Traumatic Brain Injury: Management of Psychological and Behavioral Sequelae

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ORDINARY PEOPLE

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"... an intelligent, perceptive, and deeply moving film..."
Roger Ebert, Chicago Sun-Times

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I RUN THEREFORE I AM
I shop
therefore
I am
I CROCHET
THEREFORE
I AM
I think, therefore I am

—René Descartes
The Functional Impact of TBI

• Altered physical functioning
• Changes in the way survivors:
  • Think
  • Act
  • Feel
  • Relate to others
Unique Challenges: The Burden of Care:

- “…caregiver burden appears to be relatively less affected by changes in the physical, intellectual and communication ability of the person with TBI. The primary determinants of caregiver burden appear to be the changes in behavior and emotion, commonly referred to as ‘personality changes’ which can be a consequence of TBI.” (Marsh et al, 1998)
Changes in Personality

Types of change:

1. Exaggeration of pre-injury traits

2. Fundamental changes in the way one responds (out of character or seemingly unpredictable, random responses)

DSM – V Diagnosis: “Personality Change Due to Another Medical Condition (F07.0)
Common Personality Changes Post-TBI

• Impulsivity
• Irritability/Aggressiveness
• Affective instability/affective lability
• Reduced self-awareness
• Apathy
TBI AND MENTAL DISORDERS

• TBI is linked to several mental disorders.

• Reciprocal relationship between TBI and mental disorder

• In order to qualify for a clinical diagnosis, symptoms must be:
  1. consistent and sustained over a period of time, and
  2. severe enough to interfere with social/occupational functioning or quality of life.
Depression and TBI

- Mood disorders are the most common psychiatric complication of TBI.
- Prevalence:
  1. point prevalence: 25+ %
  2. period prevalence within 1st yr.: 42%
  3. period prevalence within 7 yrs: 61%
Post-TBI Depression: Outcome Data

- Worse global outcomes
- Worse social functioning during the first year post-injury
- Worse ADL outcomes, independent of neuropsychological deficits
- Lower health related quality of life
- Survivors with depression and alcohol misuse have the poorest vocational outcomes.
Depression: DSM-5 Diagnostic Categories

1. Major Depressive Disorder

2. Depressive Disorder Due to Another Medical Condition (TBI)

3. Adjustment Disorder with Depressed Mood
Major Depressive Disorder: Diagnostic Criteria

Five (or more) of the following symptoms have been present during the same 2 week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest.

- Depressed mood most of the day, nearly every day
- Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day
- Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day
- Insomnia or hypersomnia nearly every day
- Psychomotor agitation or retardation nearly every day
- Fatigue or loss of energy nearly every day
- Feelings of worthlessness or excessive or inappropriate guilt nearly every day
- Diminished ability to think or concentrate, or indecisiveness, nearly every day
- Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or specific plan for committing suicide
Depressive Disorder due to Another Medical Condition: Diagnostic Criteria

1. A prominent and persistent period of depressed mood or markedly diminished interest or pleasure in all, or almost all, activities that predominates the clinical picture.

2. There is evidence from the history, physical examination or laboratory findings that the disturbance is THE DIRECT PHYSIOLOGICAL CONSEQUENCE OF ANOTHER MEDICAL CONDITION. (in this case, TBI)
Adjustment Disorder with Depressed Mood: Diagnostic Criteria

1. Must develop in response to an identifiable stressor(s) occurring within 3 months of the onset of the stressor.

2. The symptoms are clinically significant, as evidenced by one or both of the following:
   a. marked distress that is out of proportion to the severity or intensity of the stressor,
   b. significant impairment in social, occupational or other important areas of functioning.

3. Does not meet the criteria for another mental disorder (e.g., Major Depressive Disorder).
Causes of Post-TBI Depression

1. Organic: biochemical and physical changes in the brain (i.e., Diagnosis: Depressive Disorder Due to Another Medical Condition)

   and/or

2. Reactive/Psychosocial:
   • in response to temporary or long term disability and loss
   • in response to changes in roles in the family and society due to brain injury
Post-TBI Depression: Treatments

1. Medication based:
   • SSRI’s are a good choice due to fewer side effects.
   • There is most research based evidence in support of sertraline (Zoloft) and citalopram (Celexa).
   • Among the SSRI’s, sertraline has the most dopaminergic effect and thus, may have a positive effect on cognition.
Post-TBI Depression: Treatments (cont.)

2. **Cognitive behavioral therapy based treatments:** (examining relationship between thoughts, feelings and behaviors; examining and correcting distorted thinking)

   - research has supported CBT as beneficial in treating depression in TBI survivors.
   - “dismantling” studies have suggested that the behavioral component of CBT was effective on its own (**behavioral activation**: activity scheduling).
Post-TBI Depression Treatments (cont.)

• Holistic treatment programs that include activity scheduling and increasing positive interaction with the environment, as well as problem solving and goal-setting training may have a good potential to improve mood and overall well-being for people with TBI.
Alcohol and TBI

Statistics:

• Up to 2/3 of people with TBI have a history of alcohol abuse or risky drinking.

• Between 30-50% of people with TBI were injured when they were drunk and 1/3 were under the influence of other drugs.
Substance Use Disorders: Diagnostic Criteria

• The essential feature of substance use disorder is a cluster of cognitive, behavioral and physiological symptoms indicating that the individual continues using the substance despite significant related problems: (health, work, major responsibilities, school, relationships, legal issues).
Alcohol Use Disorder: DSM – 5 Diagnostic Criteria

A problematic pattern of alcohol use leading to clinically significant impairment or distress as manifested by at least two of the following:

- Alcohol is often taken in larger amounts or over a longer period than was intended.
- There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.
- A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects.
- Craving or a strong desire or urge to use alcohol.
- Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home.
- Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused by or exacerbated by the effects of alcohol.
Alcohol Use Disorder: DSM – 5 Diagnostic Criteria (cont.)

- Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
- Recurrent alcohol use in situation in which it is physically hazardous.
- Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.
- Tolerance: a need for markedly increased amounts of alcohol to achieve intoxication or desired effect, or a markedly diminished effect with continued use of the same amount of alcohol.
- Withdrawal.
Specific Concerns regarding Alcohol Use for the TBI Survivor

- Impedes brain injury recovery and lowers the seizure threshold.
- Drinking alcohol increases risk of another TBI.
- Post TBI, brain is more sensitive to alcohol effects. Cognitive, behavioral and physical problems are magnified.
- Can cause or worsen depression and reduce effectiveness of anti-depressant medications.
- Interacts with many prescription medications, increasing the effects of some and reducing the effects of others.
RECOMMENDATIONS REGARDING ALCOHOL USE POST-TBI.

• There is no safe amount.
• TBI survivors/family should be educated about the need to avoid alcohol.
• Those having difficulty stopping should be referred for assessment and treatment.
• Family should be educated about limiting access.
Management of Behavioral Challenges following TBI

- Clearly define the behavior of concern – “operationalize” in measurable terms.
- Perform a careful assessment of the patient to formulate an understanding of the factors contributing to the development and maintenance of the problematic behavior, using a “neuro-biopsychosocial paradigm.”
Challenging behaviors: general guidelines for assessment

- Understand the patient’s pre-injury baseline.
- Evaluate current functioning in all domains (i.e., mobility, speech/language, cognition, ADL’s).
- Understand the nature of the patient’s brain injury and how organic factors may contribute via known mechanisms.
- Explore whether other, unrelated medical problems are contributing.
- Assess patient’s view of his/her condition and whether adjustment issues are contributing.
- Assess environmental factors that may be impacting either as setting events/antecedents or consequences (ABC’s of applied behavioral analysis).
Managing Challenging Behaviors: Types of Interventions

1. Medication management
2. Contingency based (traditional applied behavioral analysis): focusing on increasing or decreasing behaviors by controlling their consequences: A-B-C.
3. Positive behavior interventions and supports (PBIS): A-B-C
4. Psychotherapy
Contingency Based Interventions: A Focus on Consequences

Definitions:

Consequences are stimuli that an individual receives/experiences after performing a behavior (desired or undesired: social, tangibles, time out).

Reinforcement is anything that serves to increase the behavior that it follows.

Positive reinforcement: the application of something that is desired (e.g., candy, praise, cash, activity, token)

Negative reinforcement is the removal of a noxious stimulus (e.g., patient cursing at therapist causes therapist to leave patient alone, thereby reinforcing patient’s cursing: the reinforcing value of “escape.”)

Punishment is anything that serves to decrease the behavior it follows (e.g., time out from reinforcers, “overcorrection”).
Contingency Based Interventions: Key Principles

• **Selectively reinforce desired behaviors.**
  • This requires an understanding of what is reinforcing for a particular patient.
  • Be mindful that some undesired behaviors are reinforced by “negative attention;” (i.e., some patient’s SEEK to provoke).

• **Reduce aversiveness of undesired situations or tasks,** thereby making “escape” unnecessary for the patient.
Positive Behavior Interventions and Supports: Goals

• Prevent problem behaviors rather than reacting to them “after the fact.”

• Teach skills aimed at replacing the problem behavior.

• Assist survivor to increase self-regulation skills.
Positive Behavioral Interventions and Supports: General Strategies

POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS: GENERAL STRATEGIES

1. Develop positive, negotiated well-understood daily routines.

2. Prevent negative behaviors:
   - Eliminate whatever triggers negative behaviors if possible (e.g., boredom, frustration, fatigue, unexpected changes in routine).
   - Use positive, encouraging communication styles (avoid nagging, scolding).
   - Teach positive communication alternatives to negative behavior (e.g., “I don’t understand what you’re asking me to do.”).
   - Use “positive behavior momentum (introducing more difficult tasks after ensuring success with basic tasks).
   - Maximize choice and control.
   - Provide interesting, “do-able” tasks.
   - Allow opportunities for breaks and recreational activities.

3. Consequences for behavior should be as logical and natural as possible to foster learning and “generalization” to other settings/contexts.
POSSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS: EARLY POST-TBI
(Feeney & Ylvisaker, 2011)

- Poorly controlled behavior is common at this phase (shouting, aggression, refusal, inappropriate behavior).
- Medication based treatment should be used sparingly because it may interfere with neurological recovery.
- **Primary intervention at this stage is prevention of negative behavior by appropriately regulating environmental stimuli, performance expectations and supports** (e.g., avoiding overstimulation, introducing tasks of graduated difficulty).
- Systematic observation should be conducted to identify conditions when the patient is calm, vs alert, vs confused.
- Careful use of redirection (so as not to unintentionally reinforce the undesired behavior via “escape”).
- Staff must avoid taking patient’s behavior personally and remain calm.
Managing Challenging Behaviors: Psychotherapy – Acute recovery period

- **Denial** may be a prominent problem.
  - Denial may be a necessary defense to foster hope and maintain motivation.
  - Lack of awareness may best be addressed by gradual exposure to challenging activities which highlight, but also target deficit areas for treatment.
- **Psycho-educational interventions** to help patients and families prepare for experiences they may face post-discharge
Psychotherapy: Chronic Stages of Recovery

• Denial starts to recede as survivor begin to see how his/her condition affects ability to resume activities in the home and community.

• Goal of therapy: assist survivor reconstruct a life which integrates functional changes, but has a sense of purpose, productivity, and social connectedness.