+ PTSD

Re-experiencing

Avoidance

Social withdrawal

Arousal

Sensitive to noise

Memory gaps

Apathy with decisions

Memory Problems

Mental slowness

Concentration

Insomnia

Dizziness

Appetite changes

Fatigue

Sadness

? Mild TBI

Residual

+ Depression

Headaches
Employment After Brain Injury: Strategies to Maintain Job Performance

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Part I: Clinical Perspectives: Brain Injury Pathology and Employment Performance
Identifying the Issues

- Multiple symptoms: Which are most vocationally limiting?
- Oversimplification, overspecification in assessment/treatment
- Ruling in/out prior occupation & total disability
- Rehabilitating to Essential Tasks: Physical, Cognitive, Psychosocial
- When should treatment be re-directed or end?
Return to Work Expectancy

- direct relationship between injury severity and RTW
- adverse pathology: frontal (executive), temporal (memory), emotional
- risk factors: older patients, lower SES, multiple concussions
- likely additional factors: prior LD, seizures, substance abuse
RTW Barriers: Patient Specific Priorities

- Headaches, pain
- Dizziness
- Concentration/Memory
- Anxiety, depression, irritability
- Fatigue
- Mental efficiency/consistency
- Noise/light intolerance
Additional Factors

- time from injury
- multiple injury
- premorbid work history, occupation, tenure
- prior work/academic abilities, transferable skills
- language limitations
- personality style/flexibility
- economic outlook
Work Performance & Retention Issues

- quantity, quality, productivity: relate to ongoing symptoms
- absenteeism: chronic pain, fatigue/insomnia, dizziness
- interpersonal relations: social perception/judgment, irritability
Headaches

- Muscle Strain/Injury
- Musculoskeletal guarding, poor posture
- Stress Related
- Depression
- Occasional Migraines
- Peripheral Nerve Injury (Very Small %)
Dizziness

- HEAD INJURY
  - Vestibular Injury (BPV); Auditory Dysfunction
  - Rarely CNS Origin

- BACK/HEAD INJURY
  - Cervical Origin
  - Deconditioning
  - Postural Hypotension
  - Hyperventilation
  - Anxiety, Panic Attacks
  - Visual Dysfunction/ Changes
Non-Organic Contributors to Concentration/Memory Problems

- Pain (Head, Neck, Back)
- Sleep Disturbance (Pain, Anxiety, Depression)
- Anxiety
- Depression
Severity Chart
Mechanics of Brain Injury

- **General injury**: widespread neuronal injury
disruption/excitation

- **Specific injury**: frontal & temporal lobes
General Injury

- PTA
- Reaction time → slowed response speed
- Thinking speed → rapid problem solving, fast paced meetings
- Complex attention
Specific Injury: Frontal Lobes

- Working memory → multi-tasking
- Rote learning
- Executive function (speech, Behaviour)
- Thinking flexibility → problem solving
- Abstract reasoning → creative, “
- Social perception/judgment
- Disinhibition → PR, interactions
- Verbal fluency → meetings, PR
- Motor weakness → manual skills
Temporal Lobes

- Verbal Memory Retention ➔ reading, auditory memory
- Visual Memory Retention ➔ learning by observation, diagrammatic instructions
- Auditory Perception ➔ auditorily distracting work environments
- Seizures ➔ physical safety risk, precludes driving
PART II:

- Assessing Employability, Appropriate Work, Modified & Work Re-entry Strategies
Disability Determination & Vocational Rehab Mandate

- “Essential tasks” performance, earning capacity
- Determine ongoing disability
- Dictate primary rehabilitation focus
Determining Employability

- No single best assessment/measure: case specific
- Ideally evaluate: physical, cognitive, psychosocial status
- Cognitive & psychosocial most difficult to assess
Cognitive & Psychosocial Disability, Employability

- Neuropsych. assessment correlates poorly with essential tasks performance
- Aptitude testing (GATB) improves ability to estimate essential task performance relative to cognitive, perceptual, motor impairment
- Compares occupational aptitude requirements to tested aptitudes
Cognitive & Psychosocial Disability, Employability cont...

- Disadvantage: Actual job may not match NOC/CCDO specs
- Actual or simulated task observation over time preferred
Disability Related to Pre-Injury Essential Tasks

- PDA & FAE address physical components only
- "Cognitive Essential Tasks" must be identified
- Psychosocial demands/characteristics must be considered
Rehabilitating to Essential Tasks: An Integrated Model

- “Comprehensive Job Demands Analysis” for essential task/demands
- Also identifies pre-morbid stressors, personality, other issues
- Measure against functional baseline: physical, cognitive, psychosocial
- Determine functional shortfall
- Integrated treatment: education, coping, remediation, work simulation/hardening
Integrated Treatment and Vocational Components

- Diagnostic clarification re primary symptoms
- Feedback/Education
- Individualized Written Rehabilitation Plan (IWRP)
- Symptom Management/Coping: Client’s symptom priorities
- Cognitive/Physical Work Hardening
- Supported Vocational Placement
Progress Measurement: CJDA vs. Functional Status

- Determines vocational disability status
- Rule in/out prior occupation based on essential tasks
- Progress measured relative to baseline and functional goal
- Identifies functional plateau, goal attainment
- Provides client clear focus, feedback
Treatment Termination/Re-direction

- Terminate treatment upon essential task realization
- Re-assess client status upon treatment plateau
- Consider ergonomic interventions upon plateau
- Consider additional quality of life issues
Cognitive Functional Measurement

- Task frequency
- Task duration
- Task complexity
- Task efficiency
- Distractions during task
Psychosocial Functional Measurement

- Multiple observational inputs:
  - Client
  - Significant others
- Therapist observation
- Psychodiagnostic measurement
Cognitive/Psychosocial Functional Treatment

- Work simulation/hardening
- Role playing (video feedback)
- Job coaching
Work Simulation/Hardening

- reinforces client abilities
- rebuilds confidence
- maintains goal orientation
- pragmatic cognitive rehab. approach
Work Simulation/Hardening cont...

- task breakdown of component parts
- addresses symptoms simultaneously
- builds stamina
- addresses psychosocial/behavioural issues
Vocational Functional Assessment

- Drives rehabilitation process
- Guides IWRP
- Strategic tools to mitigate LECB/FEL
- Selection: Client, symptom, phase, goal specific
Vocational Functional Evaluation

OPTIONS:
- Supervised Graduated Job Trial
- Job Shadowing, Job Coach
- Workshop, Occupational Therapy Evaluation
- Neurovocational Evaluation
Decision rationale:
- Anticipated disability level
- Safety & risk considerations
- Physical VS. Cognitive questions
- Client’s work background
- Client’s desire
Vocational Assessment Types

- Clinical evaluations
- Functional ability (capacity) evaluation
- Cognitive simulated work assessment
- Work trial - supervised, graduated, job shadow, coach
- Neurovocational evaluation
- Psychoeducational evaluation
Clinical Assessments

- **Purpose:** address impairment issues relative to symptoms; severe impairment may clearly preclude employment
- **Symptoms/Barriers:** any symptom
- **Disadvantages:** as recovery progresses and impairment resolves, vocational implications of impairment are less certain
Functional Ability Evaluation

- **Purpose:** addresses physical tolerances relative to specific, general work demands
- **Symptoms/Barriers:** headaches, pain, dizziness, physical limitations, emotional (?)
- **Disadvantages:** not cognitive, noise intolerance, interpersonal, stamina/ productivity over time, nor academic/ retraining potential
Work Simulation/Assessment

- **Purpose:** address likelihood of employability generally/specificationally typically relative to physical and emotional barriers; ascertain work habits
- **Symptoms/Barriers:** most symptoms, work habits, work motivation
- **Disadvantages:** formal settings often inappropriate for premorbidly high functioning (e.g. professional, technical, students); miss subtle cognitive deficits; inherent motivational concerns in process?
Cognitive Simulated Work Assessment

- **Purpose**: as work simulation with focus on cognitive demands
- **Symptoms/Barriers**: as above
- **Disadvantages**: only partially addresses retraining/academic potential
Work Trial Assessment

- **Purpose:** real work setting evaluation with/out intensive supervision, job shadowing/coaching
- **Symptoms/Barriers:** all
- **Disadvantages:** when premature --> psychological set back, symptom aggravation/regression, may lose employer
Neurovocational Evaluation

- **Purpose**: identify job alternatives, and retraining potential when brain injury exists

- **Symptoms/Barriers**: attention, flexibility, planning, problem solving, memory/learning deficits; may be combined with physical/emotional inputs

- **Disadvantages**: best used for higher skilled occupational potential; doesn’t address physical functioning, academic weaknesses, long term stamina
Neuro-Vocational Strength Clusters

- Manual Skills & Psychomotor Speed
- Visuospatial & Manual Strengths
- Verbal & Basic Academic Academic Strengths
- Intellectual, Academic & Executive Strengths
Psychoeducational Evaluation

- **Purpose:** identify strengths/weaknesses relative to academic learning abilities
- **Symptoms/Barriers:** cognitive impairment (directly and secondary)
- **Disadvantages:** academic focus only
Vocational Interventions

- **Graduate**: hours, responsibility, rate/volume, multiple tasks
- **Compensatory strategies**: lists, day timer, computer, timers
- **Task/environmental modifications**: routinize day/tasks, reduce distractions, risks
- **Activity restrictions**: risks (financial, safety, advising/counselling), noise/light, heights, physical tolerances
- "Supported employment": job shadowing, job coaching, fade support, monitoring
Summary

- many capable of RTW, depending upon injury severity and risk factors
- primary barriers may be: somatic, emotional, cognitive, psychosocial, economic
- evaluating occupational disability tied to objective/subjective barriers
- no one vocational evaluation tool will address all “mild head/brain injured”
- integrated treatment and vocational rehabilitation: functional status driven
- cognitive work demands and simulated work key components
- vocational evaluation relative to recovery phase, primary disability sources and work (re)training requirements, activity demands, environment
Graduated and Modified Work Re-entry As Person Adjusts, Relax:

- Hours/shifts
  - Graduated hours (avoid overtime)
  - Steady shifts, days only

- Minimize distractions
  - Quiet area, earplugs
  - Reduce personal interruptions
  - Reduce phone interruptions
  - Place temporary wall dividers
Graduated and Modified Work Re-entry
As Person Adjusts, Relax:
con’t…

- Minimize task complexity
  - Give only one task at a time
  - Task complete before next
  - Instructions from one person only
  - Employer’s written step by step instructions (then client writes, oral, alone)
Graduated and Modified Work Re-entry
As Person Adjusts, Relax: con’t…

- Productivity
  - Maintain quality standards
  - Relax quantity/time standards
  - Place into lower volume/speed area
Graduated and Modified Work Re-entry As Person Adjusts, Relax: con’t…

- Neuropsychologist’s clearance
- Place where errors less costly/risky
- Client observes colleague
  - Client then closely observed, very gradual increase (continue buddy system)