Assessment of the Brain Injured Client: Neuropsychological, Psychiatric and Adjustment Issues

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Objectives

1. Brief review cognitive, behavioral, social impact of brain injury
2. Discuss neuropsychological assessment
3. Describe psychological/personality assessment
4. Incorporate discussion of adjustment, risk behavior, malingering, pre-morbid functioning through comprehensive neuropsychological assessment
Demographics

• TBI was a diagnosis in more than 280,000 hospitalizations and 2.2 million ED visits. (CDC, 2010)
• 80,000 - long-term disability following a TBI
• Individuals who have had one TBI are at greater risk to sustain a second TBI
• Additionally: Stroke, Tumors, Encephalopathy, other neurological conditions
Areas of Function Affected

• Cognitive
• Medical (seizures, pain, sleep)
• Sensory/perceptual
• Mobility, functional skills
• Social-emotional and Behavioral
• Vocational
SYMPTOMS

- Slowed information processing
- Memory problems
- Decreased attention/concentration
- Impaired new learning
- Poor planning
- Decreased judgment
- Inflexibility

- Decreased initiation
- Physical/mental fatigue; Sleep issues
- Headaches, pain
- Vestibular/dizziness
- Sensitive to light, noise, crowds, busy environment
SYMPTOMS

- Changes in vision, taste, smell
- Tinnitus
- Communication issues
- Motor problems
- Word finding problems
- Social pragmatic
- Sexual problems
- Increased fears/anxiety
- Depression
- Alcohol intolerance
- Mood swings
- Irritability
- Decreased emotional control (laugh, cry)
- Relationship issues
COMPREHENSIVE ASSESSMENT

- Physiatry , Neurology
- Neuropsychiatry
- Physical Therapy/Vestibular Therapy
- Nursing
- Speech/Language Therapy
- Occupational Therapy
- Recreational Therapy
- Cognitive Therapy
- Vocational Therapy
- Neuropsychology, Clinical Psychology
Neuropsychological Testing

• Samples various areas of functioning
• Up to 8 hours
• Assesses attention/concentration
  memory
  executive functions (planning, reasoning)
  visuo-spatial skills
  personality
  motivation

LOOK FOR PATTERNS ACROSS TESTS
A TEST IS A SAMPLE OF BEHAVIOR

(may measure multiple functions)
EXPERIENCE YOURSELF

• Trails A and B (simulation)
• Part of Halstead Reitan Neuropsychological Test Battery
• Timed test
Trails A and B

- Speed of processing
- Visual Scanning
- Sequencing
- Divided attention/concentration
- Planning
- Shifting mental set
- Eye-Hand coordination
Neuropsychological Evaluations

- Study of brain-behavior relationships
- Existence and severity of deficits
- Differential diagnosis
- Recovery potential
- Treatment interventions
- Identifies functional deficits even in cases where MRI may not be sensitive enough to identify damage.

*Mild TBI: 85%-90% normal MRI*
Sensitivity of Measurement

(Umile, Sandel, Alavi, Terry, Plotkin, 1997)

20 Persistent Post Concussion Symptom Clients

75% had normal CT and normal MRI

Neuropsychological testing abnormal: 95%
Dynamic Imaging abnormal: 90%
Abnormal temporal lobe PET and SPECT: 75%
Abnormal frontal lobe PET and SPECT: 30%
Components of a Neuropsychological Evaluation

- **Specific Referral Questions!**
- **Record Review**
- **Clinical Interview:** consistencies, motivation
- **Standardized Testing:** comparisons based on age, sex, education level
- **Recommendations**
Specific Referral Questions

CASE MANAGERS CAN INFLUENCE the value of the comprehensive neuropsychological evaluation by providing focused referral questions.

• how does performance relate to pre-injury functioning?
• are emotional factors affecting outcome?
• can he return to his job as xxxxx?
• is the client putting forth good effort?
Specific Referral Questions

• What are his/her deficits?
• Has the patient improved?
• Has the patient deteriorated?
• What treatment interventions are indicated?
• Identify emotional or behavioral issues which are influencing status and which would benefit from treatment.
Record Review and Clinical Interview

- Record Review: diagnoses and treatment, discrepancies, follow through, quotes
- Trust/rapport
- Pre-morbid functioning (psych)
- Previous TBI/MTBI or learning disability
- History of current injury, its MEANING
- Current symptoms and changes
- Family input may be helpful
Importance of Context

1. Environmental exacerbation: structure, stability, work performance/relationships
2. Secondary gain: what was happening assessing losses
3. Pre-morbid status: prior medical/neurological substance abuse history coping and defenses family dynamics
NEUROPSYCHOLOGICAL IMPAIRMENT SCALE

Allows for comparison of self report vs. family report (magnify, minimize)

Allows for comparison of self report vs. test performance

Assesses attention, concentration, memory, defensiveness, consistency, academic skills, frustration tolerance
Neuropsychological Testing

- Importance of Norms
- Standardized
- Intra and inter scatter (consistency)
- Sample functions under various circumstances
- “Hold” tests to estimate pre-morbid functioning
- Timed vs. Untimed
- Assessment of effort: behaviorally and tested
Neuropsychological Testing

THE IMPORTANCE OF NORMS
PROCESS APPROACH

• Not just looking at Scores
• Noting how questions are approached
• Assessing motivation, effort
• Ability to self monitor vs. impulsivity
• Noting frustration tolerance, focus
• Sometimes we get the right answer for the wrong reason!
Referral Suggestions

At least three months post injury: allow time to clear neurologically

Tests are valid if administered in six month intervals; if more frequent, practice effect

Annual re-evaluations up to a point: specific referral question

Functional need for neuropsychological eval?
Verbal Memory

• Paragraph Recall: Memory for information presented in context
• Wechsler Memory Scale-IV
• Word Lists: learning curve over trials
• Immediate, short term and long term recall
• Compared to norms
Visual Perceptual Skills

The Rey-Osterrieth Complex Figure Test (ROCF) is a neuropsychological assessment in which examinees are asked to reproduce a complicated line drawing. ....permits the evaluation of different functions, such as visuospatial abilities, memory, attention, planning, and working memory (executive functions). (immediate, stm, delayed)
ABSTRACT REASONING:
ability to think flexibly, shift “set,”
problem solving, reasoning, judgment

e.g. Category Test (Halstead)
Wisconsin Card Sort Test
Comprehension, Vocabulary
Neuropsychological Testing

Common tests administered

• Halstead-Reitan Neuropsychological Test Battery (Booklet Category Test, Trails A and B, Sensory Perceptual Exam, Seashore Rhythm, Tactual Perception Test)
• Wechsler Adult Intelligence Scale-IV (WAIS-IV)
• Wechsler Memory Scale-IV (WMS-IV)
• Wide Range Achievement Test-3 (WRAT-4)
Neuropsychological Testing

Common Tests Administered:
- California Verbal Learning Test-II (CVLT-II)
- Frontal Systems Behavior Scale (FrSBe)
- Neuropsychological Impairment Scale (NIS)
- Wisconsin Card Sorting Test (WCST)
- Beck Anxiety Inventory (BAI)
- Beck Depression Inventory-II (BDI-II)
- Minnesota Multiphasic Personality Inventory-2 (MMPI-2)
Validity

1. Look within tests for consistency
2. Look across tests for discrepancies
3. Compare to prior testing
4. Compare to functional performance
5. Evaluate behaviors
6. Standardized measures are available to evaluate malingering or symptom magnification
Assessing Validity

- **TOMM: Test of Memory Malingering**
  
  50 item visual recognition test
  
  “while sensitive to malingering, the TOMM is insensitive to a wide range of neurological impairments, making it ideal for detecting exaggerated or deliberately faked memory impairment”
Assessing Validity

Rey Fifteen Item Memory Test (FIT): recall of meaningful symbols

Victoria Symptom Validity Test: computerized, study a card with 5 digits, see a card with the same 5 digits and another 5 digits. Select one previously seen.
Social/Emotional Sequelae

- Depression
- Anxiety
- Shattered identity
- Family conflict
- Short fuse
- Impulsivity
- Egocentrism

- Loss of control
- Irritability
- Sleep difficulties
- Sexual dysfunction
- Isolation
- OCD
- Loss, Loss, Loss
Emotional and Behavioral Control

• Decreased emotional control
• Irritable, short fuse, uncharacteristically aggressive or violent
• Depression independent of situation
• Cognitive losses: inflexible
• “A different person”, egocentric, reduced capacity for intimacy, isolation
Behavior/Emotions

• Organic factors:
  Frontal lobe dyscontrol issues
  including irritability, impulsiveness,
  anger control

• Reactive components:
  Depression, anxiety, social
  withdrawal
Cognitive Factors Influence on Emotions

- **Cognitive inflexibility**: unable to develop alternatives
- **Stimulus bound**: > self focus
- **Perseveration**: emotionally stuck, precludes acceptance and revised identity
Emotional Influence on Cognition

**Depression:**
- Slowed motor responses
- Decreased initiative/effort
- Decreased initial learning

**Anxiety:**
- Impairs concentration
Psychiatric Symptoms
*(Hoofien, Gilboa, Vakil, Donovick, 2001)*

Symptom Check List – 90 *(Derogatis)*

76 severe TBI clients

14 years post injury

- Hostility 52%  
- Depression 45%  
- Anxiety 44%  
- Psychoticism 36%  
- OCD 30%  
- Phobic 28%  
- Paranoid 8%
Personality Assessment

• Depression: Beck Depression Inventory-II

• Anxiety: Beck Anxiety Inventory

• Personality Functioning:
  MMPI-2: 10 scales, patterns
  Validity scales
MMPI-2

Validity scales: ? omitted
Lie, socially acceptable
Frequency/fake bad
K ego strength; correction
MMPI-2

- Clinical Scales: *Interpreted in patterns*

  Hypochondriasis  Paranoia
  Depression       Anxiety
  Hysteria         Schizophrenia
  Psychopathy      Mania
  Masc/femn        Social Introversion
Personality Assessment (MMPI-2)

- Chronicity of depression; suicide risk
- Anxiety complicating recovery
- “Acting out” potential
- Social isolation
- Extent of “thought disorder”
- Paranoid ideation
- Overall pathology/distress; medication recs
- Level of self awareness
In addition to their cognitive deficits, an individual’s adjustment and coping will greatly influence outcomes, thus influencing costs of managing the case!
Neuropsychological Evaluation – Recommendations

- STRENGTHS/BARRIERS
- FUNCTIONAL
- SPECIFIC COGNITIVE STRATEGIES
- JUDGMENT AND SAFETY
- COPING AND MOOD: impact on function
- ACTIVITY PATTERN
- THERAPY REFERRALS
- PSYCHIATRY/MEDICATION MANAGEMENT
Comments & Questions