



Mental Health Complications in Acute Spinal Cord Injury Rehabilitation: An Interdisciplinary Approach

HYATT REGENCY DENVER & COLORADO CONVENTION CENTER · SEPTEMBER 3-6, 2017

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Purposes of Presentation

- Heighten understanding and awareness of the roles of team members in identification, treatment, and management of mental health disorders in SCI population
 - **Ultimate goal is to minimize impact on rehabilitation engagement and outcomes**

Learning Objectives

1. Differentiate between expected post-injury psychological changes and those that can signify mental disorders that can threaten rehabilitation engagement and outcomes
2. Describe the effects that spinal cord injury can have on pre-morbid mental health disorders
3. Recognize the roles of psychologist, nurse case manager, and physical therapist in achieving rehabilitation goals while working with consumers with mental health problems

Spinal Cord Injury (SCI) Facts

(National Spinal Cord Injury Statistical Center)

- Estimated to be approximately 282,000 persons with SCI in the USA
- Average age of injury is 42 years old (getting older)
- Males account for 80% of population of SCI
- Vehicle crashes are the leading cause of injury
- Private sector acute care setting is usually 11 days and inpatient rehab is about 35 days
- Incomplete tetraplegia is the most frequent neurological category
- Re-hospitalization occurs in about 30% of population with the average length of stay of 22 days

Facts About Mental Health Disorders (General Population)

National Institute of Mental Health Web site

<https://www.nimh.nih.gov/index.shtml>

- 1 in 5 adults experiences mental illness each year
- 1 in 25 adults experience serious mental illness that interferes with or limits one or more major life activities
- 18.1% of adults experience anxiety disorders
- 10.2 million adults whom experience mental illness also have a concurrent substance abuse issue

MH Problems in the SCI Population

- Individuals with SCI are at increased risk for post-injury mental health problems, including Depressive Disorders, Anxiety Disorders, Adjustment Disorders, and Posttraumatic Stress Disorder (PTSD) (Craig, Tran & Middleton, 2008).
- Elevated levels of anxiety have been reported in 23–35% of the SCI population and elevated levels of depression in 35–38% (Kennedy et al., 2003)
- Those with SCI are found to be more vulnerable to suicide than the general population (Charlifue & Gerhart, 1991)
- Conversely, behavioral health disorders may put individuals at increased risk for SCI (e.g., addiction)
- **Often overlooked, SCI can lead to an exacerbation of symptoms of pre-morbid mental health conditions such as Major Depressive Disorder, Bipolar Disorder, Schizophrenia, and Posttraumatic Stress Disorder, thereby threatening rehabilitation engagement and outcomes.**

What do we know about Pre-SCI MH Disorders?

- Much less is known about pre-injury MH disorders and the impact of SCI, as opposed to post-injury MH disorders during acute rehabilitation and the prevalence of MH problems in community dwelling individuals with SCI
- There is some evidence that pre-SCI substance use and certain personality traits are over-represented among the SCI population (Heinemann et al., 1991; Berry et al., 2007)
- **We know that stress exacerbates mental health symptoms, and SCI represents a profound stressor**

Psychosocial Realities/Stressors Post- SCI

- Changes in independence
- Change in family role/dynamics
- Inability to control certain bodily functions
- Changes in body image
- Losses of privacy
- Loss of physical function
- Potential changes in support system

SCI & Psychological Impact

- Spinal cord injury (SCI) is a life altering injury that impacts not only physical function, but also emotional and psychological health (Richards et al., 2010).
- An individual's mental health status after SCI is affected by their adjustment to disability, **any premorbid mental health disorders**, and post-SCI psychosocial barriers (Middleton & Craig, 2008).

Predictors of Vulnerability to Psychiatric Morbidity Post- SCI

- Personal history of psychiatric disorder
 - Includes substance abuse
- History of impulsiveness
- Lack of social support system
- Loss of intimate relationship
 - e.g., recent death of parent, divorce
- Family history of psychiatric disorders
- Lack of finances/instrumental resources

Common Mental Health Disorders Encountered During Acute SCI Rehabilitation

- Depressive Disorders (common Pre-SCI & Post-SCI)
 - Very common in general population and more common in SCI population (but not normative)
 - consider if suicide attempt was reason for SCI
- Anxiety Disorders (common Pre-SCI & Post-SCI)
 - e.g, phobias, panic and generalized anxiety
- Adjustment Disorders (more common Post-SCI)
 - Very common should the distress symptoms become pronounced in response to the SCI or other associated stressors such as loss of a relationship after the injury
- Post-Traumatic Stress Disorder (common Pre-SCI & Post-SCI)
 - May or may not be related to the cause of the SCI
- Schizophrenia (much more likely Pre-SCI)
 - if bizarre delusions or hallucinations are present in absence of previous diagnosis then consider organic causes (meds; brain injury; delirium)
- Bipolar Disorders (Likely Pre-SCI but can be Post-SCI in context of brain injury)
 - If no history of prior mood diagnosis or history of severe mood instability or mania and you notice it during acute rehab, consider organic causes as noted above
- Substance Use Disorders (Pre-SCI by definition)
 - Often related to the injury itself, which may cause much ambivalence, guilt, shame or denial
 - Possibly still in withdrawal to some extent (especially tobacco) and now having to cope without this primary coping strategy
- Borderline Personality Disorder (Pre-SCI by definition)
 - Dramatic, erratic, unstable pattern of emotions, relationships, and self-image that consolidates during adolescence and into young adulthood

Major Depressive Disorder

- Usually manifest itself in mid to late 20s
- Can result from trauma, genetic makeup, organic imbalances
 - Can be intensified by illness, stress, substance abuse, or reaction to medications (many of which we prescribe on SCI)
- Characterized by an overwhelming and persistent feeling of sadness, hopelessness, and helplessness
- Risk for poor engagement, reduced FIM outcomes, extended stay, poor alliance, frustration of staff
- Common before SCI, during acute rehab, and after return to the community ('common cold' of MH problems)
- Sleep, appetite, motivation, energy, self-worth, view of future, self-criticism, giving up easily

Major Depressive Disorder (continued)

- Important to determine if depression is part of grieving process (i.e. focuses on loss of function and paralysis) vs. clinical depression (i.e. individual feels worthless, helpless, and begins to withdraw)
- Good depression screening instruments exist
- Presence of depression is not related to level or severity of injury, but is related to ongoing pain
- Level of depression is correlated with best outcomes during acute rehab and discharge
- When in doubt, discuss treatment options with patient in order to not let this condition linger and detrimentally affect entire acute SCI rehab engagement process
 - Psychotherapy; pharmacotherapy; arranging rehabilitation to promote success experiences and emphasizing small successes

Anxiety Disorders

National Institute of Mental Health Web site

<https://www.nimh.nih.gov/index.shtml>

- Impacts about 30% of adults in the United States
- Defined as out of proportion response to a stimuli that evokes fears, worry, or avoidance
 - This out of proportional response interferes with daily functioning & thus can affect rehabilitation
- Causative factors can be genetic, environmental, or due to developmental stressors
- Common pre injury, during acute rehab, and in community dwelling individuals with SCI
- Phobias (e.g., can affect imaging; discomfort in specialty beds; desire to be near windows)
- Generalized Anxiety Disorder ('worry wart' and may have difficulty not anticipating worst case scenarios)
- Due to medical condition (e.g., e.g., breathing difficulties or when on ventilator)
- Be sensitive to and validate worries (without necessarily agreeing with reality of feared outcomes) and discuss coping strategies and anxiety management skills; focus on taking one session or one day at a time as these individuals tend to 'get ahead of themselves'

Post-Traumatic Stress Disorder (PTSD)

National Institute of Mental Health Web site

<https://www.nimh.nih.gov/index.shtml>

- Classified as a Trauma & Stressor-related Disorder
- Impacts 7.7 million Americans over the age of 18
- Often after traumatic events such as natural disaster, terrorist attack, violent assault, or other life-threatening events
- often occurs in conjunction with depression and substance abuse
- Common pre-SCI, especially in veteran population (e.g., combat)
- May also have onset during acute rehabilitation (e.g., traumatic etiology of SCI leading to an Acute Stress Disorder (e.g., violence; MVC)
 - Early identification and intervention may prevent chronicity of symptoms

Schizophrenia

National Institute of Mental Health Web site

<https://www.nimh.nih.gov/index.shtml>

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- Chronic mental health disorder that impacts how an individual thinks, acts, behaves, and interacts with reality
 - Symptoms usually develop between adolescence & young adulthood
 - Symptoms can be classified as positive (e.g., delusions & hallucinations), negative (e.g., apathy), or cognitive
 - Scientists believe the interaction of genetics and an individual's environment play a role in development of schizophrenia
 - Also brain chemistry and structure may play a role in development of schizophrenia
 - NOT a result of SCI; if onset of these symptoms then suspect organic basis such as infection, delirium, TBI, medication reaction
 - Very difficult for these individuals, when symptoms are not well controlled, to understand what is going on as a result of the SCI; important for psychiatry on board quickly to assess meds and provide support

Bipolar Disorders

(“Manic-Depressive” Illness)

National Institute of Mental Health Web site

<https://www.nimh.nih.gov/index.shtml>

- Characterized by unusual shifts in moods, energy, activity levels, and ability to carry out daily tasks
- Multiple types: Bipolar I Disorder, Bipolar II Disorder, etc.
- Multifactorial in possible causes
 - Brain structure/chemistry
 - Genetics
 - Family History
- Mood volatility can be caused by many factors, including drugs, withdrawal from drugs, delirium, medications, etc.
- More common before SCI and need psychiatry to assess stability and medications
- If symptoms are new, then suspect organic etiology as above; medications can cause this such as steroids and even certain neuropathic pain meds
- Will need to adjust expectations and watch for mood impact on rehabilitation involvement
 - Important to regulate sleep-wake cycles
 - provide support for emotional regulation in general

Borderline Personality Disorder (BPD)

- Described as a pattern of ongoing instability in moods, behavior, self-image, and functioning
- Signs and symptoms usually include:
 - Avoidance of real or imagined abandonment
 - Pattern of intense or unstable relationships
 - Distorted and unstable self-image or sense of self
 - Recurring suicidal or self-injurious behaviors
 - Chronic feeling of emptiness
- Currently BPD is an often misdiagnosed or underdiagnosed so consulting with mental healthcare professionals is pertinent to rule out other diagnoses and get appropriate treatment
- Disorder that consolidates during adolescent development and by definition is in place by early adulthood, so not result of SCI
- History should show unstable, erratic, dramatic relationship history and likely trauma experienced early in life
- By definition, individuals with this problem will be challenging to work with in rehabilitation therapies, as the stress of an SCI strains their already fragile identity and coping capabilities

Impact of Emotional, Psychosocial, and Physiological Changes that Occur Post- SCI

- Combination of factors leads to an individual who may present differently day-to-day during the acute rehab stay, especially early on (e.g., mood and interpersonal changes)
 - e.g., environmental stressors; complexity of rehabilitation setting; new need for ADL assistance; new medications; tobacco withdrawal; prognostic uncertainties
- Imperative for all team members to behave, interact, and react to differences in moods in similar manners (communication, consistency and cohesiveness)
 - Actively listen (demonstrating the individual is ‘heard’), validate the experience (not the same as agreeing with the person), acknowledge the individual’s problem or concern, collaborate/refer to assist with solution if possible, follow up with individual about concern, and provide supportive/nurturing environment for future discussion as needed

Interdisciplinary Team

- The rehab team plays a key role in early identification of mental health disorders via medical record review, behavioral observations, clinical & collateral interviews, and standardized testing.
- All team members contribute to evaluation of ways in which a mental health disorder may affect the individual's ability to learn from, participate in, and adjust to rehabilitation, in addition to anticipating how it may affect post-discharge adjustment.
- Team members develop a plan of care that meets the unique needs of the individual and assists with monitoring the progress throughout the continuum of care.

Role of Psychologist

Rehabilitation Psychology

- Assess for facilitators/strengths; identify barriers/vulnerabilities
 - Can include pre or post-SCI MH disorders via medical record review, behavioral observations, clinical & collateral interviews)
- Consult with & communicate back and forth regularly with team members to assess impact of MH symptoms on rehab participation
- Consult with team to best understand personality functioning, how to motivate, predict potential problems, & how to manage if occur
- Assist in managing relationship/role changes with significant others
- Ultimate goal is to optimize quality of life & well-being, as well as to decrease risk for secondary conditions, including future MH problems

Is it a problem or not?

Common Emotions & Experiences Post-SCI

Potentially Normative

- Sadness
- Loss
- Anger
- Uncertainty
- Loneliness
- Worry
- Guilt
- Disbelief
- Resentment
- Denial

Red Flag Considerations

- Severity
- Frequency
- Duration/Persistence
- Reactivity to normal supports and time
- Functioning
 - Relationships
 - Neurovegetative symptoms
 - Distress
 - Engagement
 - Alliance

If it is a Problem?

- History of same or similar problems? What's worked before?
- Alert team to risks & red flags
- Assess interactions with MDs, nurses & rehab therapists
- Consultation with team on adjustments to content, style, interaction, & expectations of individual
- Provide psychoeducation, counseling, and/or psychotherapies
- Consider engaging pharmacologic specialists as needed

Identify and Activate Predictors of Resilience Against MH Morbidity Post- SCI

- Emotional support system
- Financial matters & other instrumental supports
- Employment
- Positive leisure, recreation, hobbies
- Adaptive problem solving & coping
- Assist with acceptance, adaptation, & adjustment post-SCI
 - Designed to improve mood, quality of life, improve self-image, improve inter-personal relationships, and increase understanding of injury

Consider “Team-Involved” Psychology Practices

- Regular ratings of MDs, nurses & rehab therapists regarding mood, anxiety, irritability, appropriate vs inappropriate interactions, engagement, alliance, etc.
- Co-counseling with nurse case manager to explore themes of any nursing interaction problems and then nurse case manager can provide specific examples of how to problem solve and communicate with floor nurses or nurse manager
- Observe interaction during rehab sessions in order to identify potential stuck points during interactions on both parts of the provider-participant working relationship
- Put together ‘Behavioral Agreements’ between patient and all SCI providers
- Work with clinical pharmacist or other medical provider to provide specific targets for pharmacologic intervention (e.g., ‘sleep onset’ or ‘decreased appetite’ versus merely ‘Depression’ treatment)
- Assist in combination interventions targeting pain treatment additions or subtractions (e.g., when weaning off of pain medications)

Role of Nursing

Red Flags for Detecting Mental Health Disorders for Nursing Staff

- Low mood
- Loss of interest and pleasure or loss of energy number
- Significant weight loss or gain
- Physical agitation
- Fatigue or loss of energy
- Significant distress or impairment
- Feelings of worthlessness or excessive guilt
- Reduced concentration
- Indecisiveness
- Sleep disturbance
- Easily fatigued
- Palpitations
- Excessive worry
- Angst
- Irritability
- Fear
- Difficulty concentrating
- Increased startle
- Hypervigilance
- Compulsions
- Obsessions
- Restlessness
- Muscle tension
- Shortness of breath

Helpful Screening Tips for Nursing

- Screening occurs each time you interact with patient
 - During hourly rounds, during education of ICP, when you turn on the light in patient's room, when turning the patient in bed, etc.
- Establish good communication between yourself and the patient in which you are an active listener, display empathy, and explore the patient's expectations of rehab and their life
- If patient with known mental health disorders, provide education to them in their preferred learning style and give reinforcement as needed
- Work with team to establish a plan of care to be consistent with patient needs to increase achievement of rehabilitation goals

Nursing Education to SCI Patients

- To better assist patients, nurses need to understand the following:
 - Perform holistic care assessment of patient's mental and physical health needs (Barley & Lawson, 2016).
 - Providing education on bowel care program is equally important as reinforcing the anxiety relieving techniques established by psychology
 - Identify at risk patients
 - Patients with increased psychosocial problems as have increased barriers to completion of rehab goals
 - Understand the role of comorbid mental health problems and its direct correlation to physical outcomes, greater disability, and higher rates of death.
 - Understand that patients may not ask for help due to embarrassment, stigma, lack of knowledge, or worries about treatment (Barley & Lawson, 2016).
 - Population most often impacted by SCI are middle aged men- change in role and identification of new stressors can be difficult.
 - Utilization of nurse's clinical judgment
 - Making referrals to appropriate disciplines as needed
 - Provide reinforcement of skills taught by other disciplines

Role of Nursing in Treatment Process of Mental Health Disorders

- Ask the patient “how are you feeling”?
 - Be an active listener when the patient responds
 - Make eye contact and be focused on patient during conversation
- Use your screening tools per facility guidelines.
- Identify suicidal and/or homicidal ideations.
 - Ask patient “are you having thoughts of hurting yourself or others”.
 - Ask if they have a plan to harm self or others. (Weapons)
- Ensure yourself, patient, other patients, and staff remain safe during times of intervention
- Identify and notify treatment team immediately of changes in patient behavior and symptoms.
 - Inform team often of treatment plan and progress- even if changes seem minimal be sure to alert team and document when charting

Role of Nursing in Rehab Setting

- Nurses spend an abundant amount of time with the spinal cord injured person during the rehabilitation stay
 - Nurse most often encounter first hand the common side effects of pre-existing mood disorders and any adjustment issues in which an individual presents with at time of rehab stay
- It is also imperative that nurses have an adequate working knowledge of what is the normal progression of grief and bereavement in relation to SCI in rehab setting
- It is important that nurses understand the red flags of a person diagnosed with a mental health disorder as well as daily management of mental health disorders
 - Discussion with team on regular basis to provide feedback when team is not present

Nursing and Interdisciplinary Team

- As nurses we serve as an intricate part of the patient's support system during their rehab stay
- Social support from nursing staff can also facilitate healthier behaviors such as increased activity tolerance, healthy eating, smoking cessation, and treatment adherence, through role modeling or social norms (Barley & Lawson, 2016).
- It can be helpful for nurses to attempt to understand the patient's thought patterns and how these thoughts contribute to a patient's ability to meet or in some cases not meet rehabilitation goals.

Role of Physical Therapist

Physical Therapy and SCI

- The role of the physical therapist in SCI is as follows:
 - Assess the individual's specific physical abilities
 - Develop a plan of care based on those physical characteristics and the individual's needs
 - Set realistic goals with patient and family input
 - Successfully implement plan of care by optimizing individual's functional potential
 - Prepare individual for seamless transition home

The Evidence of Loss of Function

- Physical therapist make the spinal cord injured person's functional loss evident daily by the tasks and activities initiated during sessions
 - Because of the role of the physical therapist is to optimize functional potential and recommend medical equipment that assists individuals with being independent the fears, frustrations, sadness, anger, and hopelessness associated with SCI are glaringly evident

Individualization of Treatment Sessions

- The physical therapist by job specificity acknowledges the “elephant in the room”- the person’s spinal cord injury
 - Recognize the newly spinal cord injured person’s loss of independence and function
 - Provide education and take the time to address questions and concerns
- PTs have a key role in assisting to identify barriers to reaching maximal functional potential. Some barriers are:
 - Pain
 - Limited financial resources
 - Poor family support
 - Adjustment difficulties
 - Pre-morbid mental health disorders
 - Pre-morbid substance abuse issues

Keys to Rehab Success

- Identify the following:
 - Education level
 - Favorable learning style
 - Video, hand-outs, kinesthetic, memory book
 - Observe the individual's ability to respond to constructive feedback
 - Emotional liability
 - Impact of pre-morbid mental health disorders
- Develop plan with IDT
- Implement plan with unity amongst IDT members for effective carryover

Adjustment Disorder

- Adjustment Disorder previously defined
- PTs can assist with adaptive emotional recovery
 - Term can be defined as the ability to successfully navigate the negative emotions such as sadness, fear, and anxiety that are directly correlated to an individual's new diagnosis of spinal cord injury
 - Understanding that bereavement and grief are a natural process associated with spinal cord injury
 - Provide constructive environment for individual to grieve
 - Allow individual to express spiritual beliefs
 - Be an active listener

Other Mental Health Disorders

- Most prevalent are anxiety disorders, schizophrenia, bipolar disorder, personality disorders, and substance abuse
 - These diagnoses are most often pre-morbid but are exacerbated by new spinal cord injury
- These diagnoses impact the coping and learning style of individuals thus affecting an individual's ability to reach maximum functional potentials
- As PTs, we should understand the definition of each diagnosis but realize that the barriers presented must be dealt with on an individual basis

Importance of IDT

- Interdisciplinary team is composed of medical members of team with a certain expertise in their respective areas
 - Goal is to optimize with quality of life and independence for individuals
- Understanding the scope each member of the IDT and the importance of collaboration are the essential components to success being achieved for the individual patient



Summary & Conclusions

- Early identification of mental health disorders via medical record review, behavioral observations, clinical & collateral interviews, and standardized testing
- All team members contribute to evaluation of ways in which a mental health disorder may affect the individual's ability to learn from, participate in, and adjust to rehabilitation, in addition to anticipating how it may affect post-discharge adjustment.
- Team members develop a plan of care that meets the unique needs of the individual and assists with monitoring the progress throughout the continuum of care.
- Interdisciplinary approaches targeting mental health complications in acute SCI rehabilitation are critical for maximize engagement, functional outcomes, and community integration.
- Healthcare providers should take into account the role of chronic pain and fatigue have on the individuals ability to adjust

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