose \((t(95) = 4.559, p < .001)\). Table 5 presents a summary of the results, indicating how the high burnout groups differed from the high engagement groups on the workplace spirituality dimensions.

**Table 5. High Burnout versus High Engagement Groups on Workplace Spirituality**

<table>
<thead>
<tr>
<th>HIGH BURNOUT GROUPS</th>
<th>versus</th>
<th>HIGH ENGAGEMENT GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Emotional Exhaustion</td>
<td></td>
<td>High Energy</td>
</tr>
<tr>
<td>Less inner life</td>
<td>More inner life</td>
<td></td>
</tr>
<tr>
<td>Less personal meaning</td>
<td>More personal meaning</td>
<td></td>
</tr>
<tr>
<td>Less community</td>
<td>More community</td>
<td></td>
</tr>
<tr>
<td>Less alignment with organisational values</td>
<td>More alignment with organisational values</td>
<td></td>
</tr>
<tr>
<td>High Depersonalisation</td>
<td></td>
<td>High Involvement</td>
</tr>
<tr>
<td>Less alignment with organisational values</td>
<td>More alignment with organisational values</td>
<td></td>
</tr>
<tr>
<td>Low Personal Accomplishment</td>
<td></td>
<td>High Efficacy</td>
</tr>
<tr>
<td>Less inner life</td>
<td>More inner life</td>
<td></td>
</tr>
<tr>
<td>Less personal meaning</td>
<td>More personal meaning</td>
<td></td>
</tr>
<tr>
<td>Less greater purpose</td>
<td>More greater purpose</td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

Over the last decade, workplace spirituality has generated a lot of interest and discussion, but little empirical research. This study has expanded the empirical research into workplace spirituality (Ashmos and Duchon, 2000; Duchon and Plowman, 2005; Milliman, Czaplewski and Ferguson, 2003). The key findings and implications are discussed.  

*Finding Meaning and Purpose at Work Subscales.* This study investigated the factor structure of four Finding Meaning and Purpose Subscales (inner life, meaningful work, community and organisational values) in an Australian sample of human service workers. Although five factors emerged from the four subscales, the factor structure provided support for, as well as expanded the construct of workplace spirituality. Three of the factors were essentially the same as the three original subscales: organisational values, inner life and community, thus providing additional support for the construct validity of these subscales.
The remaining two factors reflected a split in the meaningful work subscale, suggesting that work may be perceived as meaningful in at least two ways. The authors argue that this split represents a distinction between meaningful work as related to a greater purpose, and meaningful work as related to one’s personal experience. This finding deserves further investigation, to reveal whether this is an artifact of our sample, in which all the workers were employed in work that could potentially be seen to have a greater purpose.

This study derived five subscales based on this factor structure. The work-specific subscales (personal meaning, greater purpose, community and organisational values) were moderately correlated with each other. In contrast, inner life was moderately correlated with personal meaning only. This suggests that, in this sample, participants who had higher levels of spiritual identity also derived more personal meaning from their work; however, their level of spiritual identity was not particularly related to their perception of the workplace (community and organisational values). This finding supports Ashmos and Duchon’s (2000) view that inner life is a feature a person brings with him/herself into the workplace, and while the workplace might enable its expression, the workplace does not create inner life.

**Relationship between Workplace Spirituality and Burnout.** The results provided support for the hypothesis that perceptions of workplace spirituality would be inversely associated with burnout. All dimensions of workplace spirituality (inner life, personal meaning, greater purpose, community and organisational values) were significantly correlated with at least one dimension of burnout. Several key findings are discussed.

Firstly, inner life, a measure of spiritual identity, was inversely correlated with emotional exhaustion and depersonalisation, and positively correlated with personal accomplishment. This finding supports previous studies that have found an inverse relationship between burnout and general spirituality (Kirsch, 2001; Persing, 2000). However, stronger correlations were found between some other workplace spirituality measures and the dimensions of burnout. This finding suggests that although spiritual identity may play a small role in burnout, the contextual (work-specific) dimensions of workplace spirituality are more relevant to burnout.

Secondly, two aspects of meaningful work were measured, personal meaning and greater purpose. The results suggest that finding work personally meaningful was more critical than whether one thought the work was generally meaningful (important and contributing to the greater good). These results provide support for theories of burnout that emphasise the role of finding personal meaning in one's work (Cherniss, 1995; Pines, 1993).

Thirdly, community at work was inversely related to emotional exhaustion while alignment with organisational values was inversely correlated with both emotional exhaustion and depersonalisation. These results provide support for the person-job mismatch model of burnout (Maslach and Lieter, 1997) which occurs where there is a lack of community and a mismatch between personal values and organisational values, as these are critical factors in burnout.

Finally, although burnout theories suggest that lack of personal meaning, lack of community and mismatch with organisational values are causes of burnout, the results of the current study can also be interpreted in other ways. It may be that lack of personal accomplishment decreases the level of personal meaning workers derive from their work, and similarly, workers’ levels of exhaustion may influence their perceptions of the workplace. Whether causal, symptomatic or both, it seems that the multi-dimensional construct of workplace spirituality, used in this study, captures several factors relevant to burnout.

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A recent publication by Pawar (2009) affirms these findings from an Indian study of 171 employees from different organisations, in that meaning and purpose at work significantly correlated with job satisfaction, job involvement, and organisational commitment. Additionally in Malaysia, Abdullah, Alzaidyeen and Aldarabah (2009) confirmed that workplace spirituality assisted in leadership development and effectiveness among 1510 teachers.

**Workplace Spirituality and Personal Coping Resources.** The results found that generalised self-efficacy and proactive attitude were moderately correlated with personal meaning, suggesting that individuals who find their work personally meaningful have higher levels of self-efficacy and a more proactive attitude. It may be that individuals who have more personal coping resources are better able to derive meaning from their work, or more actively seek work that is personally meaningful. It may also be that engagement in work, which is personally meaningful, increases one’s sense of competence and enhances a proactive attitude.

**Prediction of Burnout from Personal Coping Resources and Workplace Spirituality.** The relationship between workplace spirituality and burnout was further explored through a series of hierarchical multiple regressions that controlled for personal coping resources (generalised self-efficacy, proactive attitude). The results supported the hypothesis that workplace spirituality would contribute to the prediction of burnout, over and above personal coping resources. Workplace spirituality contributed most to the prediction of emotional exhaustion and personal accomplishment and least to depersonalisation. Furthermore, lack of community significantly predicted emotional exhaustion, and personal meaning significantly predicted personal accomplishment, providing further support for the importance of the twin themes of meaning and belonging at work.

**Workplace Spirituality, High Burnout versus High Engagement.** This current study found that the high burnout groups differed from the high engagement groups on dimensions of workplace spirituality. The high energy group compared to the high emotional exhaustion group had significantly higher scores on community and organisational values (as would be expected from the previous analyses). However, the high energy group also had significantly higher scores on inner life and personal meaning. The high efficacy group, compared to the reduced personal accomplishment group, had higher scores on personal meaning and greater purpose (as would be expected from the previous analyses) as well as higher scores on inner life. These results provide support for the relevance of workplace spirituality, as a multi-dimensional construct, to both burnout and engagement.

**Limitations.** This study has a number of limitations. The sample size was just adequate for an initial exploration of the issues; however, further research with larger samples is required to validate the findings. The highly subjective nature of spirituality makes it a potentially difficult construct to measure using questionnaires. Furthermore, the use of self-report measures creates the potential for common method variance. Finally, it is important to note, that this study has chosen to focus on workplace spirituality (and to a lesser extent personal coping resources), acknowledging that there are many other potential correlates of burnout. It is also acknowledged, that there may be other dimensions of workplace spirituality not included in this study.
CONCLUSION

The findings of this current study strongly suggest that workplace spirituality, as a multi-dimensional construct, is particularly relevant to burnout and compassion satisfaction amongst human service workers. This has implications for both research and practice.

The associations, found in this study, strongly suggest that workplace spirituality should be included as a relevant construct in future burnout research. Such research could facilitate the integration of workplace spirituality with more traditional areas of organisational psychology. Future research into workplace spirituality also includes the further development and testing of instruments to measure workplace spirituality. The Finding Meaning and Purpose at Work subscales utilised in this study are in the early stages of development. The issues raised from this study’s factor analyses require further investigation.

This study also has implications for practice. An important implication is that the dimensions of workplace spirituality be included and addressed by human services organisations. This study suggests that deriving personal meaning from work and finding a sense of community at work are key areas that organisations could focus on. Similarly, interventions aimed at preventing or addressing burnout and/or increasing satisfaction amongst human service workers would do well to include the dimensions of workplace spirituality. For instance, van Dierendonck, Garssen and Visser (2002) described a successful burnout intervention based on transpersonal psychology, the focus of which was supporting participants rediscover meaning and purpose in their work through the development of self-awareness and their own spirituality. He concluded that the transpersonal approach had the potential of becoming a valuable addition to already existing programs. Integrating the dimensions of workplace spirituality into programs that also address other correlates of burnout could result in more holistic interventions that address the needs of the whole person. Gibbons (2000) argues that studying workplace spirituality has the potential to “open the door to more a holistic understanding of human behaviour in the workplace” (p. 1). This current study provides support for this argument, finding that workplace spirituality appears relevant to burnout thus, warranting the inclusion of workplace spirituality in both future research and practice.

REFERENCES


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PART 5:

WAYFINDING THROUGH EDUCATION AND LEARNING CHALLENGES
Chapter 25

PERSONALITY MODES DRIVE GROWTH IN LIVING AND LEARNING

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ABSTRACT

In this chapter, a model to articulate the emergence of resourcefulness and resilience is developed, respectful of the complementary philosophical contributions of Aristotelian and Platonic approaches to understanding; the author posits three fundamental modes of personality - Doing, Feeling, and Thinking - as factors that, in combination, generate sixteen (or eight paired) related personality modes, in which the pairings show initiating and overseeing effects of personality expression. Each combinatorial mode has access to a unique set of personal resources for coping with resistance, and the depth of those resources give individuals the resilience to see their way through major obstacles. The more people who learn to resiliently operate, according to their own unique personality-grounded resourcefulness, the more rapidly society advances. As education becomes able to help students draw these resources from themselves as resilient self-knowledge, their respective cultures will become correspondingly enlightened.

Keywords: Personality types, Model, Resourcefulness, Resilience, Character, Societal growth, Individual growth

INTRODUCTION

The purpose of this chapter is to approach an understanding of resilience and resourcefulness by emphasizing the importance of personality as a driver for growth and

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learning, and to demonstrate how personality can be systematically redefined without stereotyping individuals. This will be shown by separating the archetypal modes of personality from the thoroughgoing uniqueness of each individual. It is this very uniqueness that characterizes each person's stand against resistance, opposition and oppression from the surrounding culture.

In this chapter, resourcefulness is defined as the ability to accomplish an objective with the materials and support that are available; most often, the degree of resourcefulness of an action is inversely proportional to the availability of resources. One has to be more resourceful when what is available is insufficient to meet normal expectations. Resilience is defined as the capacity to not relent in the face of limited resources, resistance or even defeat, as seen so often in historically significant actors such as the examples of Lech Walesa in Poland and Gandhi in India. This is in contrast to stubbornness, which is usually an inability to face reality. Rather, resilience reflects being in contact with a deeper reality that has not yet manifested itself. The nature of this deeper reality poses a classic conflict between the Platonic and Aristotelian approach. The Platonic focus upon ideal states is usually interpreted from an Aristotelian perspective as out of touch with reality, but to the Platonist it is guidance from Truth, with a capital “T,” which has the effect of overriding temporary setbacks and gaps in data. Aristotelians are able to arrive at a resilient state through analysis when the analytical conclusion is believed to be valid. Each maintains a resilient position but though very different means. The preference for one approach or the other seems to be linked to personality modes.

It is assumed that the personality of an individual is a stable outcome of a unique set of personality modes present in varying proportions in each individual. “Modes” are sharply defined components of personality; “types” are collections of individuals that share similar modes to some degree, but never completely; and “personality” is the unique enduring possession of each individual. Resourcefulness and resilience are outer expressions of inner modal strengths, and because of their archetypal nature will appear differently in every instance where they are expressed, and often similar expressions of resilience are caused by very different patterns of modes.

A renewed and fundamentally deeper appreciation of human diversity can become the next frontier for human progress. The diversity addressed here is not the diversity of specific traits of behavior or even physical attributes, but the more deeply seated personality differences that transcend national, racial, and gender boundaries. We need to pay attention to these fundamental differences between people, educating our children to be aware of the cultural wealth of human diversity, and each child's contribution to that diversity. Such attention has the ability to release a cornucopia of benefits that would accrue to all cultures.

Dost thou reckon thyself only a puny form
When within thee the universe is folded?
Baha'u'llah (1945, 1952, 1968) p. 34.

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Doing, feeling, and thinking\(^4\) are part of a simple set of fundamental personality modes that can be explored to see how changing patterns of these modes interact with culture. The meanings of these three terms are the obvious meanings, in that doing is a physical reaction to stimulus, feeling is an emotional response to meaning, and thinking is an intellectual reflection upon patterns of information. A model of sixteen (or eight paired) personality modes emerges from the combined interactions of doing, feeling, and thinking and their relationship to initiating or to overseeing activity.\(^5\) The resulting interaction of these modal pairs with culture show how each mode possesses a unique brand of resourcefulness to cope with cultural obstacles, which evolves into a characteristic brand of resilience in the face of severe resistance and opposition. Personality differences, of which the following sixteen modes are only a simple example, and cultural preferences interact with each other to build character, reveal personality, and ultimately, to advance culture.

This chapter will systematically review widely divergent approaches to life that have significant consequences for education. It is time to put an end to the pedagogical one-third rule.\(^6\) The rule states that, on average, whatever method of pedagogy is used, one-third of students will excel, one-third will perform satisfactorily, and one-third will struggle and perform poorly. Changing pedagogical approaches for all students is like playing musical chairs\(^7\) for determining who is placed in which third.

The high failure rate periodically prompts a movement to change the delivery system, only to repeat the same overall results. The significant detail that is overlooked in this constant rate of success and failure is that the individual students who succeed and fail from one educational approach to another, widely differ. For example, whole language readers don't flourish with a phonetic approach to reading and vice-versa. The commitment to a single approach insures the failure of at least a third of the students, and those students who land in the middle are likely in need of a comparative approach between alternatives, which isn't available when only one approach is taught.

In an experiment in a small start-up charter school in Michigan, the author (Lucatelli) assessed the personalities of all students and teachers in the school. The goal was to mentor...
the teachers to find appropriate individualized teaching and learning techniques that would be individually designed to work for each and every student. The hope was to put an end to the one-third rule. At one point early in the project one teacher commented, “I had come to the conclusion that half of my students were bright and the other half were slow to learn. Then I (the teacher) took a look at the personality assessment results for my students and learned that the students that seemed bright were most like me, and the slower learning students were most unlike my personality! From then on, by changing my approach to the “slow” students, it became possible for all my students to do well in the class!”

Personality is an important key to students’ learning styles and teachers’ teaching styles, but ultimately it is the student’s self-awareness and resultant claiming of responsibility for his own learning that will produce the greatest advancement in education.

By tapping into the natural brand of resourcefulness of each student, education can inculcate a resiliency in young people that will last them for life. Although the descriptions of modes (appearing later in this chapter) are limited in scope, it is hoped that they may demonstrate two important findings: (1) That there exist clusters of modes that reinforce and complement each other, of which the DFT model is only one example; and (2) Teaching to the individual’s strongest modes and leading the students to challenging work in their strength, enlivens their study and leads to rapid growth.

**THE EIGHT PAIRED MODES OF PERSONALITY IN RELATIONSHIP TO CULTURE**

A relational DFT (Doing, Feeling, Thinking) model developed by the author (Lucatelli), for the purposes of this chapter, shows how systematically turning the three fundamental modes of Doing, Feeling, and Thinking “ON” and “off” creates eight distinct regions in a cube. (See Figure 1). Table 1 shows the combinatorial logical notation of the model and Figure 1 shows the spatial relationship between the eight modes in a Cartesian framework.

We can now describe a comprehensive range of personality in relationship with culture based upon the three simple modal distinctions of personality: Doing (Dd), Feeling (Ff), or Thinking (Tt).

As the meanings of the modes in combination are interpreted, it becomes apparent that when the three factors are turned ON and off, becoming active and reactive respectively, the initiating and overseeing modes appear (See Table 2). An “initiating” mode treats the ON factor as an active primary focus and strives to bring it under conscious control. The off, or

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8 The word “ON” is capitalized and the word “off” is lowercase to reflect the symbolic logic convention used to represent the initiating and overseeing modes shown in Tables 1 and 2. The numbering of the levels in Tables 1 and 2 begin with zero (0) because the zero (0) numbered pair does not contain any factors in an “ON” state. The levels zero (0) through seven (7) in Tables 1 and 2 are the numbered regions of the cube of Figure 2 shown in tabular form.

9 Each of these fundamental modes can be systematically turned ON or off to produce sixteen combinatorial variations of the three modes. The possible combinations of ON and off states are: dft, Dft, dFt, dfT, dFT, DfT, DFt, and DFT. If the capital letters are separated from the lowercase letters, eight pairs of complementary terms are obtained: [NULL, dft]; [D, ft]; [F, dt]; [T, df]; [FT, d]; [DT, f]; [DF, t]; and [DFT, null], where “NULL” represents “no factors ON” or “none on” and “null” represents “no factors off” or “none off.” Complementary means that each of the eight pairs of terms when their collective terms are recombined logically, as in “initiating” Union “overseeing,” the result always contains one, and only one, of all three factors, D, F, and T, regardless if the letter is displayed as upper or lower case.

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reactive factors for the initiating modes, are complementary modifying factors that contextually influence the expression of the ON factors. The overseeing modes reactively oversee the off factors by monitoring and questioning them, hoping to discover any irregularities within the factors it monitors. The healthy expression of each initiating or overseeing mode will usually be deliberately exercised, purposefully choosing to take action or seriously questioning the appropriateness of certain actions. To simplify this presentation, only positive expressions of the modes will be discussed, even though there exists a continuum of expression for all modes from positive to negative.

Table 1. Logical Structure of Eight Pairs of Terms

<table>
<thead>
<tr>
<th>Level: Logical Pattern</th>
<th>ON / Active Initiating Mode</th>
<th>off / Reactive Overseeing Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>0: dft</td>
<td>NULL</td>
<td>dft</td>
</tr>
<tr>
<td>1: Dft</td>
<td>D</td>
<td>ft</td>
</tr>
<tr>
<td>2: dFt</td>
<td>F</td>
<td>dt</td>
</tr>
<tr>
<td>3: dT</td>
<td>T</td>
<td>df</td>
</tr>
<tr>
<td>4: dFT</td>
<td>FT</td>
<td>d</td>
</tr>
<tr>
<td>5: DfT</td>
<td>DT</td>
<td>f</td>
</tr>
<tr>
<td>6: DFt</td>
<td>DF</td>
<td>t</td>
</tr>
<tr>
<td>7: DFT</td>
<td>DFT</td>
<td>null</td>
</tr>
</tbody>
</table>

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Overseeing as well as initiating behavior are both reflections of an individual’s personality, and the personality’s relationship to the expectations of his culture. Regardless of education, some people are able to instinctively accomplish some functions easily while others struggle with them. Every person has a completely unique personality, which can be modeled at many levels of resolution. By resolution is meant the structural complexity of the model, which is determined by the number of fundamental modes that are assumed for building the model. Each level of resolution calls attention to detail that is characteristic of its particular level of complexity. Consider zooming into an online Google Map. At one level of resolution, it is possible to see the relationship between cities, and at another the street structure of a particular city is most important. Both sets of information are fully

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10. “Weber’s Theory: Weber believed that society cannot exist without the actions of its members, its individuals. Social facts are accumulated actions of individuals of a society. To Weber, society is made up of active subjects involved in interaction with each other.” (Farzaneh, 2008).
11. “Durkheim’s Theory: Durkheim believes that social facts are outside of the individual. A social fact is any kind of behavior or model of thinking and feeling that characterizes a given society. Education serves as means to convert individuals into fully functioning members of society. As a result, each person becomes a product of their society.” (Farzaneh, 2008).
12. The resolution or complexity of APMA models is determined by the number of primary factors used to generate the model, similar to the resolution of a digital image that is determined by the density of pixels. As the number of primary factors increases from one model to another, the number of possible combinations increases exponentially, which correspondingly increases the resolution of personality definition. However, changing the resolution of the model not only changes the detail, but also changes the meaning of what may be addressed by the model. As a result of this model-building process, higher resolution models don't replace lower resolution models but rather, provide a richer context within which the lower resolution models may be

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represented in each map, just as structural models focus on different levels of detail, but the chosen resolution, complexity or graphic scale of a model accentuates different aspects of the information. Personality models may accentuate coarser or finer features of an individual's personality structure.

**RESOURCefulness & Resilience Vary as Personality Varies**

People uniquely express many modes of behavior, motivational influences, and attitudinal postures. While typologies are experimental categories for classes of people who have similar personality modes, keep in mind while reading the following descriptions of modes that they are not descriptions of people, or types, but archetypal modal influences arbitrarily described at a relatively low level of resolution for simplicity. Greater complexity would generate a greater number of modes and less complexity would generate fewer modes.

The following descriptions of personality modes are underlying modal archetypes of personality, not any particular person. The statements should be read so that any person who possesses the given mode in his or her personality will exhibit the behaviors described to a degree proportional to the strength of that mode in the person and of course – if the modes were vegetables – the soup made from them would reflect the flavor of the particular

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Figure 1. DFT model of personality’s relationship to culture.

The following descriptions of personality modes are underlying modal archetypes of personality, not any particular person. The statements should be read so that any person who possesses the given mode in his or her personality will exhibit the behaviors described to a degree proportional to the strength of that mode in the person and of course – if the modes were vegetables – the soup made from them would reflect the flavor of the particular

better understood. Further, higher resolution models are built upon the structural foundation of lower resolution models.

13 By “arbitrary”, it is meant that any valid set of fundamental terms, according to APMA principles, may be chosen to describe any system, but the specific content described in the resulting system will be a direct consequence of the choice of the assumed number of fundamental axioms for that system.
Personality Modes Drive Growth in Living and Learning

vegetables included, as well as their relative proportions. For example, two people with the same modal archetypes may differentially prioritize the same set of modes and appear as very different personalities; they in fact, are different because of their dissimilar priority structure.

The names assigned to the modes reflect the way in which each mode is perceived by outsiders, not necessarily by the person who exhibits that personality quality. The modeled differences among the modal pairs numbered zero (0) through (7) are all derived from the three complementary assumptions of doing, feeling, and thinking. The eight overseeing modes are indented in the following pages to distinguish them from the eight initiating modes shown with standard indentation.

Table 2. Modes of Personality Related to Culture in DFT Model

<table>
<thead>
<tr>
<th>ON Active</th>
<th>Confirming Mode</th>
<th>Dd-factor Doing</th>
<th>FF-factor Feeling</th>
<th>Tf-factor Thinking</th>
<th>Overseeing Mode</th>
<th>off Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>NULL</td>
<td>0 Innocent</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Judge 0</td>
<td>dft</td>
</tr>
<tr>
<td></td>
<td>Doing off ►</td>
<td>Feeling off ►</td>
<td>Thinking off ►</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1 Helper</td>
<td>◄ Doing ON</td>
<td>-</td>
<td>-</td>
<td>Trustee 1</td>
<td>ft</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Feeling off ►</td>
<td>Thinking off ►</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>2 Protector</td>
<td>-</td>
<td>◄ Feeling ON</td>
<td>-</td>
<td>Gatekeeper 2</td>
<td>dt</td>
</tr>
<tr>
<td></td>
<td>Doing off ►</td>
<td></td>
<td>Feeling off ►</td>
<td>Thinking off ►</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>3 Guide</td>
<td>-</td>
<td>-</td>
<td>◄ Thinking ON</td>
<td>Police 3</td>
<td>df</td>
</tr>
<tr>
<td></td>
<td>Doing off ►</td>
<td>Feeling off ►</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FT</td>
<td>4 Hero</td>
<td>-</td>
<td>◄ Feeling ON</td>
<td>◄ Thinking ON</td>
<td>Guard 4</td>
<td>d</td>
</tr>
<tr>
<td></td>
<td>Doing off ►</td>
<td></td>
<td>Feeling off ►</td>
<td>Thinking off ►</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DT</td>
<td>5 Philanthropist</td>
<td>◄ Doing ON</td>
<td>-</td>
<td>◄ Thinking ON</td>
<td>Critic 5</td>
<td>f</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Feeling off ►</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>6 Promoter</td>
<td>◄ Doing ON</td>
<td>◄ Feeling ON</td>
<td>-</td>
<td>Examiner 6</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Feeling off ►</td>
<td>Thinking off ►</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFT</td>
<td>7 Cultural Ideal</td>
<td>◄ Doing ON</td>
<td>◄ Feeling ON</td>
<td>◄ Thinking ON</td>
<td>Spectator 7</td>
<td>null</td>
</tr>
</tbody>
</table>

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0. The Innocent (NULL) Vs. the Judge (Dft) – Dft

The Innocent (NULL) mode is uncommitted to any course of action. It is the mode of one completely ignorant of the circumstances that are being faced. A way to imagine this is as one

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would view a novice who has not yet had sufficient doing, feeling, or thinking experience with a subject area to understand events as they unfold. When this mode is active, one does not perceive the possibilities available in new situations, but rather unconsciously absorbs whatever occurs without prejudgment. Nearly all people have an innocent relationship with some specialized personality modes, but not at the general level of Doing, Feeling, and Thinking. In areas where the Innocent mode is active, one must rely completely upon experience and character to operate there. It is possible to train one’s self in these areas, but not likely that one would become proficient enough to be resilient in extreme circumstances, or creatively resourceful in the face of difficulties.

The Innocent mode’s resourcefulness is based upon unconditional acceptance of assistance from any quarter; the innocence stems from a lack of any meaningful experience, not from a failure to find flaws. There is no preconception of what is needed, nor any natural inclination to use any particular mode. Innocence may be considered to be the lack of any active mode: complete passivity. Resilience, for this mode, is based upon the acceptance of the goodness of life and the determination to live. At the scale of the modes addressed in the DFT model, with a resolution based upon the three assumptions of doing, feeling, and thinking, it is very rare to encounter this mode. It is more of a logical necessity of the model than it is a practical reality at this general level. A close analogy would be a person traveling to a completely unfamiliar culture, not knowing how to interact or interpret the simplest behaviors of a thoroughly unfamiliar environment.

The Judge (dft) mode is a subtle shift in focus from the Innocent mode in that the Judge mode oversees all three modes: Doing, Feeling, and Thinking. Unlike the Innocent who is yet unable to see the available possibilities, the Judge deliberately questions the reality of all the possibilities, and consequently helps to prevent investment of time and resources in unworthy enterprises. This mode may be in extreme terms an expression of caution by somebody who has found that all avenues of intervention have been attempted, to no avail, and is aware of the grave danger to culture by turning away and allowing things to proceed as they unfold. Decisions are made so that ideals will not be compromised. The trial and execution of Socrates is such an example. His dedication to the truth and his awareness of the consequences for the culture of ignoring the truth was so forefront in his character, and regrettably his ability to convince his accusers was such a failure, that he chose to drink the hemlock rather than confess to untruths about himself or to submit to a culturally flawed judgment. This example of Socrates demonstrates that his ideal of standing by his convictions, if compromised, would set an example for his culture that would lead to greater tragedy for his culture than his own death would.

The Judge mode is a state where all natural impulses are suspect and questioned as leading nowhere or useless. The survival of the individual is no longer the highest end for this mode. Rather it is the continuance of the ideals and the maintenance of certain normative relations. Resourcefulness in this mode is focused upon serving the culture by attitudinal commitment to certain values. The resilience of this mode lies in the conviction that all things may be questioned, and that while not all questions may be answered it is mandatory to establish importance and priority, helping to determine what deserves their resilience. No subject is excluded from inquiry for this mode.

1. The Helper (D) Versus the Trustee (ft) – Dft

The Helper (D) mode is physically active, instinctively desiring to keep moving or keep things moving. It wants to see things get done and is impatient with delays. The modus operandi of this mode is very practical and is able to use what is immediately available and knows where to best get a job done, a problem solved, a community moving, or an objective accomplished. This mode is focused upon the tangible possibilities for physical accomplishment. Expressions of this mode are bodily movements or the urge to move objects in the environment: making to-do lists, fixing things, coordinating activities, or directing action for results. If something needs to be done, it becomes top priority for this mode. To the Helper, the Feeling and Thinking modes are merely tools to facilitate the accomplishment of physically realizable outcomes.

This mode is not ideological in its approach but results-based at whatever level it functions. In a New York Times (2010, March 7) report on the aftermath of the 2010 Haitian earthquake the image of a makeshift door hinge fashioned from the torn sole of a sandal, nails and bottle caps used as washers for the nails, shows the resourcefulness of the earthquake victims who were managing their lives with very few resources. This is an excellent example of the Helper’s mode of resourcefulness. The resilience of this mode is the deep knowing that there is always a way to make something work.

The Trustee (ft) mode oversees feelings and thoughts, seeking a unified understanding about the mission for what is going to be done, usually by the Helper. The Trustee’s oversight defines an ideological position that unifies the overall effort. This is the role of a board member of an organization, to conscientiously direct future activities so that the organization’s objectives and goals become realistically attainable through the Trustee’s unified oversight concerning the organization’s attitudes and plans.

The Trustee mode’s oversight governs the actions of helping organizations. Actions taken by the Trustee mode are detached from the physical actions of those whom they govern, as long as the actions conform to the principles established by the Trustees. The Trustee mode is associated with long-range planning to avoid conflict or harm. Resilience of this mode is based upon the belief that as long as the members of an organization are unified in their mission and plan for accomplishing it, most practical issues will resolve themselves. Resourcefulness stems from organizational knowledge of its mission and the business rules.

2. The Protector (F) Versus the Gatekeeper (dt) – Dft

The Protector (F) mode is an emotionally active agent in life. Similarly to the way the Helper is influenced by thoughts and feelings, the Protector is influenced by physical circumstances and compelling ideas. The Protector’s primary purpose, however, is to protect individuals or causes, to which the Protector has made a commitment, from dangers of one form or another. The feeling of the Protector mode is being alert to who needs protection and when it must be offered. This mode responds protectively to felt danger or, in times of relative calm, is compelled to show regard for the sensations and feelings of oneself, other

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individuals, the expression of classes of people with special interests, and the direction implied by urgent matters within the culture. This mode could be expressed as the mother of an infant doing whatever is necessary to protect her child. It could also be an individual willing to compromise her needs for the welfare of a partner, a team, or for the leader of a respected organization.

The Protector mode is emotionally connected to the object of its protection. This mode will override the difficulties inherent in the physical circumstances of the protective act, as well as discount any differences of opinion between the protected and the Protector. This mode is often characterized as the unconditional love of parents for their children. “No matter what the child does or believes, I am still the child's parent and must be my child's Protector.” The Protector mode is resourceful in that it will use whatever resources are available to achieve the necessary protection. Not all protection is successful, but the Protector will not abandon its charge. The inherent resilience of this mode is based upon the conviction that building esteem, showing love, and fostering expression all work to bolster the weak or developing individual and further the betterment of society.

The Gatekeeper (dt) mode actively oversees what others are doing and thinking. The Gatekeeper mode must not let feeling interfere with the need to make sound judgments about the acquisition and use of resources, or admittance of only the qualified to membership. How often have department heads had their projects denied by the Chief Financial Officer because their plans did not articulate their financial feasibility? How often have students been denied access to higher education for lack of appropriate preparation and planning? Passion alone is insufficient for this mode, but must be supported by sound plans.

The Gatekeeper mode oversees what others do and think in ways that qualify participation in well defined activities. This function is a normal part of admissions procedure for membership in clubs, admission to universities, hiring for jobs, licensing of individuals seeking professional credentials, and other similar activities. The Gatekeeper is aware of minimum thresholds that must be met or exceeded before individuals are able to contribute to specific efforts. Knowing the way that things must work for the safety and benefit of all, the Gatekeeper mode will be resourceful in assisting others to meet the minimum threshold requirements, finding resilience from the belief that anyone with capacity who is motivated to learn, can be trained to meet the necessary standards.

3. The Guide (T) Versus the Police (df) – Dft

The Guide (T) knows the territory and is able to thoughtfully assist newcomers to negotiate – what is to them -- unfamiliar territory. This mode is focused upon opportunities for intellectual understanding, adjusting for how and why things are done and also for the attendant feelings of those being guided. The mode expresses itself by collecting, interpreting, and sharing information. If someone lacks information to proceed, this mode is able to provide timely information for the task, issue, or topic. The Guide mode, as the name implies, gravitates to consulting and advising positions or may be devoted to research.

The Guide mode is actively seeking patterns to help understand the world. To this mode, what is done, and associated feelings, only make sense if they can be explained as a part of the discovered patterns of understanding. The Guide wishes to share its knowledge with others to facilitate their accomplishments. The Guide mode is resourceful in finding
information and uses it continually to build its patterns of understanding. The resilience of this mode is based upon the belief that even if a pattern fails to explain any subject area adequately, there will always be another opportunity to reconfigure the pattern so that it better aligns with reality. In fact, the very failure to succeed at constructing an adequate pattern is a rich source of information for rebuilding from scratch, resourcefully drawing upon failure as well as success to advance understanding.

The Police (df) mode actively oversees the actions and feelings of others perceiving disruptive activity and reacting to avoid chaos and maintain order. The addition of attention to feeling makes the Police responsibilities much broader in scope than the Guard, discussed below. The Police mode imposes control, setting aside the thoughtful considerations of other modes. The Police mode oversees the enthusiasm of others, disregarding ideas that distract the Police mode from its position or intention so that the normal processes may continue without interruption. This is the proper attitude of a police officer who has stopped a driver for speeding. The reason for speeding is not his concern; speeding has occurred, and the possible out-of-control feelings of the driver who was speeding need to be checked. For example, is the driver under the influence of drugs or alcohol, or just temporarily distracted from safe driving?

The Police mode perceives the joyful movement of others as a potential for excess and disruption. The positive manifestation of this mode occurs in circumstances of emergency. An effective banking regulator, for example, would have perceived the glee of bankers heedlessly enriching themselves – both in the late 1920's Depression Era and prior to the recent bank failures of 2009 and 2010 – to be a peril to others and risky to the economic system. A regulator who would have stepped in to police such practices would have been viewed as a tyrant by bankers. However, the tyranny of such a regulator would be a minor disturbance compared with the collapse of banking institutions, which could be avoided by timely policing actions. The resilience of this Police mode is supported by the deep knowledge that excesses that remain uncontrolled can lead to disaster.

The following three initiating modes, Hero, Philanthropist, and Promoter tend not to act as quickly as the first three modes, Helper, Protector, and Guide. This is because the latter three modes, Hero, Philanthropist, and Promoter are balancing two conflicting issues at once. The extra processing time, that it takes to overcome conflicts between competing approaches, delays action. The complementary overseeing modes, identified by lower case letters, inversely become simpler in structure and become correspondingly quicker in action.

4. The Hero (FT) Versus the Guard (D) – Dft

The Hero (FT) mode emotionally commits to a greater cause, hoping to find ways for ideas to be favorably accepted and for the meaningful feelings associated with them to be understood. The Hero mode wants to unify life through resolving discrepancies between thinking and feeling, personally and in the culture at large. The Hero mode will be greatly influenced by a physical emergency or urgency of some kind, motivated to seek a unified resolution of the difficulty. The Hero is affected by what others do. While other modes may be able to compartmentalize life – for example, to continue to be effective at work while family issues are raging out of control – the Hero mode would be driven to resolve any disunifying emergency, family or otherwise, some of which may seem minor or unimportant
to others, because any disunity for this mode would necessarily interfere with all other areas of the person's life. The Hero mode is appreciated for her or his deeds, not because something was done, but because what was done affected the minds and hearts of the recipients of the actions.

The Hero mode has access to emotional and rational resources to establish unity within the community. While not particularly focused upon what may be physically happening in the moment, this mode is tuned into its emotional and ideological consequences. The resourcefulness of this mode is in balancing feeling and thinking so that what eventually is done is welcomed by all. The resilience of this mode is based upon its strong conviction that without a unified approach, no matter how long it takes to achieve, the results that are obtained will not endure.

The Guard (d) mode oversees things that are being done, typically in a confined region, in order to avert disruptions of normal activity or boundary violations. While the duties of the Guard seem similar to the responsibilities of the Police, the Guard's charge is a simpler task, that of interfering with actions that compromise legal boundaries in order to maintain the boundary. The Guard mode is not concerned with or in control of what others are feeling or thinking, and this mode's attention is upon monitoring movements to maintain the integrity of his charge. However, changes in thought or feeling will alert the Guard mode's attention to possible disruptive changes in movement.

The Guard mode's quietude heightens awareness of potentially impinging events while monitoring for potential damage or disruption to a targeted person or property. The purpose of this mode is to draw attention to activities that potentially threaten its charge, in order to avert damage or disruption. The Guard mode does not necessarily have access to all resources that are necessary to solve perceived problems that are highlighted in this way, but is resourceful in finding appropriate help. The resilience of the mode is bolstered by the knowledge that monitoring events serves to diminish disruption and danger.

5. The Philanthropist (DT) Versus the Critic (F) – Dft

The Philanthropist (DT) mode wants to do things that are reasonable. This mode deeply understands the principles of how things operate and wants to physically intervene where it is thought that suffering is occurring. The Philanthropist mode will seek to deepen understanding or improve physical conditions where resources would not otherwise be available without external assistance. A teacher may be thought of as a philanthropist in the sense of freely sharing understanding with the young, who would otherwise remain ignorant without the teacher's intervention and generosity. Of course, financial benefactors or patrons are more commonly understood to be philanthropists. This mode is not likely to respond to direct emotional appeals, but is more likely to work to alleviate the cause of emotional distress stemming from ignorance, poverty and other forms of oppression.

The Philanthropist has visionary ideas of how the world should be and is resourceful at placing materials and guidance into key positions that will advance the Philanthropist's vision. This mode is generally aware of the emotional impact of its activity. However, this mode is largely unconcerned with emotional issues as a matter of policy because their sensible programs should be so designed that the hoped for change will occur regardless of how anyone feels about it. The resilience of this mode draws its strength from the knowledge that
what is chosen to be done is based upon sound reasoning and effective actions and a deep understanding of how things should work, and draws upon this to find resources where others may not realize that resources exist.

The Critic (f) mode oversees the expression of many forms of emotionally charged material, responding to public art, political persuasion, or other events and performances that make an emotional impression. A function of this personality mode is to feed back to the performers a measure of their effectiveness and, more importantly, to focus the audience to interpret and appreciate what they have experienced. Such criticism is a way of facilitating that the meanings presented to the culture reach a greater depth of understanding within the culture.

The resilience of this mode is based upon a deep desire to maintain clarity of emotional meaning, and the satisfaction of maintaining control of emotion, personally and culturally, that comes from the clarity of meaning. The critic's resilience springs from a profound understanding of the power of emotion to motivate, and views criticism as a venue for educating the public, maturing public discourse, and helping to perfect the performances of artists who are engaged in eliciting emotion from the public.

6. The Promoter (DF) Versus (T) the Examiner – Dft

The Promoter (DF) mode actively blends doing and feeling, seizing upon timely opportunities that promise to increase joy and well-being while improving the physical state of things in some way. This person wants to initiate things that are exciting and also wants others to take part in the wonderful experiences that are inherently attractive to this mode. The Promoter mode expresses itself enthusiastically, but may become discouraged if others do not respond in kind. The Promoter finds it difficult to associate with people who talk abstractly about doing things but don't have the motivational energy to get them done. Abstract ideas without immediate benefit are of little interest to the Promoter mode. The Promoter mode is often found to be active in roles such as performance artists, community organizers, advertisers, sales representatives, and entrepreneurs.

The promoter mode's resourcefulness is based upon an ability to recognize what will engage people joyfully. The resilience of the Promoter is from a great appreciation that people prefer to do things that are meaningful to them. Advertising, for example, in its best form, is an effort to share the good news about a helpful product.

The Examiner (t) mode oversees that ideas are developed and applied consistently. The Examiner mode is not concerned about what or where ideas are used or responded to as long as the idea is judged to be safe for the culture and its individuals. Examiners will work to defeat an idea if it is deemed ineffective or dangerous. Auditors, inspectors, and quality control agents are examples of activities that demonstrate this role.

The Examiner's resilience springs from a thorough understanding of processes, relationships, possibilities, and precedent. Applying this mode to the work of others maximizes efficiency, productivity, and satisfaction with results that come from consistent...
efforts. The resources that an Examiner brings to work are highly correlated with the Examiner's ability to place appropriate resources in relation to each other and to sort priorities. The resilience of the Examiner mode is from fully understanding that proper application of standards is a most effective means to prevent waste and fraud.

7. The Cultural Ideal (DFT) Versus the Spectator (Null) – DFT

The Cultural Ideal (DFT) mode balances doing, feeling, and thinking issues so that it is able to respond to situations as needed, rather than from a personal predisposition to focus upon doing, feeling, or thinking alone. The Cultural Ideal mode is the most versatile of all the modes in that appropriate attention may be given to any other mode in this set of modes as circumstances demand. Just as the last three mode pairs – Hero, Philanthropist, and Promoter – act more slowly\(^\text{17}\) than the first three – Helper, Protector, and Guide – the Cultural Ideal mode is the slowest acting of all eight initiating modes because of its need to balance all three factors at once. This slowness to act is compensated by the thoroughness of its actions. This mode is always ready to address the current issue, not being diverted by personal proclivities. It is important for the Cultural Ideal mode to find a simple solution to any issue by incorporating all three modes of expression. This approach is very complicated, because all modes are allowed to be simultaneously active. A compensating inclination for this mode is to express its intention by using simple expressions, aphorisms, or one-line statements about life, like James Geary's “All thinking is wishful thinking”,\(^\text{18}\) alluding to the future orientation of thinking. To a person with a more narrowly focused approach, the one-line summaries often appear to be trite, but to the Cultural Ideal mode these simple statements are packed with significant meaning because they condense very complex relationships into extremely simple expressions, snapshots of complexity, that point to the complexity without fully revealing it. Rather the focus of this mode's expression is to illustrate the positive outcome of all factors working together for a harmonious outcome. Examples of this mode may be found anywhere, as specialization is not a strength of this mode.

The resourcefulness of the Cultural Ideal is founded on the ability to accept things as they are and work with them as the situation requires. The resilience of this mode is the ever-present sense that all activity, motivation, and understanding are collectively moving in the same direction and that the choice of one approach over another is entirely dependent upon the contingencies of the current situation. What may appear as chaotic to others is seen as natural progression to the Cultural Ideal.

The Spectator (null) mode does not attend to obstacles or prepare to face difficulties. Whereas the Cultural Ideal is broadly managing rapidly changing contingencies, the Spectator mode is disengaged from the action but present as a witness. The Spectator mode creates a person who is prone to being tossed about by ever-changing conditions. Without a

\(^{17}\) The speed of action is inversely proportional to the number of modes that an individual is managing simultaneously. The fundamental modes, which are the stand-alone axioms of a modal system, (in this case, Dd, Ff and Tt) are the fastest acting because there is no effort to coordinate the action one with the others. The modes that are combinations of two of the fundamental modes must delay action to accommodate the requirements of each mode. The Cultural Ideal mode finds it nearly impossible to act until all three modes are aligned. This is analogous to solving equations with three variables in high school algebra. Solving for one variable at a time is the quickest method.

\(^{18}\) James Geary wrote many aphorisms, See: http://www.jamesgeary.com/myaphorisms.php (Geary, 2010).
commitment to participate, this person has no authority to help, protect, or guide the action. All audiences and witnesses are in the role of spectators. Audiences provide support for public performances, and witnesses may provide unbiased testimony to reconstruct past events. The presence of a spectating witness also serves to make potentially dangerous situations less dangerous.

The Spectator mode is not directly engaged in the observed activity, but does vicariously experience the events through the actions of the actual participants. The human capacity for such vicarious learning helps to spread new information rapidly throughout the culture, and explains why demonstrations, advertising, film, plays, sporting events, and TV are so prevalent in society. Witnessing events that are unfamiliar or otherwise unavailable in one's own life greatly expands the breadth of human experience. The resourcefulness of the spectator lies in the vastness of opportunities for seeing new things. Its resilience is in the (mostly unexpressed) expectation that there are undiscovered experiences that may be absorbed vicariously.

Every person, when faced with difficulties, will find ways that are unique to that person to find resources to support their interests and will correspondingly vary in their style and capacity for resilience. In review, one can say that the initiating modes presented above are the natural, healthy modes in normal, healthy times free of danger. The overseeing modes are natural healthy modes in times of personal or widespread danger. Unwary initiation in times of danger can be harmful, while unnecessary caution in safe environments delays progress.

**SOCIETY AND EDUCATION**

Regard man as a mine rich in gems of inestimable value. Education can, alone, cause it to reveal its treasures, and enable mankind to benefit therefrom.


It is unlikely that there will ever be a satisfactory institutional system that will make it unnecessary for an individual to struggle with his or her own growth. However, the acceptance of that struggle as an essential part of the learning process could desensitize the stigma associated with difficulties, freeing individuals to address the struggles that make a difference and that actually benefit growth. Failing students are ultimately not naturally apathetic about learning; they have only given up hope that they will have any opportunity to learn about material of direct personal relevance.

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19. Vicarious or observational learning, which was pioneered by Albert Bandura, posits that learning occurs through observing others performing a physical activity prior to attempting the same activity for oneself. It has been observed that athletes are able to improve their performance by observing others model a particular technique prior to their own performance of it. (Wesch et al., 2007) and (Carroll and Bandura, 1982).

20. It was discovered in community organizing that conflict was an essential element in arriving at peaceful community building: "In the cities and the rural areas of the country that I've worked ... people have been able to resist through conflict. Without conflict they have not been able to resist. Negotiations do not work unless there is conflict attached to it [to generate] this resistance. So much for peace." – Arif Hasan (Fetzer Institute, 2010, p. 53).

21. “Unfortunately our current school structures serve to dampen rather than foster curiosity. Our curriculums are pre-defined and rigid, allowing little room for experimentation. It's no wonder that children's natural enthusiasm wanes as they progress from kindergarten to twelfth grade” (Kline, 1988).
Personality has a significant impact on the advancement of society. No two personalities are alike, each person being endowed with creative abilities that are unique. Earlier in the chapter, a range of personality modes were described, showing the consequences of these diverse modes for differences of expression of resourcefulness and resilience among them. The modes discussed in this chapter all operate at the scale of doing, feeling, and thinking interactions, with oneself, others, and the environment at large. There are other, more sophisticated levels and also simpler ways to interpret personality as psychological research well documented these. A hope of this presentation is to show that at any given scale, a comprehensive range of modal differences may be organized in proportional relation to each other. Table 2 is an example of such a proportional arrangement of modes, based upon the limited set of three fundamental concepts. As the number of fundamental concepts increases, in other similar applications of this method, the corresponding number of combinations expands geometrically to include all possible combinations, but always in a proportional relationship to each other. This is the major benefit of the axiomatic approach implied in Platonism. Once the categories are carefully balanced, experimental opportunities for more precise understanding abound. Proportional models become pathways for bridging among diverse functions. Without comprehensive models, detailed knowledge leads to isolated enclaves of information. There are an infinite number of potential human modes, and much more modeling work to be done in this area. That such a wide variety of personality modes exists is an unimaginable boon to culture.

It is, however, an under-utilized boon. Traditional education has dedicated itself to mastery of the physical world and the teaching of everything about it, which is an exclusively Aristotelian bias. This is a natural consequence of the success of Aristotle’s influence on Western culture’s science to not accept any idea that may not be tested empirically. Because modal concepts are archetypal in nature, they are not able to be measured empirically. No categorical system may be experimentally measured in the same way that physical facts may be measured. The categories are either useful for organizing information or not. Experimental methods point to useful categories, the axiomatic approach of the APMA method, used to develop the DFT model, is extremely helpful in placing categories in appropriate relationship to each other. Conversely, while axiomatic methods outline categories of investigation, the experimental method is the best way to validate the usefulness of the category.

The model of public education was established in an era when an urban myth could claim, without disbelief from the public, that in 1899 the director of the Patent Office, Charles H. Duell, could say, without embarrassment, that “There is nothing left to invent.” Whether Director Duell said it or not, the opposite was obviously the case. The volume of technical patents has skyrocketed since then, and the number of publications being produced is nearly out of control. However, school systems still operate under the assumption - although most all teachers know this is false - that students can acquire all the knowledge that they need from classroom study of standardized content material. This assumption ignores

22 While it is linguistically awkward to refer to the divergent mindsets as Platonic and Aristotelian thinking, more common usage, as represented by terms like “inductive” and “deductive,” implies a cultural bias toward an Aristotelian approach to the exclusion of archetypal methods encouraged by Platonism.
23 The Skeptical Inquirer claims the alleged quotation of Charles H. Duell to be an unsubstantiated urban myth. See: http://www.myoutbox.net/posass.htm (Sass, 1989).
24 The author has personal experience that registering copyrighted material in the U.S. currently takes over two years to complete the paperwork because the Copyright Office is so far behind in its processing of applications.
that the student arrives at school with qualities that need expression. The citation at the beginning of this section postulates to “Regard man as a mine rich in gems of inestimable value.” Personalities, like gems, have the quality that they already exist in rough form only to be discovered and polished. These gems are proportionally apprehended through a Platonic mindset. Archetypal patterns, while seemingly influential on the creation of physical forms, cannot be tangibly apprehended and, as such, cannot be adequately processed through Aristotelian logical techniques. Platonic logic defines the a-priori scale and structure of a discipline; Aristotelian logic identifies and measures the tangible presence of categorical qualities and searches for tangible causes. Mendeleev’s concept for a periodic table of elements was, and is, an archetypal classification of qualities to which the facts of chemistry conform. Chemistry, a classical example of experimental science searching for tangible causes, has been guided in its development by the a-priori existence of the Periodic Table, keeping all the elements in proportional relationship with each other. Platonic logic is axiomatic; Aristotelian logic is experimental. Both forms of logic are true and valid, and their interaction with each other, as active and reactive, or as complementary experiential and observational principles, has helped to clarify and distinguish the personality archetypes presented here from environmental and cultural influences. Examining any discipline from both the Platonic and Aristotelian perspective ensures that the proportionality of Platonism and the fine detail of Aristotelianism complement each other.

Education needs to harness this distinction between proportionality and attention to detail. Attention needs to be expanded from primarily what to learn to all of the questions: what, where, who, when, why and how to learn, with individualized courses of study proportioned to align with each unique personality. Knowing one’s self gives one great resilience and access to unimaginable resources.

CONCLUSION

… thou shalt see with thine own eyes and not through the eyes of others, and shalt know of thine own knowledge and not through the knowledge of thy neighbor. (Baha'u'llah, 1932, 1954, 1970)

There is a need to shift from being consumers of information to being connoisseurs of information. Self-knowledge of personality makes each one a unique connoisseur of a custom range of information. This chapter has demonstrated a simple model for articulating

26 The author (Lucatelli) has performed an experiment that is easily repeated by the reader. This experiment demonstrates a tangible analogy to the difference between Platonic and Aristotelian logic. The experiment is to select any object to draw and draw it free handed. Next, redraw the object on a fresh piece of paper with the opposite hand, to the same level of completion. Examine the results. The prediction is that the object drawn with the left hand will have truer proportions and the object drawn with the right hand will have finer detail. It is not important to know the handedness of the person who draws the objects. By analogy, Platonic logic produces truer proportions of the whole, while Aristotelian logic produces finer distinctions and detail. It is the author's opinion that there is no more conflict between Platonic and Aristotelian logic than there is between a person's left and right hand.
28 “Children come to this world with a great deal of curiosity and inner motivation. Above all else, schools should be structured to foster that curiosity, to allow children to discover knowledge for themselves.” (Kline, 1988)
personality differences for the purpose of showing that recognition of personal differences would go far toward helping students to become more self-aware and better able to manage their own lifelong learning.

This brief overview is not to be interpreted as an argument that people are experiencing incompatible realities, and so are unable to reconcile their differences. Rather it is acceptance that reality is so deep that it takes all of humanity to only experience a portion of it.

If only one were able to understand herself as a one-of-a-kind instrument of discovery, one could become a guide for others who are facing and struggling with their uniquely private difficulties, also become protectors of the dominion of each individual, and helpers along the way of self-discovery. Resiliency is not learned, it is discovered as a by-product of self-knowledge. Personality is the one possession that is uniquely the property of each individual, and a possession that no other person can possibly know as well. When a person trusts the truth of this simple fact, there is no opposition that can withstand it. The day when cultures openly encourage self-knowledge and self-development will be a day of far-reaching, beneficial, and enlightening results for all societies.29

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29 In a similar vein, Margaret Mead has said “If we are to achieve a richer culture, rich in contrasting values, we must recognize the whole gamut of human potentialities, and so weave a less arbitrary social fabric, one in which each diverse human gift will find a fitting place.” (Mead, 1935)
Personality Modes Drive Growth in Living and Learning


Chapter 26

ENGENDERING RESILIENCE IN FAMILIES FACING CHRONIC ADVERSITY THROUGH FAMILY STRENGTHENING PROGRAMS

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ABSTRACT

Education and training in the wider community include the provision of those intervention programs specifically designed to help families in adversity. This chapter discusses the different types of family prevention interventions that have been proven in research studies to improve outcomes and resilience for children living with chronic adversity and trauma. Repeated abuse and trauma associated with losses, poverty and family environmental stressors increase the likelihood of poor developmental and health outcomes for children. The most effective prevention interventions appear to be family interventions such as family skills training and in-home family support approaches. This chapter discusses the critical core components of evidence based family intervention; however, these components or principles do not guarantee a successful program, until it is evaluated in a rigorous clinical trial and independently replicated with different populations and cultures by different research teams.

Keywords: Resilience, Prevention, Family Adversity, Family Intervention Programs

INTRODUCTION

Ever wonder why identical twins with the same genetic DNA can be so different? Research in epigenetics or the science of environmental influences on genetic expression suggests that nurturing parenting is one of the key factors that protect children from inherited family diseases or mental health problems (Champagne and Meaney, 2007). Children who lack a protective family life that results in constant overwhelming stressors and Adverse...
Childhood Experiences (ACEs) are much more vulnerable to later substance abuse, mental and physical diseases and mortality (Anda et al., 2008). Worldwide parents are spending less time with their children. For instance, in the United States parental time spent with children decreased by a third in just three years from 6.2 hours/week in 2005 to 4.2 hours in 2008 (Annenberg, 2009). What is the solution to this increasing parenting problem? Collaborative effectiveness reviews (Cochrane Collaboration Reviews, WHO, Foxcroft et al., 2003, 2006; CSAP, 2008) have concluded that even highly dysfunctional parents can be taught to be better parents. Also, these reviews conclude family based interventions are the most effective in reducing later developmental problems and lack of resilience to stressors in children. This chapter covers the epigenetic research and reasons why it is necessary that evidence-based parenting and family interventions are disseminated internationally in order to create a dramatic public health impact on improving health and mental health outcomes for our next generations.

**Rationale for the Dissemination of Effective Family Strengthening Programs: Translation of Epigenetic Research to Family Practice**

Research suggests that resilience to adversity and stress is a product of a complex interaction of genetic, biological and environmental precursors (Kumpfer, 1987; 1999). But how do environments impact the genome in the gene by environment interaction? According to epigeneticists (Jirtle, 2010), the mechanism is through epigenetics or the epigenome. Research in epigenetics demonstrates the impact of the environment on gene expression to improve our understanding of complex gene x environment interactions (Caspi et al., 2002). For instance, researchers at McGill University (Meany et al., 2007) suggests that maternal stress and fetal under-nutrition *in utero* leading to low birth weight can result in poor birth outcomes that predict poorer health over the lifespan. They hypothesize that the effect of maternal adversity on fetal growth is mediated by the adrenal glucocorticoids hypothalamic-pituitary-adrenal (HPA) stress response. Later environmental adversity alters maternal physiology and behavior, which then programs the stress (cortisol HPA) response in the offspring. Offspring of high licking/grooming (LG) mothers transmit these protective behaviors to their offspring, but later isolation from an LG mother can disrupt this LG transgenerational transmission resulting in reduced exploratory behaviors, cognitive development, and oxytocin binding in later generations (Champagne and Meaney, 2007). Children of substance abusers most at risk for later addiction are those youth that manifest the phenotype of the “Over-stressed Youth Syndrome”. They overact cognitively (decreased prefrontal executive control) and emotionally (increased emotional lability and ANS hyperreactivity) (Kumpfer, 1987; Tarter et al., 2004).

The powerful effects of genetics are well illustrated in a number of studies of identical twins such as the Swedish, Danish, and Iowa/Minnesota twin studies (Pickins and Svikis, 1991) Concordance rates for manifesting inherited diseases of identical twins raised apart is often about 40% to 80% for alcoholism. Longitudinal studies of twins including the Dunedin Longitudinal Study and other studies (Hansson et al., 2008; Werner and Smith, 1982) suggest that resilience characteristics in individuals can buffer stressors under conditions of low

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stress, but not under conditions of high stress. Jaffee, Caspi and associates (2005) report that, in a study of 1,116 identical twins from the Environmental Risk Longitudinal Study, maltreated children could still manifest resilience (as defined as normative levels of antisocial behavior) if they had nurturing parents with high intelligence and few symptoms of antisocial personality disorders. However, if the parents were also alcohol and drug abusers and the children lived in relatively high crime neighborhoods with low social cohesion and support, it was much harder for these maltreated children to also become resilient. There were just too many long term stressors for individual personal characteristics to protect them.

A major justification for taking evidence-based family programs to scale is that nurturing parenting and family support appears to be a major protective mechanism in the phenotypic expression of genetic family history risks for substance abuse and other costly health conditions. Mouse studies (Anderson, 2010; Jirtle, 2010) suggest that increased exposure to nurturing parenting can protect against the phenotypic expression of genetically inherited metabolic and cardiovascular diseases. Jirtle and associates (2010) have found that greater exposure to a nurturing parent can protect mice with genes for obesity, so that the phenotype of obesity is not manifest compared to litter mates with identical genes and less exposure (the "pup in the cup"). Also studies find that the greater the exposure to a "licking" or nurturing mother in infancy and childhood in mice results in reduced stress reactions and improved health of the offspring throughout life. Like Suomi’s (2006) peer-raised monkeys, children who do not feel protected by caring adults tend to cluster into strong peer groups. They exhibit increased levels of stress, anxiety, and reduced secure attachment and exploratory behaviors needed to develop self-control and executive functioning.

Hence, this epigenetic research explains the mechanisms underlying how Adverse Childhood Experiences (ACEs) appear to have a profound impact on later substance abuse, mental and physical diseases and mortality (Anda et al., 2008). Earlier research found direct effects of childhood neglect in reducing the size of the corpus callosum in children (Teicher, Dumont, Ito, Vaituzis, Giedd, and Anderson, 2004).

While research on family interventions is a major accomplishment in the field of prevention science, key challenges remain in maximizing their potential public health impact. Hence, we believe it is critical now to determine how to disseminate, on a wide-scale, effective family interventions to reduce social and health care cost related to lack of nurturing. Increasing family protective factors can reverse this negative impact.

Issues Relating to Family Functioning

Family systems theory (Walsh, 1996) views the family as an open system that evolves over the multigenerational life cycle (Carter and McGoldrick, 1998; Falicov, 1995). From the perspective of diathesis stress model, problems result from an interaction of individual and family vulnerability to stressful life experiences/sociocultural contexts (June, Jay and Keith, 1998). Unsuccessful attempts to cope with an overwhelming situation, especially without support from friends and family members, can cause family distress. The long-term influence from general pile-up of internal and external stressors can overwhelm the family’s coping skills, and raise the risk for subsequent problems (Boss, 2001; McCubbin and Patterson, 1983). In addition, distress increases exponentially when current stressors reanimate painful issues from the past (Carter and McGoldrick, 1998). Unresolved conflicts and losses may
surface when similar challenges are confronted. Clinical experience indicates that many families function would present some problems at a point in their life cycle that had been traumatic a generation earlier (Froma, 2002). Furthermore, life crises and long lasting stressors can weaken the functioning of a family system, which may impact other family members and their relationships. In turn, effective family processes in coping with difficulties and challenges are critical for adaptation and resolving the crisis (Thompson and Fromer, 1998).

Prevention science seeks new etiological knowledge and prevention interventions to help parents, teachers, and other caring adults in their efforts to promote resilience and positive outcomes in children. Hence, evidence-based prevention interventions have been designed for, and implemented successfully in, schools by teachers, counselors, and prevention specialists, as well as in faith communities using trained volunteers paired with parenting specialists. Many evidence-based interventions have supported positive child development by increasing resilience to negative life stressors (Biglan and Taylor, 2000; Kumpfer and Alvarado, 2003). It is helpful to consider family strengthening approaches that work to succeed in improving resilience in children facing adversity.

Etiological Theory and Mechanisms of Effectiveness. Evidence-based family interventions improve the most salient risk and protective factors for negative adolescent outcomes. According to the tested Social Ecology Model (Kumpfer, Alvarado, and Whiteside, 2003) three family protective variables. Parent/child attachment, parenting skills and supervision, and communication of positive family values were the most critical in protecting youth from developmental problems. Other etiological factors were important such as the community environment, youth behavioral control, and school performance, but not as great as family factors particularly for girls (Kumpfer, Smith and Summerhays, 2008). Similar tested theoretical models with longitudinal predictive data examined four possible outcomes (drug abuse, school failure, teen pregnancy, and delinquency) and found these three family protective factors (family bonding, monitoring, and family norms) to be the most important in preventing behavioral and mental health adjustment problems (Ary, Duncan, Duncan, and Hops, 1999).

Solutions: Effective Family Strengthening Programs to Increase Resilience

Greenberg (2007) categorized effective prevention approaches to promote resilience according to Bronfenbrenner’s social ecology theory as targeting: 1) macro-system level environment changes through community coalitions, media campaigns, and policy changes impacting national, community or school-level ecologies, norms, and behaviors; 2) micro-system level environmental changes in families and children through skills training in communication and other interpersonal skills; 3) Parent training can also impact at an exo-system level with parental social support and parental monitoring of peers at a meso-system level. At this level, the quality of interrelationships among settings is influenced by forces in which the child does not participate, but which have a direct bearing on parents and other adults who interact with the child. These may include the parental workplace, school boards, social service agencies, and planning commissions.

For the reason that the children’s risk of developmental psychopathology is closely relevant to the number of risk factors compared to the number of protective or resilience
factors related to parenting styles, research on effective parenting techniques preventing children’s negative mental and behavior outcomes is blooming in the last 20 years.

**RESEARCH TO PRACTICE**

Resilience research offers key understandings that must be put into practice to promote resiliency in youth. Parents and caring others buffer or provide both proximal and distal stimuli -thus having a critically significant impact. The primary strategies for fostering individual resilience suggested by research are to: 1) reduce environmental risk and vulnerability, 2) reduce stressors and pileup, 3) increase available resources, and 4) mobilize protective processes (Masten, 1994). Effective parents or socialization agents instinctively do many of these behaviors to increase resilience in children. Overprotection is harmful to resilience except in high-risk environments or with socially or emotionally fragile children; hence parents occasionally must increase environmental risks and stressors to provide manageable challenges for children. Learning from one's failures as well as successes is the hallmark of resilient people in strengthening their self-efficacy and concept of personal power (Richardson et al, 1990; Richardson, 2002). As is discussed by Kumpfer and associates (2011) in a companion text (Celinski and Gow, 2011), the Transactional Framework of Resilience model (Kumpfer, 1997) presents a complete model for understanding the complex dynamics within family systems. The model discusses ways that caring adults can help children struggling with adversity to have happy and healthy lives.

**Building Resilience – What Caring Adults Can Do to Build Resilience in Children**

For children facing adversity, development of their resilient should be addressed as indicated by the knowledge of protective family processes. Teaching the ‘adversity youth’ skills for how to deal with challenges and life traumas has been explored by Richardson and his associates (Richardson, Neiger, Jensen, and Kumpfer, 1990) as a process of developing resiliency in youth. In the resiliency research literature, family protective contents include:

1. **Providing At Least One Caring Adult.** Positive interpersonal relationships with at least one caring parent or adult is a major protective factor for negative child outcomes as found in the longitudinal study in Kauai (Werner, 1986; 1993; 2005). Children of substance abusing parents were more resilience to their family stressors and trauma, if there was at least one protective parent, grandparent, relative, teacher or coach who supported their positive development. While short term mentors and advisors are helpful, the most resilience children have a long-term champion.

2. **Facilitating Parental Warmth and Emotional Support.** Authoritative parenting combines warmth and responsiveness with high standards of behavior and is regarded and tested by numerous studies to be the most successful form of parenting style (Baumrinid, 1991; Steinberg, Mounts, Lamborn, and Dornbusch, 1991; Gray
and Steinberg, 1999; Liem, Cavell, and Lustig, 2010). This parenting style is characterized by moderate demandingness with moderate responsiveness - which is firm but not rigid, willing to make an exception when the situation warrants, responsive to the child's needs but not indulgent. Parent/child interactive therapy (Egeland and Erikson, 1990) or the SFP Child’s Game (Kumpfer, Alvarado, Tait and Turner, 2002) can be used to increase bonding in children suffering from reactive attachment disorder, or the SFP Child’s Game can be used to increase bonding in children suffering from reactive attachment disorder.

3. **Facilitating Pro-social Attachment and Identification.** Secure attachment with at least one caring adult early in life is very important in promoting resilience in negative life situations for children of alcoholics (Werner, 2005). Abused children or children of emotionally, non-responsive mothers are more insecurely attached to caregivers. If children are removed from parents early and frequently moved from foster parent to foster parent, they can develop “reactive attachment disorder” or a lack of bonding or attachment, which can lead later to a lack of empathy for others and violence. Some youth have been found to exercise self-agency (Bandura, 1989) by escaping rejecting, violent, or chaotic homes and finding a more positive “family” (Wolin and Wolin, 1993) or institutional setting. Therapeutic child play or teaching parents to have positive play time with their children (called Child’s Game in the SFP) have been found to be the most effective way for parents separated from children because of war, military service, prison, or employment to reestablish bonding with the child and improve the child’s emotional and behavioral competence (Egeland and Erikson, 1990).

4. **Facilitating Positive Male Involvement.** Fathers or adult men serve an important protective function for boys and girls in helping them to become more competent and resilient (Lamb, 1997). Many children today are being raised without fathers and they make up a high percentage of children who end up as prisoners or drug abusers. Additionally, according to the National Center for Health Statistics, a child living with his/her divorced mother, compared to a child living with both parents, is 375% more likely to suffer from anxiety or depression, to be diagnosed as hyperactive and to be in need of professional treatment for emotional or behavioral problems. In addition, these fatherless children are almost twice as likely to repeat a grade in school and are more likely to suffer from a number of psychosomatic disorders (e.g., chronic asthma, frequent headaches, bed-wetting, stammering or speech defects) (Miller and Zubaty, 1995).

5. **Balancing Psychological Closeness and Behavioral Expectations in an Authoritative Parenting Style.** According to Barber’s work, youth who engage in substance abuse are more likely influenced by psychological controls, behavioral controls or permissiveness from their parents. For mothers, psychological over-involvement and control over their adversity child can somehow exacerbate youth’s probability to commit substance abuse. And for fathers, permissiveness or behavioral controls are risk factors for youth’s negative behavior or substance abuse. The design for intervention and prevention program to utilize parenting strategies and parent-child

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relationships should focus on the intrusion into the psychological autonomy of children, adolescents, and other age groups in the variety of contexts that make up human social life (Barber, 1992, 2002).

6. **Increasing Parent/Child Time Together.** Bonds of affection develop through positive parent/child time together. Family meetings and fun family activities during leisure time are important in maintaining positive parent/child relationships.

7. **Teaching and Coaching the Youth to Learn Life Skills and Competencies.** Helping children build inner strength to cope with the ‘ups and downs’ of growing up is one of the best things parents can do (Grotberg, 1995). Teens commit substance abuse for many reasons, including curiosity, because it feels good, or to reduce stress, to feel grown up, or to fit in. They often fail to see the link between their action today and the consequence in the future, and it is difficult to know which teens will experiment and stop and which will develop serious problems. Therefore, helping children to develop the confidence and skills to face, overcome, or even be strengthened by hardship, is a powerful contribution by parents.

8. **Providing Empathy and Emotionally Responsive Caregiving.** Research indicates that individuals have different patterns of social behavior based upon their history of attachment experiences. Emotionally responsive caregiving is considered to be a protective factor against negative environments, particularly in boys, and abused or poor children (Egeland and Erikson, 1990). Youth’s poor mental health is influenced by early emotional abuse engendering insecure attachment, which impairs emotional regulation, and fosters negative views of self and others that support maladaptive coping responses, and also interferes with social functioning and the capacity for intimate adult attachments (Riggs, 2010). The epigenetic research studies with mice suggest that lack of nurturing caregiving can reduce exploratory behaviors, cognitive development, and oxytosin binding in later generations (Champagne and Meaney, 2007), which would reduce the capacity for intimate relationships. Meadow voles also lack oxytosin binding capacity and lead solitary lives compared to prairie voles that mate for life and have oxytosin binding sites. Hence, it is possible that the lack of nurturing caregiving not only reduces imitation learning and role modeling, but also the physiological capacity to enjoy intimate relations. Social cognition and self-esteem were indicated to be mediators through the examination of the association between youth’s evaluation of their parent-child attachment quality and emergence of aggression in youth (Simons, Paternite, and Shore, 2001).

9. **Reducing Stress and Increasing Family Order and Organization.** Family routines and rituals were found to be related to parenting competence, child adjustment, and marital satisfaction (Fiese, Tomcho, Douglas et al., 2002). Vulnerable children are those who usually overreact to stressors, and to whom parents’ effort on increasing family organizations, rituals, and daily routines are very important (Bennett, Wolin, Reiss, and Teitelbaum, 1987; Wolin, Bennett, and Noonan, 1979).
10. Developing and Communicating Appropriately High Parental or Family Expectations for Child's Performance. The socioeconomic factors were related indirectly to children's academic achievement through parents' beliefs and behaviors communicated to their children (Davis-Kean, 2005). Because positive parental communication is found to be a major protective factor against children’s negative behavior (Benard, 1997; CSAP, 2000), developing appropriate parental expectations for youth’s performance can buffer effects from other negative factors. Parental monitoring, open parent-child communication, supervision, and high quality of the parent-child relationship are suggested to deter involvement in high-risk behavior (Devore and Ginsburg, 2005). For alcohol abuse, parental expectations of adolescent alcohol use significantly moderated all structural relationships, and greater parental disapproval was associated with less involvement with friends and peers who use alcohol, less peer influence to use alcohol, greater self-efficacy for avoiding alcohol use, and lower subsequent alcohol use and related problems (Nash, Mcquwwmn and Bray, 2005).

**FAMILY FOCUSED RESILIENCE AND STRENGTHENING INTERVENTIONS**

National expert reviews of family interventions show that they can be effective in strengthening family systems and reducing family violence. Unfortunately, there is not yet an agreement among researchers about the definitions and components of the different types of family-focused approaches.

A number of different prevention approaches have been developed and found effective because the causes of children’s outcomes are multi-determined (Biglan and Taylor, 2000; Kumpfer and Alvarado, 2003). Combining prevention interventions to address more risk and protective factors has been found to result in even better developmental outcomes. Thus combining a parenting and family intervention such as the first author’s Strengthening Families Program (SFP) with child-only skills training program, such as that of Spivack and Shure’s *I Can Problem Solve*, resulted in larger effect sizes roughly equivalent to adding together the individual program effect sizes (Kumpfer et al., 2002).

Etiological theories of negative children’s outcomes, such as the first author’s empirically tested Social Ecology Model (Kumpfer et al., 2003) highlight the primary importance of parent/child attachment in reducing developmental psychopathology as well as parental supervision and effective communication of positive family values and expectations for the child’s behaviors. Intervention theories, such as the Transactional Framework for Resilience (Kumpfer, 1999), suggest that prevention programs should target reducing stressors in the family environment, as well as facilitating children’s resilience to stressors.

**Types of Effective Family Strengthening Programs**

The Center for Substance Abuse Prevention Enhancement Protocols Systems (CSAP/PEPS, 2000) reviewed family strengthening approaches and defined eight of these...
interventions. Only four approaches had sufficient research evidence to be considered an
evidence-based approach in improving parenting skills and family relations: (1) behavioral
parent training (primarily cognitive/behavioral parent training); (2) family skills training
(parent training, children’s skills training, and family practice); (3) family therapy (structural,
functional, or behavioral); and 4) in-home family support.

Since the CSAP review in 2000, two promising low cost approaches have emerged.
Bauman and associates (2001) obtained positive results when involving parents in mailed-out
parenting homework assignments with 12-14 year old Caucasian children; and Gordon (2000)
and Schinke and associates (2004) utilized technology in offering family workbooks and
learning videos (Haggerty et al., 2007). Recently, these researchers found that a computer
version of the parenting program was more effective than the group-based version for African
American families on improving children’s positive behaviors.

Critical elements of effective family strengthening interventions are coping mechanisms
and behavior change skills (Liddle, 2004). Cognitive-behavioral psychology, social learning
and/or family systems theory are the underlying psychological theories of most evidence-
based family programs (Liddle, Santisteban, Levant, and Bray, 2002). A key concept
incorporated into many of the family-based EBPs is to reduce coercive parent-child
interactions that give rise to child abuse and family violence, a process well documented by
Gerald Patterson at the Oregon Social Learning Center (Patterson, and et al., 1986). This
cognitive behavioral family approach uses reframing and cognitive restructuring methods to
foster behavior change.

The Harvard Family Research Project (2006) indicates that families can make a
difference in the academic and social lives of children and youth through caregivers’
involvement in the children’s positive developmental process. Sustained parenting efforts are
essential to provide the necessary opportunities, relationships, networks and supports to raise
children successfully.

Usually evidence-based family prevention interventions involve the whole family and are
more effective than parent-centered or youth-centered programs. Family-based EBPs are
different from traditional didactic educational lessons, in that they involve participants in an
interactive change process. They stress the importance of the engagement process and
reducing barriers to attendance through relationship building activities, such as personal
invitations, family meals, childcare, transportation, and other incentives. Most of these EBPs
begin with sessions designed to improve positive feelings through positive reframing or skills
exercises that stress family strength. In addition, the potential for personal and relational
transformation and growth that can be forged out of adversity is emphasized by family-based
EBPs, in which families can gain strength and more resourceful power by sharing their efforts
(Froma, 2002).

**Most Effective Family Programs (EBPS)**

A recent research review (for the United Nations Office of Drugs and Crime, Kumpfer,
2008) of the most effective family interventions worldwide revealed additional promising
EBPs: the Triple-P (Positive Parenting Program) from Australia has some evidence of
reducing child maltreatment in low risk families, and is currently being tested with high risk
families in South Carolina. It is noteworthy that through adapting EBPs to local families,
recruitment and retention have increased by as much as 40% (Holleran Steiker et al., 2008; Kumpfer, Alvarado, Smith, and Bellamy, 2002). However, a 14-session family skills training program (which includes separate parent/child groups in the first part followed by a family practice group in the second part) demonstrated significant positive outcomes.

According to Kumpfer and Brooks (2010) there are seven exemplary Family Strengthening Programs (see www.strengtheningfamilies.org). These programs were judged by criteria of being high quality studies that have been independently replicated. Further, the exemplary programs reported large effect sizes. Two of the listed family intervention approaches that have been most widely replicated are: In-Home Family Support, and Family Therapy.

The Strengthening Families Program 3-17 years has the largest impact on preventing or reducing alcohol, tobacco and other drug (ATOD) use. The Strengthening Families Program 10-14 year old version for school based substance use disorder prevention (Kumpfer, Molgaard, and Spoth, 1996) was found to be the most effective alcohol prevention program, according to a meta analysis by the Cochrane Reviews at Oxford University, Center for Substance Abuse Prevention, and the World Health Organization’s reviews (Foxcroft et al., 2006).

Core Components of Evidence Based Family Programs

In a study of 77 programs that address child maltreatment prevention, Kaminski and associates (2008) identify five critical core components evidence-based family strengthening interventions: (1) practice time for parents (with both children and group leaders in the training) should be included in program format; (2) parents should be taught to interact positively with children during the family training (e.g., showing enthusiasm and attention for good behavior, letting the child take the lead in play activities); (3) parenting content should include increasing attention and praise for positive children’s behaviors, understanding normal development, positive family communication skills and effective discipline; (4) children’s social skills training should be included in children’s session; and (5) generalization of new behaviors should be facilitated through assignments involving practice in home or other social settings.

Mediating Mechanisms Underlying Evidence-Based Prevention Programs

The mechanisms of effectiveness of evidence-based family interventions are only beginning to be understood, but research studies (Greenburg, 2007) suggest they are effective because they teach skills for parents and children to improve behavioral and emotional self-regulation and executive cognitive functioning. Almost all evidence-based prevention programs teach children what Greenberg calls vertical control and horizontal control. Vertical control is the use of higher-order frontal cognitive processes to control lower level limbic emotional impulses. For example, when a parent is stressed and angry, they can stop and think first about the damage that hitting the child will do to their relationship or the possible result of having child protective services remove the child from the home. This vertical control of behaviors in the pre-frontal area of the brain is frequently damaged by
overuse of alcohol and drugs or head trauma, so techniques to help parents or children to think first before acting can prevent lasting problems. Horizontal control refers to verbal processing of emotional and behavioral action. For instance, youth are taught conscious strategies for self-control of behaviors such as verbal mediation (self-talk) and inhibitory control. One example of inhibitory would be a Control Signals Poster with “Red = Stop, Yellow = Think, Green = Go” strategy. Feeling charades or pictures are used to teach cognitive labeling of emotions. Because of increased neglect, children of substance abusers are frequently not taught by parents to reflect on feelings. Hence, they are more frequently diagnosed with “alexithemia” or an inability to identify feelings. The first author’s Strengthening Families Program (Kumpfer, DeMarsh, and Child, 1989) includes a technique called “Child’s Game” that teaches parents to watch in a play situation for their children’s expression of feelings and to describe the body cues and label the feeling for the child. In this manner, parents are taught to help the children learn a full feelings vocabulary beyond just “sad, mad, and glad”.

Greenberg (2007) tested a specific mediational hypothesis that the executive functions would mediate behavioral control. His hierarchical linear modeling analysis of one year follow-up data on 318 third graders found that increased inhibitory control at posttest because of the PATHS curriculum resulted in decreased teacher reported child externalizing and internalizing behavior problems. Hence, his prevention intervention impact on increasing inhibitory control helped to also test and confirm the mediating mechanisms in his theory.

Cost-Benefit of Family Skills Intervention

Meta-analyses suggest that EBP family interventions produce effect sizes averaging nine times larger than youth-only prevention interventions (Foxcroft et al., 2003; Kumpfer, 2008). Hence, they prevent or reduce the highest percent of adolescent alcohol and drug users. For instance, Miller and Hendrie’s (2008) recent cost/benefit study reported that the percent of adolescents prevented from alcohol use was highest for the author’s Strengthening Families Program (SFP) at 18%, compared to only 1% for the Life Skills Training (LST) program and 2.5% for other social influence and youth-only skills training programs.

Despite being more effective, the cost benefit ratio of family interventions has been calculated as lower than youth-only life skills. For instance, SFP has a $11.36 saved/dollar spent at a cost of $880 per family compared to $34 saved/dollar spent for the best youth only program calculated at $140 cost per participant for the All Stars program (Aos et al., 2004; Miller and Hendrie, 2008). However, the costs were not all calculated uniformly. Benefits of the family interventions were calculated only for the single youth referred to the family intervention and not for all of the siblings or adults who also have a benefit in reduced family conflict, family violence and substance abuse. Using an average of 4 members in a family, the cost benefit ratio for family programs like SFP would increase to a figure more like $40/saved per dollar spent.
Overcoming Barriers to Engagement of Families Facing Adversity

A review of the international research literature on family resilience shows that interventions at the family level are important means by which families manage to cope with adversity (Ross, 2003). Positive parenting is a crucial influence on children’s functioning and developing.

Even though effective programs exist, some noteworthy barriers may preclude family participation in program activities. Some families fail to utilize the prevention or intervention services and some families may be just hard to reach for some other reasons. Often, transportation, work schedule, language, or childcare concerns can be barriers for families participating (Crook, Mullis, Cornille, and Mullis, 2005).

Families can be too easily labeled as resistant or reluctant. It is important for program staff to remain mindful of the challenges families facing adversity experience. Staff members must recognize that entering into a family based intervention can be intimidating to participants. Sometimes this shows up as resistance, non compliance with a direction, or an unnecessarily negative tone and attitude (Thomas, Andrea, Ann, Ronald, and Daniel, 2010).

In order to best meet the needs of families facing adversity several strategies can be considered:

1. *Foster Participants’ Security.* It is extremely important to foster a sense of security and a safe atmosphere for participants. An attitude of acceptance and nonjudgement promotes initial safety and rapport building.

2. *Foster Participants’ Trust.* Fostering belief and trust in staff is important for program success. Families need to have confidence in the person offering help. Families may have had negative experiences with ‘helping others’ in the past. Staff members should be mindful of these challenges and interact in a way that demonstrates warmth and empathy for the challenges the family is facing. Again, a nonjudgmental attitude and acceptance promotes an effective working partnership. Staff should demonstrate confidence in their ability to help families negotiate challenges.

3. *Needs Assessment.* Designing the program based on a needs assessment is helpful to facilitate participation in programs. When families can see that the program meets their stated challenges, they are more likely to participate in the program.

4. *Increase Enrollment.* Recruit families universally in the schools or communities so there is no stigma attached to attending. When enrolling families in schools, all of the parents are invited to attend a “Fun Family” night at the schools. This method was employed successfully in the SAFE Project that enrolled 800 families from 12 elementary schools (Kumpfer et al., 2002). Letters were sent to all parents in a particular grade by the principal and each teacher inviting them to a “Fun Family Night” saying their school is participating in the SFP and that they want 100% participation per class.

Lotteries are held for school supplies for those that come on time in the evening for a meal during which the program SFP is explained. Those who want to enroll sign consent forms and pretests followed by family activity games. Providing a meal prior to the SFP class session each night increased enrollment as well. Other ways to reduce barriers to attendance include providing: child care for younger and older children; small gifts to parents for completion of home practice sessions; small tokens to the children for good behavior points in the lessons; as well as a monetary graduation gift of $50 dollars. Researchers also find increased attendance when children beg parents to attend so they don’t miss out on their small
gifts each session - the McDonald marketing trick. Other tips include having successful graduating families from prior groups come to speak at the recruitment sessions, having the family implementers or group leaders there to lead families in a few fun activities to show that learning can be fun in the program and reducing fear of attending thus improving the enrollment.

5. Maintain Retention Rate. Keeping families attending can be equally challenging in these hard economic times when parents often are holding more than one job. Hence, the family program must have its own benefits in social support, tangible improvements in the children’s and parents’ behaviors, and a fun and stress-free environment.

SFP research suggests an 85% retention rate after the 3rd delivery in community settings (Aktan et al., 1996) even with the highest risk drug-abusing parents. The first few times staff implement a family program, retention can be as low as 45%, but staff soon learn what to do to keep families engaged and attending including their own increased competence in delivering the family sessions. However, if there is continual staff turnover, this increase in competency in the delivery of the program is lost. Having the families plan the graduation ceremony in the last four sessions of SFP is a good way to keep them attending until graduation.

Cultural pride is increased by having the families plan the graduation to demonstrate cultural arts that the parents teach the children during the last few “Parent’s Game” teaching lessons on clear directions. In the American Indian groups, the parents taught drum, flute, and shawl making plus traditional dancing for the graduation party. In Spain, each family planned their own theatrical skit to demonstrate skills learned using traditional Spanish music, acting, magic, and games. Families plan the final dinner often with music and dancing, gifts, and guest speakers such as the mayor or a community leader.

One creative way to reduce barriers to attendance is to use computer or web-based options. While the enrollment rate from complete grades was about 46% for the universal group based SFP 10-14 Years (Spoth et al., 2000), it might be possible to recruit more families if they didn’t have to come to a group on a specific night. For instance, the completion rates were much higher for a computer CD and self-paced booklet parenting program called Families that Care at 85% to 96% with African Americans completing more often than White families (Haggerty et al., 2007).

6. Increase Engagement with Cultural and Local Adaptability of Family-based EBPs. Phase-in studies of cultural adaptations of SFP for Pacific Islanders, American Indians, African Americans and Hispanic/Latino families found engagement (enrollment and retention) was improved by an average of about 40% when the culturally specific version was implemented compared to the general version (Kumpfer, Alvarado, Smith, and Bellamy, 2002). Even though it was easier to recruit and retain ethnic families with the culturally adapted versions, the family behavior change outcomes were not larger than those of the general version. Because recruiting families into any family intervention is difficult, using culturally respectful versions of family program is recommended. Respecting the families’ culture is a very important principle that can be improved by hiring culturally knowledgeable staff even if the program has not been culturally adapted in the curriculum manuals. Cultural adaptations do improve engagement (Holleran Steiker et al., 2008), but also it appears that web and PC-based delivery also can increase engagement (Haggerty et al., 2007).
DISCUSSION

We have outlined here a number of evidence-based family interventions and their critical content that promote effectiveness at increasing resilience and coping skills and reducing negative developmental outcomes for children living with adversity. We have made a case that prevention or therapy interventions that deal with the total family system are much more effective in reducing immediate mental health and behavior problems in children (Connell and Dishion, 2008). Also 10 year longitudinal studies of SFP 10-14 Years find later adolescent risk for life time diagnosed mental health disorders (such as depression, anxiety, social phobias, and even personality disorders) reduced by 220% to 300% (Spoth, Redmond, Mason, Kosterman, Haggerty, and Hawkins, 2005). Additionally, EBP family interventions are the most promising for reducing chronic diseases such as substance use disorders, obesity, diabetes, and eating disorders as well as improving school (Harvard Family Research Project, 2006) and workplace performance. Already family interventions have proven to be the most effective for substance abuse prevention (Kumpfer and Johnson, 2009) and child maltreatment prevention and treatment (Kumpfer and Brooks, 2010; Prinz, Sanders, Shapiro, Whittaker, and Lutzker, 2009).

An interesting question arises: If family strengthening approaches have the greatest impact on increasing resilience, why are practitioners not implementing more evidence-based family interventions? Reasons include lack of knowledge or training in the best EBP programs as well as the additional cost. A model for dissemination into health care of evidence-based programs has been proposed by Kilbourne and associates (2007). However, international dissemination, as well as dissemination nationally of EBP family programs, is needed. Suggestions for successful implementation in other countries has been recommended (Cuijpers, Graaf, and Bolhmeijer, 2005; Kumpfer, Pinyuchon, de Melo, and Whiteside, 2008; UNODC, 2009). Many of the effective family interventions have been developed in English speaking countries (Australia, UK, Ireland, and USA). Hence, dissemination to other countries takes considerable work in developing partnerships and champions, translating and culturally adapting materials, and developing new trainer of trainers and supervision, as well as evaluation systems in the new countries. Several family interventions have been successfully implemented in other countries including the primary author’s Strengthening Families Program by following these needed steps to dissemination.

Sustainable funding sources are critical to widespread dissemination, because unfortunately, family interventions are more costly. They are not quick fixes which are never really very effective. Individual and group-based family programs are more expensive to implement than media campaigns or school-based prevention interventions. Despite being nine times more effective, family interventions have a lower cost benefit ratio than youth school-based skills training programs (Miller and Hendrie, 2008). If the benefits are considered for the impact on all the family participants, rather than just the one identified child, the cost/benefit ratio is equivalent to the most effective school-based prevention interventions or about $33 per dollar spent (Kumpfer and Smith, in press). However, with the use of computer technology including DVD, web based or i Phone delivery, the costs of delivering therapeutic content can be dramatically reduced while increasing fidelity to the model program. However, there are some concerns about comparable effectiveness that could be lost without group implementation (Kumpfer, Greene, Allen and Miceli, 2010). Hopefully,
EBP family program designers will find creative ways to maintain social and peer group support for positive improvements in coping and parenting skills by using web chat rooms and discussion boards, emails from family coaches, having groups of families commit to implementing the program in their homes, but sharing their successes with the group by phone or email. Additionally, the cost of producing high quality family programs in film and editing to put on interactive web sites is very expensive to produce by university based researchers, unless they get a very large grant from their government.

**CONCLUSION**

In this chapter, we presented the most effective parenting and family programs as well as the core components of effective family focused prevention approaches, including the lead author’s Strengthening Families Program (SFP). Techniques to modify risk factors for children that are embedded in these most effective parenting programs were discussed, such as active environmental modification, cognitive reframing, stress management skills, improving behavioral control, decision making, and identification of key feelings. These therapeutic techniques can be incorporated into educational and clinical programs to increase resilience in children faced with chronic family adversity. The chapter concluded with a summary of major considerations and what each of us can do to improve resilience, both in our youth and in ourselves.

Many techniques for improving coping and resilience have been discussed in this chapter that can be built into more effective prevention programs to strengthen resilience in youth and adults. One important point to make is that having a practitioner design from ‘scratch’ new parenting program is generally not as good an idea is adapting an existing evidence-based program. Why recreate the wheel? Some practitioners claim that their programs work and are EBPs just because they follow the principles or core content of other effective EBPs. However, unless a full scale randomized control trial is conducted, these new programs designed on just principles of effectiveness, can never really claim effectiveness. Nevertheless, a good starting point is to find the best evidence-based family intervention that best matches the needs (risk and protective factors) in the families, and then culturally or locally adapting the content and delivery methods will lead to the greatest likelihood of successful implementation and outcomes.

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RESILIENCE IN UNIVERSITY STUDENTS: ACADEMIC SUCCESS, RECOLLECTED PARENTAL STYLE, AND COPING STRATEGIES

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ABSTRACT

Coping with challenges is important for finding one’s way in life and for success in pursuing one’s objectives including higher education attainment. Parents are both blamed and praised for many things, not always justified, but is success in life, or part of it, associated with parenting styles (as recollected by the adult children)? This study linked recollections about parental styles with academic success among university students and also examined the relationship between coping strategies and student academic success. Questionnaires on perceived parenting styles, coping strategies, and academic performance (self-recalled) were administered. Results indicated that recollected authoritative parenting style was conducive to higher academic performance, while permissive parenting style was detrimental and authoritarian parenting neither conducive nor detrimental. No clear relationships were found in this student sample between coping strategies and academic success. Implications are drawn with attention to the importance of authoritative parenting as a foundation for subsequent wayfinding, exemplified in relation to success at university.

Keywords: Parental Style, Authoritative Parenting, Authoritarian Parenting, Permissive parenting, Academic Success, Coping Strategies

INTRODUCTION

Education aims to develop a lifelong learning aspiration in children, while facilitating academic success (Grolnick, Kurowski, and Gurland, 1999). Researchers investigating
academic grades in school and university have found that a variety of factors affect success (Cunningham, Brandon, and Frydenberg, 2002; Englund, Luckner, Whaley, and Egeland, 2004; Gill, Ashton, and Algina, 2004). Recently, parenting style has been identified as a salient predictor of level of academic success (Fan, 2001; Flouri, 2006). Parenting style is defined by the level of demandingness and responsiveness that parents exert on their children, and influences the personal characteristics that children develop, such as autonomy and determination to succeed (Aunola, Stattin, and Nurmi, 2000; Heaven, Mak, Barry, and Ciarrochi, 2002).

Coping style is a further prominent theme in education research, and has been shown to shape achievement strategies in students (Aunola et al., 2000), to affect continuation in academic programs (Ratelle, Larose, Guay, and Senecal, 2005), and to be related to the level of perceived control that an individual has over a situation (Chu and Choi, 2005). Parental styles are thought to be related to successful performance, resilience and resourcefulness in varying degrees. For example, authoritarian parenting is linked with subsequent avoidant behaviours (involving limited resourcefulness when faced with new challenges); permissive parenting is linked to lower performance and less self-reliance; and authoritative parenting is linked to high levels of resilience and performance.

However some, but not many, studies have been carried out that have examined successful performance of university students and the apparent impact of the way their parents related to them (the students’ recollection of their parents’ styles). Nor have there been many studies that have reported on successful performance in relation to the coping strategies used by university students. The current study reports on the studies that have been carried out in these areas and then outlines the investigations into these relationships in a student sample from an Australian university.

Parenting Styles

Three prominent prototypes of parental authority: authoritarianism, authoritativeness, and permissiveness have been identified, classified by the level of demandingness and responsiveness they enforce. Demandingness refers to claims that parents make on their children, the level of behavioural maturity that they demand and accept, as well as supervision of children’s activities (Baumrind, 2005; Buri, 1991). Responsiveness is determined by the degree to which parents encourage individuality and autonomy in their children through providing a supportive and warm home environment.

Authoritarian Parenting

Authoritarian parenting is high on demandingness and low on responsiveness (Glasgow, Dornbusch, Troyer, Steinberg, and Ritter, 1997), and is essentially characterised by an emphasis on obedience, and a tendency to favour more punitive models of discipline management (Gonzalez, Greenwood, and WenHsu, 2001). This type of parenting is commonly associated with deficient decision-making ability in children, as seen in Juang and Silbereisen (2002). Similarly, the literature on authoritarian parenting styles has suggested that this type of parenting leads to children exhibiting more anxious and withdrawn behaviour, a tendency to rely on authority figures, and to be less inclined to seek out challenges and exhibit exploratory behaviour (Baumrind, 2005). Thus, authoritarian parenting
can be seen to be linked to dampening of natural resilience and to limiting of the development of resourcefulness, and hence it would be projected, to less successful performance.

**Authoritative Parenting**

Authoritative parenting is characterised by the use of disciplinary measures that are moderated by warmth, reason, flexibility and verbal give-and-take (Buri, 1991). Likewise, authoritative parents provide clear and firm direction and articulate their expectations of their children, and often take the time to explain decisions to their children (Gill et al., 2004). Critical research into the influence of authoritative parenting has found that parents’ expectations of their children’s educational success have been found to be the strongest influence of academic achievement, as opposed to other types of parental involvement, such as parent participation in school activities (Englund et al., 2004). A study by Grolnick et al. (1999) determined that students whose parents took an active interest and became involved in their children’s academic and social lives reported higher academic achievement than children of permissive parents who did not engage in their children’s school activities. Furthermore, other research has linked authoritative parenting to academic engagement in school, taking pride in academic accomplishments, and better academic performance amongst students. A growing body of evidence suggests that authoritative parenting is positively correlated with an increase in educational grades (Kim and Rohner, 2002; Steinberg, Lamborn, Darling, Mounts, and Dornbusch, 1994), and the evidence that authoritative parenting is linked with optimum academic, social and psychological development of European American children is particularly promising (Steinberg et al. 1994). It was thought that similar results would be found in our study on Australian and American students.

**Permissive Parenting**

A permissive parenting style was described by Buri (1991) as one which makes fewer demands on children than do parents who exhibit other parenting styles, and is relatively non-controlling (low on demandingness, and low on responsiveness). Although permissive parents, by nature are described as being “warm” and “less apt to employ punishment”, children who are raised using these parenting styles have been shown to lack self-reliance and inquisitiveness (Ferrari, 2001) - traits which are desirable in an academic context - and to be more disruptive in class (Spera, 2005). Research conducted by Bronstein, Ginsburg and Herrera (2005) concluded that children with permissive parents (who gave limited guidance, both in the personal and academic spheres of their lives) achieved lower grades than children of parents using other parenting styles. This finding and those relating to authoritarian and authoritative parenting were explored in the current study of students in an Australian private university.

**Academic Achievement and Parenting Styles: Our Research**

Assisting children in developing their competencies including building resourcefulness and resiliency is seen to be a critical factor in achieving academic success, and may involve encouraging children to solve problems on their own (Gottfried, Fleming, and Gottfried, 1994). Much parenting literature asserts clear expression of rules and expectations as the
critical characteristic underpinning the model of authoritative parenting. It was expected in the current study that students who perceived their parents to be authoritative would have a clear understanding of their parents’ academic expectations of them, and thus show higher academic achievement than students with other parenting styles.

One reason for the current study, apart from examining whether university students would respond in similar ways as postulated in other studies, was to help resolve a conflict in the research literature about the enduring nature of parental influence. Spera (2005) had suggested that parental influence declined during adolescence, but Glasgow et al. (1997) postulated that the influence of parenting on academic performance does not decline. This discrepancy between studies needed to be further investigated and the current study examined whether the effects would be evident, or not, in students of university age.

Coping Styles and Academic Achievement

A second element of interest in our current study was the relationship that would be shown in the Australian private university sample, between academic achievement and coping styles used by the students. There is evidence to suggest that coping strategies play an important role in the way that individuals respond to stressful situations such as those faced by university students (cf., Christopoulos and Hicks, 2008). Folkman and Lazarus (1985) proposed a transactional model of stress, whereby the individual appraises the person-environment transaction as exceeding the resources they possess to cope, and stress ensues as a result. Coping is defined by this model as the cognitive or behavioural strategies that are employed by an individual in an effort to minimize the distressing demands of the situation (Akgun, 2004; Rafnsson, Jonsson, and Windle, 2006). The current study aimed to explore the predictive value of coping style on academic achievement in the student sample. In particular, task-oriented, emotion-focused, and avoidance coping strategies were examined.

Task-Oriented Coping

Coping strategies are recruited in order to increase resilience and to reduce psychological demand and distress (Valentiner, Holahan, and Moos, 1994), and it is postulated in the empirical literature that a specific domain of coping may be responsible for increased academic performance in a university sample (Nonis, Hudson, Logan, and Ford, 1998; Struthers, Perry, and Menec, 2000). Task-oriented coping, or problem-focused coping as it is also referred to, is an active coping response characterised by taking steps to deal with, or eliminate, the problem directly (Litman, 2006).

Aspinwall and Taylor (1997) examined predictors of college success in a sample of 672 freshmen aged 16 to 19 years, and found that the implementation of task-oriented coping strategies had a direct positive effect on adjustment to college, while the use of avoidant coping strategies predicted worse adjustment to college at the end of the first semester. Similarly Santiago-Rivera, Bernstein and Gard (1995) reported that students who considered achievement important tended to use more task-oriented coping strategies. According to Appelhans and Schmeck (2002), students who utilised task-oriented coping and endorsed the use of analytic skills and critical thinking, would also demonstrate academic interest, aspects
which presumably are conducive to academic success. Our research questions were: “Would the university students in the current sample demonstrate similar emphases with respect to academic success and task-oriented coping?” and “Would emotional-focused and avoidance coping be negatively related to success?”

**Emotion-Oriented Coping**

Emotion-oriented coping is not directed at the task or problem itself, but rather is aimed at reducing or eliminating the distressing emotions that are associated with a situation (Carver, Scheier, and Weintraub, 1989; Plutchik, 2000). The cognitive strategies and behaviours identified by Endler and Parker (1994) as constituting emotion-oriented coping include self-blame, worrying about a course of direction and seeking emotional support.

Academic achievement has been found to be negatively affected when emotion-oriented strategies are utilised (Stewart, Lam, Betson, Wong, and Wong, 1999). Folkman and Lazarus (1985) found that students engaged in more emotion-oriented coping behaviours after an academic exam and before the results were posted, than at any other time in the academic year. That is, there was relatively less emphasis on emotion-oriented coping strategies before the academic examinations; this suggests that students realise that emotion-oriented coping is not a particularly valuable strategy and only use this strategy when there is nothing more that can be done about the situation.” When a student perceives academic pursuits to be unmanageable, these experiences elicit helplessness in students which lead them to engage in emotion-oriented coping, and this response has been found to have an adverse effect on students’ academic motivation and performance (Struthers et al., 2000).

**Avoidance-Oriented Coping**

Avoidance-oriented coping involves avoiding or distracting oneself from potentially threatening cues or information. In order to avoid psychological discomfort, avoidant copers prefer minimal information in potentially threatening or stressful situations (Burns, Dittmann, Nguyen, and Mitchelson, 2000). There is mixed evidence on the influence of avoidant-oriented approaches to academic stress. Burns et al. (2000) explored academic procrastination as a form of avoidant coping in a university context and found that in many cases individuals who utilize avoidant coping strategies are able to deal with everyday issues better than those who use task-oriented strategies. While studies such as Ferrari (2001) support the notion that individuals who approach their academic responsibilities without avoidance are more efficient and perform superiorly, Chu and Choi (2005) distinguished, in a sample of 230 Canadian university students, that those who engaged in active procrastination behaviours which put them under time pressure, enjoyed short-term benefits such as less stress and depression, and had higher levels of life satisfaction and higher GPAs than students who engaged in emotion-oriented coping. Task-oriented coping yielded the best results.

For the purpose of the current study, two domains of avoidance coping style were defined: social diversion and distraction. Seeking out other people in order to distract oneself from the problem is called social diversion, and engaging in a substitute task is known as a distraction form of avoidance (Endler and Parker, 1994). Distraction coping involves distancing oneself from distressing stimuli by engaging in some activity that removes the stressor for a short period, such as going for a walk (Endler and Parker). Whilst disengaging
oneself from a stressor or problem may sometimes be helpful briefly in aiding task-oriented coping, there is evidence in the literature to suggest that avoidance coping is linked with poorer psychological outcomes than either of the other two coping styles (Valentiner et al., 1994; Zuckerman, Kieffer, and Knee, 1998). Although Windle and Windle (1996) concluded that avoidance coping predicted both positive and problematic functioning among a sample of 733 high school students, for the most part, the literature suggests that avoidance coping is detrimental, rather than beneficial, to academic success. It was postulated that the current study would find avoidance-oriented coping to be negatively predictive of academic performance.

**Aim and Hypotheses**

Although authoritative parenting has been linked with desirable academic outcomes in an American sample (Gill et al., 2004; Strage and Brandt, 1999), limited research has investigated the role that parenting styles play in academic performance in an Australian sample. The current study aimed to clarify the parenting and coping styles that are most predictive of academic achievement in this sample.

In light of the current research discussed above, several hypotheses were therefore proposed:

- **H1 (a):** Authoritative parenting would significantly predict higher levels of academic performance.
- **H1 (b):** Permissive parenting would significantly predict lower levels of academic performance.
- **H2 (a):** Task-oriented coping would significantly predict higher levels of academic performance.
- **H2 (b):** Emotion-focused and Avoidance-oriented coping would significantly predict lower levels of academic performance.

In the above hypotheses, academic performance was measured using the grades that students had obtained in the past twelve months, regardless of the year of study in which the students had completed the questionnaires (see discussion under Design, in the Method section following).

**METHOD**

**Participants**

The participants were 132 students from a private university in Australia (92 females and 40 males), aged from 17-54 years (M = 22.40 years, SD = 4.86 years). The current sample consisted predominantly of American and Australian students (34.4% American and 29.8% Australian; the remaining represented more than 12 different nations).
Measures

Students responded to a package of questionnaires, which consisted of demographical questions, the mother and father version of the Parental Authority Questionnaire (PAQ) and the Coping Inventory for Stressful Situations (CISS). The questionnaires were stapled together in a specific order, so that the CISS, PAQ and demographic questionnaires each appeared first for a third of the surveys. Counterbalancing was employed in an attempt to decrease potential order effects in the data.

The demographic questionnaire asked for details such as age, sex, family structure, and current grade point average. Multiple measures of academic achievement were gathered in this section in the form of current grade point average, past grade point average (from previous degree), and grades in the past 12 months. This method was employed to control for possible missing data, as well as to investigate how highly the three measures would be correlated with each other for analytical purposes. All three measures used the scale High Distinction = 4, Distinction = 3, Credit = 2, Pass = 1, Fail = 0.

Parental Authority Questionnaire. The PAQ is a 30 item self-report measure assessing children’s perceptions of parental authority in the form of the three prototypes; authoritarian, authoritative and permissive parenting. Sample items on both the mother and father version of the PAQ include “While I was growing up my mother/father felt that in a well-run home the children should have their way in the family as often as the parents do” and “As I was growing up my mother/father did not allow me to question any decision that he/she had made” and “My mother/father felt that wise parents should teach their children early just who is the boss in the family”. Students will respond to items on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). There are 10 permissive, 10 authoritarian and 10 authoritative five-point Likert statements. Scores on each of these variables can range from 10 to 50; the higher the score, the greater the appraised level of parental authority prototype measured.

Buri (1991) reported favourable reliability estimates on the PAQ. Test-retest reliability estimates over a two-week period yielded high reliability coefficients from .77 to .92. Buri also reported favourable Cronbach coefficient alpha values ranging from .75 for mother’s permissiveness to .87 for Father’s authoritarianism. The current study used the combined score for recollections of mother and father behaviours on each parenting style, and the Cronbach’s alpha reliability coefficients for this current sample were .84 for the Permissive parenting scale, .90 for the Authoritarian parenting scale, and .93 for the Authoritative parenting scale in turn.

Coping Inventory for Stressful Situations (CISS). The CISS is used to measure task, emotion and avoidance coping strategies (Endler and Parker, 1994). The CISS contains 48 items (16 items per scale) and asks participants to rate how much they engage in the specified activity when they encounter a difficult, stressful, or upsetting situation. Participants respond on a 5-point Likert scale ranging from 1 (not at all) to 5 (very much). Examples of items from the scales include “Think about how I have solved similar problems” (task-oriented), “Blame myself for not knowing what to do” (emotion-oriented), and “Watch T.V.” or “Phone a friend” (avoidance-oriented). In addition, avoidance-oriented coping has two subscales, and example items from these include “Window-shop” (distraction avoidance) and “Try to be with other people” (social diversion avoidance). The reliabilities for this scale are high, with Cronbach’s alpha ranging from .66 to .92 across all coping scales. For the current sample,
Cronbach’s alpha reliability coefficients for each of the scales was found to be .85 (Task-Oriented), .87 (Emotion-Oriented), .81 (Avoidant-Oriented), .72 (Avoidant-Distraction) and .79 (Avoidant-Social).

Design

The current study included three potential criterion variables as measures of academic performance (GPA, previous GPA and Grades in the last 12 months, regardless of the year of study in which the student completed the questionnaire). Although these criterion variables are discrete in nature, they are commonly used in the literature as continuous variables. The current study employed the measure that had the highest response rate: Grades in the last 12 months; this was used as the continuous criterion variable, measured on an ordinal scale. The first predictor variable was parenting style, which had three levels (Authoritative, Permissive, and Authoritarian) and was measured on an ordinal scale. Coping style, as the second of the predictor variables also had three levels (Task-Oriented, Emotion-Oriented, and Avoidant-Oriented) and was measured on an ordinal scale.

RESULTS

Data Screening

The data was screened, and following a strong significant correlation between GPA and grades in the last 12 months ($r = .73$, $p < .001$) and given the larger number of students who had recalled their progress over the last 12 months, this was used as criterion or dependent variable. Similarly, due to the reduced sample size because of missing data, the sum of mothers’ and fathers’ scores on parenting were combined as an overall measure of parenting style for these analyses.

Pairwise deletion was used for bivariate correlations, and listwise deletion was used for multiple regression. Histograms and descriptive statistics for skew and kurtosis were examined and no outliers or extreme scores were detected in the data.

Bivariate Correlations. Alpha level was .05 for all analyses. Bivariate correlations were conducted to assess the relationships amongst predictor and criterion variables. No significant bivariate correlations were found between grades in the last 12 months with the parenting styles or the coping styles, allowing the analyses to proceed.

The descriptive statistics for grades, parenting style, and coping for the sample are outlined in Table 1 for reference.

Relationship between Parenting Styles and Academic Achievement

Hypothesis 1 predicted a significant relationship between parenting styles and grades in the last 12 months. An analysis was conducted with Grades in the last 12 months entered into a standard multiple regression as the criterion variable, and the three parenting styles...
(Authoritative, Authoritarian, and Permissive) entered as the predictor variables. The assumptions of normality, linearity and homoscedasticity were satisfied. By examination of Mahalanobis Distance, Cook’s Distance, Leverage and Studentised Residuals scores, data from two participants were identified as unduly influential and were therefore removed from the dataset.

**Table 1. Descriptive Statistics: Grades, Parenting Styles, and Coping Types**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades (GPA over 12months)</td>
<td>2.79</td>
<td>0.82</td>
</tr>
<tr>
<td>Overall Authoritative Parenting Style</td>
<td>68.87</td>
<td>14.46</td>
</tr>
<tr>
<td>Overall Permissive Parenting Style</td>
<td>54.36</td>
<td>11.48</td>
</tr>
<tr>
<td>Overall Authoritarian Parenting Style</td>
<td>60.03</td>
<td>13.71</td>
</tr>
<tr>
<td>Task Coping</td>
<td>56.78</td>
<td>8.64</td>
</tr>
<tr>
<td>Emotion Coping</td>
<td>45.40</td>
<td>10.60</td>
</tr>
<tr>
<td>Avoidance Coping</td>
<td>49.83</td>
<td>9.47</td>
</tr>
<tr>
<td>Avoidance/Distraction Coping</td>
<td>23.07</td>
<td>5.72</td>
</tr>
<tr>
<td>Avoidance/Social Coping</td>
<td>17.68</td>
<td>4.08</td>
</tr>
</tbody>
</table>

The approach to assessment had involved the use of several questionnaires in a relatively lengthy process; these questionnaires were counterbalanced but because of time constraints, some 35 students did not complete all questionnaires. It was decided to use list-wise deletion and assess only those who had completed all questionnaires. The remaining total sample for the project was therefore 94.

The overall R for the regression was significantly different from zero, $F (3, 90) = 3.42$, $p < .05$. The $R^2$ value of .10 indicated that approximately 10% of the variability in grades in the past twelve months was explained by the combination of the three parenting styles. Table 2 displays the unstandardized regression coefficients ($B$), the standardized regression coefficients ($\beta$), 95% confidence intervals for $B$, squared semi-partial correlations ($sr^2$), and Adjusted $R^2$. As predicted by Hypothesis 1(a) and Hypothesis 1(b), authoritative parenting and permissive parenting made similar significant unique contributions to the explained variance in grade, although the relationship with authoritative parenting, $p < .05$, was positive, while the relationship with permissive parenting, $p < .05$, was negative indicating that grades increase as authoritative parenting increases, but decrease as permissive parenting increases. The contribution made by authoritarian parenting to grades was not significant.

**Table 2. Multiple Regression of Parenting Styles on Grades in the Past 12 months**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>$\beta$</th>
<th>95% Confidence Interval</th>
<th>$sr^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>3.35</td>
<td>0.78</td>
<td>1.80</td>
<td>4.91</td>
<td></td>
</tr>
<tr>
<td>Authoritative Parenting</td>
<td>0.01</td>
<td>0.01</td>
<td>0.21*</td>
<td>0.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Permissive Parenting</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.22*</td>
<td>-0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Authoritarian Parenting</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.14</td>
<td>-0.02</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Note: $p < .05$. $R^2_{adj} = .072$.  

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Relationships between Coping Styles and Academic Achievement

Hypothesis 2 predicted a relationship between the combined coping styles and grades in the last 12 months. A regression analysis was conducted with Grades in the past 12 months entered into a standard multiple regression as the criterion variable, and the three coping styles (Task-Oriented, Emotion-Oriented, and Avoidant-Oriented) entered as the predictor variables. Only the overall avoidance-oriented coping style was retained for the regression, due to multicollinearity of variables (strong correlations between the coping styles in this sample).

All previously identified assumptions of regression were satisfied. Due to listwise deletion, the sample size was reduced to 83 for the regression analysis. Table 3 displays the unstandardized regression coefficients (B), the standard regression coefficients (β), 95% confidence intervals for B, squared semi-partial correlations (sr²) and Adjusted R². R for the regression was not significantly different from zero, F (3, 79) = .503, p = .681. The R² value was .19; however, the overall model failed to significantly predict grades in last 12 months.

Table 3. Standard Multiple Regression of Coping Styles on Grades in the Last 12 Months

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>95% Confidence Interval</th>
<th>sr²</th>
<th>Lower boundary</th>
<th>Upper boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>3.13</td>
<td>0.96</td>
<td>1.23</td>
<td>5.04</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task Coping</td>
<td>0.00</td>
<td>0.01</td>
<td>0.03</td>
<td>-0.02</td>
<td>0.02</td>
<td>-0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Emotion Coping</td>
<td>0.00</td>
<td>0.01</td>
<td>-0.11</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>Avoidance Coping</td>
<td>0.00</td>
<td>0.01</td>
<td>-0.03</td>
<td>-0.02</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: R²_{Adj} = .19.

DISCUSSION

Hypotheses 1 (a) and 1 (b), that parenting styles would explain a significant proportion of academic performance, were supported. The analysis revealed that two of the three parenting styles were significant in isolation.

This finding has strong links to previous findings (e.g., Aunola et al., 2000; Fan, 2001). Parenting style has been posited to be a major predictor in many facets of a child’s academic success, both indirectly through influence on achievement motivation (Bronstein, Ginsburg, and Herrera, 2005), and directly through parental warmth and involvement in academic pursuits such as involvement at school (Flouri, 2006; Kim and Rohner, 2002). The private University students in the current study were from a wide age and experience range, appearing to confirm suggestions by one set of studies that recollected early experiences of parental influence impacted on academic performance (Glasgow et al., 1997), but not confirming studies that argued that recollected experiences of parental influence had limited impact on academic success (Spera, 2005). Actual current contact with parents may not be needed to influence academic outcomes, but simply recollections of experiences. The results indicate significant associations. However, the question must remain open at least to some extent. Are recollected experiences consistent with the actual parenting styles adopted in the
current respondents’ early childhood? More longitudinal studies are needed to address this issue, although several studies already have indicated the importance of authoritative styles in later success (e.g., Bronstein et al., 2005; Heaven et al., 2002).

The results of this study specifically supported Hypothesis 1(a), that authoritative parenting would significantly predict higher levels of academic achievement. This finding mirrors previous findings in parenting research and has a large base of theoretical support (Bronstein et al., 2005; Heaven et al., 2002; Weiss and Schwarz, 1996).

Further, this significant finding is particularly relevant for suggestions for future research in the parenting field. As sample size restricted the current study from performing involved statistical analyses with large numbers of predictor variables, students’ scores for mother and father parenting styles were summed to produce a composite score. In doing so, some of the variance in scores may have been lost, and future studies may be interested in determining the importance of the individual parent styles on domains of students’ lives such as academic achievement and adjustment to university.

Authoritative parenting has been consistently linked to a number of outcomes that are beneficial to academic success, such as increased psychological adjustment in adolescents, and positive attitudes towards education; benefits that students in the current study presumably experienced (Heaven et al., 2002). In addition, the democratic disciplinary framework that is unique to authoritative parenting style has been shown to foster positive and successful achievement strategies in children, leading to a high level of academic performance in secondary students (Heaven et al., 2002), again in line with the findings from the Australian university sample. It is posited that, in this sample, beneficial achievement strategies, produced by positive parenting, influenced implementation of appropriate strategies for academic success.

It may be relevant that this sample was high-achieving, with the self-reported mean grade in this sample being in the high credit range. The high level of academic performance may not be representative of all other University students, and this fact should be taken into consideration when interpreting results. It should also be noted that a large proportion of the students in this study were Study Abroad students on exchange, who had to satisfy stringent academic requirements in order to participate in the exchange program, thus contributing to what may be a restricted range of scores. Nevertheless, the results are clear: authoritative parenting styles and academic results were positively related in this sample.

Similarly, but negatively, for permissive parenting (Hypothesis 1b), it was found that permissive parenting predicted lower levels of academic performance in results of this study. This finding confirms the position that other studies have taken in regard to permissive parenting style, finding it detrimental to high academic performance. Students with permissive parents obtained lower grades than students with either authoritative or authoritarian parents, due, it has been argued in other studies, to the low maturity expectations and lack of guidance in academic pursuits given to them by parents (Bronstein et al., 2005; Englund et al., 2004).

It is possible that students who perceived their parents to be permissive and uninterested in their academic pursuits did not feature highly in the current sample, as students with this background might already have dropped out of study (Marchant, Paulson, and Rothlisberg, 2001). This is a limitation for generalisability of the results; however, this finding has been consistently replicated in other university samples (Eppler, Carsen-Plentl, and Harju, 2000; Gonzalez et al., 2001; Ratelle et al., 2005). Further studies to examine this aspect may be.
needed. Nevertheless, the current sample demonstrated that there are detrimental academic effects on many students from the permissive parental style.

Academic Success and Coping Styles

In regards to the second set of hypotheses, the initial hypothesis that the three coping styles would explain a significant proportion of variance in academic performance was not supported. This finding is in contrast to earlier studies such as that by Nonis et al. (1998) (who found that coping style was a strong determinant in the outcomes of students’ levels of anxiety and depression, decision-making ability and academic achievement) and by Rafnsson et al. (2006) (who found that task-oriented coping was related inversely to emotional problems, and positively to grade point average in an Icelandic and American university sample).

Reasons for not finding support for the propositions that coping strategies would predict academic performance in the current sample may include restriction of range effects (mostly high-performing students being included in the sample, and these may have used a balanced approach to the application of each of the task-oriented, emotional and avoidance coping strategies, returning to more positive strategies quickly). That is, the high-achieving population who participated in this study may have utilized other coping resources that were more conducive to relaxation, such as engaging in social support, or relying on religious beliefs (Saroglou and Anciaux, 2004). Further study would be needed to determine whether such strategies were, or are used, to cope with academic pressures; and to determine the extent to which different cultures impact on strategies used.

This finding did not support some studies on avoidance coping in particular. Avoidance-oriented strategies have been identified as self-handicapping and detrimental to academic success in university students (Valentiner e.t al., 1994; Zuckerman, Kieffer, and Knee, 1998). There have been studies suggesting avoidance-oriented coping has only limited effects and may be a useful diversion for some. For example, Windle and Windle (1996) and Nurmi, Onatsu, and Haavisto (1995) found evidence that avoidant coping strategies benefit students when employed for a short time as respite from a stressor, but become self-handicapping only when utilized as a means of avoiding the situation for long periods of time and then lead to academic underachievement. Active procrastination is another strategy students may have employed, which is a possible reason that avoidance coping did not yield a negative/detrimental effect on students’ studies (Burns et al., 2000; Chu and Choi, 2005).

Conclusion

The significant results in this study have important implications for research into parenting styles in different contexts. Prior research has depicted aspects of authoritative parenting such as verbal give-and-take as being especially advantageous to students in westernized countries (Calvete and Connor-Smith, 2006), and the findings from the current study are consistent with their results. Values of parents as reflected in the parenting styles they adopt may need special attention in further studies, but already there is substantial

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evidence that, where academic success is a goal of parents for their children, implementing an authoritative parenting style has many advantages over permissive and authoritarian styles. A by-product of values that encourage self-development, decision-making, adherence to high and achievable standards, and self-discipline within a warm and caring framework (‘an authoritative style’) is that growing children and young adults also do better in our educational systems. These findings have implications for parents everywhere.

**REFERENCES**


Chapter 28

TRANSITION TO UNIVERSITY: HOW INDIVIDUAL CHARACTERISTICS CAN AFFECT STUDENTS' SATISFACTION WITH THEIR COURSE

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¹Consulting Psychologist, Regional Australia
²Queensland University of Technology, Australia

ABSTRACT

A student’s success during their first year at university has now been analysed in the past decade in several western countries from many different perspectives. Considered rightly to be a major transition in life, it has always been known to be a challenge to survive the first year. Previously some attempts had been made sporadically to determine what were the keys to a student’s success, but in Australia, since the education system’s government funding reduced substantially and since the income from full fee paying international students became a substantial part of the universities’ budgets, more and more interest arose within teachers, administrators and researchers about the exact nature of the success of both school leavers and mature age students in terms of retention and academic grades. If students were not satisfied, they might leave and go elsewhere, if they academically survived the first semester. As part of that pool of research, our study sought to ascertain the extent to which the student’s own input might affect their overall satisfaction with their academic performance, rather than just asking the student to assess what was wrong and right about external factors such as the course, the lecturer and the environment. We were interested in ascertaining how personality traits, motivational levels, learning strategies, previous academic performance levels, and grade expectations might affect the students’ overall course satisfaction in that critical first year.

Keywords: University Success, First Year Satisfaction, Transition to University, Academic Performance
INTRODUCTION

When entering university, students have to use their wayfinding skills to navigate through the maze of bureaucratic, technological, social, economic and evaluative systems which are all new to them. At this stage of their educational life, they have to deal with new educational social systems, making a gigantic leap from the secondary school system (for a large percentage of first year students) which is structured for the whole of their time at school, to an unstructured experience, where they are virtually "on their own" in terms of the amount of time that needs to be invested, the actual structuring of time to meet university deadlines, new content, totally different ways of teaching that content - without examples of what product they have to produce and at what standard - in order to pass the subject. The transition from school to university has been considered to be a difficult adjustment as students move from “being explicitly taught facts towards independent learning” (Parappilly, Quinton and Andersson, 2009, p. 591).

However in the past 17 years, James, Krause and Jennings (2009) point out that preparation at school for university has made a difference with 51% (up from 36% in 1994) of school graduates declaring that programs at school had prepared them better for their first year of university study. Also Dalziel and Peat (1998) had earlier indicated that the students who performed at higher levels of academic performance in secondary school did better in their first semester at university. Bear in mind that the students they studied were in science courses, where there are often definitive answers, rather than in courses such as arts, humanities and psychology where there are few definitive answers. The students in our study in fact came from eight different faculties.

ACADEMIC SUCCESS

There is general agreement that identifying the factors that influence academic performance can improve the targeting of interventions and support services for students at risk of academic problems. In the future, such knowledge may help tutors guide individual students not just to greater overall success, but towards more satisfaction with their university learning experiences.

In a study of 373 first year psychology students, Lennings and Gow (1997) found that the experience of previous success was most predictive of success in the future and that experience of the course did appear to fundamentally alter students’ perceptions of themselves. McKenzie and Schweitzer (2001) explored the issue of academic performance in an earlier study where questionnaires had been distributed to 197 first year students four to eight weeks prior to the end of semester exams, and then overall grade point averages were collected at semester completion. From that investigation, it was pinpointed that previous academic performance was identified as the most significant predictor of university performance. Integration into university, self efficacy, and employment responsibilities were also predictive of university grades.

McKenzie's work on first year students (see McKenzie and Gow, 2004) determined that while previous performance was a more accurate predictor of school leavers' performance, it
was self-reported learning strategies that more accurately predicted the success of mature age students.

Fortuitously, the opportunity arose to analyze data obtained from a larger subset of 1193 first year university students undertaking courses across faculties at the Queensland University of Technology (QUT), on this topic of student experience in their first year and thus we report here on an innovative quantitative method - the SEQ (The Student Experience Questionnaire) which was developed by Nulty (1999) which taps the students' experiences of their course during their course of study, rather than after they had completed their course. This quantitative data can reveal more than feedback about course aims, content knowledge, lecturers’ characteristics, their concern for students, and curriculum design, in that it taps commitment to improvement of the course, assessment methods enhancing learning, promotion of deep learning, and the learning environment.

**HOW SATISFYING IS THE TRANSITION FROM SCHOOL TO TERTIARY EDUCATION?**

With the increasing public responsibility of Australian universities, considerable emphasis has been placed on students’ satisfaction with their course of study (Long and Johnson, 1997). As a means of improving their national and international status as excellent teaching institutions, Australian universities invest considerable time and expenditure into gathering students’ evaluations of their course of study, both during the course and upon course completion. Student evaluations of courses can be interpreted in two ways. One approach is to view the student evaluation as an accurate indicator of the quality of the course. Another approach is to focus on what the evaluation says about the student’s level of satisfaction, which may or may not be an accurate reflection of course quality. While most research does imply that the evaluation is an indication of the student’s satisfaction level, researchers tend to focus on the implications of the evaluation for course quality assessment (Koon and Murray, 1995; Kwan, 1999; Marsh and Roche, 1994; Remedios, Lieberman, and Benton, 2000; Wachtel, 1998).

Just as course and teaching quality are proposed to be multidimensional constructs (Long and Johnson, 1997; Marsh and Roche, 1994), so too can satisfaction be considered as comprising various aspects. In fact, it can be argued that the dimensions proposed to underlie course or teaching quality, also underlie student satisfaction. That is, while an evaluation that focuses on the course quality may include a dimension such as ‘clear goals’, an evaluation of student satisfaction could simply include the dimension of ‘the student’s satisfaction with goal clarity’. While the underlying items of this dimension do not change, the interpretation of the evaluation does change.

**Student Evaluation of Teaching and Units**

In responses to the demand for valid Australian measures of student course experience, the Course Experience Questionnaire (CEQ) was developed and first used in 1993 to assess student's experience of the course. The CEQ prompts students to reflect on their course of
study and is designed to be completed after the course is finished. The CEQ assesses five dimensions of course experience discussed by Long and Johnson (1997) which include: quality of teaching, clarity of goals, appropriateness of the assessment and appropriateness of the workload, and the generic skills developed as a result of the course.

Two other questionnaires are also widely used in Australian universities to assess the quality of teaching and the quality of the unit itself; these questionnaires are the Student Evaluation of Teaching (SET) and the Student Evaluation of the Unit (SEU) (Nulty, 1999). These questionnaires are based on the dimensions of effective teaching proposed by Marsh and Roche (1994) which include: feeling that the course was worthwhile; lecturer enthusiasm and rapport between the lecturer and student; clarity of goals; group interactions; breadth of course material; appropriateness of the assessment and appropriateness of the workload.

However, while SET’s and SEU’s provide information about specific lecturers and units during the course, and the CEQ provides information about the course as a whole after the student has completed the course, there has been little research examining the student’s view of the course as a whole during the course of study. Valuable global information of the course as a whole could be obtained from the student during the course, rather than asking the student to reflect on the course after completion. The Student Experience Questionnaire (SEQ) was developed by Nulty (1999) in response to the need to develop a questionnaire that was able to assess the students’ experience of their course during their course of study rather than after they had completed their course.

Several factors have been identified as influencing a student’s evaluation of the teaching and course. One the most crucial factors to consider when examining students ratings of the course is how the ratings have been influenced by the grades the student had attained in the course. Cohen (1981), in a comprehensive meta-analytic study of 67 previous studies, detected that student evaluations were relatively highly correlated \( r = .43 \) with student grades. Cohen showed that a higher correlation existed between student evaluations and students grades for those studies where students evaluated the course after they had received their final grades, than for those studies where students evaluated the course prior to receiving their final grades. This indicates that students’ evaluations are influenced by the grades they attain, and Cohen highlights that obtaining ratings of the course prior to students receiving their final grades may provide a less biased rating of the course. In their article, Lennings and Gow (1997) stated that perhaps a number of students were operating on hope, rather than beliefs about mastery, because they obtained a negative correlation between their estimated result for the semester exam and their actual final result.

Remedios, Lieberman and Benton (2000) suggest that not only is the grade attained important, but how the grade attained actually relates to the grade that the student expected to attain is important. They suggest that the ‘relative grade’ (the difference between the expected grade and the attained grade) is more critical than the actual grade attained in influencing a student’s evaluation. They examined grade expectancies, actual grades, and student evaluations at four times throughout one semester: at the start of semester, after the mid-semester exam, after the final exam, and after the final grades had been received. They found that the best predictor of student evaluations after the final exam (before grades were known) was the actual grade in the mid-semester exam, followed by the ‘relative’ mid-semester grade (difference between actual and expected grade at mid-semester mark). However, the best predictor of the student evaluation after receiving their grades was the difference between the student’s actual grade and their initial expected grade (at the start of semester). They propose
that even though the grade expectancies appear to become more realistic through the semester as different assessment items are completed and progressive marks are known, the difference between the initial expectancies and actual outcome is a powerful influences on students’ final evaluations of the course.

In a similar vein, working with 373 first year psychology students, Lenning and Gow (1997) determined that experience of previous success was most predictive of success in the future and McKenzie’s work on first year students (see McKenzie and Gow, 2004) found that previous performance was indeed a more accurate predictor of school leavers’ performance, although it was self reported learning strategies that more accurately predicted the success of mature age students.

Long and Johnson (1997) reported several factors that influenced CEQ ratings. They believed that some factors affecting the CEQ ratings were intrinsic to the course (such as disciplinary differences), while others were extrinsic to the course (such as gender, age, enrolment status). Of the intrinsic factors, they reported that CEQ ratings differed across disciplines, with some disciplines gaining more positive CEQ ratings than other disciplines. In general, they reported that courses that were more difficult to enter (such as law courses) attained lower CEQ ratings than courses that were less difficult to enter (such as humanities courses). They highlighted the different content matter of the courses and the different levels of ability of the students as affecting the ratings.

In terms of extrinsic factors, students with higher previous performance (as measured by their university entry score) tended to have less favorable CEQ ratings than students with lower previous performance (Long and Johnson, 1997). Also, age was a factor affecting CEQ ratings for the quality of teaching and assessment sub-scales, with older students giving more favorable ratings than younger students. Long and Johnson (1997) conjectured that older students may be more accepting of lectures or may not expect so much from their lecturers than younger students. In addition, Marsh and Roche (1994) reported that students with more interest in the subject gave higher evaluations than students with less interest in the subject.

Little research has been conducted examining how personal characteristics affecting academic achievement, such as personality traits, motivational levels, and learning strategies, affect student satisfaction. In terms of personality characteristics, level of neuroticism, agreeableness, and conscientiousness may be important factors that influence a student’s satisfaction. With highly neurotic individuals being more prone to negative affect, and more antagonistic individuals being less cooperative and less compliant, it is possible that these individuals are less satisfied with the course. Further, individuals lacking conscientiousness (i.e. those that are disorganized, lacking in time management skills, and with poor planning) may be more likely to find the course to be more demanding and may subsequently evaluate the course more poorly.

In relation to motivational factors, students with an external locus of control (blame external forces for failures) may be more likely to be dissatisfied with the course, rather than students with an internal locus of control (as they take personal responsibility for their actions. On the other hand, as Marsh and Roche (1994) noted, students with an intrinsic interest in the course may be more likely to be satisfied with the course. Students who hold a more intrinsic value of the course, and who have a desire to understand the material and a genuine interest and enjoyment in the task, may rate the course more positively than students who focus more on extrinsic rewards such as grades or future job prospects. Focusing more on what the course can do for them, as distinct from what one can learn from the course, may
lead these students to be overly critical in their view of the course and thus produce somewhat more negative views of the course.

Students who utilize effective self-regulatory learning strategies may also be more likely to be satisfied with their course. Self-regulated learners take personal responsibility for their learning, manage their time effectively, and monitor their comprehension, according to Zimmerman (1990). It is possible that students who are self-regulated in their approach to learning, are likely to be more active participants in the learning process and thus, more actively pursue ‘satisfaction’ in their studies. On that same note, McKenzie and Gow (2004) deduced that it was self reported learning strategies, rather than previous performance, that more accurately predicted the success of mature age students.

**Aim of Study**

This study aimed to assess the degree to which individual characteristics, such as previous academic performance levels, personality traits, motivational levels, learning strategies, and grade expectations might affect students’ course satisfaction.

**METHOD**

**Procedure**

The study utilized a longitudinal design, with students being approached at the start of the first semester at university to complete a questionnaire, which assessed personality, achievement motivation, self-reported learning strategies, and grade expectations, along with demographic details about participants. Students provided their email addresses in order that they could be followed up in the future. These students were then contacted via email at the end of their first and second semester of study, prior to the end of semester exams to complete short follow-up surveys that assessed their satisfaction with the course, perceived success, and grade expectations.

**Initial Questionnaire**

Participants were recruited to participate in the initial questionnaire in one of two ways: (1) in lecture time, and (2) via an email to all students enrolled at the university. For those participants recruited in lecture time, lecturers introduced the researcher (McKenzie) to students and encouraged students to participate in the study. The researcher then proceeded to inform the students that the purpose of the questionnaire was to examine different variables affecting students in their university studies during first year, and students were then invited to participate in the study. Students who were approached during lecture time responded at a rate of 67%. Participants were given enough time in the allocated lecture time to complete the questionnaire (which took approximately 35 minutes) and they returned the questionnaire to the researcher at the end of that time. For those students recruited via email, an email was sent...
to all students enrolled within the university asking for any first year students to register their interest in participating in the study, by sending a return email to the researcher. These students provided their mailing addresses, and subsequently a copy of the questionnaire (with a stamped self-addressed return envelope) was sent to all of these students. The response rate (53%) for this group was slightly lower than that for those who were approached in lecture time.

Follow-Up Questionnaire

In the second last week of semester one and semester two, students who participated in the initial questionnaire and provided their email addresses were approached via email to participate in the follow-up questionnaire. Sending the email at this time of the semester allowed students time to receive the email and complete the survey before the end of semester, after which time students would have been difficult to contact. Students completed the survey and e-mailed it back to the researcher.

Participants

The original pool of participants in this study included 1193 first year university students across eight faculties at the Queensland University of Technology (QUT) (this sample size represented approximately a 76% response rate from the approached sample of 1560). Five hundred and seventy five males, 603 females, and 15 people who did not indicate their gender, participated in the study. Ages ranged from 16 to 58 (M = 21.44, SD = 7.09). For the first semester follow-up questionnaire, 302 students participated (representing a 25.3% response rate) - 120 males and 182 females. For the second semester follow-up questionnaire, 235 students participated (representing a 19.7% response rate) - 105 males and 130 females.

Materials

The initial student questionnaire assessed personality, achievement motivation, self-reported learning strategies and obtained demographic details about participants. Academic data was obtained by accessing the student records held by the university (students provided informed consent for their records to be accessed when they completed the initial questionnaire). Student records showed each student’s entrance rank and this was used as an index of previous academic performance. For school leavers, an Overall Position (OP) was available. This ranks students in relation to others on a scale from 1 to 25, with 1 being the highest and 25 being the lowest. For mature-age students, a Queensland Tertiary Admission Centre (QTAC) rank was available. This ranked students on a scale from 1 to 99 with 99 being the highest and 1 being the lowest. Thus, it was important to place all students on a comparable scale, and thus using a conversion table from the Queensland Tertiary Admission Centre, QTAC ranks were converted to their equivalent OP score for ease of interpretation.

For a measure of academic achievement, grade point averages (GPA’s) were accessed from student records. GPA’s are a measure of a student’s average performance across all
subjects in which they are enrolled. They range from 1 to 7, with a grade of 7 being the highest and being classified as a high distinction, a grade of 6 being a distinction, a grade of 5 being a credit, a grade of 4 being a pass, a grade of 3 being a low pass, a grade of 2 being a fail, and a grade of 1 being a low fail.

**Initial Questionnaire**

*Achievement motivation.* Four scales from the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Garcia and Pintrich (1995) were used to assess academic self-efficacy, locus of control, learning goals and task value. The selected scales included academic self-efficacy (8 items), control of learning beliefs (4 items), intrinsic goal orientation (or learning goals) (4 items), and task value (6 items). The academic self-efficacy scale measures the extent to which one believes that one has the ability to succeed in a given academic task. The control of learning beliefs scale measures the degree to which students attribute outcomes to factors within their own control, rather than to external agents. The intrinsic goal orientation scale measures a desire for learning and mastery. Task value beliefs refer to the students’ interest in the subject and their views about the use and importance of the subject. Participants respond to a series of statements on a seven point Likert scale, ranging from 1 (not at all true of me) to 7 (very true of me).

*Self regulatory learning strategies.* Five sub-scales from the Learning Strategies scale from the MSLQ were also used. The five sub-scales that were used were the elaboration and organization sub-scale from the cognitive learning scale, the metacognitive self-regulation scale, and the time management and effort regulation sub-scale from the resource management scale. The elaboration scale refers to paraphrasing and summarizing. The organization scale involves outlining the major points and using tables to illustrate points. The metacognitive self-regulation scale measures goal setting, observing one’s understanding of the task, and task-dependent regulation. The time management scale involves appropriate use of one’s time. Effort regulation refers to delaying gratification and persisting in tasks, regardless of difficulty.

*Personality traits.* The NEO Five Factor Inventory (NEO-FFI) which is a short version of the NEO Personality Inventory-Revised (NEO-PI-R), developed by Costa and McCrae (1992), was used to assess the big five personality traits of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The NEO-FFI consists of 60 items with 12 items per personality-trait scale. Participants rate their level of agreement with a series of statements on a five point Likert scale (1 = strongly disagree to 5 = strongly agree). Scores are produced on each of the big five personality traits (Costa and McCrae, 1992). High scores on neuroticism indicate a tendency to experience disruptive emotions and irrational thoughts, whereas low scores on neuroticism indicate a level of emotional stability. High scores on extraversion indicate a tendency to sociability and a general liking of people and groups, while low scores on extraversion indicate a level of introversion or a more reserved, independent individual. High scores on openness to experience indicate an active imagination, intellectual curiosity and independence in judgments, whereas low scores indicate conventional behaviours and narrow outlooks. High scores on agreeableness indicate a degree of altruism and sympathy for others, while low scores on agreeableness indicate a level of antagonism and scepticism. Finally, high scores on conscientiousness indicate self-
control, purposeful and reliable behavior and strong will, while low scores on conscientiousness indicate apathetic behavior and a level of hedonism.

Predicted grades. Students were also asked to predict the grades they would attain that semester and the grades they wanted to attain that semester. Students were asked “What do you expect your overall average grade to be at the end of semester?” and “What would you want your overall average grade to be at the end of semester?” Students then rated their responses on a grade scale from low pass to high distinction.

Follow-Up Questionnaires

The follow-up survey for semester one and two measures perceived success in the respective semester, student experience of the course, and grade predictions.

Student Experience Questionnaire. As indicated earlier, the Student Experience Questionnaire (SEQ) was developed by Nulty (1999) in response to the need to develop a questionnaire which was able to assess the students' satisfaction with their course during their course of study rather than after they had completed their course, as was the case with the Course Experience Questionnaire (as discussed by Long and Johnson, 1997). The SEQ was developed from re-worded CEQ items and items re-worded from the Student Evaluation of Teaching (SET) questionnaire and Student Evaluation of Unit (SEU) questionnaire (Nulty, 1999). The SEQ assesses nine dimensions believed to underlie a worthwhile course experience: course aims, content knowledge, lecturers' characteristics, concern for students, assessment methods enhancing learning, promotion of deep learning, curriculum design, commitment to improvement of the course, and the learning environment.

Two versions of the questionnaire are available: a full version (20 items) and an abbreviated version (10 items). This study incorporated the abbreviated version of the SEQ as brevity was an important feature to consider in the follow-up questionnaire to enhance the response rate. The SEQ asks students to rate their responses along a five point Likert scale from disagree strongly to agree strongly.

To assess the reliability (internal consistency) of the questionnaire, the Cronbach’s alpha of the first and second semester SEQ were calculated. Acceptable levels of reliability were identified with the first semester SEQ shown to have an alpha coefficient of .818 and with the second semester SEQ data, proven to have an alpha coefficient of .796.

Perceived success. A scale consisting of seven questions was constructed to measure the student's perceived success. The questions were as follows: (1) I believe that I have been successful in my first/second semester of study; (2) I am happy with the marks that I have attained so far this semester; (3) I am happy with the amount of material I have learned this semester; (4) I am happy with the quality of my learning this semester; (5) I think I have not worked as hard as I should have this semester (reverse scored); (6) I think I don’t have the potential to be successful at university (reverse scored); and (7) I feel that my life outside of university has interfered with my chances of success at university this semester (reverse scored). Students rated their responses to the questions along a five point Likert scale ranging from disagree strongly to agree strongly. Ratings from each of the seven questions were combined (after reverse scoring the appropriate questions) and divided by seven to give a single perceived success scale ranging from 1 (disagree strongly) to 5 (agree strongly).
The reliability (internal consistency) of the scale was assessed using Cronbach’s alpha. The perceived success scale was found to have acceptable reliability with an alpha coefficient of .802 for the first semester questionnaire and .785 for the second semester perceived success scale.

Predicted grades. Similar to the initial questionnaire, the final two questions of both the first and second semester follow-up questionnaire asked students to predict the grades they would attain that semester and the grades they wanted to attain that semester. Students were asked “What do you expect your overall average grade to be at the end of semester?” and “What would you want your overall average grade to be at the end of semester?” Students then rated their responses on a grade scale from low pass to high distinction.

RESULTS

Statistical Approach

A series of stepwise multiple regressions were used to assess the degree to which individual characteristics and previous performance affected students’ course satisfaction across their first year at University.

Descriptives

Table 1 shows the means and standard deviations for all variables in the study. Table 2 depicts the correlation matrix for all variables in the study.

Individual Characteristics Affecting Course Satisfaction

A stepwise multiple regression examined the relationship between the individual characteristics of the students who were assessed at the beginning of the year (personality, motivation, learning strategies, expected and wanted grades) and their course satisfaction at the end of the first semester of study. A significant relationship was identified \( F(4, 295) = 22.82, p < .01 \), which accounted for 23.6% of the variance in course satisfaction. There were four significant variables in the equation: effort regulation, task value, openness to experience, and wanted grades at the start of the year. Table 3 contains the results for the significant variables in the multiple regression.

The first two analyses assessed the extent to which individual characteristics, that were assessed at the beginning of the first year, could predict a student's level of course satisfaction at the end of the first and second semester of study. The second two analyses assessed whether students’ perceived success, grade expectations and the grades students wanted to achieve at the end of the semester explained significantly more variation to the previous regression equation. The third analyses examined whether the students’ attained grades in the first semester and the gap between the students expected, wanted and actual grades in the first semester of study influenced their course satisfaction in the second semester of study.

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**Table 1. Means and Standard Deviations for Study Variables**

<table>
<thead>
<tr>
<th>Variables in Study</th>
<th>Males</th>
<th>Females</th>
<th>School Leavers</th>
<th>Mature-age Students</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 575</td>
<td>n = 603</td>
<td>n = 587</td>
<td>n = 600</td>
<td>N = 1193</td>
</tr>
<tr>
<td>Entrance Ranka</td>
<td>5.74 (2.61)**</td>
<td>6.36 (2.96)</td>
<td>6.19 (2.98)</td>
<td>5.87 (2.53)</td>
<td>6.07 (2.82)</td>
</tr>
<tr>
<td>1st Semester GPA</td>
<td>5.18 (0.79)</td>
<td>5.13 (0.71)</td>
<td>5.10 (0.73)</td>
<td>5.20 (0.76)*</td>
<td>5.15 (0.75)</td>
</tr>
<tr>
<td>2nd Semester GPA</td>
<td>4.70 (1.42)</td>
<td>4.77 (1.36)</td>
<td>4.70 (1.38)</td>
<td>4.79 (1.40)</td>
<td>4.74 (1.39)</td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>5.08 (0.97)**</td>
<td>4.73 (1.08)</td>
<td>4.81 (1.01)</td>
<td>5.00 (1.08)*</td>
<td>4.90 (1.05)</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>5.47 (0.88)</td>
<td>5.52 (0.75)</td>
<td>5.45 (0.84)</td>
<td>5.57 (0.91)*</td>
<td>5.50 (0.87)</td>
</tr>
<tr>
<td>Task Value</td>
<td>5.13 (1.09)</td>
<td>5.43 (1.07)**</td>
<td>5.19 (1.13)</td>
<td>5.43 (1.02)**</td>
<td>5.30 (1.09)</td>
</tr>
<tr>
<td>Learning Goals</td>
<td>4.77 (0.99)</td>
<td>4.68 (1.11)</td>
<td>4.60 (1.03)</td>
<td>4.87 (1.07)**</td>
<td>4.72 (1.06)</td>
</tr>
<tr>
<td>Performance Goals</td>
<td>4.67 (1.18)</td>
<td>4.67 (1.18)</td>
<td>4.74 (1.17)</td>
<td>4.60 (1.19)</td>
<td>4.68 (1.18)</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaboration</td>
<td>4.71 (0.85)</td>
<td>4.93 (0.93)**</td>
<td>4.74 (0.86)</td>
<td>4.95 (0.87)**</td>
<td>4.83 (0.90)</td>
</tr>
<tr>
<td>Organisation</td>
<td>4.70 (1.02)</td>
<td>5.09 (1.04)**</td>
<td>4.82 (1.04)</td>
<td>5.04 (1.05)**</td>
<td>4.92 (1.05)</td>
</tr>
<tr>
<td>Metacognitive SRb</td>
<td>4.32 (0.84)</td>
<td>4.41 (0.93)</td>
<td>4.33 (0.87)</td>
<td>4.43 (0.92)</td>
<td>4.37 (0.89)</td>
</tr>
<tr>
<td>Time Management</td>
<td>4.89 (0.93)</td>
<td>5.20 (1.01)**</td>
<td>5.01 (0.96)</td>
<td>5.14 (1.02)</td>
<td>5.07 (0.99)</td>
</tr>
<tr>
<td>Effort Regulation</td>
<td>4.84 (1.04)</td>
<td>5.12 (1.01)**</td>
<td>4.93 (1.06)</td>
<td>5.10 (0.99)*</td>
<td>5.00 (1.04)</td>
</tr>
<tr>
<td>Personality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neurotician</td>
<td>20.26 (7.96)</td>
<td>23.62 (7.98)**</td>
<td>22.31 (7.91)</td>
<td>21.86 (8.41)</td>
<td>22.11 (8.14)</td>
</tr>
<tr>
<td>Extraversion</td>
<td>28.69 (6.29)</td>
<td>30.50 (5.78)**</td>
<td>30.03 (5.95)</td>
<td>29.20 (6.20)</td>
<td>29.66 (6.08)</td>
</tr>
<tr>
<td>Openness</td>
<td>27.79 (6.57)</td>
<td>29.97 (5.75)**</td>
<td>27.99 (6.15)</td>
<td>30.23 (6.11)**</td>
<td>28.98 (6.23)</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>29.96 (5.52)</td>
<td>32.10 (5.45)**</td>
<td>31.19 (5.55)</td>
<td>31.13 (5.67)</td>
<td>31.17 (5.60)</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>30.29 (6.74)</td>
<td>31.75 (6.68)**</td>
<td>30.53 (6.65)</td>
<td>31.84 (6.73)**</td>
<td>31.11 (6.71)</td>
</tr>
</tbody>
</table>

*Higher entrance ranks academically are signified by lower numeric values; bSR = Self-Regulation.
*Significantly higher than other group p<.05; **Significantly higher than other group p<.05.
Table 2. Correlation Matrix for all Variables

<table>
<thead>
<tr>
<th></th>
<th>Entrance Rank</th>
<th>GPA Sem 1</th>
<th>GPA Sem 2</th>
<th>Self-efficacy</th>
<th>Locus of Control</th>
<th>Task Value</th>
<th>Learning Goals</th>
<th>Performance Goals</th>
<th>Elaboration</th>
<th>Organization</th>
<th>Self-regulation</th>
<th>Time Management</th>
<th>Effort Regulation</th>
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Note: *p < .01; *SR = Self-Regulation.
Table 3. Individual Characteristics Affecting Course Satisfaction: End of First Semester

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<th>Variables</th>
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<td>.159</td>
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<td>Wanted GPA at the start of year</td>
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<td>.038</td>
<td>-.153</td>
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A second stepwise multiple regression examined the relationship between the individual characteristics of the student that were assessed at the beginning of the year (personality, motivation, learning strategies, expected and wanted grades) and their course satisfaction at the end of the second semester of study. A significant relationship was identified \( F(2, 226) = 17.27, p < .01 \), which accounted for 13.3% of the variance in course satisfaction. There were two significant variables in the equation: effort regulation and openness to experience. Table 4 outlines the results for the significant variables in the multiple regression.

Table 4. Individual Characteristics Affecting Course Satisfaction: End of Second Semester

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The Influence of Perceived Success and Grade Expectations on Course Satisfaction

A stepwise multiple regression examined the relationship between the students' perceived success, grade expectations and wanted grades at the end of the first semester of study (after partialling out the influence of their individual characteristics that were assessed at the beginning of the year) and their course satisfaction at the end of the first semester of study. A significant relationship was identified \( F(5, 289) = 25.72, p < .01 \), which accounted for 30.8% of the variance in course satisfaction. Perceived success at the end of the first semester was found to explain significant unique variance in the prediction of course satisfaction in the first semester after accounting for individual characteristics, explaining an extra 6.6% of the variance. The four significant individual characteristics identified in the previous regression equation remained important in this new stepwise multiple regression. Table 5 shows the results for the significant variables in the multiple regression.

A second stepwise multiple regression examined the relationship between the students' perceived success, grade expectations and wanted grades at the end of the second semester of study (after partialling out the influence of their individual characteristics that were assessed at the beginning of the year) and their course satisfaction at the end of the second semester of study. A significant relationship was identified \( F(4, 221) = 21.10, p < .01 \), which accounted for 27.6% of the variance in course satisfaction. Perceived success at the end of the second semester and expected grades at the end of second semester were ascertained as explaining significant unique variance in the prediction of course satisfaction in the second semester.
after accounting for individual characteristics, explaining an extra 14.9% of the variance. The two significant individual characteristics identified in the previous regression equation remained important in this new stepwise multiple regression. Table 6 shows the results for the significant variables in the multiple regression.

Table 5. Perceived Success and Grade Expectations affecting Course Satisfaction at End of First Semester

<table>
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<tr>
<td>Perceived success at end of semester one</td>
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Table 6. Perceived Success and Grade Expectations Affecting Course Satisfaction at the End of the Second Semester at University

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The Gap between Expectation and Reality and Course Satisfaction

In order to examine whether students’ actual grades and the gap between their expected, wanted and actual grades in the first semester affect their course satisfaction in the second semester of study, a multiple regression was conducted, with the following variables being entered into the equation:

1. The gap between the students’ expected and wanted grades at the start of the year, mid-year, and at the end of year.
2. The gap between the students’ expected grades at the start of the year and their actual semester one grades.
3. The gap between the students’ expected grades mid-year and their actual semester one grades.
4. The gap between the students’ wanted grades at the start of the year and their actual semester one grades.
5. The gap between the students’ wanted grades mid-year and their actual semester one grades.
6. The students’ actual semester one grades.
Unexpectedly, it was found that none of these variables were significantly predictive of the students’ course satisfaction in the second semester of study ($F(6, 159) = 1.079, p = .378$).

Some of the students ($n = 81$) who were contactable after the first year had been completed and their results were known (they were on the long summer vacation at this stage), commented on the general factors that they believed influenced success. Ninety one percent believed that the amount of work a student put into her/her work was an important factor affecting achievement, followed by motivation and dedication (87.7%) and time management (85.2%).

With regard to previous performance being a predictor of first year academic success, 63% nominated prior academic skills, or lack of skills, as being important; 44.4% endorsed the belief that prior success motivated future performance; 34.6% considered that it had given feedback to the student about their own ability; and 33.3% commented that it had given them more to build on.

In terms of learning strategies being an essential component of wayfinding skills at university level, the majority considered these learning strategies helped them to: prioritize tasks (81%); complete tasks on time (71.6%); organize material (71.6%); utilize self discipline (70.4%); and to keep stress under control (56.8%).

**CONCLUSION**

The study set out to determine what individual characteristics, including previous academic performance levels, personality traits, motivational levels, learning strategies, and grade expectations might affect students’ course satisfaction. Overall, the results showed that at the end of first semester, effort regulation, task value, openness to experience, and wanted grades affected course satisfaction. By the end of the second semester of study, only two of those remained significant in terms of course satisfaction: effort regulation and openness to experience.

Further analyses assessed whether students’ perceived success, grade expectations and the grades they wanted to achieve at the end of each semester would add any more information to this research questions. This was in fact the case; at the end of both first and semester semesters, perceived success was confirmed as explaining significant unique variance in the prediction of course satisfaction after accounting for individual characteristics.

Our speculations about gaps between expectations and reality and course satisfaction were not upheld in this situation. Indeed, having decided that there must really be something which explained the poor feedback on courses from some of the students, it was disappointing to be once again ‘ruled out of court’ with respect to the non-significant findings in relation to the gap between expectation and reality and course satisfaction.

Most first year university teachers had noticed a significant negative shift in attitude, commitment, and taking personal responsibility for their educational outcomes about one decade ago with certain sections of the student intake. This may be due to the type of student changing as proposed by Collier and Morgan (2008); they pointed out that things have indeed changed with generation Y students being different from traditional college students. Additionally, it may be that we know little about the effects of the digital world of communication (Gow, 2009) on young people and their perceptions of what is needed to

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facilitate a student’s progress, in a way that they respect because of their prior exposure to interactive communication technologies.

REFERENCES


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Chapter 29

DO CHRONIC MORAL EMOTIONS MEDIATE BETWEEN VALUE CONGRUENCE AND PSYCHOLOGICAL WELLBEING IN UNIVERSITY STUDENTS?

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\(^1\)Queensland University of Technology, Australia
\(^2\)Consulting Psychologist, Regional Australia
\(^3\)Franklin and Marshall College, USA, Lancaster, Pennsylvania

ABSTRACT

In an effort to better understand the role that moral emotions play in the psychological health of university students, we asked university students to focus on the level of congruence or incongruence between their personal moral commitments and their behaviours (value congruence); concurrently, we measured selected aspects of students’ psychological health: namely, general psychological illness and three nominated markers of subjective well-being (life satisfaction, optimism, and self-esteem). Chronic moral emotions were conjectured to mediate between value congruence and the selected markers of psychological health. This was the case for the subjective well-being variables, but not for general psychological illness. Higher value congruence was related to lower chronic moral emotions as well as higher life satisfaction, optimism, and self-esteem; however, value congruence did not correlate with general psychological illness. Further, lower chronic moral emotions were associated with an increase in each subjective well-being index and lower general psychological illness. Moreover, lower chronic moral emotions accounted for the positive relationship between value congruence and each component of subjective well-being. We suggest that further investigations involving larger samples in a diversity of university settings may provide insights that would empower clinicians to assist university students who are struggling with the deleterious impacts of value incongruent behaviour.

Keywords: Value Congruence, Chronic Moral Emotions, Psychological Illness, Life Satisfaction, Optimism, Self-Esteem

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INTRODUCTION

Shame and guilt are moral emotions that arise in response to self-assessments and self-reflective judgments that what one has done or not done, or the kind of person one has become, is faulty (Kroll, Egan, Erickson, Carey, & Johnson, 2004). These emotions are of great interest to many theorists and researchers in psychiatry and abnormal psychology, since such emotions appear to have high importance for psychological health - potentially playing central roles in the pathogenesis or exacerbation of a range of psychopathological states as well as deterioration of subjective well-being (Penn, Jayawickreme, Atanasov, & Schien, under review). Our work seeks to explore the role that recurrent experience of guilt and shame (chronic moral emotions) may play in mediating the impacts of moral behaviour on psychological health. We hypothesised that the level of congruence or incongruence between a person’s own moral commitments and behaviours (value congruence) may affect his or her psychological health indirectly via influencing whether or not he or she experiences chronic moral emotions (Penn et al., under review). In this chapter, we adumbrate the theoretical rationale for such a prediction (see also Hall, Gow, Penn, & Jayawickreme, 2011; Penn et al., under review) and report on our findings from a correlational study.

Chronic Moral Emotions and Psychological Health

Chronic moral emotions may impact negatively on psychological health. They may lead to the onset or exacerbation of numerous psychological disorders, such as major depression, substance abuse, and somatisation, as well as to reduced subjective well-being, such as life dissatisfaction, pessimism, and poor self-esteem (Penn et al., under review). When moral emotions persist over extended periods of time, the belief that the self is faulty may become firmly entrenched. When this occurs, other undesirable ways of experiencing the self, which may be directly implicated in various psychological disorders, may arise. For example, a self that is seen as faulty also may be hated and induce feelings of helplessness and hopelessness over the perceived difficult or impossible task of repairing it (Penn et al., under review; Tangney, 1996). This could, in turn, cause or contribute to major depression and, in extreme cases, suicidal actions in an attempt to escape noxious or painful self-awareness (Baumeister, 1991).

Value Congruence and Chronic Moral Emotions

Value congruence may influence whether or not a person experiences chronic moral emotions by affecting his or her moral self-assessments. Persons who tend to act incongruently with their values may experience chronic moral emotions because they are likely to assess themselves and their behaviour as evidence of moral failure. In this connection, Bybee and Quiles (1998, p. 281) noted:

Acts that are repeated, that are habitual, or that form a pattern may give rise to both chronic guilt and shame as the individual feels guilty over each incident and ashamed for the characterological flaw that permitted the behavior to be continued. Singular incidents

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may also give rise to both chronic guilt and shame. A solitary event may mar and stigmatize, leading to ongoing guilt over the event (e.g., having an accident while driving under the influence) and shame over the label (e.g., being a drunk driver).

Conversely, those who tend to act congruently with their values may be spared continual feelings of shame and guilt because they assess themselves and their behaviour positively.

The Mediating Role of Chronic Moral Emotions

Figure 1 shows a model of psychological health based on value congruence that has been proposed by Penn et al. (under review). The model is as follows. Value congruence affects a person’s psychological health (levels of psychological illness and subjective well-being) indirectly via influencing whether or not he or she experiences chronic moral emotions. Specifically, value-incongruent behaviour leads to chronic moral emotions, which in turn may result in psychological health problems (i.e., psychological illness and low subjective well-being). Conversely, value-congruent action helps to spare the person from such undesirable consequences.

![Figure 1. Conceptual Model of the Relations between Value Congruence, Chronic Moral Emotions, and Psychological Health (Psychological Illness and Subjective Well-Being). Based on Penn, et al. (under review).](Complimentary Contributor Copy)

Research Aims and Hypotheses

The aim of the present study was to extend upon Penn et al.’s (under review) initial investigation of the model by examining the mediating role assigned for chronic moral emotions. In this correlational design, five relationships in accord with the model were posited and are as follows. Increased value congruence, as measured by self-report of the extent to which behaviour over the past six months had been consistent or inconsistent with self-endorsed moral values would correlate negatively with (1) chronic moral emotions and (2) general psychological illness, and positively with selected indices of subjective well-
being, including (3) life satisfaction, (4) optimism, and (5) self-esteem. Importantly, it was also predicted that chronic moral emotions would mediate the relationships of value congruence to general psychological illness and the subjective well-being indices.

METHOD

Participants

One hundred and one undergraduate and postgraduate university students aged 18 to 61 years (\(M_{\text{age}} = 25.0\) years, \(SD = 9.5\)) volunteered to participate in the study. Students under 18 were ineligible to participate. Of the 100 participants who provided data, 84 were undergraduates enrolled in a course in introductory psychology; the remaining 16 postgraduate participants were colleagues of the lead author enrolled in coursework pursuing masters or doctorate degrees in clinical psychology. As an incentive for participation, undergraduates received a half-hour credit toward the research participation component of their course. Postgraduates received no incentive for participation.

Measures

**Personal Morality and Degree of Strength of Character Scale (PM–DSC).** The PM–DSC is a measure of self-endorsed personal morality commitments and value congruence that the lead author devised for use in this study. The PM–DSC is an adaptation of the methodology employed by Penn et al. (under review) and consists of two parts. Part I is an adaptation by the lead author of the Goal and Mode Values Inventories (GMVI; Braithwaite & Law, 1985); it measures personal morality commitments. In this study, Part I was administered solely for the purpose of having participants reflect on their personal moral commitments in order to assist their assessment of their value congruence in Part II.

Part I has two components. Component A is the original GMVI, which contains three inventories. The Personal Goal Values Inventory contains 23 personal end states of existence that may serve as life-guiding principles for the respondent (e.g., Item 5: “True Friendship [having genuine and close friends]”). The Mode Values Inventory includes 42 human traits (e.g., Item 8: “Loving [showing genuine affection]”; Item 14: “Bright [being quick thinking]”). The Social Goal Values inventory contains 14 socially-relevant end states of existence that pertain to the development and protection of the community and which also serve to guide personal behaviour (e.g., Item 5: “A World at Peace [being free from war and conflict]”). Respondents indicate their acceptance or rejection of each value on a 7-point Likert scale ranging from 1 (“I reject this as a guiding principle in my life”) through 3 (“I neither reject nor accept this as a guiding principle in my life”) to 7 (“I accept this as of the greatest importance as a guiding principle in my life”). Braithwaite and Law (1985) reported median test-retest reliabilities for the Personal Goal Values, Mode Values, and Social Goal Values inventories of .62, .61, and .62, respectively.
Component B consists of an additional item set designed by the lead author that requires respondents to indicate which of their accepted human values are morally relevant. To accomplish this, each item from Component B is paired to an item from Component A. Each Component B item requires the respondent to answer either yes or no to the following statement: “For me personally, to reject this value would be immoral.” Each Component B item is to be answered only if the corresponding human value from Component A is accepted (i.e., the corresponding Component A item is scored 4–7). If the respondent indicates that it would be immoral to reject the human value that is under consideration, by answering yes, then that human value is judged to be moral for the respondent. Conversely, if the respondent indicates that it would not be immoral to reject the human value, by answering no, then that human value is deemed morally-irrelevant for the respondent. Figure 2 depicts an example item that shows the two components of Part I of the PM–DSC.

The inclusion of Component B, in addition to the original GMVI, is intended to enhance the instrument’s construct validity as a measure of moral values (as opposed to human values in general). However, Component B has not yet been psychometrically validated.

<table>
<thead>
<tr>
<th>Component 1 (Human values)</th>
<th>Component 2 (Moral values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  I reject this</td>
<td>If 4–7 circled:</td>
</tr>
<tr>
<td>2  I am inclined to reject this</td>
<td>For me personally, to reject this value would be immoral</td>
</tr>
<tr>
<td>3  I neither accept nor reject this</td>
<td></td>
</tr>
<tr>
<td>4  I am inclined to accept this as important</td>
<td></td>
</tr>
<tr>
<td>5  I accept this as important</td>
<td></td>
</tr>
<tr>
<td>6  I accept this as very important</td>
<td></td>
</tr>
<tr>
<td>7  I accept this as of the greatest importance</td>
<td></td>
</tr>
</tbody>
</table>

1. Physical Development (being physically fit)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Y</th>
<th>N</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Figure 2. Example item from PM–DSC Part I showing Components A and B.

Part II of the PM–DSC is an adapted version of Penn et al.’s (under review) single-item measure of value congruence. The rephrased item refers specifically to moral values, rather than to human values in general. The item is as follows:

The values from Part I that you accept (i.e., circled 4–7) and believe that to reject would be immoral (i.e., circled Y) can be termed your current moral values. Now, reflecting specifically on your current moral values (as opposed to your other sorts of values), indicate the extent to which your behaviour during the past six months has been consistent/inconsistent with these values. Do this by ticking the appropriate box below (tick only one box). In other words, we are interested in your personal belief about the degree to which your present way of life is in harmony with your current moral values.

The asymmetrical 5-point rating scale ranges from 1 (My behaviour has been very inconsistent with my moral values) through 3 (My behaviour has been somewhat consistent...
with my moral values) to 5 (My behaviour has been very consistent with my moral values). Part II is yet to be psychometrically validated.

State Shame and Guilt Scale (SSGS). The Shame and Guilt subscales of the SSGS (Marschall, Sanftner, & Tangney, 1994) were used to measure chronic moral emotions. Although the SSGS was originally designed to measure in-the-moment (i.e., state) feelings of shame (e.g., “I feel like I am a bad person.”) and guilt (e.g., “I feel bad about something I have done.”), the scale was adapted to assess the chronic form of these emotions by using an extended time frame (i.e., the past week). To derive an index of chronic moral emotions, sum-scores of the two subscales were aggregated. In support of the validity of this aggregated score, the two subscales proved to be correlated highly (r = .7, N = 100). Each subscale contains 5 items with a scale ranging from 1 (Not felt this way at all) to 5 (Felt this way very strongly). Total scores range between 10 and 50, with higher scores indicating greater chronic moral emotions. Murray, Ciarrocchi, and Murray-Swank (2007) reported alpha reliabilities for the shame and guilt subscales of .84 and .83, respectively.

Brief Symptom Inventory (BSI). The BSI (Derogatis, 1993) is a widely used, carefully validated, brief version of the Symptom Checklist-90-Revised (Derogatis, 1994). The 53 items provide a scale of subjective distress ranging from 0 (Not at all) to 4 (Extremely). Participants are instructed to rate each item based on how much that problem has distressed or bothered them during the past week. Higher scores denote greater pathology or greater mental or physical distress. The measure produces nine primary symptom indices (e.g., Depression, Anxiety) as well as three global indices of distress, one of which is the Global Severity Index (GSI), which is a measure of general psychological illness (mean of all items). The BSI data reported in this study are limited to GSI scores.

Subjective well-being measures. A separate measure was used for each selected component of subjective well-being: life satisfaction, optimism, and self-esteem. In this study, the three subjective well-being measures were presented together in a single questionnaire. Items of the three measures were intermixed. For all three measures, the same item response format was adopted; participants were instructed to respond based on their experience during the past week on a 5-point Likert scale ranging from 1 (Strongly Disagree) through 3 (Neutral) to 5 (Strongly Agree). Negatively worded items were reverse scored. For each measure, a sum-score was obtained, with higher scores indicating greater life satisfaction, optimism, and self-esteem.

The Satisfaction with Life Scale (SWLS) was designed by Diener, Emmons, Larsen, and Griffin (1985). The SWLS is based on the assumption that “one must ask subjects for an overall judgement of their life in order to measure the concept of life satisfaction” (pp. 71–72). Diener and his colleagues employed factor analysis to derive 5 items from an original pool of 48. Example SWLS items include, “In most ways my life is close to my ideal.” and “If I could live my life over, I would change almost nothing.” Diener et al. reported a two-month test-retest correlation coefficient of .82 and an alpha coefficient of .87 for a sample of 176 undergraduates. Furthermore, they found that the SWLS correlates positively with other indices of subjective well-being and negatively with markers of psychological illness.

The Life Orientation Test–Revised (LOT-R; Scheier, Carver, & Bridges, 1994) contains 6 items that assess optimism. Of these items, three are worded in the positive (e.g., “I’m always optimistic about my future.”) and three in the negative (e.g., “If something can go wrong for me, it will.”). Scheier et al. (1994) found that these items have a Cronbach’s alpha of .78 and a test-retest correlation coefficient at intervals of 4 months, 12 months, 24 months,
and 28 months of .68, .60, .56, and .79, respectively. The LOT-R also contains 4 filler items. In the present study, the filler items were not used, as the six LOT-R items were interspersed among items of the other two subjective well-being measures.

The Rosenberg Self-esteem Scale (RSE; Rosenberg, 1965) is a widely used measure of self-esteem, possessing good reliability and validity (Crandall, 1973; Rosenberg, 1965). The RSE contains 10 items, including five worded positively (e.g., “I feel that I have a number of good qualities.”) and five negatively (e.g., “I wish I could have more respect for myself.”).

Procedure

Ethical clearance was obtained from the University Research Ethics Unit. Undergraduate participants were recruited by advertising, while postgraduate participants were recruited by fliers posted in postgraduate offices across campus. The survey included instructions for returning the survey via mail, in a prepaid envelope, or in person, to a deposit box at the School of Psychology building. Surveys that were distributed to the undergraduates included additional instructions for securing research participation credit. One hundred and forty six copies of the survey were distributed. Of these, 101 (69.2%) were returned complete, one (0.7%) was returned blank, and 44 (30%) were not returned. One of the returned surveys was excluded as explained in the next section.

RESULTS

Preliminary Analyses

Missing values. No action was taken in response to missing data on the personal morality part of the PM–DSC, as this was administered solely to have participants reflect upon their moral values. There were no missing data for Value Congruence. All General Psychological Illness data for one participant were missing; these missing data were not replaced. This participant’s data were retained for analyses not involving General Psychological Illness. Furthermore, 0.1% of data for Chronic Moral Emotions, General Psychological Illness, Life Satisfaction, Optimism, and Self-Esteem were missing in apparent random fashion. These missing data were replaced using the expectation-maximization method. Missing data for General Psychological Illness were replaced with reference to the particular GSI primary symptom index (e.g., Depression, Obsessive-Compulsive) pertaining to the missing data point.

Assumptions of normality. One participant had particularly high Chronic Moral Emotions and General Psychological Illness scores, and markedly low Life Satisfaction, Optimism, and Self-Esteem scores. This participant’s scores were excluded from the analyses as an ‘outlier.’ There were no other unusual scores. Value Congruence was significantly negatively skewed, and was normalised after reflection using a square-root transformation. Chronic Moral Emotions was significantly positively skewed and was normalised with a log transformation. For the psychological health distributions, General Psychological Illness was positively

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skewed, and the three subjective well-being distributions were normally distributed. The four psychological health distributions reported here are consistent with expectations for a non-clinical sample. General Psychological Illness was normalised with a square-root transformation. All assumptions were met for the analyses.

Descriptive statistics and reliability. Descriptive statistics for each variable and internal consistency data for each multi-item variable (i.e., all variables except Value Congruence) are shown in Table 1. The undergraduate and postgraduate participants’ data are shown together, as group means for each variable were the same (analyses not shown). On average, the participants regarded their way of life as being generally consistent with their personal morality. Mean levels of Chronic Moral Emotions was low. Consistent with expectations for a non-clinical sample, average General Psychological Illness was low, and means of Life Satisfaction, Optimism, and Self-esteem were moderate to high. All multi-item variables showed acceptable internal consistency, with Cronbach’s alphas ranging from 0.79 to 0.97.

Bivariate Analyses

A series of simple regression analyses were conducted to investigate the various hypothesised bivariate relations between Value Congruence, Chronic Moral Emotions, and the psychological health indices: General Psychological Illness, Life Satisfaction, Optimism, and Self-Esteem. Note that, here and elsewhere, Value Congruence is reported in an unreflected form, in order to show the true direction of its relations to other variables. The Alpha level was set at .05.

First, Pearson correlation coefficients for the variable interrelationships are shown in Table 2, and then the regression analyses are discussed. Increased Value Congruence correlated with decreased Chronic Moral Emotions, $\beta = -0.22$, $F(1, 98) = 5.10$, $p = .03$, 95% CI [−0.08, −0.36]. Effect size was small-to-moderate.

Table 1: Descriptive Statistics and Internal Consistency (Cronbach’s $\alpha$) for Value Congruence, Chronic Moral Emotions, General Psychological Illness, and Subjective Well-being Indicators (Life Satisfaction, Optimism, and Self-esteem)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$N$</th>
<th>$M$</th>
<th>$SD$</th>
<th>95% CI</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value congruence</td>
<td>100</td>
<td>2.95</td>
<td>0.74</td>
<td>2.80 – 3.10</td>
<td>0.79</td>
</tr>
<tr>
<td>Chronic moral emotions</td>
<td>100</td>
<td>17.17</td>
<td>6.70</td>
<td>15.86 – 18.48</td>
<td>0.89</td>
</tr>
<tr>
<td>General psychological illness</td>
<td>99</td>
<td>0.72</td>
<td>0.60</td>
<td>0.60 – 0.84</td>
<td>0.97</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>100</td>
<td>17.00</td>
<td>3.64</td>
<td>16.29 – 17.71</td>
<td>0.80</td>
</tr>
<tr>
<td>Optimism</td>
<td>100</td>
<td>21.49</td>
<td>3.95</td>
<td>20.72 – 22.26</td>
<td>0.79</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>100</td>
<td>36.44</td>
<td>6.24</td>
<td>35.22 – 37.66</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Note. All variables untransformed. *1-item variable.

Increased Value Congruence was associated with increases in each subjective well-being index. Value Congruence explained 36% of the variance in Life Satisfaction, $F(1, 98) = \ldots$
Do Chronic Moral Emotions Mediate Between Value Congruence …

14.56, p < .001, 95% CI [22, 51]. Effect size was moderate. Value Congruence explained 21% of both Optimism, $F(1, 98) = 4.46, p = .04$, and Self-Esteem, $F(1, 98) = 4.71, p = .03$, 95% CI [7, 35]. Effect sizes were small-to-moderate. Inconsistent with the model, Value Congruence was unrelated to General Psychological Illness, $\beta = -.18$, $F(1, 97) = 3.13, p = .08$, 95% CI [.05, .31].

Table 2: Intercorrelations between Value Congruence, Chronic Moral Emotions, General Psychological Illness, and Subjective Well-being Indicators (Life Satisfaction, Optimism, and Self-esteem)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Value Congruence</td>
<td>100</td>
<td>–</td>
<td>–.22*</td>
<td>–.18</td>
<td>.36**</td>
<td>.21*</td>
<td>.21*</td>
</tr>
<tr>
<td>2. Chronic moral emotions</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td>.61**</td>
<td>–.53**</td>
<td>–.49**</td>
<td>–.54**</td>
</tr>
<tr>
<td>3. General psych. illness</td>
<td>99</td>
<td>–</td>
<td>–.45**</td>
<td>–.49**</td>
<td>–.52**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Life satisfaction</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td>.59**</td>
<td>–</td>
<td>.62**</td>
<td></td>
</tr>
<tr>
<td>5. Optimism</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>.76**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Self-esteem</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Variable unreflected in order to show true direction of intercorrelations.* $p < .05$. **$p < .01$.

Increased Chronic Moral Emotions was associated with decreases in each subjective well-being index. Chronic Moral Emotions explained 53% of the variance in Life Satisfaction, $F(1, 98) = 37.26, p < .001, 95\% CI [40, 66]$; 49% of Optimism, $F(1, 98) = 30.95, p < .001, 95\% CI [36, 63]$; and 54% of Self-Esteem, $F(1, 98) = 40.21, p < .001, 95\% CI [41, 67]$. Effect sizes were large. Increased Chronic Moral Emotions correlated with increased General Psychological Illness, $\beta = .61$, $F(1, 97) = 57.28, p < .001, 95\% CI [.50, .73]$. Effect size was large.

Mediation Analyses

The analyses presented in this section concern the investigation of the role of Chronic Moral Emotions as a mediator of the relations between Value Congruence and each nominated subjective well-being marker: Life Satisfaction, Optimism, and Self-Esteem. (Note that the lack of a relationship between Value Congruence and General Psychological Illness precludes mediation analysis for this variable.)

A variable may be called a mediator to the extent that it explains the relationship between the predictor and the criterion (Baron & Kenny, 1986). One set of criteria for a mediational effect are as follows: (1) That there exists an effect of predictor on criterion, not controlling for the mediator (i.e., total effect), and (2) that the effect of predictor on criterion explained by the mediator (i.e., indirect effect) be statistically significant (i.e., ≠ 0) in the predicted direction (Preacher & Hayes, 2004). This set of criteria is preferred to a popular alternative set discussed by Baron and Kenny (1986), as the former addresses the limitations of the latter, and more directly addresses the mediation hypothesis, and is also more statistically powerful (see Preacher & Hayes, 2004). The method employing the preferred criteria that is more statistically rigorous is to generate a distribution of the indirect (or mediated) effect of predictor on criterion through re-sampling (a method known as ‘bootstrapping’), where the indirect effect is defined as the product of the paths (1) from predictor to mediator and (2)
from mediator to criterion (see Preacher & Hayes, 2004). Bootstrapping provides a confidence interval for the indirect effect. If zero is not in the observed confidence interval, it can be concluded that the indirect effect is significantly different from zero at the given alpha level (i.e., that the variable under consideration mediates the effect of predictor on criterion).

The confidence interval for the indirect effect also describes the size of the effect. Preacher and Hayes (2008) recommend this method of describing the size of the indirect effect over the alternative strategy (the Baron and Kenny method). In the Baron and Kenny method, a direct effect - namely, the effect of predictor on criterion after controlling for the mediator - that is smaller than the total effect but different from zero is considered an instance of partial mediation, whereas a direct effect that is statistically indistinguishable from zero is deemed an instance of complete mediation. Preacher and Hayes (2008) argue that the coarse distinction between partial and complete mediation, as per the Baron and Kenny method, has less utility than the confidence-interval approach because of its dependence on the size of the total effect and on sample size. The authors also cite Shrout and Bolger's (2002) argument that the failure to recognise that all indirect effects are partial may result in the failure to acknowledge that other mediators may also be operational and that mediation is perhaps stronger for one group than for another. With respect to the indirect effect, Preacher and Hayes argue that the terms partial and complete are useful for describing its practical significance, but are most often problematically used to describe its statistical significance (whether likely to have occurred by chance). Thus, in this study, in accord with Preacher and Hayes (2008), the sizes of indirect effects are reported via the estimation of bootstrap confidence intervals, rather than via use of the terms partial and complete. In the study, bootstrapping was conducted using an SPSS® macro provided by Preacher and Hayes (2004). For all mediation analyses, 5000 re-samples were used.

Testing Chronic Moral Emotions as a mediator of the relations between Value Congruence and each subjective well-being index revealed that Chronic Moral Emotions mediated the relations between Value Congruence and each subjective well-being index. Specifically, each indirect effect was significant at an alpha level of .05. Value Congruence had an indirect effect of 1.45 with Life Satisfaction, 95% CI [0.09, 2.86]; 1.56 with Optimism, 95% CI [0.09, 3.34]; and 2.74 with Self-Esteem, 95% CI [0.07, 5.44]. As zero is not in any of these confidence intervals, the relations of Value Congruence with Life Satisfaction, Optimism, and Self-Esteem are indirect through Chronic Moral Emotions.

In sum, all but one of the hypothesised bivariate relationships - that between Value Congruence and General Psychological Illness - emerged. Value Congruence correlated with Chronic Moral Emotions as well as were each nominated index of subjective well-being (Life Satisfaction, Optimism, and Self-esteem). Chronic Moral Emotions related to each index of subjective well-being and to General Psychological Illness. Importantly, decreased chronic moral emotions accounted for the relations between higher Value Congruence and increases in each component of subjective well-being.

**DISCUSSION**

The model of psychological health based on value congruence (Penn et al., under review) led us to hypothesise that chronic moral emotions would account for the relationships of value

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congruence to general psychological illness and selected indices of subjective well-being. Empirical analyses revealed mixed support for the mediation model.

As expected, levels of chronic moral emotions accounted for the relation between value congruence and each component of subjective well-being. Specifically, (a) increased congruence between subjects’ personal values and behaviour was associated with small-to-moderate decrements in chronic moral emotions; (b) lower levels of chronic moral emotions related to large increases in life satisfaction, optimism, and self-esteem; and (c) chronic moral emotions explained the small-to-moderate relations between increased value congruence and increases in life satisfaction, optimism, and self-esteem.

These data support the view that value congruence impacts on subjective well-being (as measured by life satisfaction, optimism, and self-esteem) indirectly via its effect on chronic moral emotions. One might speculate that lower value congruence (that is, lower consistency between personal values and behaviour) may awaken negative moral emotions, and that these emotions, in turn, may serve to undermine subjective well-being by disrupting a healthy experience of self. Disruptions in the quality of the experience of self may manifest in episodes of moral anxiety and worry, or periods of self-loathing, and thoughts of helplessness and hopelessness about the prospects for developing a morally authentic self. These preliminary data would suggest that these chronic feelings are not only related to ego-dystonic mood states, but may contribute, in the long run, to reduced subjective well-being (e.g., life dissatisfaction, pessimism, and poor self-esteem; Penn et al., under review; Tangney, 1996. We hasten to add, however, that in as much as correlational analyses are incapable of validating causal directions we must leave open the possibility that other, as yet unidentified, causal variables and/or pathways may be at play here.

Contrary to the model proposed in this chapter, there is no evidence in these data that would support the view that chronic moral emotions explain the relation between value congruence and general psychological illness in this sample. Specifically, while the association between value congruence and general psychological illness was in the predicted negative direction, the correlation failed to achieve statistical significance.

One explanation for these non-significant results relates to sampling. The preponderance of participants recruited into the current sample evidenced low levels of morality-based distress. As a result, only a few persons in our sample may have represented the true nature of the effects of value incongruent behaviour at high score levels; and indeed of those with high distress scores, one subject with very high scores was treated as an outlier. We suspect that had we followed up the outlier as a case study, we may have gained greater insight into the deleterious impact of chronically high negative moral emotions. Further investigations involving larger samples in a diversity of university settings may provide insights that would empower clinicians to assist university students who are battling with the damaging effects of value incongruent behaviour.

We present both our positive and negative results with caution for two reasons. First, the PM–DSC could have as yet unknown problems with validity and reliability, in as much as two of its components, those designed or adapted by the lead author, have yet to be psychometrically tested. As already noted, one of the untested components of the PM–DSC consists of a single item that measures congruence between participants’ self-professed values and behaviour. A common criticism of single-item measures is that they are especially prone to measurement error. Nevertheless, we defend the use of such a measure in the light of earlier work (Nunnally, 1978), which suggests that single-item measures (1) can possess
psychometric strengths that are equally or more important than any weakness with respect to measurement error; (2) are likely appropriate for providing the type of information about value congruence that was sought in this study (that is, global unidimensional information [Hudy, 1998; Wanous, Reichers, & Hudy, 1997]); and (3) may minimise participant fatigue in studies, such as the present, that require participants to answer many other items (Gardner, Cummings, Dunham, & Pierce, 1998).

**CONCLUSION**

Despite the limitations of the current study, we believe that further investigation of the model, as it stands, is warranted. More specifically, we wish to suggest that since the correlational studies reported here are largely supportive of the model, examination of the causal predictions of the model seems to be one important next step. Beyond the results reported here, it is clear from a growing body of literature that moral emotions play significant roles in human life and functioning. They appear to be instrumental in supporting or sustaining psychological health, seem to contribute to a sense of well-being or distress, are related to suicidal thoughts and behaviours, and may be critical to identity formation and character development. Notwithstanding the centrality of moral emotions in human life, until relatively recently, moral emotions have been subject to little empirical scrutiny. We believe that the dearth of work in this area represents a significant lacuna in the body of psychological literature. We are thus happy to make whatever contributions we can to this emerging field, because it may assist counsellors to help students at risk, if they are suffering from value incongruence with resultant symptoms of psychological illness and moral disquietude.

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