Mild Traumatic Brain Injury and Posttraumatic Stress Disorder

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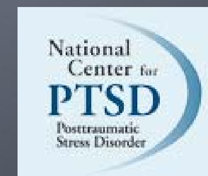

Agenda

- Nature and Treatment of Posttraumatic Stress Disorder (PTSD)
- Proposed Relationships Between PTSD & mTBI
- Current Controversies in PTSD/mTBI
- Recommendations for Clinical Practice

Posttraumatic Stress Disorder Overview

DSM-IV Diagnosis
Posttraumatic Stress Disorder (PTSD)

Traumatic event occurs: a person experiences, witnesses, or is confronted by an event involving death or serious injury, or a threat to the physical integrity of self or others.

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The individual experiences fear, helplessness, or horror at the time of the event.

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The following symptoms must last one month or more and must cause significant distress or impairment:

Reexperiencing (≥ 1)

- distressing recollections of the trauma in the form of thoughts or perceptions
- distressing trauma-related dreams
- acting or feeling as if the trauma were recurring
- distress on exposure to trauma-related cues (internal or external cues) aka triggers
- physiological arousal on exposure to trauma-related cues.

Avoidance (≥ 3)

- avoidance of trauma-related thoughts, feelings, and conversations
- avoidance of activities, places, or people related to the trauma
- an inability to recall an aspect of the trauma
- loss of interest in typical activities
- a feeling of detachment or estrangement from others
- restricted affect
- lowered hope in and expectation from the future

Hyperarousal (≥ 2)

- sleeping difficulties
- irritability
- concentration problems
- hypervigilance
- exaggerated startle

(DSM; American Psychiatric Association, 1994)

Prevalence and Incidence of PTSD

- Lifetime prevalence rates vary from 5% to 12% of the adult population (Keane et al., 2000)
- Approximately 20% of women and 8% of men develop PTSD after experiencing a traumatic event (NCPTSD, 2008)
- Combat exposure is associated with an increased risk for PTSD
  - 12% of OIF vets and 8% of OEF vets (Hoge et al, 2004); 18.5% of GWOT vets overall (RAND, 2008)

Treatments for PTSD

- Psychotherapy
  - Cognitive behavioral therapy (CBT) is widely accepted as a treatment for PTSD (Foa, Keane, & Friedman, 2000)
    - CBT packages may provide a combination of exposure therapy, stress inoculation training, and cognitive therapy
  - Additionally, the following are commonly offered:
    - Psychoeducation about PTSD
    - CBT treatments to address related problems such as anger (anger management training, assertiveness training) or social isolation (social skills training, communication skills training)
- Pharmacotherapy is also recognized as a first-line intervention for PTSD (SSRIs)

(VA PTSD CPG, 2004)

Proposed Relationships Between PTSD and mTBI

Comorbidity of PTSD and mTBI

- Earlier studies: TBI prevents the development of PTSD (Max et al., 1998; Mayou, Bryant, & Duthie, 1993; Sbordone & Liter, 1995; Warden et al., 1997)
- Most recent studies report incident rates of PTSD in patients with mTBI (11-24%) to be roughly equivalent to non-TBI patients with similar stressors (Bombardier et al., 2006; Gil et al., 2005; Harvey & Bryant, 2000; Harvey & Bryant, 1998)
- RAND study (2008) of 1965 OIF/OEF service members: 37.4% of those with mTBI history also had PTSD or MDD.
- VA study (2007): 42% of OIF/OEF veterans with mTBI history also had PTSD symptoms (Lew, Poole, Vanderploeg, et al., 2007).
- Bryant et al. (2000): PTSD occurred among 27% of moderate and severe TBIs.

Reasons for Comorbidity of PTSD and mTBI

- Cognitive impairments and perceptual disturbances may contribute to, mimic, or alter the presentation of PTSD or other psychiatric disorders (Kim et al., 2007; King, 2008)
- No current scientific resolution to whether impairments caused by each source might
  - Be additive
  - Be multiplicative
  - Create a "ceiling effect" (where the sum of the two factors is less than would be predicted for each alone
  - Provide a "protective effect"
- There is no evidence for "universal effects"

(Kennedy et al., 2007)

Relationship Between PTSD and mTBI

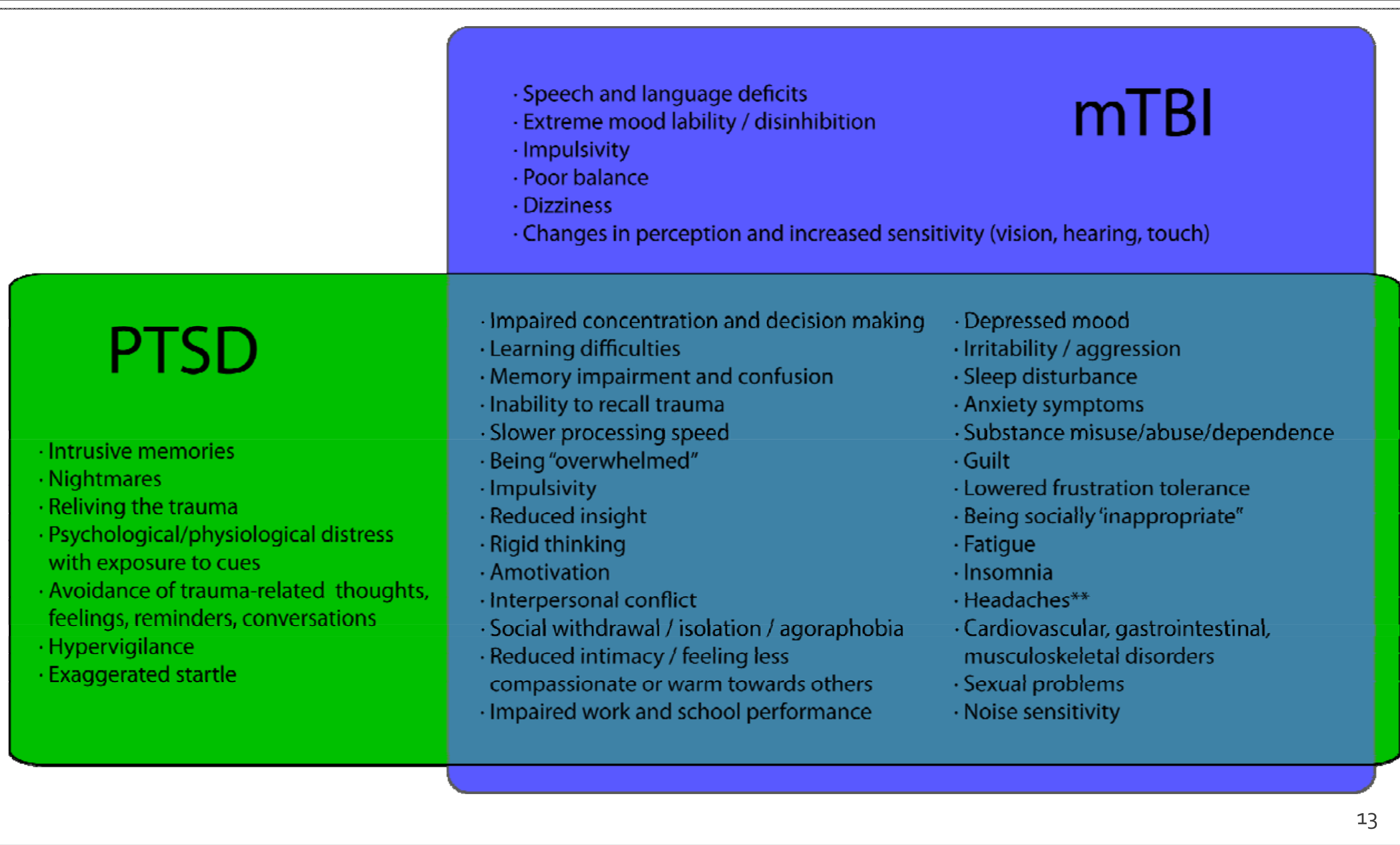
- Various psychological and biological theories have been proposed to explain the relationship between PTSD and mTBI
  - Cyclical and transactional symptom maintenance (King, 2008; DVBIC, 2008)
  - Biological mechanisms
    - Genetic contributions
    - Structural changes
    - Endocrine findings
    - Neurochemical and neurotransmitter changes

Challenges and Current Controversies in PTSD / mTBI Literature

Confounded Definitions of Required Traumatic Event

- A TBI event is almost certainly emotionally traumatic (unless the survivor is unconscious prior to the incident)
  - Therefore, we should see the same incidence rates for PTSD as we do in the trauma-exposed population: 8% for women and 20% for men
- Experiences of fear, horror, and helplessness are ubiquitous in combat (Kennedy, Jaffee, Leskin, et al., 2007)

Shared Symptoms / Difficulty in Differential Diagnosis



The Paradox of PTSD w/ PTA, LOC, or Alteration in Consciousness

- It has been argued that the coexistence of PTSD and TBI (specifically with PTA, LOC, or Alteration in Consciousness) is paradoxical (e.g. Adler, 1943; O'Brien & Nutt, 1998; Boake, 1996; Bontke, 1996; Price, 1994; Trimble, 1981).
- Resolutions to the paradox have been proposed (Harvey, Brewin, Jones, & Kopelman, 2003)
  - Focuses on ambiguity in the criteria for diagnosing PTSD
  - Accepting that TBI patients do experience similar symptoms to other PTSD patients but that there are crucial differences in symptom content

Is it possible for my patient to have both mTBI and PTSD?

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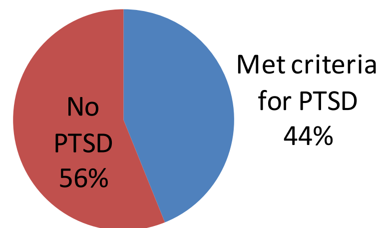
• distressing recollections of the trauma in the form of thoughts or perceptions • distressing trauma-related dreams • acting or feeling as if the trauma were recurring • distress on exposure to trauma-related cues (internal or external cues) aka triggers • physiological arousal on exposure to trauma-related cues.	• avoidance of trauma-related thoughts, feelings, and conversations • avoidance of activities, places, or people related to the trauma • an inability to recall an aspect of the trauma • loss of interest in typical activities • a feeling of detachment or estrangement from others • restricted affect • lowered hope in and expectation from the future	• sleeping difficulties • irritability • concentration problems • hypervigilance • exaggerated startle

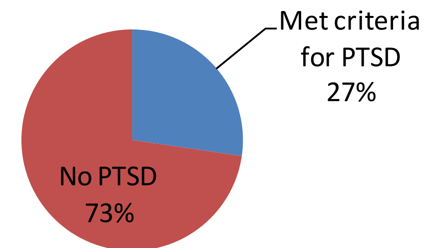
(DSM; American Psychiatric Association, 1994)

Possible Overatrribution of Symptoms to mTBI

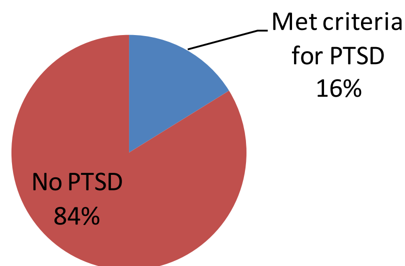
Of the 4.9% reporting loss of consciousness



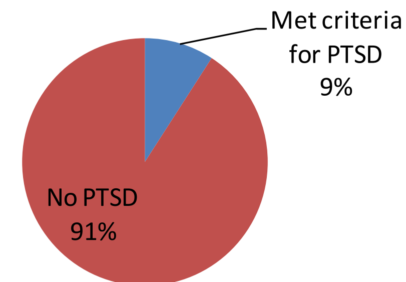
Of the 10.3% reporting altered mental status



Of the 17.2% reporting other injuries



Of the 67.6% reporting no injury



N = 2525 OIF Soldiers 3-4 months postdeployment

(Hoge, et al, 2008)

Consequences of Overatrribution of Symptoms to mTBI

- May unnecessarily increase patient's anxieties about their symptoms
- Limited empirical support for mTBI screening/assessment procedures will result in a large number of referrals for evaluation of nonspecific health symptoms with potential iatrogenic consequences
  - May prevent clinicians from considering an appropriate PTSD dx
  - Underdiagnosis of PTSD and other psychiatric conditions leads to lack of treatment
  - There are effective treatments available for PTSD, which could reduce patient's suffering but may not be made available
- Continuation of stigma for psychiatric disorders
- Conversely: inaccurate to suggest that mTBI is not a serious medical concern

Recommendations for Clinical Practice

What are the best ways for me to help my patient?

- Confirm diagnosis as possible
- Screen every patient for both disorders
- Identify most troublesome symptoms and prioritize needs
- Identify appropriate referrals/resources
  - Collaborate with other treatment team members to provide a wrap-around approach
- Provide education and create positive expectancies; balance supportive care with pressure toward maximum recovery
  - Monitor language and terminology (mTBI = concussion)
  - Validate patient and provide alternative framework for understanding symptoms
- Strongly encourage healthy and safe behaviors
- Train compensatory strategies / treat symptoms

Tips for Managing PTSD/mTBI Patients

- Create a language ahead of time for discussing TBI symptoms
- Discuss consequences of problematic behavior
- Avoid being punitive
- Ask!! Patient may be able to give you critical information on environmental issues that make engaging easier for him/her.
- Be flexible as possible to accommodate special needs (but set personal limits as necessary)
- Use language and graphical aids in psychotherapy:
  - Use concrete language
  - High frequency words
  - Analogies
  - Diagrams
  - Written summaries
  - Mini-reviews (at the beginning, middle, and end of session)
- Try behavioral interventions in lieu of cognitive ones where appropriate
- Anticipate unsafe or ineffective decision making
- Make and share reasonable goals
  - Punctuate small successes
- Get consultation! High risk of clinician burnout.

How can I tell if symptoms are due to PTSD or mTBI (differential diagnosis)?

- Often, you may not be able to tell for sure
- Differential dx requires
  - understanding etiology of PTSD/TBI symptoms
  - Obtaining accurate information to account for presenting neurological and psychological factors (thorough clinical interview and record review – the gold standard assessment for mTBI)
- Use brief questionnaires for PTSD symptoms such as Posttraumatic Checklist - Civilian (PCL-C) or PC-PCL
- Gold standard assessment to obtain PTSD diagnosis is Clinician Administered PTSD Scale (Weathers, Keane, & Davidson, 2001)
- Treatment should be symptom-focused, rather than diagnosis focused

What are the empirically-supported treatments for comorbid PTSD /mTBI?

- Very few studies have addressed treatment of co-occurring TBI and PTSD
- Bryant et al. (2003) compared a CBT regimen versus supportive counseling for the treatment of Acute Stress Disorder and mTBI
- See VA and DoD clinical practice guidelines for EVT of each of the disorders

Should I send the PTSD/mTBI patient for a neuropsychological workup? Imaging?

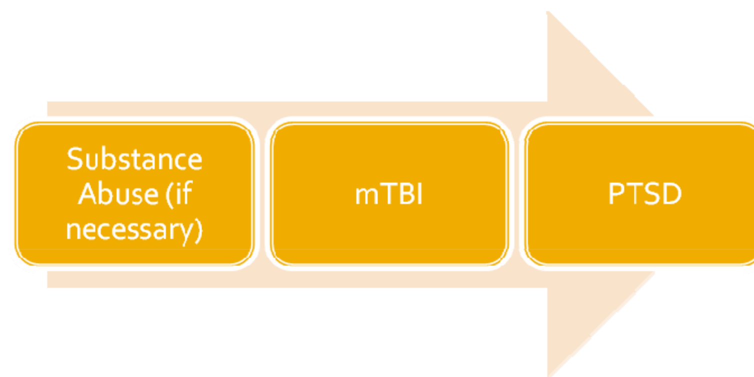
- No clear answer
- Consider the value of positive expectancies

Are certain pharmacological agents indicated or contraindicated in a PTSD/ mTBI population?

- For medical staff:
  - "Start low and go slow"
  - Avoid medications that can worsen cognition
- For all clinicians with patient interaction:
  - Monitor for drug compliance
  - Monitor for evidence of worsening symptoms/ drug interactions and report to medical staff

Is it preferable to provide sequential treatment or cotreatment? Is there an accepted treatment hierarchy?

- Do cognitive problems need to be resolved before PTSD treatments can be used?
- Is it necessary to teach distress tolerance to decrease hypervigilance and suspiciousness before cognitive or PTSD interventions can be used?
- There is no generally accepted hierarchy.
- Some argue:



Can I still do PTSD treatments in the presence of TBI? Is there some need for modification?

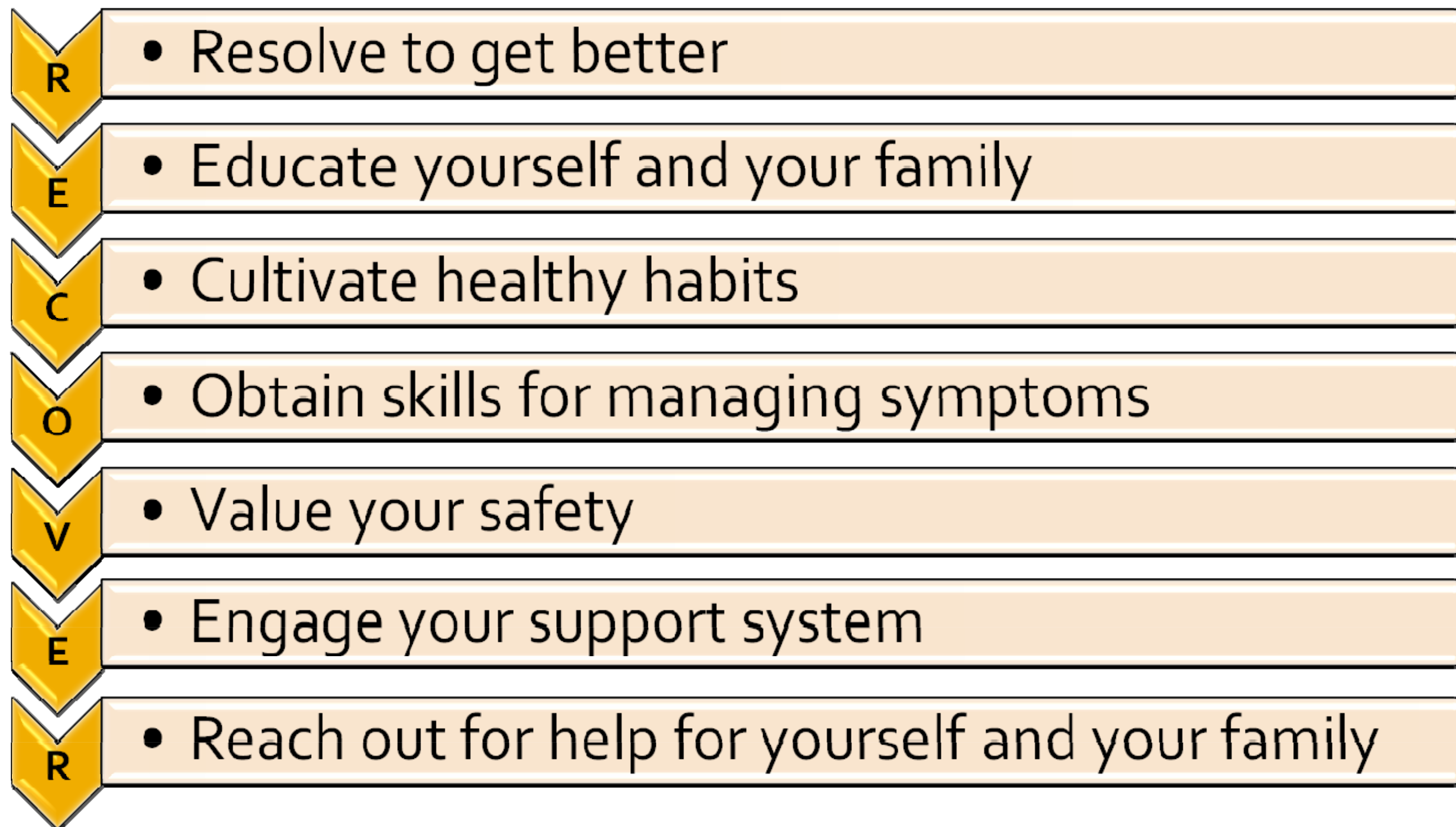
- CBT is widely accepted as a treatment for PTSD (Foa, Keane, & Friedman, 2000)
- Case studies support a use of CBT for patients with PTSD after TBI (McGrath, 1997; McMillan, 1991; McNeil & Greenwood, 1996; Middleboe et al., 1992).
- Mild TBI patients are able to do CBT treatments and benefit from these beyond supportive treatment (Bryant et al, 2003)
- CBT may be of particular value to people with cognitive impairments because it is structured, educative, and interactive (Manchester & Wood, 2001; Ponsford, Sloan, & Snow, 1995; Williams, Evans & Wilson, 2003)
- PTA does not seem to reduce effectiveness of CBT
- Post-TBI depression appears to be resistant to both CBT and supportive counseling
- Modifications may be necessary to accommodate cognitive or physical deficits associated with mTBI

Can treatment for comorbid mTBI and PTSD occur in group settings?

- This has not yet been studied
- Clinical experience suggests that co-occurring mTBI can create challenges similar to those usually seen with co-occurring SUD or Axis II disorders (i.e. impulsivity, mood lability, rigid thinking style, lack of empathy, etc.)
- Clinical assessment of patient's ability to tolerate distress and manage cognitive demands of treatment is necessary.
- Balance: avoid increasing shame by inappropriate admission into group and avoid overpathologizing

RECOVER Model for Patients

Developed for afterdeployment.org



(Hoffman, in press)

Clinical Resources Online

- www.afterdeployment.org
- National Center for PTSD
  www.ncptsd.va.gov (intranet site has PTSD scales for download)
- Defense and Veterans Brain Injury Center
  www.dvbic.org
- www.brainline.org
- www.braintrauma.org
- www.guidelines.gov

Questions?

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