

The CO-MORBIDITY of TRAUMATIC BRAIN INJURY and MENTAL ILLNESS

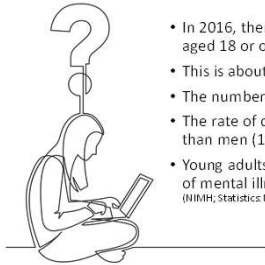
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The Brain Injury Association of Michigan 2019 Conference

What is Mental Illness?

Mental Illness: a mental, behavioral or emotional disorder that interferes in the way that we think, feel or function.

- Impairments can be mild, moderate or severe.
- Mental illness can affect how we handle stress, relate to others or make healthy choices.
- Mental health is important at every stage of life: childhood, adolescence, the adult life span.
- Mental health can change over time.
- Mental health can change after a traumatic brain injury
(CDC, Learn About Mental Health)

How Common is Mental Illness?



- In 2016, there were an estimated 44.7 million adults aged 18 or older with a mental illness
- This is about 1 in 5 Americans per year
- The number (1 in 5) is the same for children
- The rate of diagnosis is higher for women (21%) than men (15%)
- Young adults ages 18-25 had the highest prevalence of mental illness compared to other adult groups
(NIMH; Statistics: Mental Illness)

Causes of Mental Illness

- Biological factors (genetics or a chemical imbalance)
- Chronic medical condition (cancer/brain injury and so forth)
- Use of alcohol or recreational drugs
- Early childhood trauma
- Feeling lonely or isolated



Phineas Gage (1848) Neuroscience's Most Famous Patient

- Iron bar through frontal lobe: Tamping iron-43 inches long; 1.25 inches in diameter and 13 pounds
- Penetrated left cheek, shot through skull and landed several dozen feet away
- Responsible and well adjusted- model foreman
- Negligent, irreverent, profane, unable to take responsibility
- Lost his job
- Died at age 36 after a series of seizures (Smithsonianmag; Phineas Gage)



Depression

Depression

Depression is more than ups and downs. The depressed mood lasts most of the day, nearly every day. In addition, most of the following symptoms occur:

- Little or no pleasure in all or most activities
- Significant weight loss or weight gain/decrease or increase in appetite
- Inability to sleep or sleeping too much
- Restlessness or inactivity that other's comment about

Depression

- Fatigue or loss of energy
- Feelings of worthlessness
- Excessive guilt
- Inability to concentrate or make decisions
- Thoughts of death and dying; suicidal thoughts with or without a plan or a suicide attempt



Types of Depression

Major Depressive Disorder

Five or more of the symptoms are present everyday (exceptions are suicidal ideation and changes in appetite) for at least two weeks. Depressed mood is a constant.

Dysthymia

Depressed mood for most of the day. This has lasted for at least two years.

Other Types of Depression

Premenstrual Dysphoric Disorder, Substance/Medication Induced Depressive Disorder, Depressive Disorder Due to Another Medical Condition (DSM-V; Major Depression)

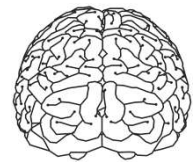
Psycho Social Profile (Depression)

- Poorer social functioning
 - Higher levels of dissatisfaction at work
 - Unemployment
 - Lower SES
 - Less education
 - Lack of close personal relationships
- (Neuropsychiatric Disease and Treatment; Psychiatric Disorders and Traumatic Brain Injury)



Co-Morbidity of Depression and TBI

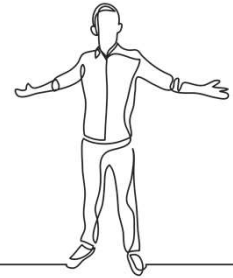
- Estimates of 33-44% of individuals met the criteria for major depression
- Predominant symptoms were lack of energy and irritability
- Reported an average of three years after the TBI



Bipolar Disorder

Bipolar Disorder

- Also known as manic-depressive illness
- Extreme shifts in mood
- Extreme shifts in energy
- Changes in activity levels
- Inability to complete everyday tasks
- Intense emotion
- Changes in sleep behaviors



Manic Episode

- Feeling of elation
- Have a lot of energy
- Feel jumpy or wired
- Have trouble sleeping
- Talk fast and change subjects
- Feel agitated or irritable
- Believe thoughts are going fast
- Think that they can multi-task a lot of different things
- Spend a lot of money or have risky sex



Depressive Episode

- Feel very sad, empty or hopeless
- Have little energy
- Decreased activity levels
- Sleep too much
- Lack of enjoyment
- Feel worried
- Trouble concentrating
- Forgetful
- Change in appetite
- Think about death or suicide



Types of Bipolar Disorder

Bipolar 1 Disorder

Manic episodes last at least seven days or require the person to be hospitalized. Depressive episodes occur as well.

Bipolar 2 Disorder

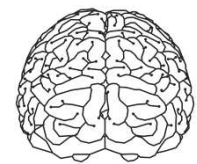
Manic episodes are not as full blown as above. Depression also occurs.

Cyclothymia

Numerous cycles of depression and mania but neither are well defined. Symptoms must last for at least two years. (DSM-V; Bi-Polar Disorder)

Co-Morbidity of Bi-Polar Disorders and TBI

- Low incidence
- Psycho social factors were not indicated
- Family history of mood disorders may be a factor
- Sex offenders with bi-polar disorders more likely to have a TBI
(Neuropsychiatric Disease and Treatment; Psychiatric Disorders and Traumatic Brain Injury)



Anxiety Disorders

Generalized Anxiety Disorder

- Excessive worry occurring more days than not for at least six months
- Difficulty controlling the worry
- The worry is associated with at least three of the following: restlessness, easily fatigued, difficulty concentrating, irritability, muscle tension or sleep disturbance
- The worry causes distress and/or impairment in social or work situations
- The worry is not an affect of medication, substance or another medical condition
- The worry is not explained by another mental disorder (DSM-V; Anxiety Disorders)

Panic Attacks

- Pounding heart
- Sweating
- Trembling
- Shortness of breath
- Chest pain
- Nausea
- Dizziness
- Chills
- Feeling of going crazy
- Feeling like you're dying



Co-Morbidity of Anxiety Disorders and TBI

- A pre-morbid tendency to worry is at times a predictor
- Individuals with anxiety or depression perceive their TBI as more severe
- Individuals with anxiety have more difficulty in the rehab setting
- Individuals may have generalized anxiety, obsessive-compulsive disorder, panic attacks, or depression with generalized anxiety.
- Multiple hardships created by anxiety complicate rehabilitation and recovery. (Neuropsychiatric Disease and Treatment; Psychiatric Disorders and Traumatic Brain Injury)

PTSD

Post-Traumatic Stress Disorder

For anyone older than 6 years of age

- A.** Exposure to actual or threatened death, serious injury, or sexual violence in one or more of the following ways.
- Direct experience of a traumatic event
 - Witnessing of the event as it occurs to others
 - Learning that the traumatic event occurred to a close family member or close friend.
 - Experiencing repeated or extreme exposure to aversive details of the traumatic event (first responders...)

Post-Traumatic Stress Disorder

B. Presence of one or more

- Recurrent, involuntary, and intrusive distressing memories or dreams of the traumatic event
- Flashbacks in which the individual feels or acts as if the traumatic event was recurring
- Intense or prolonged psychological distress at exposure to internal or external cues that resemble the trauma
- Physiological reactions to internal or external cues that symbolize the trauma

Post-Traumatic Stress Disorder

C. Avoidance of or efforts to avoid distressing memories, thoughts or feelings associated with the traumatic event

Avoidance of people, places, conversations, activities, objects, situations that resemble the traumatic event

D. Changes in mood/cognitions/arousal and reactivity such as:

- Sleep disturbance
- Persistent negative emotional state (fear, horror, anger, guilt shame)
- Reckless or self-destructive behavior
- Problems with concentration
- Negative beliefs about oneself

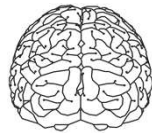
Co-Morbidity of PTSD and TBI

- Mild TBI- 14%. People who had memory of the accident were more likely to have PTSD. This finding has lead researchers to hypothesize that post traumatic amnesia acts like a protectant.
- PTSD has been reported with moderate and severe TBI. The most frequently reported symptom was emotional reactivity and the least frequently reported was intrusive memories.
- There is no difference between people that are involved in lawsuits (in other words... people are not faking this).
(Neuropsychiatric Disease and Treatment; Psychiatric Disorders and Traumatic Brain Injury)

Special Populations and Substance Misuse

Substance Misuse and TBI

- After a TBI the brain is more sensitive to alcohol and other drugs
- There are not as many neurons to absorb the alcohol
- Alcohol and unprescribed drugs can have a negative interaction with prescribed medications
- Patients are not aware of the potential risks of mixing substances.
- False belief in controlling the outcome
(Negative Effects of Alcohol Abuse on TBI Rehabilitation; Mir'Chal Harris)



Co-Morbidity of Substance Use and TBI

- Addiction changes the brain by replacing normal needs and desires with priorities that are involved in seeking drugs. A weakened ability to control impulses in spite of the negative consequences is similar to a mental illness.
- Research shows as many as 58% of individuals who sustain a TBI are under the influence of drugs/alcohol
- Fifty percent of TBI survivors return to pre-injury patterns
- 54% who sustain a second TBI are under the influence

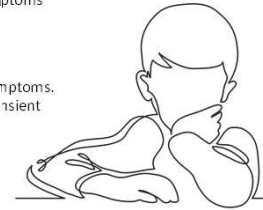
Pediatric TBI and Mental Illness

- Personality change is most significant (not a personality disorder)
- Mood instability
- Aggression
- Disinhibited behavior
- Apathy
- Paranoia



Co-Morbidity of Personality Change in Children

- Severe TBI: 40% had ongoing symptoms two years after injury
- Additional 20% had symptoms of transient personality change
- Moderate to Mild TBI: 5% had symptoms. Almost all caregivers reported transient symptoms
- The most debilitating psychiatric symptom



PTSD/Mania/Depression in Children

- **PTSD:** Relatively common in the first weeks after injury (68%) and decrease to 12% by two years after injury
- Predictors include: Severity of injury, female gender, pre-injury anxiety and depression
- **Mania:** 8% of children developed mania
- May be overlapped with ADHD
- **Depression:** TBI increased the risk of depressive symptoms especially among underserved children
- One fourth of severely injured children had ongoing depressive disorder and one third had a depressive disorder some time after
(Psychiatry Clinical North America; Neuropsychiatry of Pediatric Brain Injury)

ADHD and TBI in Children

- Long-term study: 418 children studied
- 57 had a single injury and 42 had multiple mild injuries before the age of 6 (no loss of consciousness/no hospitalizations)
- ADHD diagnosed 3 times more in the injured children than the non-injured at the age of 12
- Cumulative effect of head injuries without characteristics deeming them clinically important may cause risks to behavioral development
- ADHD may be hard to detect in young children but are more noticeable in middle and high school aged.
- Potential lasting and detrimental effects on children with multiple mild injuries before the age of 6
(Global Pediatric Health; Parent Reported Mild Head Injury History in Children: Long Term Effects on ADHD)

Mild TBI and U.S. Soldiers Returning from Iraq

- 2525 soldiers interviewed after year long deployment in Iraq
- PTSD was strongly associated with mild TBI. Overall 49.9% of soldiers who reported loss of consciousness met the criteria for PTSD.
- Soldiers who reported mild TBI were at high risk for physical and mental health problems.
- The soldiers who responded to the study were significantly more likely to report blast injuries.
- There will be an increase in the numbers of veterans for further screening and treatment. (NEJM; mTBI in U.S. Soldiers Returning from Iraq)

TBI in Prisons

- 25-87% of inmates have experienced a head injury
- Prisoners with a TBI have severe depression and anxiety, substance use disorders, difficulty controlling anger and suicidal thoughts or attempts
- Among male prisoners: a history of TBI is associated with violence
- Children and teens who are convicted of crime are more likely to have a pre-crime TBI and a history of violence
- Lack of treatment and rehabilitation while incarcerated leads to a high probability of abuse of alcohol and other drugs, re-arrest and increased risk of death (CDC; TBI in Prisons and Jails)

Other Factors

Victimization of Persons with a TBI

- Persons with disabilities are 4 to 10 times more likely to be victims of violence, abuse or neglect
- Children with disabilities are more than twice as likely to be physically or sexually abused
- More men than women are perpetrators of violence, family members, home care attendants or health care workers, and disabled individuals against other disabled individuals
- Persons with a TBI may have difficulty with anger management which prompts others to act out similarly
- Misperceptions about TBI may lead to treatment that is demeaning or abusive
- TBI outcomes affect others' perceptions of a person's ability to honestly report an act of victimization
- Persons with TBI may experience physical or sexual violence, emotional abuse or neglect by a caregiver in return for access to medication, adaptive equipment or assistance with ADLs (CDC, Victimization of Persons with TBI or Other Disabilities)

Potential Barriers to Treatment

- The injured person has limited insight to their behaviors and doesn't recognize the need for treatment
- The injured person self medicates with alcohol or unprescribed drugs and does not want to take prescription medications
- The injured person does not take medications as prescribed
- The injured person is not an accurate self-reporter in treatment
- The family meets aggression with aggression
- The family looks at the identified patient as the "problem"
- Cultural influences

How to Help

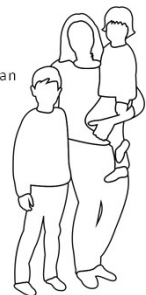
How to Help: Treatment

- Talk to a physician, psychiatrist, or therapist that understands TBI
- A program can be tailored to the person's specific needs
- The BIA or Michigan Psychological Association could provide names for trained professionals
- A combined therapy and medication program may be indicated
- Behavioral therapy, cognitive-behavioral therapy, family therapy



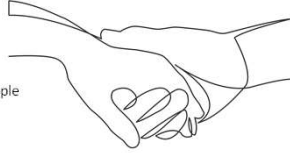
How to Help: Family

- Remain calm if an emotional outburst occurs
- Take the person to a quiet and calming area if you can
- Acknowledge their feelings
- Provide gentle and supportive feedback
- Try not to take things personally
- Try not to argue or yell back
- Set limits for positive communication
- Try not to give in to unrealistic demands



How to Help

- Join a support group
- Understand that medications do not typically have an immediate effect. It can take several trials to find the right medication.
- Education on TBI
- Do relaxation exercises
- Increase activity and exercise
- Enjoy the sun
- Surround yourself with positive people
- Believe in a higher power
- Forgive



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