



Posttraumatic Stress Disorder: Learning the Lessons of the Past

About two years ago, a Vietnam War veteran walked up to me at a Vietnam Veterans of America hall and gave me a framed embroidery with the picture of a soldier's face and the title, "Hidden Wounds of War." These words struck a chord in me. Through my experience as a health care provider working with veterans and military personnel, I have witnessed the wide ranging and devastating effects that unseen emotional wounds of war can have on soldiers, their families, and the public at large. Posttraumatic stress disorder (PTSD), which is responsible for a vast majority of these hidden wounds, can worsen physical ailments, cause psychological problems, complicate relationships, make it difficult to maintain a job and stable housing, and even lead to suicide.

Studies indicate that the troops who serve in the current conflict in Iraq are suffering from PTSD, and other problems related to their war zone experiences, on a scale not seen since Vietnam.¹ And survival analysis shows that more than one third of people with an index episode of PTSD fail to recover even after many years.² As years go by, therefore, the number of veterans who present to the VA with PTSD symptoms may well increase. In order to handle this rise in PTSD incidence, we federal clinicians must learn lessons from the past and apply these lessons to today.

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In this column, I hope to increase awareness as to why we need to treat veterans from Iraq and Afghanistan promptly. I will review the historical background of PTSD, the lessons learned from past conflicts, the current incidence of PTSD among Iraq and Afghanistan veterans, and the increased cost and burden on the VA health care system.

PTSD OVERVIEW

PTSD is essentially characterized by recurrent, intrusive episodes of reliving one or more severely traumatic events through disturbing memories, dreams, and flashbacks. These episodes cause emotional distress and lead to persistent avoidance of stimuli reminiscent of the traumatic event or events and persistent symptoms of hyperarousal. The traumatic event leading to PTSD is usually a physically violent or psychologically damaging experience, such as rape, sexual or physical abuse, mugging, domestic violence, a serious accident, a natural disaster, or a human-caused disaster (including acts of terrorism). Anyone who has experienced a life threatening event can develop PTSD, and it occurs relatively frequently in soldiers exposed to combat.

Many of those who have studied PTSD consider the condition to be physiological as well as psychological. The body responds to stress by releasing adrenaline, which increases the heart rate and blood pressure. Some authors have proposed that PTSD results when severe or repeated trauma causes this stress response to go into "overdrive."³ It is also hypothesized that adrenaline may be responsible for activating the amygdala, a small structure in the brain implicated

in the expression of fear, the startle response, and emotional memories.⁴

Approximately 7.7 million Americans aged 18 and older, or about 3.5% of this age group, have PTSD in a given year.⁵ About 19% of Vietnam War veterans have experienced PTSD at some point after the war.⁶ According to the testimony of Colonel Charles Hoge, MD, chief of psychiatry and behavior health services at Walter Reed Army Institute of Research, before the House VA Committee in July 2005, 19% to 21% of troops who have returned from combat deployments related to Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) have met criteria for PTSD, depression, or anxiety disorder.⁷ When surveyed three to 12 months after their deployment, 15% to 17% of those who served in Iraq and 6% of those who served in Afghanistan reported PTSD symptoms.⁷

EARLY HISTORY OF PTSD

Although PTSD was officially recognized by the American Psychiatric Association in 1980, the disorder has been known by various names throughout history. "Nostalgia" was a term coined by the Austrian physician Leopold Auenbrugger in the late 17th century to describe a circumstance in which young soldiers returning from war "cease to pay attention and become indifferent to everything which the maintenance of life requires them."⁸ By the mid 18th century, nostalgia was firmly instituted in medical terminology.⁸

During the Napoleonic era, physicians recognized multiple factors related to nostalgia, including cultural, social, and environmental issues, as well as participation in battle. Baron

Dominique-Jean Larrey, Napoleon's chief surgeon, suggested that prevention—attained through allowing soldiers recreation time and providing them with “some mode of useful instructions”—was beneficial to both the soldier and the state.⁹ William A. Hammond, MD, surgeon general of the U.S. Army in 1864, wrote, “The best means of preventing nostalgia is to provide occupation both for the mind and the body. Soldiers placed in hospitals near their homes are always more liable to nostalgia than those who are inmates in hospitals situated in the midst of or in the vicinity of the army to which they belong.”¹⁰

During the Russo-Japanese War (1904–1905), Russian physicians were the first to use psychiatric specialists. The first good description of “war neurosis” came about during this war.

During World War I (1914–1918), “shell shock” was the popular label given to neuropsychiatric casualties. It was initially thought to be an actual shock to the central nervous system from exploding artillery. Later, it was recognized that soldiers could develop similar symptoms even when they were not exposed to explosions.

British and French psychiatrists recognized that shell shock was a stress-induced psychological disorder, and they recognized the importance of forward treatment. They emphasized that treatment should be administered closer to the battlefield (a concept eventually known as “proximity”) and that the sooner it took place the better (a concept later called “immediacy”).

BATTLING PTSD: LESSONS LEARNED

During World War I, Colonel Thomas Salmon, MD, the neuropsychiatry consultant to the American Expeditionary Forces, was the first American physician to use the term war neurosis and, along with Colonel

Pearce Bailey, developed a treatment program. Psychiatrists were placed in the divisions and forward hospitals. A description of war neurosis and treatment recommendations were published in *Neuropsychiatry* in 1929.¹¹ These recommendations espoused the principles of proximity and immediacy, as well as expectancy—the belief, and emphasis of this belief during treatment, that the soldier will get better.

During World War II (1939–1945), the psychological symptoms ascribed to war neurosis were called “battle fatigue.” Some of the lessons that had been learned in the earlier wars, however, were forgotten. At the outset of this conflict, no psychiatrists were assigned to combat divisions and no provisions were made for special psychiatric treatment units at the field level.

By the 1943 Tunisia campaign, however, these lessons were being better implemented. During these battles, psychiatrist Captain Frederick Hanson returned to duty 70% of 494 patients with neuropsychiatric symptoms after 48 hours of treatment with rest. On the recommendation of Hansen and others, General Omar Bradley issued a directive establishing a holding period of seven days for psychiatric casualties, with an initial diagnosis of exhaustion.¹² These experiences taught the military that the incidence of battle fatigue (now called “combat stress”) is related to the intensity of combat, that the condition is modified by physical and morale factors, and that unit cohesion can make a difference.

During the Korean conflict (1950–1953), mobile psychiatric detachments, or “KO Teams,” were used. Preventive measures (such as a rotation system and, if tactically possible, rest and recreation for individuals or units) were implemented—although the rear area support troops unfortu-

nately were neglected in these measures. Overall, by the end of this conflict, approximately 97% of soldiers with psychiatric casualties were returned to duty somewhere in the combat theater and approximately 88% were returned to duty within their own division.¹³

During the initial phases of buildup to the Vietnam War (which began in 1959 and ended in 1975), the military's psychiatric program was fully in place, with abundant mental health resources and psychiatrists conversant with the principles of combat psychiatry. Throughout the entire conflict, even with a liberal definition of psychiatric casualties, less than 5% (and nearer to 2%) of soldiers were placed in this category.¹⁴

Nevertheless, the National Vietnam Veterans' Readjustment Study, which was conducted from 1986 to 1988, indicated that 15.2% of male and 8.5% of female Vietnam War veterans had PTSD.¹⁵ The reasons for this high prevalence are multiple and include the unpopularity of the war. Returning Vietnam War veterans were not welcomed home and were mistreated by society and government agencies—who neglected for years to provide treatment for these veterans' psychological problems. There also were other, hidden and unexpected, factors that compounded the problems these returning soldiers faced, including high rates of alcohol and drug abuse, disciplinary infractions, and venereal disease.

During the Persian Gulf War (1990–1991), psychiatric components were referred to as “OM Teams.” The 528th Medical Detachment from Fort Benning, GA was the OM Team of this conflict, with two reserve teams augmenting their mission. It was found, however, that the psychiatric OM Teams were too centralized to be true mental health assets to these soldiers, who were involved in modern

air and land warfare amongst fluid battlefields that rapidly changed locations.¹⁶ Many other valuable lessons were learned from this war, including that mental health support should be deployed early in a conflict (as the greatest mental health impact was made during the buildup phase of Operation Desert Shield) and that the combat stress treatment principles of proximity, immediacy, and expectancy described after World War I still apply today.¹⁶

EXPERIENCE FROM THE CURRENT CONFLICTS

It was reported in 2004 that military personnel serving in Iraq were significantly more likely to be exposed to combat than those serving in Afghanistan. Responses to an anonymous survey of 3,671 army and marine soldiers indicated that up to 17% of those returning from Iraq met the screening criteria for depression, anxiety, or PTSD, compared with about 11% of those returning from Afghanistan. And the largest difference was in the rate of PTSD.¹⁷

Unique stressors

Significant combat experiences that soldiers in Iraq and Afghanistan face today include receiving small arms fire; receiving incoming artillery, rocket, or mortar attacks; being attacked or ambushed, often with improvised explosive devices (IEDs); seeing dead bodies or human remains; having a friend or acquaintance who was seriously injured or killed; and directing fire at an enemy. In particular, insurgent IED attacks are a major cause of U.S. fatalities in Iraq.

Further stress comes from not being sure who your enemy is in these conflicts, since they can be dressed in civilian clothing. This can lead to fear of or guilt over killing civilians and has been a stressor for units that travel outside their compound. Many

consider no part of Iraq to be a "safe zone." Another factor compounding combat stress is the frequent redeployment and extensions of deployment that have characterized the current conflicts. Soldiers may not know when they will be returning home and for how long.

Combat stress control units

Working on the conclusion that the best way to relieve combat stress and treat acute stress reactions in the war zone is to help affected soldiers process the traumatic events and teach them ways to diffuse stress, the current operations in Iraq and Afghanistan are making use of deployed combat stress control units. These units provide educational groups that teach stress coping techniques and encourage soldiers to participate in recreational activities, physical fitness, and sports, all in close proximity to the combat zone. In addition, they run three- to five-day restoration programs that include rest, showers, three hot meals, exercise, supportive group therapy, and further education about coping with stress in a combat zone.

The essential objective of combat stress control units is to restore as many soldiers with combat stress, or other emotional problems, as possible to the unit; maintain their functioning at a level that keeps them in the war zone; and conserve the fighting force. Combat stress teams have helped more than 90% of troops who approached them for help return to duty. The combat stress control unit I worked with in Baghdad, Iraq was able to return to duty approximately 95% of soldiers who presented to the unit.

BATTLING PTSD AT HOME

Unfortunately, being able to return to duty does not mean that these soldiers will not develop PTSD at a later time in their lives. After returning home, many may experience a

variety of problems in addition to PTSD, including depression, panic attacks, hypervigilance, anxiety, marital problems, anger problems, unemployment, and alcohol and substance abuse. They may have trouble relating to people who have not been in a combat zone. Although some may feel pride in their combat experience and a renewed enthusiasm to deal with life's challenges, others may continue to struggle with a variety of the above-mentioned problems.

Today, all service members are screened for PTSD and other mental health problems upon their return from deployment. In the first systematic analysis of these service members' self reports, Hoge and colleagues sought to determine the relationship between deployment to Iraq and Afghanistan and mental health care use during the first year after return home.¹⁸ The researchers measured health care utilization and occupational outcome for one year after deployment or until leaving the service if it occurred sooner. About 19% of 222,620 army soldiers and marines who served in Iraq and completed routine postdeployment health assessment between May 1, 2003 and April 30, 2004, reported a mental health problem. About 11% of 16,318 army soldiers and marines who served in Afghanistan and 8.5% of 64,967 army soldiers and marines who served in other locations reported a mental health problem. Mental health problems reported on the postdeployment assessment were significantly associated with combat experiences, mental health care referral and utilization, and attrition from military service. In the first year after returning home from Iraq, 35% of OIF veterans sought mental health services and approximately 12% were diagnosed with a mental health problem per year.¹⁸

The researchers also found that, of 222,620 soldiers having served in

Iraq, 2,411 reported “some” and 467 reported “a lot” of suicidal ideation. Exposure to a combat situation was correlated with screening positive for PTSD among Iraq veterans. Of 21,822 service members who screened positive for PTSD after returning from Iraq, about 80% reported witnessing persons being wounded or killed or engaging in direct combat during which they discharged their weapon, compared with about 48% of 200,798 who screened negative for PTSD.¹⁸

This study offers new evidence of the strong relationship between combat duty and a variety of mental health outcomes and, most importantly, high mental health care utilization in the first year after deployment.

ADDRESSING THE LONG-TERM COSTS OF PTSD

In the long term, psychoneuro-immunologic stress can worsen multiple medical problems, including diabetes, cardiovascular disorders, joint disease, cancer, headaches, gastrointestinal problems, sexual difficulties, and asthma. In fact, these types of stresses increase the risk of death due to cardiovascular disorders.¹⁹ In a study of mortality among a national random sample of 15,288 male, U.S. Army veterans with and without PTSD after military service, Boscarino found that, of 7,924 Vietnam War veterans, post-war mortality from all causes, including cardiovascular and external causes (deaths from suicide, homicide, and accidents), was about twice as high in veterans who screened positive for PTSD as it was in those who screened negative for the condition.¹⁹

Given these facts, any substantial increase in the number of veterans with PTSD represents a significant challenge for the VA health care system. By the time you read this article, more than five years will have passed since the beginning of the Iraq war. The historical information from pre-

vious wars, including the Vietnam War, indicate that the number of veterans presenting to the VA with symptoms of PTSD increases with the passage of time after a conflict. Furthermore, the news of the wars in Iraq and Afghanistan can act as a trigger for veterans of past wars, bringing back more distressing memories of their own war experiences. Thus, it is conceivable that the Vietnam War veteran population—which currently accounts for the lion’s share (92%) of PTSD treatment in the VA²⁰—could also experience an increase in new or relapsing PTSD cases.

Can the VA keep up?

The VA and DoD have been opening and expanding new PTSD and mental health care programs throughout their respective health care systems to reach out to returning OIF and OEF veterans. Even so, the number of new cases of PTSD is already increasing significantly, and the question of whether the VA will be able to handle the increased number of patients seeking treatment remains. For instance, while the total number of all veterans receiving disability compensation grew by only 12.2% during fiscal years (FYs) 1999 to 2004, the number of PTSD cases grew by 79.5% (from 120,265 in FY 1999 to 215,871 in FY 2004), and total PTSD benefits increased by 148.8% (from \$1.7 billion to \$4.3 billion).^{21–23} As of the first quarter of 2006, the VA had treated 20,638 Iraq war veterans, and that number continues to grow. A report in the fourth quarter 2006 issue of *The Milken Institute Review* by Bilmes and Stiglitz projected that the costs of providing health care and compensation to Iraq war veterans could total \$127 billion.²⁴

FULFILLING AN OBLIGATION

We can prevent the long-term sequelae of PTSD amongst combat veterans

returning from Iraq and Afghanistan if we treat PTSD and its related problems aggressively and early on. Among the lessons of history, the experience after the Vietnam War taught us that, if we do not treat PTSD adequately, we will face the consequences of the multiple health care, social, and societal problems that result. It is essential that the DoD and VA recruit qualified mental health clinicians, train existing clinicians in best treatment practices for PTSD and postdeployment mental health problems, and help veterans with these problems get their lives back together. Over time, this strategy will decrease costs. We have an obligation to the uniformed men and women who serve in war time. They put their lives in danger to protect this country. Without their sacrifices, this country would not be what it is today. ●

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REFERENCES

1. Robinson SL. *Hidden Toll of the War in Iraq: Mental Health and the Military*. Washington, DC: Center for American Progress; September 2004. <http://www.americanprogress.org/ki/hiddentoll91404.pdf>. Accessed September 29, 2008.
2. Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*. 1995;52(12):1048–1060.
3. Herman JL. Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *J Trauma*

- Stress. 1992;5(3):377-391.
4. Canli T, Zhao Z, Brewer J, Gabrieli JD, Cahill L. Event-related activation in human amygdala associates with later memory for individual emotional experience. *J Neurosci*. 2000;20(19):RC99.
 5. Kessler RC, Chiu WT, Demler O, Merikangas KR, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication [published correction appears in *Arch Gen Psychiatry*. 2005;62(7):709]. *Arch Gen Psychiatry*. 2005;62(6):617-627.
 6. Dohrenwend BP, Turner JB, Turse NA, Adams BG, Koenen KC, Marshall R. The psychological risk of Vietnam for U.S. veterans: A revisit with new data and methods. *Science*. 2006;313(5789):979-982.
 7. *House Committee on Veterans' Affairs, Full Committee Hearing on the Department of Defense (DoD) and Department of Veterans Affairs (VA): The Continuum of Care for Post Traumatic Stress Disorder (PTSD)*. 109th Cong, 1st Sess (2005) (statement by Colonel Charles W. Hoge, MD, chief of psychiatry and behavior services, Walter Reed Army Institute of Research, U.S. Army). <http://veterans.house.gov/hearings/schedule109/jul05/7-27-05f/choge.pdf>. Accessed September 30, 2008.
 8. Auenbrugger L, Neuberger M, ed. *Inventum Novum ex Percussione Thoracis Humani*. London, United Kingdom: Dawson's of Pall Mall; 1966.
 9. Rosen G. Nostalgia: A "forgotten" psychological disorder. *Psychol Med*. 1975;5(4):340-354.
 10. Hammond WA. *A Treatise of Insanity in its Medical Relations*. New York, NY: D. Appleton; 1883.
 11. Bailey P, Williams FE, Komora PO, Salmon TW, Fenton N. *The Medical Department of the United States Army in the World War. Volume X, Neuropsychiatry*. Washington, DC: US Government Printing Office; 1929. <http://143.84.107.69/books/docs/wwi/Neuropsychiatry/frameindex.html>. Accessed September 26, 2008.
 12. Jones FD. Chapter 1: Psychiatric lessons of war. In: Jones FD, Sparacino LR, Wilcox VL, Rothberg JM, Stokes JW, eds. *War Psychiatry*. Falls Church, VA: US Army, Office of the Surgeon General; 1995:12. http://www.bordeninstitute.army.mil/published_volumes/war_psychiatry/WarPsychChapter01.pdf. Accessed September 30, 2008.
 13. Rock NL, Stokes JW, Koshes RJ, Fagan J, Cline WR, Jones FD. Chapter 7: U.S. Army combat psychiatry. In: Jones FD, Sparacino LR, Wilcox VL, Rothberg JM, Stokes JW, eds. *War Psychiatry*. Falls Church, VA: US Army, Office of the Surgeon General; 1995:158. http://www.bordeninstitute.army.mil/published_volumes/war_psychiatry/WarPsychChapter07.pdf. Accessed September 30, 2008.
 14. Jones FD, Johnson AW. Medical and psychiatric treatment policies and practices in Vietnam. *J Soc Issues*. 1975;31(4):49-65.
 15. Schlenger WE, Kulka RA, Fairbank JA, et al. The prevalence of post traumatic stress disorder in the Vietnam generation: A multimethod, multisource assessment of psychiatric disorder. *J Trauma Stress*. 1992;5(3):333-363.
 16. Bacon BL, Staudenmeier JJ. A historical overview of combat stress control units of the U.S. Army. *Mil Med*. 2003;168(9):689-693.
 17. Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. Combat duty in Iraq and Afghanistan, mental health problems and barriers to care. *N Engl J Med*. 2004;351(1):13-22.
 18. Hoge CW, Auchterlonie JL, Milliken CS. Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *JAMA*. 2006;295(9):1023-1032.
 19. Boscarino JA. Posttraumatic stress disorder and mortality among U.S. Army veterans 30 years after military service. *Ann Epidemiol*. 2005;16(4):248-256.
 20. Spotswood S. Need of VA docs to treat PTSD rising. *US Med*. 2007;43(8). <http://www.usmedicine.com/article.cfm?articleID=1608&issueID=102>. Accessed September 29, 2008.
 21. *Review of State Variances in VA Disability Compensation Benefits*. Washington, DC: VA Office of Inspector General; May 19, 2005. Report no. 05-00765-137. <http://www.va.gov/oig/52/reports/2005/VAOIG-05-00765-137.pdf>. Accessed September 29, 2008.
 22. Spotswood S. VA review of PTSD cases questioned. *US Med*. September 2005. <http://www.usmedicine.com/article.cfm?articleID=1156&issueID=79>. Accessed October 1, 2008.
 23. *House Committee on Veterans' Affairs, Subcommittee on Disability Assistance and Memorial Affairs, Oversight Hearing on the Variances in Disability Compensation Claims Decisions Made by VA Regional Offices; the Post Traumatic Stress Disorder Claims Review; and United States Court of Appeals for the Federal Circuit Decision Allen v. Principi*. 109th Cong, 1st Sess (2005) (statement of Jon A. Wooditch, acting inspector general, Department of Veterans Affairs). http://www.va.gov/oig/pubs/vaig-testimony_20051020.pdf. Accessed September 29, 2008.
 24. Bilmes L, Stiglitz JE. Encore: Iraq hemorrhage. *Milken Inst Rev*. December 2006:76-83.