Post Traumatic Stress Disorder and the Returning Military

Diana L. Thorne, MD

Overview of Combat Trauma

- Everyone deployed to combat zones is affected by the experience, mentally and physically
- Some are affected in positive, growth-enhancing ways
- Some find new meaning in their lives and a stronger spiritual connection
- But others are injured by their operational experiences, superficially or deeply
- Most heal from their operational stress just as most physical wounds heal in time
- But a few stress injuries persist long after deployments have ended

Challenges of Operational Stress Management in the Military and the VA

- Discriminating between normal, adaptive responses to combat or operational stress and those that are pathological
- Identifying pathological stress reactions early, but without adding the insult of stigma to the injury of stress and trauma
- Treating stress problems early and effectively, but without promoting disability

Daignostic Criteria for PTSD

- **Criterion A (one required):** The person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, in the following way(s):
- Direct exposure
  - Witnessing the trauma
  - Learning that a relative or close friend was exposed to a trauma
  - Indirect exposure to aversive details of the trauma, usually in the course of professional duties (e.g., first responders, medics)

Diagnostic Criteria for PTSD

- **Criterion B (one required):** The traumatic event is persistently re-experienced, in the following way(s):
  - Intrusive thoughts
  - Nightmares
  - Flashbacks
  - Emotional distress after exposure to traumatic reminders
  - Physical reactivity after exposure to traumatic reminders

Diagnostic Criteria for PTSD

- **Criterion C (one required):** Avoidance of trauma-related stimuli after the trauma, in the following way(s):
  - Trauma-related thoughts or feelings
  - Trauma-related reminders

Diagnostic Criteria for PTSD

- **Criterion D (two required):** Negative thoughts or feelings that began or worsened after the trauma, in the following way(s):
  - Inability to recall key features of the trauma
  - Overly negative thoughts and assumptions about oneself or the world
  - Exaggerated blame of self or others for causing the trauma
  - Negative affect
  - Decreased interest in activities
  - Feeling isolated
  - Difficulty experiencing positive affect

Diagnostic Criteria for PTSD

- **Criterion E (two required):** Trauma-related arousal and reactivity that began or worsened after the trauma, in the following way(s):
  - Irritability or aggression
  - Risky or destructive behavior
  - Hyper-vigilance
  - Heightened startle reaction
  - Difficulty concentrating
  - Difficulty sleeping

Diagnostic Criteria for PTSD

- **Criterion F (required):** Symptoms last for more than 1 month.
- **Criterion G (required):** Symptoms create distress or functional impairment (e.g., social, occupational).
- **Criterion H (required):** Symptoms are not due to medication, substance use, or other illness.

Diagnostic Criteria for PTSD

- **Two specifications**:
- **Dissociative Specification.** In addition to meeting criteria for diagnosis, an individual experiences high levels of either of the following in reaction to trauma-related stimuli:
  - Depersonalization. Experience of being an outside observer of or detached from oneself (e.g., feeling as if "this is not happening to me" or one were in a dream).
  - Derealization. Experience of unreality, distance, or distortion (e.g., "things are not real").

Diagnostic Criteria for PTSD

- **Two specifications**:
- **Delayed Specification**. Full diagnostic criteria are not met until at least six months after the trauma(s), although onset of symptoms may occur immediately.

Combat/Operational Stress Trajectories Over Time

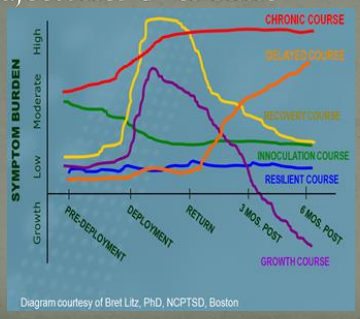
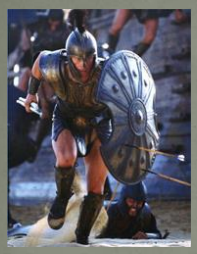


Diagram courtesy of Bret Litz, PhD, NCPTSD, Boston

Stigma Prevents Some Service Members From Getting Needed Help

- **Walter Reed Army Institute of Research study: 1709 soldiers and Marines surveyed 304 months after OIF-I**
  - **17% had symptoms of PTSD, depression, or anxiety**
  - **86% of those with symptoms realized they had a problem**
  - **45% said they wanted help**
  - **29% had received mental health help in the past year**
- **Biggest reasons for not asking for help:**
  - **65% "I would be seen as weak."**
  - **63% "My leaders might treat me differently."**
  - **59% "My unit might have less confidence in me."**
  - **55% "I couldn't get off of work to get treatment."**
  - **51% "M leaders would blame me for the problem."**
  - **50% "It would harm my career."**

Greek Warrior Ideals: *Arete*



Brad Pitt as Achilles in "Troy"

- **Ancient Greek ideal of the aristocrat warrior**
- **Features of *arete*:**
  - **Strength**
  - **Valor**
  - **Courage**
  - **Fortitude**
- **Has continued unchanged in the militaries of the world**
- **The foundation of all military core values and identity**
- **For a warrior to develop stress symptoms of any kind is to fail to live up to the warrior ideal!**

Shame over Loss of Honor and Failure to Live Up to the Warrior Ideal

"And as a companion I must reckon with Ajax, difficult to tent, alas, living with a god-sent madness. In the past you sent him forth mighty in his valiant strength; but now he shepherds lonely thoughts and has found deep mourning for his friends. And the deeds of the greatest valor done earlier by his hands have been let drop.."
-Sophocles, Ajax, Electra, Oedipus Tyrranus

Suicide of Ajax

Challenges

- Warriors and veterans with stress symptoms must be helped to preserve their honor, not be encouraged to abandon it
- Health and pastoral care personnel must be mindful of military cultures
- Use language that minimizes shame without trivializing potentially disabling problems

Stress Reactions

- US Marine Corps Solution: Stress reactions are either
  - Normal, reversible adaptations or
  - Irreversible (but usually self limiting) stress injuries
- Like physical injuries, stress injuries are never the sole fault of the individual

Some of the "Manageable" Hardships of Operational Deployment s

PHYSICAL	- Heat - Dehydration - Illness - Cold - Sleep deprivation - Injury
COGNITIVE	- Boredom - Being hyper-focused - Lack of information - Information overload
EMOTIONAL	- Fear of death/injury - Fear of failure - Feeling devalued - Loyalty conflicts
SOCIAL	- Being away from loved ones and friends - Loss of personal space - Isolation
SPIRITUAL	- Loss of clarity about life's purpose - Loss of innocence - Loss of trust

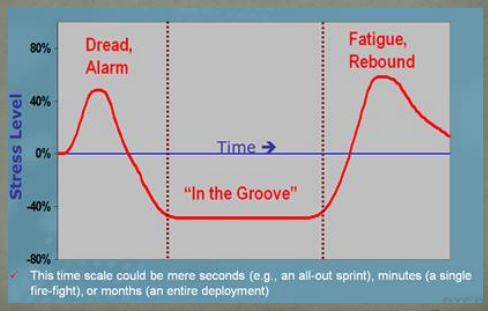
Some of the "Manageable" Hardships of Homecoming

PHYSICAL	- Traffic - Crowds - Being unarmed - Access to alcohol and drugs
COGNITIVE	- Not knowing how much to tell family, friends - Loyalty conflicts - Boredom
EMOTIONAL	- Withdrawal from the rush of battle - Feeling unsafe - Helplessness
SOCIAL	- Being separated from buddies and leaders - Being overwhelmed/misunderstood by family
SPIRITUAL	- Difficulty making sense of what happened - Guilt - Conflicting values

Three Tactics for Normal, Reversible Adaptation to Stress.

ACCOMMODATE	NEUTRALIZE	DISENGAGE
• Change yourself to better suit the stressor	• Eliminate or reduce the stressor	• Detach mentally from the environment, yourself, or both
• This makes you more tolerant to that particular stressor	• This lessens the force and impact of that particular stressor	• Examples: denial, withdrawal, numbness
• This is the goal of all training and education	• A fast way to adapt, but often not possible	• Stores up stress for later processing

Three Phases of Normal Adaptation



Common "Rebound" Changes in Service Members After Deployment

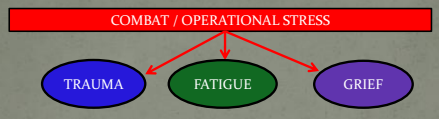
- **Aggressiveness**
  - De-sensitized to aggression
  - Angry, irritable, agitated because of stress
  - May even crave violence as excitement
- **Relative numbness**
  - Numb to their own and other's suffering
  - Numb to their own and other's joy
- **Becoming easily frustrated or overwhelmed**
- **Feeling alienated from family and friends at home**
- **Having a hard time getting back into home/garrison routines.**

Stress Injuries Occur When Stress is Too Intense or Lasts Too Long

- **Adaptation**
  - A gradual process
  - Can be traced over time
  - Reversible

- **Adaptation**
  - May be more abrupt
  - A derailment, change in self
  - Individual loses control
  - Irreversible (though can heal)

Three Mechanisms of Stress Injury



- An impact injury
- Due to events involving terror, horror, or hopelessness

- A wear-and-tear injury
- Due to the accumulation of stress over time

- A loss injury
- Due to the loss of people who are cared about

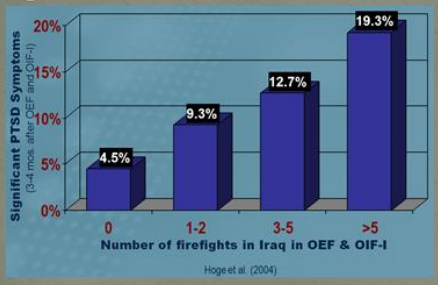
Trauma Stress Injuries

- Abrupt injuries to the brain and mind
- Due to specific event(s) that provoke:
  - Terror, horror, or helplessness
  - Physiological hyper-arousal
  - Dissociation (abrupt and transient loss of mental integrity)
  - Damage to necessary or deeply-held beliefs
  - Shame or guilt

Traumatic Events in OIF

- Multi-casualty incidents (SVBIEDs [Suicide Vehicle-Borne Improvised Explosive Device], ambushes)
- Friendly fire
- Death or maiming of children and women
- Seeing gruesome scenes of carnage
- Handling dead bodies and body parts
- "Avoidable" casualties and losses
- Witnessed or committed atrocities
- Witness death/injury of a close friend or leader
- Killing unarmed or defenseless enemy
- Being helpless to defend or counterattack
- Injuries or near misses
- Killing someone up close

The Greater the Exposure to Combat, the Higher the Risk for PTSD



Peri-Traumatic Dissociation

- **Definition: A stress-induced, abrupt and transient loss of ability to integrate:**
  - Perceptions (external and internal)
  - Thoughts, emotions, and behavior
  - Conceptions of the self and the world
- **Three types of aspects**
  - Going blank, like in a trance
  - Loss of control of one's body (paralysis, deafness, stuttering, shaking, blindness)
  - Change in personality (e.g. becoming cruel, fearless, or childlike)
- **Always involves a loss of control – mentally, emotionally, and physically**

Controversies Over Dissociation

- **Is dissociation always present during trauma?**
- **Does it always predict future PTSD?**
- **Should the non-cognitive types of dissociation be classified as dissociation, or something else?**
  - Somatoform dissociation (e.g., conversion disorders, psychogenic pain)
  - Personality change ("tertiary dissociation")
  - **Is the etiology of dissociation psychological or biological?**
    - Defense mechanism? (Freud)
    - Brain dysfunction? (Janet)
  - **Dissociation propensity as a trait vs. dissociation as a pathological state**

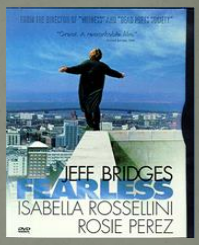
1. Trance-Like Dissociation

2. Loss of Control in Dissociation

- **Panic**
- **Rage**
- **Uncontrollable shaking**
- **Temporary paralysis, blindness, deafness**
- **Loss of emotional control ("hysterical")**

3. Personality Change in Dissociation

- Abrupt change in attitudes, values, and behavior
- Person becomes uncharacteristically:
  - Fearless
  - Reckless
  - Cruel
  - Regressed and helpless
- **Usually transient**



Beliefs That Can Be Damaged By Traumatic Stress

- Belief in one's basic safety
- Belief in being the master of oneself and one's environment
- Belief in "what's right" – moral order
- Belief that "they" deserved to die, and we deserve to live
- Belief that our cause is honorable
- Belief that every Marine and Soldier is valued
- Belief in the basic goodness of people (especially oneself)

Causes of Shame or Guilt in Traumatic Stress Injuries

- Failing to act
- Surviving when others did not
- Failing to save or protect others
- Killing or injuring others
- Helplessness
- Loss of control
- Even just having stress symptoms of any kind

What is Damaged in the Brain in Combat Stress Injuries

- **Allostatic shifts in set points in brain neurotransmitter systems due to stress**
  - ⇑NE activity, and down-regulation of alpha-2 autoreceptors
  - ⇑ CRF (corticotropin releasing factor) activity
  - ⇓ serotonin activity, and up-regulation of serotonin receptors
  - ⇓ NPY (neuropeptide-Y) activity
- **Hippocampal dysfunction and possible neuronal damage**
  - **Cortisol toxicity to glutamate neurons**
  - **⇓ BDNF (brain-derived neurotrophic factor)**
  - **Excitotoxicity mediated by glutamate NMDA receptors**

Summary

- Most warfighters are resilient, and recover quickly from combat/operational and homecoming stress
- Aiding those with persistent stress problems requires sensitivity to military culture & identity
- Common "normal" post-deployment stress problems include (1) aggression, (2) substance abuse, and (3) emotional numbness
- "Stress injuries" occur when stress is too intense or lasts too long
- The three mechanisms of stress injury are (1) trauma, (2) fatigue, and (3) grief
- Traumatic stress injuries are compromised of both biological damage to brain systems and psychosocial damage to beliefs and self-esteem

Clinical Tools

- There are a number of self-rating scales and structured clinical interviews to monitor the effects of treatment. Two examples include the Posttraumatic Stress Disorder Checklist for *DSM*-5 (PCL-5) and the Clinician-Administered PTSD Scale for *DSM*-5 (CAPS-5). The PCL-5 is an example of a patient self-rating scale, while the CAPS-5 is an example of a structured clinical interview including Criterion A stressor information recorded on the Life Events Checklist. The CAPS-5 may provide a much richer dialogue between the clinician and the person being treated regarding the severity and nature of the PTSD symptoms and is considered the gold standard for PTSD evaluation.

Clinical Tools

- While the CAPS-5 is preferred for initial evaluation, there is literature supportive of a strong correlation between the two measures, and the PCL-5 has the advantage of being quick and easy to administer as a follow up measure for PTSD symptom severity. Both the PCL-5 and the CAPS-5 provide a quantitative measure of the patient's PTSD symptoms and response to treatment over time. This information enhances the clinical assessment and interview with the patient, and is consistent with measurement based care

Medications for PTSD

- **Sertraline (Zoloft)** 50 mg to 200 mg daily
- **Paroxetine (Paxil)** 20 to 60 mg daily
- **Fluoxetine (Prozac)** 20 mg to 60 mg daily

- **Mirtazapine (Remeron)** 7.5 mg to 45 mg daily
- **Venlafaxine (Effexor)** 75 mg to 300 mg daily

- Note: Only sertraline and paroxetine have been approved for PTSD treatment by the FDA. All other medications described in this guide are being used "off label" and have empirical support and practice guideline support only.

Mood Stabilizers for PTSD

- **Carbamazepine (Tegretol).** Requires monitoring of white blood cell counts due to risk of agranulocytosis. Will self-induce its own metabolism and increase the metabolism of other medications including oral contraceptives.
- **Divalproex (Depakote).** Requires monitoring of liver function tests due to risk of hepatotoxicity and platelet levels due to risk of thrombocytopenia. Target dosage is 10 times the patient's weight in pounds.
- **Lamotrigine (Lamictal).** Requires slow titration according to the package insert due to risk of serious rash.
- **Topiramate (Topimax).** Requires clinical monitoring for glaucoma, sedation, dizziness and ataxia.

Atypical Antipsychotics

- Atypical antipsychotics are not recommended as monotherapy for PTSD.
- Risperidone (Risperidal) is contraindicated for use as an adjunctive agent - potential harm (side effects) exceeds benefits.
- There is insufficient evidence to recommend any other atypical antipsychotic as an adjunctive agent for PTSD.

Other Medications for PTSD

- **Prazosin (Minipress)**
- Prazosin has been found to be effective in decreasing nightmares in PTSD. This is logical given its blockade of the neurotransmitter norepinephrine at the post-synaptic alpha-1 receptor.
- Because of the short half-life of prazosin, divided dosage schedules may be necessary.

Other Medications for PTSD

- Buspirone and beta blockers are sometimes used adjunctively in treatment of hyperarousal symptoms, though there is little empirical evidence in support of their use. Buspirone is an agonist at the pre-synaptic serotonin 5-HT(1A) receptor and a partial agonist at the post-synaptic serotonin 5-HT(1A) receptor and might reduce anxiety in PTSD without sedation or addiction.

Other Medications for PTSD

- Beta blockers provide post-synaptic blockade of norepinephrine at synapses and blockade of adrenalin (epinephrine) at the organs such as the heart, sweat glands, and muscles. There is interest in using beta blockers to prevent PTSD, though the evidence at the current time does not support this. Beta blockers reduce both central and peripheral manifestations of hyperarousal and may reduce aggression as well. They may be used for comorbid conditions such as performance anxiety in the context of social anxiety disorder.

Other Medicaions for PTSD

- Benzodiazepines
- **This is the only potentially addictive group of medications discussed.** Limited studies have not shown them to be useful in treating the core PTSD symptoms (47,48). There are several other concerns about the use of benzodiazepines including potential disinhibition, difficulty integrating the traumatic experience, interfering with the mental processes needed to benefit from psychotherapy, increased falls and mental clouding in the elderly, and addiction. In a recent study combining PE and alprazolam, the group receiving alprazolam had a poorer outcome in PTSD symptom reduction than the group receiving PE alone (49). Furthermore, a recent meta-analysis found benzodiazepines to worsen symptom outcome for patients with PTSD (50). Because of these potentially negative effects, it is recommended that benzodiazepines not be used in PTSD. Any acute use should be short term (e.g., no more than five days) with frequent re-evaluation for side effects.

Other Medication Considerations

- Patients with PTSD or anxiety disorders may be very aware of their somatic reactions, and it is important to start low and go slow on dosage adjustments to improve patient adherence.
- Be sure to ask female patients of childbearing age about contraception and pregnancy when prescribing medication. And be aware of medications that are contraindicated during pregnancy because of teratogenic effects.
- Be sure to ask all patients about substance abuse as well.
- Once medications are started, it is crucial that the provider remember to discontinue medications which are not proving efficacious and to simplify the number and types of medications used whenever possible.

PTSD and Co-occurring SUD (substance use disorder)

- The National Vietnam Veterans Readjustment Study, conducted in the 1980s, found 74% of Vietnam Veterans with PTSD had co-morbid SUD
- According to one national epidemiologic study, 46.4% of individuals with lifetime PTSD also met criteria for SUD
- In another national epidemiologic study, 27.9% of women and 51.9% of men with lifetime PTSD also had SUD Women with PTSD were 2.48 times more likely to meet criteria for alcohol abuse or dependence and 4.46 times more likely to meet criteria for drug abuse or dependence than women without PTSD. Men were 2.06 and 2.97 times more likely, respectively

Psychotherapy for PTSD Prolonged Exposure

- The standard PE protocol is approximately 10 individual sessions, 90 minutes in duration, but may range from 8 to 15 sessions. The central components are in vivo and imaginal exposure; psychoeducation and breathing retraining are also included. In vivo exposure consists of gradually and systematically having patients approach trauma-related situations, places, and people that elicit distress and have been previously avoided. Between sessions, patients systematically confront trauma-related situations they have been avoiding, remaining in the situation until their distress reduces by half. Imaginal exposure involves repeated revisiting of the memory in imagination and recounting aloud the traumatic event(s) in detail, while vividly imagining the event(s) and paying specific attention to emotions and thoughts that occurred during the event. Treatment sessions are audio-recorded and patients are asked to listen to their recounting of the trauma daily.

Psychotherapy for PTSD Cognitive Processing Therapy

- The standard CPT protocol is 12 individual sessions, 60-minutes in duration, or 12 90-minute group sessions. Individual CPT may range from 8 to15 sessions. CPT consists of cognitive therapy and a written trauma narrative. Patients briefly process their trauma directly by writing a narrative of their traumatic event(s) that they read to themselves and to therapists after sessions 3 and 4. The majority of sessions are focused on helping patients challenge their beliefs through Socratic questioning and the use of daily worksheets. Statements on the impact of the trauma are written at the beginning and end of therapy to allow the patients to see concretely the changes in their thinking. CPT-C (CPT-cognitive) is a form of CPT that does not include the written trauma narrative and may improve symptoms even faster than CPT (13), although some patients may benefit more from full CPT (14).

Adjunctive Treatment

- There are other modalities that have been found to be useful in improving the quality of life in veterans with PTSD
- Yoga- often referred to as the moving meditation has been used successfully as a means to deal with stress and intrusive memories
- Mindfulness meditation and grounding techniques are helpful in dealing with flashbacks, nightmares, and severe anxiety

References

- American Psychiatric Association. (2013) Diagnostic and statistical manual of mental disorders, (5th ed.). Washington, DC: Author.
- Friedman, M. J., Resick, P. A., Bryant, R. A., & Brewin, C. R. (2011). Considering PTSD for *DSM*-5. *Depression & Anxiety, 28,* 750-769. doi:10.1002/da.20767
- Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., & Friedman, M. J. (2013). National estimates of exposure to traumatic events and PTSD prevalence using *DSM-IV* and *DSM*-5 criteria. *Journal of Traumatic Stress, 26,* 537-547. doi:10.1002/jts.21848

Redeployment

Marines with 2nd Battalion, 8th Marine Regiment pay their final respects to Sgt. Joseph Garrison, a squad leader with Fox Company

Female Soldiers

References

- PTSD: National Center for PTSD
- Clinician's Guide to Medications for PTSD
  - **Matt Jeffreys, MD**
- ***Combat* Stress *Injuries***
  - **William P. Nash, MD**
- Dissemination of Evidence-Based Psychotherapy for PTSD in Veterans Affairs