See article by Bergman et al

Casualties Beyond the Battlefield: A Need for Further Assessment of Combat-Related Mental Health Disorders in the US Military

John H. Shale, MD, JD,[a,c,*] and Abril S. Atherton, PharmD, BCPP, BCPS[b,c]

In this month's *Journal of Clinical Psychiatry*, Bergman et al[1] report on the long-term mental health of military veterans matched with nonveterans with a focus on the impact of the length of the veterans' military service. Using data from the Scottish Veterans Health Study, some 57,000 veterans and 173,000 nonveterans were matched. The authors report that military service was correlated with increased mental health problems among veterans in general and among "early service leavers" in particular.[1] Matching of the exact same 2 groups had been used in a previous study on myocardial infarction,[2] which demonstrates that the methodology is sound and flexible and could be applied to a variety of medical issues.

Reviewing the references to the article reveals that sources included many British and American studies, which appeared in both British and American journals. This might arguably suggest that the findings would be generalizable to US Armed Forces, who are also North Atlantic Treaty Organization members and use a common military doctrine with similar training and weapons.

But the issue of service in wartime, particularly service in areas of active combat, is not addressed in this article. For countries that have been at war and actively engaged in combat operations for the past 14 years,[3,4] the quantitative effects on mental health are a critically important issue. It is made even more important as many of the troops are sent for repeated combat deployments in what are euphemistically referred to as the "sandboxes" of Iraq and Afghanistan. The United States, United Kingdom, and Canada have engaged in combat operations in both of these areas as allies.

The psychological trauma of war, now called posttraumatic stress disorder (PTSD), has quite likely been recognized for millennia. In the US Civil War (1861–1865), it was called "soldier's heart."[5] Then, in World War I and early in World War II, it became "shell shock" or "war neurosis."[6,7] Later in World War II, the appellation evolved to "battle fatigue" or "combat stress."[8] But it was essentially the same disorder and led to large numbers of casualties.

The term *PTSD*, introduced in *DSM-III* in 1979, resulted, in large part, from the efforts of a group of anti–Vietnam War activist psychiatrists.[9] These psychiatrists argued that Vietnam veterans suffered substantially greater psychological trauma from their combat experiences than did veterans of other wars. However, Jonathan F. Borus, MD, reported a study in April 1974 that showed Vietnam combat veterans had no more adjustment problems than did servicemen who were not in Vietnam.[9] The subject was politicized and thus controversial. To some extent, it remains so.

Among the veterans of the current conflicts whom we treat every day, one of the most common mental disorders is PTSD, often associated with some sort of substance abuse disorder.[3] Most of these veterans have made at least 1 deployment to either Iraq or Afghanistan, and many have made multiple deployments. The other group that seems overrepresented based on clinical experience is veterans from the Vietnam War.

But these observations are based on clinical experience, which, while important, is anecdotal and not the result of systematic empirical study. We cannot settle the controversy about Vietnam combat veterans on the basis of anecdotal evidence. Nor can we confidently define the magnitude and nature of PTSD and its likely comorbidities on the basis of clinical experience or studies of small groups of veterans alone.

There have been studies on the general population and on veterans that did not compare them to each other. It is estimated that nearly half of all Americans will meet some sort of criteria for a mental health diagnosis in their lifetime, with the majority being initially diagnosed prior to 24 years old.[10] Twenty-five percent of veterans returning from Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) received mental health diagnoses while initially being treated at Veterans Affairs (VA) health care facilities.[11] It is not known whether these patients had diagnoses prior to active duty or at the time they left service.

Mental health disorders evaluated in these studies[10,11] included only anxiety disorders, mood disorders, and psychosis. The expansion to include substance use disorders would be very interesting. It might also be interesting to look only at PTSD. There are currently concerns about capturing veteran use of non-VA services for mental health issues, particularly PTSD.[12]

One study[13] reported that between 2000 and 2011 nearly 1 million active service members were diagnosed with a mental disorder during service in the US armed forces.

[a]Department of Psychiatry, University of Utah School of Medicine, Salt Lake City
[b]University of Utah School of Pharmacy, Salt Lake City
[c]Salt Lake City VA Hospital, Salt Lake City, Utah
*Corresponding author: John H. Shale, MD, JD, 4227 Fern Drive, Ogden, UT 84403 (jhshale@gmail.com).

J Clin Psychiatry 2016;77(6):e757–e759
dx.doi.org/10.4088/JCP.15com10208

These disorders included many diagnostic categories, including substance use disorders, mood disorders, personality disorders, schizophrenia, and other psychoses. This review was much more detailed regarding those diagnosed with a mental health disorder while in service. In general, the patients who identified with adjustment disorders, substance use disorders, PTSD, personality disorders, and schizophrenia were younger, and disorders occurred more frequently among those up to 24 years in age. As patients aged, diagnoses such as anxiety and depression were somewhat more evenly distributed among the age ranges.[13]

Veterans who returned from Iraq and Afghanistan with a mental health diagnosis, particularly PTSD, have been identified to use more non–mental health services and other medical services in the VA compared to patients with no mental health diagnosis.[14] This may have future implications, predicting higher rates of mental health diagnoses and increasing costs of medical and mental health care in the future. Recruits with mental health diagnoses in the Air Force were more quickly separated from active duty in the first 14 months of service compared to recruits without mental health disorders.[15] These data, sometimes conflict with other data and address only parts of the overall issue of the long-term effects of military service in general and combat service in particular.

The Defense Medical Surveillance System was used to find information related to those service members on active duty in a study evaluating mental health utilization and attrition before Iraq and Afghanistan.[16] This study[16] established a baseline rate of utilization of behavioral health services prior to OEF/OIF.

Screenings have been used to determine risk of mental health disorders and attrition.[17] Separation from service occurs more quickly in those who have a hospital discharge during service for a mental disorder diagnosis compared to those with only medical concerns.[18,19] Individuals in the US Marine Corps who experienced interpersonal trauma were 1.5 times more likely to drop out of recruit training compared to those without a trauma history.[20] There is a reported increased risk of attrition among some service members, such as the Marines, who have psychiatric diagnoses.[21]

We suggest that what is needed is an epidemiologic approach to the mental health effects of service directly in combat or in areas of combat. Such studies should be on the scale of the article in this month's issue. These authors[1] used data from the Scottish Veterans Health Study for the cohort of veterans. What is needed are studies of this magnitude and type stratified on personal characteristic such as age, education, rank, time in service, ethnicity, and military occupational specialty specifically designed to focus on the effects of exposure to combat. Such studies would be both useful and timely.

Certainly the US Department of Defense and the Department of Veterans Affairs have large databases on those who served in the armed forces. While it might require some work, defining a large subset of veterans who have been deployed to combat zones should be possible. Finding an appropriate and adequately large cohort of nonveterans would require some effort and significant cost.

Those who join the armed services understand that the time might come when they will be sent into a combat zone. Even in peacetime, training accidents in aviation and in live fire exercises can result in casualties. And some of those casualties will manifest symptoms meeting the diagnostic criteria of PTSD. The very purpose of epidemiologic studies is to define the causes, nature, and magnitude of some health problem. These data are needed to develop a reasonable and effective response within the limits of resources and other priorities.

There does seem to be national consensus that veterans are a group deserving some special recognition. They have served our country at some cost, or at least potential cost, to themselves and have done so voluntarily. Even in our polarized political environment, it is not unreasonable to think that research regarding mental health problems among veterans might well garner bipartisan support.

Submitted: June 29, 2015; accepted June 29, 2015.
Potential conflicts of interest: None reported.
Funding/support: None reported.

REFERENCES

1. Bergman BP, Mackay DF, Smith DJ, et al. Long-term mental health outcomes of military service: national linkage study of 57,000 veterans and 173,000 matched nonveterans. *J Clin Psychiatry*. 2016;77(6):793–798.
2. Bergman BP, Mackay DF, Pell JP. Acute myocardial infarction in Scottish military veterans: a retrospective cohort study of 57,000 veterans and 173,000 matched nonveterans. *Am J Epidemiol*. 2014;179(12):1434–1441.
3. Seal KH, Metzler TJ, Gima KS, et al. Trends and risk factors for mental health diagnoses among Iraq and Afghanistan veterans using Department of Veterans Affairs health care, 2002–2008. *Am J Public Health*. 2009;99(9):1651–1658.
4. Veterans Affairs. Dates & Names of Conflicts. US Department of Veterans Affairs Web site. http://www.mentalhealth.va.gov/communityproviders/docs/conflicts.pdf. Accessed June 26, 2015.
5. Deutch A. Military psychiatry: the civil war. In: American Psychiatric Association. *One Hundred Years of American Psychiatry*. New York, NY: American Psychiatric Association; 1944:376–377.
6. Salmon TW. *The Care and Treatment of Mental Diseases and War Neuroses: ("Shell Shock") in the British Army*. New York, NY: War Work Committee of the National Commitee for Mental Hygiene, Inc; 1917.
7. Sargant W, Slater E. Acute war neuroses. *Lancet*. 1940;236(6097):1–2.
8. Grinker RR, Spiegel JP. *Men Under Stress*. New York, NY: McGraw-Hill; 1963.
9. Burkett B, Whitley G. *Stolen Valor*. Dallas, TX: Verity Press Publishing. 1998;454:139-161.
10. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of 12-month *DSM-IV* disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):617–627.
11. Seal KH, Bertenthal D, Miner CR, et al. Bringing the war back home: mental health disorders among 103,788 US veterans returning from Iraq and Afghanistan seen at Department of Veterans Affairs facilities. *Arch Intern Med*. 2007;167(5):476–482.
12. Averill LA, Eubanks Fleming CJ, Holens PL, et al. Research on PTSD prevalence in OEF/OIF Veterans: expanding investigation of demographic variables. *Eur J Psychotraumatol*. 2015;6(0):27322.
13. Armed Forces Health Surveillance Center (AFHSC). Mental disorders and mental health problems, active component, US Armed Forces, 2000–2011. *MSMR*. 2012;19(6):11–17.
14. Cohen BE, Gima K, Bertenthal D, et al. Mental health diagnoses and utilization of VA non-mental health medical services among returning Iraq and Afghanistan veterans. *J Gen Intern Med*. 2010;25(1):18–24.
15. Garcia SM, Ortman BV, Burnett DG. Mental health diagnoses and attrition in Air Force recruits. *Mil Med*. 2015;180(4):436–444.

16. Garvey Wilson AL, Messer SC, Hoge CWUS. US military mental health care utilization and attrition prior to the wars in Iraq and Afghanistan. *Soc Psychiatry Psychiatr Epidemiol*. 2009;44(6):473–481.
17. Gubata ME, Oetting AA, Weber NS, et al. A noncognitive temperament test to predict risk of mental disorders and attrition in US Army recruits. *Mil Med*. 2012;177(4):374–379.
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. Niebuhr DW, Gubata ME, Oetting AA, et al. Personality Assessment Questionnaire as a pre-accession screen for risk of mental disorders and early attrition in US Army recruits. *Psychol Serv*. 2013;10(4):378–385.
20. Wolfe J, Turner K, Caulfield M, et al. Gender and trauma as predictors of military attrition: a study of Marine Corps recruits. *Mil Med*. 2005;170(12):1037–1043.
21. Schmied EA, Highfill-McRoy RM, Crain JA, et al. Implications of psychiatric comorbidity among combat veterans. *Mil Med*. 2013;178(10):1051–1058.

It is illegal to post this copyrighted PDF on any website.