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Co-occurring mental health and alcohol misuse: Dual disorder symptoms in combat injured veterans

Kevin J. Heltemes [a,*], Mary C. Clouser [a], Andrew J. MacGregor [a], Sonya B. Norman [b], Michael R. Galarneau [a]

[a] Department of Medical Modeling, Simulation, and Mission Support, Naval Health Research Center, 140 Sylvester Road, San Diego, CA 92106-3521, USA
[b] VA San Diego Healthcare System and University of California San Diego, Department of Psychiatry, 3350 La Jolla Village Drive, San Diego, CA 92161, USA

HIGHLIGHTS

- 37.3% of injured veterans with a mental health problem reported alcohol misuse.
- PTSD and depression symptoms were significant correlates of alcohol misuse.
- Higher health complaints in those with dual disorder than mental health alone.

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ABSTRACT

Objective: Service members face difficulties during military deployment potentially resulting in morbidities such as posttraumatic stress disorder (PTSD), depression, and alcohol misuse. The co-occurrence of alcohol misuse and mental health disorders is termed dual disorder and has been associated with adverse outcomes.
Methods: The study included 812 high-risk (i.e., endorsing combat exposure with documented combat injury) male U.S. veterans of Operation Iraqi Freedom, injured between October 2004 and November 2007, identified from the Expeditionary Medical Encounter Database.
Results: PTSD and depression symptoms were significant correlates of alcohol misuse. Veterans with dual disorder symptoms reported a significantly higher mean number of health complaints on the Post-Deployment Health Reassessment compared with those endorsing only mental health symptoms.
Conclusions: These results highlight how mental health disorders among injured service members increases the odds of problem drinking and those with dual disorder have elevated health complaints.

1. Introduction

The co-occurrence of posttraumatic stress disorder (PTSD) and alcohol misuse is high (Back, Brady, Sonne, & Verduin, 2006; Kessler, Chiu, Demler, & Walters, 2005; Mills, Teesson, Ross, & Peters, 2006), particularly among veteran populations. Rates of self-reported alcohol misuse range from 18 to 35% for those returning from an Operation Iraqi or Enduring Freedom (OIF/OEF) deployment (Hoge et al., 2004; Wilk et al., 2010), and prevalence of alcohol misuse among those with PTSD has been shown to be as high as 76% in a treatment-seeking Vietnam veteran population (Sierles, Chen, Messing, Besyner, & Taylor, 1986). Additionally, rates of self-reported depression and alcohol misuse among veteran infantryman of OIF are not insignificant and vary from 10 to 15% (Thomas et al., 2010) and are similar to the rates seen in young adult civilian populations (Mason, Hawkins, Kosterman, & Catalano, 2010). In both veteran and civilian populations, the presence of co-occurring alcohol misuse and PTSD is associated with poor outcomes across a variety of domains, including greater psychological distress, diminished social functioning, poorer treatment adherence and response, elevated physical health problems, and greater suicidal ideation (Jakupcak et al., 2009; Mills et al., 2006; Ouimette, Ahrens, Moos, & Finney, 1998; Tate, Norman, McQuaid, & Brown, 2007).

A large body of literature links both PTSD and alcohol misuse with an increased risk of symptom complaints and health problems such as difficulty sleeping, muscle aches, and physical pain (Goodwin & Davidson, 2005; Schnurr, Spiro, & Paris, 2000). Elevated rates of health problems among those with PTSD are evident even after controlling for physical illness (Beckham et al., 1998) and injury (McFarlane, Atchison, Rafalowicz, & Papay, 1994). Most of the research evaluating symptom complaints in individuals with alcohol misuse and/or PTSD has used mixed-age civilian samples (Norman et al., 2006), or samples of older veterans (Tate et al., 2007). Depression and alcohol misuse comorbidity have been linked to more serious issues. Research among psychiatric

* Corresponding author at: Naval Health Research Center, 140 Sylvester Road, San Diego, CA 92106, USA. Tel.: +1 619 553 6934; fax: +1 619 553 8378.
E-mail addresses: heltemesk@gmail.com (K.J. Heltemes), mary.clouser@med.navy.mil (M.C. Clouser), andrew.macgregor@med.navy.mil (A.J. MacGregor), snorman@ucsd.edu (S.B. Norman), michael.galarneau@med.navy.mil (M.R. Galarneau).

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patients with both alcohol dependence and depression shows that they exhibit greater suicidal ideation and lower self-esteem compared to those with depression only (Cornelius et al., 1995).

The aims of the current study were to (1) identify the prevalence and correlates of dual disorder in recently separated veterans, (2) examine the symptoms of PTSD and depression and their association with alcohol misuse, and (3) assess the occurrence of elevated health complaints among veterans with dual disorder. Service members returning from Iraq and Afghanistan, many of whom experienced psychological and physical trauma during their deployment, offer a unique opportunity to examine the occurrence of PTSD/depression, alcohol misuse, and symptom complaints in a young, recently traumatized veteran population. Because whether the onset of increased health complaints occurs soon after the onset of PTSD/depression and alcohol misuse or possibly decades later has not been fully elucidated by the current literature, this research is critical in regard to the assessment and treatment necessary for traumatized individuals who misuse alcohol. In addition, understanding correlates and symptoms of dual disorder among service members is pressing given that alcohol misuse is a significant contributor to morbidity, is especially prevalent following combat deployment, and is a healthcare challenge facing the military, Department of Veteran Affairs, and civilian healthcare (Branchey, Davis, & Lieber, 1984; Hoge et al., 2004; Wilk et al., 2010).

2. Materials and methods

2.1. Patients and methods

The study population included 812 high risk (i.e., endorsing combat exposure and having a documented combat injury) male U.S. veterans of OIF who presented to forward-deployed medical treatment facilities (i.e., facilities in the combat zone and nearest to the point of injury) for combat-related injury between October 2004 and November 2007. The study population was identified from the Expeditionary Medical Encounter Database (EMED), formerly the Navy-Marine Corps Combat Trauma Registry. The EMED is a deployment health database maintained by the Naval Health Research Center, in San Diego, California. The database consists of documented clinical encounters of service members deployed in support of OIF/OEF (Wade, Dye, Mohrle, & Galarneau, 2007). The clinical records are then linked to existing databases including the Post-Deployment Health Assessment, Post-Deployment Health Reassessment, Defense Manpower Data Center, Standard Inpatient and Ambulatory Data Records to obtain medical, administrative, deployment-related, and health assessment data.

2.2. Injury-specific, demographic, and deployment data

Injury severity was assessed using the Injury Severity Score (ISS) for each service member (Baker, O'Neill, Haddon, & Long, 1974). Age, military rank, and service branch at time of injury were extracted from the EMED clinical record. Rank was categorized as junior enlisted (E1–E3), enlisted (E4–E5), or senior enlisted/warrant officer/officer (E6–E9, W1–W4, O1–O6). Deployment and other demographic characteristics, such as marital status, deployment length, level of education, race/ethnicity, and deployment history, were extracted from Defense Manpower Data Center records.

2.3. Mental health diagnosis prior to injury

Inpatient and outpatient mental health diagnoses prior to injury (*International Classification of Diseases*, 9th Revision, Clinical Modification [ICD-9-CM] codes 290–316) were obtained from medical records managed by the Office of the Secretary of Defense, Health Affairs, TRICARE Management Activity (i.e., Standard Inpatient Data Record and Standard Ambulatory Data Record). Diagnoses were coded by credentialed providers at military treatment facilities and federally reimbursed private clinics using ICD-9-CM codes (Larson, Highfill-McRoy, & Booth-Kewley, 2008).

2.4. Screening instruments

After returning from deployment, service members complete a Post-Deployment Health Assessment (PDHA) and an almost identical follow-up questionnaire to the PDHA called the Post-Deployment Health Reassessment (PDHRA). Both are self-administered questionnaires and are followed by an interview with a health care professional (Hoge, Auchterlonie, & Milliken, 2006). The purpose of these instruments is to evaluate present health status, including mental health, as well as any deployment or post-deployment health concerns and to recommend follow-up with appropriate health care providers when indicated. Combat exposure was identified from the PDHA through endorsing at least one of three questions; encountering dead bodies, great danger of being killed, or discharging a weapon during combat.

2.5. PTSD, depression and alcohol misuse

The PDHRA contains validated PTSD and depression screening instruments, which are displayed in Table 1. The 4-item PTSD screening instrument in the PDHRA is based on the Primary Care PTSD screen instrument and has been well validated in both soldiers returning from combat and in a patient population from the Veteran's Administration (Bliese et al., 2008; Prins et al., 2003). Based on the results of these validation studies a positive screen for PTSD required Veterans to endorse at least 3 of 4 symptoms from the PTSD screening instrument (Bliese et al., 2008; Prins et al., 2003). The depression screening instrument is derived from the Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2003). Endorsing either of the 2 questions "more than half

Table 1
Mental health and alcohol-related questions from the Post-Deployment Health Reassessment.

Posttraumatic stress[a]	Depression[b]	Alcohol misuse[c]
Post-Deployment Health Reassessment	Post-Deployment Health Reassessment	Post-Deployment Health Reassessment
Have you had any experience that was so frightening, horrible, or upsetting that, in the past month, you…	Over the past month, have you been bothered by the following problems?	In the past month, did you use alcohol more than you meant to? (yes/no)
Have had any nightmares about it or thought about it when you did not want to? (yes/no)	Little interest or pleasure in doing things (not at all/few or several days/more than half the days/nearly every day)	In the past month, have you felt that you wanted to or needed to cut down on your drinking? (yes/no)
Tried hard not to think about it or went out of your way to avoid situations that remind you of it? (yes/no)	Feeling down, depressed, or hopeless (not at all/few or several days/more than half the days/nearly every day)	
Were constantly on guard, watchful, or easily startled? (yes/no)		
Felt numb or detached from others, activities, or your surroundings? (yes/no)		

[a] Endorsing 'yes' on any three of the four questions indicates a positive screen for PTSD.
[b] Endorsing 'more than half the days' or 'nearly every day' on either question indicates a positive screen for depression.
[c] Endorsing 'yes' on either question indicates a positive screen for alcohol misuse.