Journal of Psychiatric Research 79 (2016) 108–115

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/psychires

Insomnia brings soldiers into mental health treatment, predicts treatment engagement, and outperforms other suicide-related symptoms as a predictor of major depressive episodes

Melanie A. Hom [a, *], Ingrid C. Lim [b], Ian H. Stanley [a], Bruno Chiurliza [a], Matthew C. Podlogar [a], Matthew S. Michaels [a], Jennifer M. Buchman-Schmitt [a], Caroline Silva [a], Jessica D. Ribeiro [c], Thomas E. Joiner Jr. [a]

[a] Department of Psychology, Florida State University, 1107 West Call Street, Tallahassee FL 32306, United States
[b] Office of the Army Surgeon General, 7700 Arlington Boulevard, Falls Church, VA 22041, United States
[c] Department of Psychological Sciences, Vanderbilt University, 111 21st Avenue South, Nashville, TN 37240, United States

ARTICLE INFO

Article history:
Received 29 August 2015
Received in revised form
4 April 2016
Accepted 9 May 2016

Keywords:
Suicide
Depression
Sleep
Agitation
Treatment engagement

ABSTRACT

Given the high rates of suicide among military personnel and the need to characterize suicide risk factors associated with mental health service use, this study aimed to identify suicide-relevant factors that predict: (1) treatment engagement and treatment adherence, and (2) suicide attempts, suicidal ideation, and major depressive episodes in a military sample. Army recruiters (N = 2596) completed a battery of self-report measures upon study enrollment. Eighteen months later, information regarding suicide attempts, suicidal ideation, major depressive episodes, and mental health visits were obtained from participants' military medical records. Suicide attempts and suicidal ideation were very rare in this sample; negative binomial regression analyses with robust estimation were used to assess correlates and predictors of mental health treatment visits and major depressive episodes. More severe insomnia and agitation were significantly associated with mental health visits at baseline and over the 18-month study period. In contrast, suicide-specific hopelessness was significantly associated with fewer mental health visits. Insomnia severity was the only significant predictor of major depressive episodes. Findings suggest that assessment of sleep problems might be useful in identifying at-risk military service members who may engage in mental health treatment. Additional research is warranted to examine the predictive validity of these suicide-related symptom measures in a more representative, higher suicide risk military sample.

1. Introduction

Suicide has become a growing problem in the U.S. military, with research indicating that service members die by suicide at higher rates than civilians (Kuehn, 2009). These elevated rates may be due, in part, to risk factors unique to military personnel, such as military-specific stress (e.g., exposure to killing, physical wounds), greater access to lethal means (e.g., firearms), and demographic composition (e.g., predominantly young males; Nock et al., 2013; Schoenbaum et al., 2014). Consequently, the development of military suicide prevention strategies has become a public health priority, motivating a marked increase in research in this area (U.S. Department of Health and Human Services [HHS], 2012). In particular, connecting at-risk service members to care has been identified as critical to suicide prevention efforts (Kuehn, 2009; Brenner and Barnes, 2012).

Although interventions to reduce suicide risk have yielded promising results among military populations (Britton et al., 2012; Knox et al., 2012; Rudd et al., 2015; Trockel et al., 2015), many service members remain reluctant to engage with mental health services, often due to stigma, negative beliefs about treatment, and concerns about career impact (Vogt, 2011; Blais et al., 2014; Britt et al., 2015). Thus, efforts must be made to understand patterns and predictors of mental health service use among military personnel, especially those at elevated suicide risk.

As an initial step towards enhancing treatment engagement

* Corresponding author.
E-mail address: hom@psy.fsu.edu (M.A. Hom).

http://dx.doi.org/10.1016/j.jpsychires.2016.05.008
0022-3956/

among at-risk service members, it may be helpful to identify suicide risk factors associated with greater help-seeking behaviors. To maximize utility, symptoms used to screen for suicide risk should signal short-term, acute risk rather than long-term risk. Longer-term risk factors may be informative by revealing mechanisms by which risk is conferred, identifying at-risk sociodemographic or psychiatric groups (see Nock et al., 2008 for review), and informing public health prevention approaches (e.g., reducing access to means for suicide; Mann et al., 2005). However, in clinical settings, acute warning signs are arguably more useful in informing risk level categorization and treatment provision. Detection of acute warning signs may also be useful in gatekeeper training approaches to suicide prevention (e.g., equipping unit leaders to identify at-risk unit members).

In considering the vast body of suicide risk factors, there are at least five short-term risk symptoms assessable via brief, self-report survey: (1) agitation; (2) insomnia; (3) suicide-specific hopelessness; (4) talk about suicide/reported suicidal ideation; and (5) interpersonal theory of suicide constructs (i.e., perceived burdensomeness, thwarted belongingness, and capability for suicide). Each of these factors is supported by a body of literature justifying its selection as a focus of suicide risk screening (Chu et al., 2015). Agitation has been shown to be a precursor to suicidal behaviors (Fawcett et al., 1990), correlated with near-lethal attempts (Hall and Platt, 1999), and related to higher suicidality among individuals with a higher capability for suicide (Ribeiro et al., 2015). Insomnia is also a robust predictor of future suicide risk, including among military samples (Fawcett et al., 1990; Bernert et al., 2005, 2014; Ribeiro et al., 2012), even when controlling for depression and hopelessness (Ribeiro et al., 2012). Relatedly, hopelessness appears to play an integral role both in the emergence and maintenance of suicidal thoughts (Beck, 1986; Rudd et al., 2001). Suicidal ideation itself and disclosure of ideation have also been well-established as warning signs for suicide (Rudd et al., 2006). Finally, the interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010) proposes that three constructs interact to confer risk for suicide: capability for suicide (i.e., heightened pain tolerance, fearlessness about death), thwarted belongingness (i.e., unmet need to belong), and perceived burdensomeness (i.e., feeling like a burden on others). Capability for suicide may especially be impacted by military service (Selby et al., 2010), and there is evidence for the association between suicidal history and these constructs among service members (Bryan et al., 2010).

1.1. The present study

Research identifying suicide risk factors associated with treatment engagement is critical to examine within a military sample since mental health services are more readily available and accessible in this population relative to civilians, for whom structural barriers are potent (Bruffaerts et al., 2011). Utilizing a large, diverse sample of U.S. Army recruiters, this study aimed to identify suicide-related factors: (1) associated with treatment engagement and adherence; and (2) predicting future suicide risk in a military sample (i.e., attempts, ideation, major depressive episodes [MDEs]). Due to a dearth of research examining the relationship between these variables and treatment engagement indices, a priori hypotheses were not posited.

This study examined predictors of any type of mental health care visits as well as visits excluding standard mental health screenings (i.e., Pre-Post-Deployment Health Assessments to detect deployment-related health concerns) to identify factors predicting voluntary visits. With regard to utilizing depression as an outcome measure, although most individuals with depression will not die by suicide (Bostwick and Pankratz, 2000), depression treatment is a key avenue for suicide prevention since it is one of the most common psychiatric disorders among suicide decedents (Cavanagh et al., 2003) and is highly treatable (Mann et al., 2005). As a result, although MDEs are not the suicide risk factor with the greatest specificity, taking into account the potentially low rates of suicide ideation and attempts in this sample—both of which are rare in the general population—MDEs were included at the study's outset as an additional outcome measure, with consideration that depression is related to but not the sole contributor to suicide risk.

2. Material and method

2.1. Participants

A total of 3391 Army recruiters and recruiter candidates enrolled in the study and completed baseline self-report measures. Only those with available medical record data (N = 2596) were included in analyses. There were no statistically significant demographic differences between those with missing medical record data and those included in the study. Included participants were primarily male (92.2%) and ranged from 20 to 57 years of age (M = 29.8, SD = 4.8; see Table 1). Regarding race/ethnicity, 66.4% identified as White/Caucasian, 14.8% as Black/African American, 13.4% as Hispanic/Latino, 2.8% as Asian, 1.4% as Native Hawaiian/Other Pacific Islander, and 1.2% as American Indian/Alaska Native.

2.2. Measures

Due to study setting constraints, factor analyses of previous datasets were used to select a subset of items from each self-report measure to comprise a brief assessment battery.

2.2.1. Acquired Capability for Suicide Scale (ACSS; Van Orden et al., 2008; Ribeiro et al., 2014)

An abbreviated 4-item version of the ACSS assessed perceived fearlessness about death and physical pain tolerance. Respondents rated four items (e.g., "I am not afraid to die") on a 5-point Likert scale. Total scores on the abbreviated ACSS range from 0 to 16, with higher scores indicating greater perceived pain tolerance and

Table 1
Participant demographics and characteristics (N = 2596).

Characteristic	Valid %
Sex	
Male	92.2%
Female	7.8%
Age (M = 29.8, SD = 4.8)	
18–24	12.6%
25–34	72.2%
35–44	14.5%
45–54	0.7%
55–64	<0.1%
Race/Ethnicity	
American Indian or Alaska Native	1.2%
Asian	2.8%
Black or African American	14.8%
Hispanic or Latino	13.4%
Native Hawaiian or Other Pacific Islander	1.4%
White or Caucasian	66.4%
Rank	
Sergeant	39.3%
Staff Sergeant	46.7%
Sergeant First Class	7.1%
First Sergeant/Master Sergeant	1.4%
Command Sergeant Major/Sergeant Major	<0.1%
Second Lieutenant	<0.1%
Captain	5.4%