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# **Suicide Attempts Following Traumatic Brain Injury**

**From Risk Identification to Prevention**

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Brookhaven Hospital**

- Identify psychiatric and psychological issues associated with suicidal behavior following TBI
- Identify risk factors related to suicide and TBI
- Establish understanding of multi-axial approach to risk assessment
- Identify methods to reduce risk and address suicidality



## Learning Objectives

## Sam's Story: Suicide Attempts following Brain Injury

- 39 y.o. convenience store owner beaten in a robbery
- Severe TBI with bilateral frontal and temporal lobe injuries
- Coma length of 2 days
- Seizure disorder, severe depression, anxiety, panic attacks/PTSD, memory loss and impaired thinking/planning ability
- Anger, rage events. Constant thoughts of revenge and retribution
- Loss of functional abilities
- Initiated substance use/abuse daily
- Social withdrawal and avoidance
- First suicide attempt 5 months after attack





- Depression over loss of self and functional changes
- Despair, feelings of worthlessness
- Previous attempts, pre and post TBI
- Prior ideation with/without plan
- Psychiatric history or exacerbation of pre-existing illness
- Emergence of psychiatric symptoms post TBI
- Psychosocial stressors related to TBI
- Impulsive behaviours, executive dysfunction
- Thinking, planning, decision making problems
- Mood state problems related to TBI

**Factors Related to Suicide Attempts by Individuals with TBI**



- 17% of the individuals with TBI report suicidal thoughts, plans and attempts in a five year post injury period (Teasdale, 2000)
- Majority of the individuals with suicidal thoughts/plans/attempts are male, with ages 25-35 at the greatest risk. Males 65+ are the number two risk group
- Hopelessness is a key factor in suicidality
- Comorbidity with a psychiatric diagnosis or substance abuse problem was a common factor
- Role of identity crisis and social disruption (Klonoff and Tate, 1995)
- Risk increases in the first 15 year period post-injury



## Prevalence of Suicide Attempt Following Brain Injury



- Social Withdrawal (Sugarman, 1999)
- Executive Dysfunction (Mazaux et al, 1997)
- Role of Affective Disorders (Morton and Wehman, 1995)
- Awareness of deficits (Prigitano, 1996)
- Disinhibition Syndromes (Shulman, 1997)
- Increased risk due to TBI as a stressful life event (Frey, 1995)
- Increased risk for individuals with mild TBI associated with psychiatric diagnosis and psychosocial disadvantage (Teasdale and Engberg, 2000)

## **Research related to TBI and Suicide**

- Depression is common following brain injury
- Co-morbid psychiatric diagnosis: pre-existing condition may be exacerbated and underlying, previously undiagnosed problems may surface, elevating risk
- Suicide event may not follow the model of feelings/thoughts, plan and act
- Previous history cannot be discounted
- Individuals with a Neurobehavioral Syndrome and/or a seizure disorder may present an enhanced risk



**Emergence of Suicidal Events in Individuals with TBI**

(Mann, The Neurobiology of Suicide and Aggression, 2000)

### Aggression

- Trigger/Life Event
- Perception of Attack/Injury/Threat
- Anger
- Impulsivity
- External Aggressive Act

### Suicidal Act

- Trigger/Depression following TBI
- Perception of Loss, Depression and Suicidal Ideation
- Suicidal Planning
- Impulsivity
- Suicidal Act

**Models for Aggressive and Suicidal Behaviors**



- Depression
- Bipolar Disease/Manic Depression
- Psychosis/Thinking disorder
- Personality Disorders/Borderline Personality
- Seizure Disorders/Pre and Post-Ictal Changes
- Impulse Control Problems
- Drug/alcohol abuse and addiction
- Anger/Rage problems/ Episodic Explosive Disorder
- Relationship of suicidal act to other aggressive acts



## Issues of Diagnosis and Suicide Potential



- History of prior attempts, pre and post injury
- History of psychiatric illness, pre and post injury
- History of suicide in other family members
- Passive ideation without an active plan
- Role of disinhibition, including medication related problems
- Episodes of Anger/emotional dysregulation

**Diagnostic Issues in Individuals  
with TBI and Suicide Risk**



- Thinking problems, executive dysfunction
- Emotional response to injury and disability
- Difficulties with self-regulation and impulse control
- Memory problems
- Compliance with treatment
- Social withdrawal
- Social role changes and isolation



**Brain Injury as an Accelerant to  
Psychiatric Conditions**



- Cognitive problems effect problem solving ability
- Psychological issues related to brain injury recovery and adjustment to disability
- Reduced/impaired physical functions effect view of self
- Impulse control problems
- Emergence/expansion of psychiatric issues
- Substance abuse
- Perceived failure

## **Cognitive, Emotional and Behavioral Issues**



- Limited ability to self-manage mood state
- Self-regulation of behavior is impaired
- Problems in selecting behavioral alternatives
- “Stuck” or repetitive quality of behavior
- Difficulty in expressing feeling/mood problems to others
- Anger management
- Family and social role issues
- Seizure related events, possible “kindling”



## Impulse Control Issues



- Self worth vs. worthlessness
- Hopelessness/depression/despair
- Anger/Hostility
- Plan
- Method
- Access
- Previous history of suicidal thoughts and attempts
- Capacity to act on plan
- Social withdrawal
- In TBI cases, impulsivity is an important factor

## **A Model for Understanding Suicide**



- Suicide Probability Scale (SPS)  
John Cull and Wayne Gill, 1988
- SPS uses a four axis system
- Hopelessness
- Suicide Ideation
- Negative self-evaluation
- Hostility

**A Four Axis Approach to Evaluating Suicide Risk**

- Loneliness
- Inability to change life
- Problems doing things, initiation
- Not important to others
- Unable to meet expectations
- Few friends
- No future/no improvement
- Perceived disapproval by others
- Feeling tired/listless
- Can't find happiness



## Hopeless Indicators



- Punish others by suicide
- Punish self
- “Better off dead”
- “Less painful to die than living this way”
- Thought of a plan/method
- “Think of suicide”
- “I wish I died in the accident”

## **Suicidal Ideation Indicators**



- Not feeling like a worthwhile person
- Not feeling appreciated by others
- Not missed by others if dead
- Things don't go well
- Not close to mother
- Not close to father
- Not close to significant other



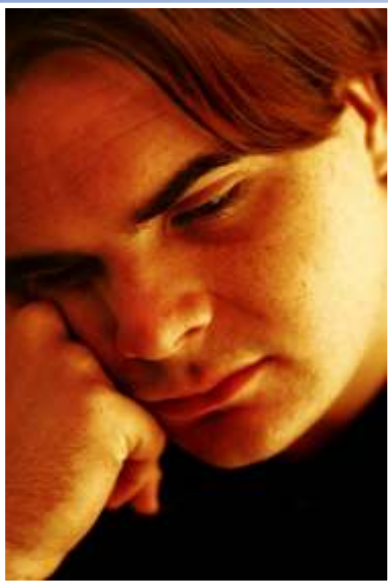
## **Negative Self Evaluation Indicators**



- Anger/rage control, “gets mad easily”
- Impulsive acts
- Angry feelings towards others
- Feels isolated from others
- Senses anger from others
- Can’t find a job/activity that I like



**Hostility Indicators**



- Establishes scores in four domains
- Compares score to “average” and standard deviations
- Combines raw score data into a weighted T-score to define “probability”
- Ranks probability risk from mild to severe
- Considers major stressors/upsets over last two years, including past attempts in assessing risk potential

## **Practical Aspects of the SPS**



- Predicts risk potential based on self-report of the individual to questions
- The four axis model provides relationship to dimensions of suicide
- Clinical importance/relevance of questions relates to risk factors
- Limited bias caused by age, gender or ethnicity
- Can be re-administered without practice learning bias
- Current mood state dependent



## **Suicide Probability Scale (SPS)**



- Axial approach provides an opportunity to assess potential for suicidal thinking, planning and acting
- Risk potential is assigned using data from the four domains of the scale
- Test questions relate to current emotional state
- Instrument supports, but does not replace a clinical interview and assessment
- Specific questions/response trigger “risk”

## **Suicide Probability Scale (SPS)**



- Cognitive issues must be considered
- Reading and comprehension support may be required
- The role of denial may effect score and obscure certain risk factors
- Impulsive behaviour(s) will accelerate risk potential
- Planning of suicide, including access and method may be poorly organized, but risk potential may be high
- Passive issues may be significant to risk

**Applying the Suicide Probability Scale to TBI**



- Clinical assessment based on presentation of suicidal thoughts and plan and the individual's current mental state
- Assessment must include current psychological/psychiatric issues and diseases, past history and psychological stressors
- Use of an assessment instrument will highlight issues, but cannot be used solely without a further assessment
- Current behavioral risk issues must be evaluated
- Prevalence of impulsive behaviors in individuals with TBI will enhance risk potential
- Lack of planning due to cognitive deficits does not exclude the individual from risk assignment
- Mood state issues must be considered

## **Risk Assessment Process**

- Current stressors and/or life changes
- Medication and its effects
- Substance use/abuse
- Specific problem(s) that the individual cannot solve
- Engagement in other self-harmful behavior(s)



## **Risk Assessment - II**



- Is there evidence of suicidal thinking or self-harm?
- Has the person experienced a loss of self-worth related to their disability?
- Is there evidence of depression, including vegetative symptoms?
- Is there a plan and/or method for the act?
- Is there a passive component?
- Is there a past history of suicide attempts?
- Has anger or hostility increased in response to internal or external events?



**Risk Identification Leads to Prevention**



- Feeling they would be “better off dead”
- “I wish I died in the accident”
- “I wish God would take me away”
- Feelings of loneliness and isolation
- Need to punish self
- Desire to punish others through suicide
- Exposure to risk or engagement in risky behavior and activities

## Passive Suicide

- Setting up event to occur
- Using law enforcement or military action to stage event
- Requires planning and capacity to operate plan
- Individual is resigned to completing the event, no “fail safe” mechanism
- Unlikely to communicate plan to others
- High likelihood of other risk factors being present



**“Suicide by Cop”: Passive or Active?**



- Engagement in high risk behaviors can be the plan for suicide
- Plan may include motor vehicles, sport activities, fights, drug/alcohol use
- Individual may not see themselves as the “active participant” and may express that these activities provide “relief”
- History may include multiple accidents, overdoses, fights
- Impaired judgment may initiate plan and act
- Stress event may trigger attempt

## **The Role of High Risk Behaviors in Suicide Ideation and Acts**

- Use clinical interview and assessment to determine risk
- Refer to mental health professionals for emergency evaluation and care
- Refer to law enforcement to prevent person from moving forward with plan
- Avoid “contracting for safety” in situations where the person is outside of appropriate and immediate supervision
- Person may express relief or calm when a plan is established
- Maintain awareness of non-verbal behaviors and cues



## Prevention and Treatment Issues

- Maintain contact with the person, establish their location
- Keep them engaged/talking
- Enlist help from another person to contact mental health or law enforcement
- Avoid argument or confrontation
- Avoid value judgments



**Prevention and Treatment Issues - II**

- All mental health, medical and rehabilitation professionals have a duty to protect the individual and others from harm
- Confidentiality and private medical information does not apply in “duty to warn” situations
- Response to protect must be immediate and complete



**Duty to Warn and Professional Responsibility**



- Suicide risk increases following a brain injury
- Impulsive behavior, cognitive and emotional problems are complicating agents to depression and suicidal thoughts and plans
- Mental health and rehabilitation professionals must manage ongoing risk



**Mental Health or Rehabilitation Problem?**



- Communication among rehab team members is vital
- Understanding risk factors
- Establishing a safety net, know signs and signals
- Frank discussion with significant other and family of risk potential and signs
- Rapid response to risk upon first identification
- Identifying “triggers” or precursors
- Consider cognitive, behavioral and neurologic issues
- Coordinate psychiatric treatment with counseling and rehabilitation efforts

**Adding to Client Safety**



- The client
- Their family, friends and others outside of rehab
- Rehabilitation professionals
- Medical and mental health professionals
- Support people in the community
- A plan to respond in an emergency

**A Team Approach: Build a Safety Net**

- Loss of self-esteem and social role
- Economic problems
- Job Loss
- Relationship problems, loss of friends
- Adjustment to disability
- Social Isolation and withdrawal
- Cognitive, behavioral and executive functioning deficits



## **The Contributing Factors: The Role of Brain Injury in Suicide**



- Recognize mood and feeling state triggers
- Provide definitive, safe behavioral alternatives
- Extend and solidify “safety net” strategies through key people and a safety plan
- Address substance use/abuse issues
- Increase awareness of nonverbal/behavioral cues
- Recognize role of impulsivity in dyscontrol

## **Psychotherapeutic Strategies**



- Inseparable and intertwined
- Brain injury may accelerate psychiatric disorders
- Neurobehavioral issues may enhance risk
- May occur at any time following injury, not confined to early recovery
- Social role recovery is strongly related to emerging and chronic mental health issues
- Individuals with a brain injury will not “fit” the psychiatric model

## **Brain Injury and Mental Health Issues in Suicide Attempts**

- Understand risk factors
- Respond proactively to first signs
- Use external controls to assure safety
- Involve mental health professionals in treatment and in rehabilitation planning
- Assure continuity between mental health and rehabilitation providers to incorporate brain injury issues in treatment
- Maintain awareness of changes, including those which are subtle



**Risk Prevention**

A stylized illustration of a human head in profile, facing right. The brain is depicted with blue and white wavy lines. Several question marks are scattered around the brain, with one large white question mark on the left side of the brain and a smaller blue one to its right. The background is a solid blue color.

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