Psychosocial Complications of Brain Injury

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Disclosure

Rolf B. Gainer, PhD has business relationships with Rehabilitation Institutes of America, Brookhaven Hospital and Community NeuroRehab of Iowa and related companies. Those relationships have not influenced the content of this presentation.
Learning Objectives
To understand post-injury development of psychiatric disorders
To understand the risk factors associated with depression, mood disorders and anxiety disorders
To determine how psychosocial complications effect the rehabilitation process and community return
To understand the long-term effects of psycho-social problems on the individual
We’re neurotypical until........
...a traumatic event occurs
Brain injury often results in impairment to emotional, cognitive and behavioral aspects of the person in addition to the physiological changes.
What are the mental health issues?
Depression
Mood state problems
Risk for Suicide
Substance abuse
Irritability, anger and aggression
High risk behaviors
How does brain injury impact on the person's sense of self?
Uncertainty about self
The erosion of sense of competency and self worth
Struggling with issues of post-injury identity
Ambiguous loss creates stress and defies closure
Three categories of loss

Nochi, 1998
Loss of clear self knowledge
Loss of self by comparison
Loss of self in the eyes of others
The social consequences
Brain Injury: “The isolating disease”
Can we better understand the social impact of brain injury on long-term outcomes?

Understanding that happiness is a property of groups of people

A person with a brain injury and those around them may be unhappy

The “cascade” effect occurs in illness and disability as a source of unhappiness for the person and others

Relatives’ criticism influences adjustment and outcome after brain injury:

Heightening the association between distress, coping and recovery

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Loss of one’s sense of competency
“It’s me, but it’s not me”

Struggling with insight into deficits and changes
Experiencing withdrawal and isolation

From others
By others
“It’s not the same person”

Dealing with responses from others
The neuropsychiatric sequelae following brain injury are a direct consequence of the trauma itself and the characteristics of the injury; it’s severity; injury location and the pre-injury psychological make-up of the person.
The psychosocial complications of brain injury are caused by the interaction of physiological, emotional, psychological, cognitive and behavioral aspects of the injury on the person, their relationships and participation in life activities.
Psycho-social complications of brain injury occur at all levels of severity—from Mild to Severe Injuries.
The factors relating to psychosocial complications include: neurophysiological changes to the brain, pre-injury personality characteristics, psychological resilience, effectiveness of social support network, economic status.

Shoumitro, et al, 1999
The presence of a psychiatric disorder will complicate rehabilitation and impact on adjustment to disability.
In the years following the end of rehabilitation, psychiatric crisis is likely to be the cause of disruption in the person’s social network.
“I don’t know what’s wrong with me. It’s like my brain isn’t working. Things I used to know how to do, I can’t anymore”
Severe brain injury increases the occurrence rates for: Depression; Dysthymia; Obsessive-Compulsive Disorder; Phobias; Panic Disorders; Substance misuse; Bipolar Affective Disorder and Schizophrenia as compared to individuals with brain injury.

Silver, et al, 2001
• Individuals with both depression and anxiety perceived themselves as more ill and demonstrated reduced function as compared to cohort with anxiety without depression.
The Chicken or the Egg: Which can first?
Does brain injury cause psychiatric disease?
or, do the symptoms resemble a known psychiatric condition?
Or, does brain injury exacerbate pre-injury problems?
The Neuropsychiatric Sequelae
30-year study of mental health issues and brain injury

- Temporary disruption of brain function leading to the development of psychiatric symptoms
- Increased, long-standing vulnerability and even permanent psychiatric disorder

Source: Kaponen, S., et al. (2002)
30-year study of mental health issues and brain injury

• 61.7 had an Axis 1 (DSM-IV) diagnosis in their life time

• 48.8% had an Axis 1 diagnosis following their injury

• 40.0% had a current, post-injury Axis 1 diagnosis

• Depression (MDD) was the most common diagnosis

Source: Kaponen, S., et al. (2002)
Functional Outcomes 10 years after injury

High levels of anxiety and depression = poorer outcome attainment
Level of ability to participate = poorer outcomes
Social isolation related to functional deficits
Psychiatric diagnosis and cognitive deficits are best regarded as components rather than outcomes

Source: Ponsford, J. et al. (2008)
Monash University Study: Likelihood of post-injury psychiatric disorders

Psychiatric disorders occurring in 60% of the post-injury population in a 5.5 year period

Greater likelihood of psychiatric disorder found in relationship to pre-injury substance abuse, major depressive and anxiety disorders

R. Van Reekum’s Study

- Depression found in 44.3% - 50.0% of cases over a 7.5 year period
- Anxiety Disorders found in 9.1% - 16.6%
- Substance abuse in 27.7%
- Personality Disorders in 12.7%
- Denial of symptoms could prevent an understanding of cognitive, emotional and behavioral difficulties

The confusion of injury severity and the emergence of neuropsychiatric issues

Agitation in early recovery may be seen as a Mood Disorder

Slowed processing diagnosed as Major Depression
Location, location, location....

The location and severity of the injury can be the cause for the emergence of specific symptoms
Frontal lobe injury and neurobehavioral deficits
Loss of self-regulatory functions

Impaired Executive functions

Deficits in judgment, problem-solving and planning

Diminished self-awareness
Social role return and frontal lobe function

Is there a connection?
Is our social role functioning determined by frontal lobe function?

- Emotional recognition
- Infer mental states of others
- Social Cognition
- Cognitive Flexibility
- Executive Functioning

Theory of Mind applied to social network integration

How does the person’s ability to perceive others impact on their social role?
Seizure Disorders and Neuropsychiatric Diagnosis

Aspects of behavioral dyscontrol

Constant irritability and agitation

Seizure activity may include aggressive behavior “out of the blue”

Pre- and post-ictal changes impede cognitive and psychological responsiveness
The “irritable” person

Relationship of irritability to pre- and post-seizure states

Positive behavioral response to anti-seizure medications
Irritability, anger and aggression.....

...the perfect storm
Dual Diagnosis: Two problems, one cause or one problem?

Are certain people more likely to develop certain symptoms?

What is the role of pre-injury personality characteristics?
The person prior to their injury

Pre-injury personality characteristics will effect post-injury changes

Resilience is significant to recovery
Pre-injury characteristics and problems may become more apparent and become barriers to recovery.
The person after their injury

• Neurophysiological deficits of the injury

• Psychological vulnerability (personality and attribution style)

• Self awareness of the brain injury deficits and resilience

• Social influences, support and participation
Can there be a latency period from the injury to the emergence of symptoms?
Psychiatric problems Create Barriers to Rehabilitation

Prevent participation in rehabilitation

Neurobehavioral problems may cause discharge

Social withdrawal and isolation

Differing response to psychiatric medications
The onset of neuropsychiatric problems and recovery

Relationship to the injury site and the emergence of certain symptoms

Depression and left pre-frontal injury

Meichenbaum’s Study

• 70-80% of people exposed to trauma recover successfully
• 20-30% continue to experience lingering clinical disorders and adjustment problems such as PTSD, anxiety, depressive and substance abuse disorders that can result in suicidal acts, aggressive behavior and divorce.

The injury can cause neurochemical changes which produce psychiatric symptoms.

Disturbances in serotonin, glutamate and dopamine are associated with depression.

Soblosky, et al, 1992
Jorge, et al, 2005
Diffuse axonal injury can be associated with the onset of neurobehavioral problems

Richardson, et al, 2007
Does the presence of a neurobehavioral syndrome effect long-term outcomes?

self-regulation issues trigger problems
Do family members “disconnect” when the person has behavioral problems?

What happens when they disconnect?
Rage and anger are transmitted faster through social networks, triggering a chain reaction.

The negative response of others may increase withdrawal and isolation.
The person, their injury and response

People with pre-injury alcoholism have a greater likelihood to develop depression

Dikmen, et al, 2010
Jorge, et al, 1993
Depression and anxiety are often seen as co-occurring conditions following brain injury.

Rola, et al, 2006
Depression and anxiety have higher correlation with right hemisphere lesions, while depression is associated with left hemisphere lesions.

Depression and Anxiety: physiological, psychological or both

The latency period from injury to the onset of symptoms may be associated with depression, anxiety and bipolar affective disorders seen in later years.

VanReekum, et al, 2000
Depression

44.3% of individuals with TBI were at risk for developing depression as compared to 5.9% of the general population.

Left prefrontal injuries correlated to the development of depression.

Lateral and medial frontal lobe injuries have a greater likelihood of developing both depression and apathy.

Preinjury psychiatric disorders and socio-economic status associated with higher rates of depression.

Jorge, RE et al, 2004
Sadness causes withdrawal and social deactivation

or Apathy
Apathy is associated with a reduced emotional and physical response

83% of TBI cases with apathy had comorbid depression
Differentiation of “social apathy” an altered sense of self and social awareness related anterior frontal lesions
Apathy may exist as subtypes defined by frontal-subcortical loops (Apathy Syndromes)

Can we understand apathy as a factor in social role disruption?

The loss of the capacity to initiate affects relationships.
Do family members “disconnect” when the person has behavioral problems?

What happens when they disconnect?
Fann et al: Self perception

• Individuals with both depression and anxiety perceived themselves as more ill and demonstrated reduced function as compared to cohort with anxiety without depression

Anxiety
Feelings of excessive fear or worry
Fatigue, irritability, muscle tension, restlessness, diminished concentration and sleep problems
The individual may manifest difficulties in decision making and problem solving
These problems can complicate injury-related memory and cognitive difficulties
Pre-injury “worry” problems may be exacerbated by the injury increasing the risk of developing General Anxiety Disorder.

American Psychiatric Association, 2000
Mayou, R. et al, 2001
Panic Disorders

Intense and sudden surge in anxiety

Producing: intense fear; pounding heart; sweating; trembling; difficulty breathing; chest pain; chills; fever

Feelings of unreality; fear of losing control; fear of dying

Panic attacks may relate to specific injury to the brain, neurotransmitter abnormalities or psychosocial response to the changes caused by the injury
Post-Traumatic Stress Disorder: PTSD

PSTD is a group of symptoms following a traumatic event which can include: reliving the event; avoidance of stimuli associated with the event; increased arousal; anger expression; irritability and “flashbacks”

Psychosocial adversity; early post-TBI depressive symptoms and pre-injury anxiety problems increase the potential for developing PTSD
Mood disorders

Manic episode marked by a period of elevated, expansive or irritable mood lasting at least 1 week with at least three symptoms: amplified self-esteem; decreased need for sleep; grandiose ideas; distractibility and engagement in behaviors with high risk consequences.

Mania if often misdiagnosed in TBI due to increased aggression, sleep disorders and increased activation/arousal/agitation related to the injury.
Manic Episode of Bi-Polar Affective Disorder

Further classified as Bipolar I, Bipolar II, cyclothymia affecting 4% of the individuals with TBI

Bipolar I identified by one or more manic episodes
Bipolar II identified by one or more depressive episodes followed by one or more hypomanic episodes

Cyclothymia is a chronic fluctuating mood disturbance including depressed and hypomanic states
Phobias and other problems

Heightened fear or somatic concerns with illness, danger, disease or other threat

Behaviors may occur in response to fears and/or concerns which interfere with functioning
Obsessive-Compulsive Disorder - OCD

Repetitive, ritualistic behaviors which consume significant time and activity in the person’s life

Thinking that the repeated activity and ritual is required to address a problem

Ritualistic behaviors interfere with the person’s life activities
Schizophrenia

Prevalence of schizophrenia increases 2-3 fold over the span of 10-20 years post-TBI as compared to neurotypical individuals (Davidson, K. and Bagley, C.R., 1969)

The diagnosis of schizophrenia results in an increase in social relationship problems and a decrease in independence (Silver, et al. 2001)
Paranoia: Cognitive or Neuropsychiatric?

The person’s altered sensory state contributes to paranoia.

Cognitive problems, including memory, may cause the person to misperceive interactions.

Sense of altered self and changes in social role may further contribute.
Personality changes

Changes in coping skills

Altered responses

Shifts in self-awareness and self-knowledge

Emotional and behavioral dysregulation
It is difficult to diagnose Brain Injury as the cause of a Personality Disorder without a pre-injury diagnosis of Personality Disorder.

A Brain Injury can exacerbate certain behavioral characteristics which resemble a known Personality Disorder. The person may have difficulty in self-regulating these behaviors after their injury.
Disordered Personality or Organic Personality Disorder

Organic Personality Disorder has been used to describe individuals with significant changes in their behaviors, affect, aggression and emotions (Schwarzbold, et al. 2008)

In a 30-year follow-up study 23% were considered as having a Personality Disorder.

The most common Personality Disorders reported were Avoidant, Paranoid and Schizoid (Gagnon, et al. 2006)
Cognition and personality change

Changes to a person’s cognitive, behavioral and emotional abilities can produce changes which effect the person’s adjustment to disability effecting social role and relationships and impede community re-integration.

There may be a gradual development of psychiatric problems 5-years post-injury in relation to adjustment issues (Olver, et al. 1996)
Impulse control and self-regulatory problems

Problems with impulse control and self-regulation of emotions and behavior can cause significant problems in social relationships and reduce the available social and community supports which will increase isolation.
Substance Use and Addiction

Substance use and addiction are often seen as a “Dual Diagnosis” and can complicate rehabilitation and recovery.

Some individuals may use substances to self-manage symptoms of depression and/or anxiety.

Substance “cravings” are difficult for a person with brain injury to self-manage.
Anger and Aggression

Difficulty in anger control and aggression can serve to further isolate the person from their support network and social relationships and impede rehabilitation and community return.
Elevated Risk for Suicide

The loss of self contributes to depression and anxiety and coupled with diminished impulse control can place the person at risk for self-harm. Hopelessness is a key factor in suicidality.

Comorbidity with a psychiatric diagnosis or substance abuse problem is a common factor.

Role of identity crisis and social disruption (Klonoff and Tate, 1995)

Risk increases in the first 15 years post-injury.
Elevated Risk for Suicide

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
When rehabilitation ends

Brain injury is a lifetime disability impacting on the person’s social role and relationships, creating lost vocational and career opportunities and economic changes and hardships.

Capacity for stress and psychological resilience will differ from person-to-person and can change over time for the individual.
The changes the person’s experience of their view of self which may persist for years and serve as a barrier.
Recovery of Self

What is important to recovery of self?
A person’s history is key to understanding how they will react to their brain injury

How does the person reconcile with who they **now** are as compared to who they were prior to the event?
How does the person perceive the control of their life after an adverse event?

Internal or External?
Shifting to internal control can lead to positive responses and changes.
Externalizing control prevents the person from addressing the changes in their life.
How do other people respond to the person?
Resiliency: Ingredients for recovery
The before and after: who am I now?
There is no measure for resilience, it is the person’s response to adversity, obstacles and threat which determines how the person will fare with each event.

Emmy Werner, 1989
Resilience is a constant recalculation of factors relating to multiple stressors over time

Emmy Werner, 1989
Social Role Components
“...my social relationships fell off as people recognized my deficits...”
“...they didn’t know how to make it comfortable...”
“...we weren’t operating in the same social circles anymore...”
“people withdrew from me, too”
Social Network Changes
Loss of pre-injury social role
Changes in key relationships
Difficulty in maintaining access
Loss of independence

Requiring role modification
Reliance on physical assistance
Cognitive and behavioral difficulties
The “Dual Diagnosis”: Functional problems and living with stress
Latency between injury and onset

Effects on both the person and others

Role and relationship changes
Pre- and post-injury determinants

Psychological functioning pre-injury
Resilience and adaptability
Post-injury psychological response
Extent to which social return occurs
The long-term view

Recovery of self and social role is a significant aspect of long-term outcome

Pre- and post-injury psychological make-up

Ability to adjust to the residual disabilities
A lifetime of changes

Aging with a brain injury disability

Changes in resilience and adaptability

Life changes external to the person

Support network
Supporting success

Person-centered rehabilitation
Addressing mental health issues as they occur
Caregiver support
Maintaining meaningful activities
Access to housing and services
Economic supports
Resources needed by the person will need to be flexible with their changing needs.
Thanks!

Questions?

This presentation can be found at traumaticbraininjury.net under “Resources” and “Community Presentations”
Resources and References


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