Journal of Affective Disorders 197 (2016) 66–73

Contents lists available at ScienceDirect

Journal of Affective Disorders

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

Research paper

Nature and determinants of suicidal ideation among U.S. veterans: Results from the national health and resilience in veterans study ☆

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ARTICLE INFO

Article history:
Received 31 December 2015
Received in revised form
25 February 2016
Accepted 28 February 2016
Available online 2 March 2016

Keywords:
Suicidal ideation
Longitudinal time points
Nationally representative veteran sample
Protective and risk factors

ABSTRACT

Background: Suicidal thoughts and behaviors among U.S. military veterans are a major public health concern. To date, however, scarce data are available regarding the nature and correlates of suicidal ideation (SI) among U.S. veterans. This study evaluated the prevalence and correlates of suicidal ideation in a contemporary, nationally representative, 2-year prospective cohort study.
Method: Data were analysed from a total of 2157 U.S. veterans who participated in the National Health and Resilience Veterans Study (NHRVS; Wave 1 conducted in 2011; Wave 2 in 2013). Veterans completed measures assessing SI, sociodemographic characteristics, and potential risk and protective correlates.
Results: The majority of veterans (86.3%) denied SI at either time point, 5.0% had SI onset (no SI at Wave 1, SI at Wave 2), 4.9% chronic SI (SI at Waves 1 and 2), and 3.8% had remitted SI (SI at Wave 1, no SI Wave 2). Greater Wave 1 psychiatric distress was associated with increased likelihood of chronic SI (relative risk ratio [RRR]=3.72), remitted SI (RRR=3.38), SI onset (RRR=1.48); greater Wave 1 physical health difficulties were additionally associated with chronic SI (RRR=1.64) and SI onset (RRR=1.47); and Wave 1 substance abuse history was associated with chronic SI (RRR 1.57). Greater protective psychosocial characteristics (e.g., resilience, gratitude) at Wave 1 were negatively related to SI onset (RRR=0.57); and greater social connectedness at Wave 1, specifically perceived social support and secure attachment style, was negatively associated with SI onset (RRR=0.75) and remitted SI (RRR=0.44), respectively.
Limitations: Suicidal ideation was assessed using a past two-week timeframe, and the limited duration of follow-up precludes conclusions regarding more dynamic changes in SI over time.
Conclusions: These results indicate that a significant minority (13.7%) of U.S. veterans has chronic, onset, or remitted SI. Prevention and treatment efforts designed to mitigate psychiatric and physical health difficulties, and bolster social connectedness and protective psychosocial characteristics may help mitigate risk for SI.

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1. Introduction

Suicide among U.S. military veterans is a significant public health concern, with veterans accounting for roughly 22% of suicides nationally (Kemp and Bossarte, 2012). Compared to civilians, veterans in the general population are twice as likely to die by suicide (Kaplan et al., 2007; Gibbons et al., 2012), although the magnitude of these differences is debated and appears to vary across age groups, with the most striking difference being in the relative risk for 17-24 year old male veterans, in which the relative risk is 3.8 times higher than same-age men without military

☆The National Health and Resilience in Veterans Study was supported by the U.S. Department of Veterans Affairs National Center for Posttraumatic Stress Disorder. Preparation of this manuscript was supported in part by the Office of Academic Affiliations, Advanced Fellowship Program in Mental Illness Research and Treatment Department of Veterans Affairs. Dr. Pietrzak is a scientific consultant to Cogstate and Mitsubishi Tanabe Pharma America, Inc. for work that is unrelated to this manuscript. The other authors have no disclosures. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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http://dx.doi.org/10.1016/j.jad.2016.02.069
0165-0327/Published by Elsevier B.V.

service (Gibbons et al., 2012). Suicidal ideation (SI) is often a precursor to a suicide attempt or suicidal death (e.g., Dobscha et al., 2014; Miranda et al., 2014). Given the high prevalence of SI and association with suicidal behavior, identifying correlates of SI could result in more targeted outreach and intervention efforts that can aid in suicide prevention.

The prevalence of SI among veterans varies depending on the timeframe and population studied. Among veterans and active members of the military, the lifetime prevalence of SI is quite high (e.g., 13.9%; Nock et al., 2014; 33.4% Bryan and Bryan, 2014). However, the prevalence is lower when examining shorter timeframes, with estimates ranging from 3.3% in the past year among adults with history of military service (Blosnich et al., 2014) to 21.6% among treatment-seeking Iraq and Afghanistan veterans (Pietrzak et al., 2011). Other studies with service members (e.g., currently in the military), as well as veterans have also obtained estimates within this range (e.g., Pietrzak et al., 2010; Bryan and Bryan, 2014; Ramsawh et al., 2014). With such a wide range in the prevalence of SI among veterans (e.g., 3.3–33.4%), greater understanding into the nature of SI over time is necessary. Further, to date, much of the extant literature has focused on specific samples of veterans (e.g., veterans utilizing Veterans Health Administration care, treatment seeking samples, college students) and data are lacking regarding the prevalence and presentation of SI in nationally representative samples of U.S. veterans. Such data are important, as they can inform the burden and changes in SI over time in the entire U.S. veteran population.

A large body of research has attempted to identify factors associated with suicidal thoughts, plans, and attempts. In a large cross-national investigation, sociodemographic risk factors for SI included younger age, female sex, unmarried marital status, and less education (Nock et al., 2008). Similar factors are associated with SI in veteran populations, although results are mixed, such that Native American race, younger and older ages, and male sex are linked to increased risk of SI (e.g., Allen et al., 2005; Desai et al., 2005, 2008; Jakupcak et al., 2010; Lemaire and Graham, 2011; Bryan and Bryan, 2014). In a longitudinal population-based study, anxiety disorders (e.g., social phobia, simple phobia, generalized anxiety disorder, panic disorder, agoraphobia, and obsessive-compulsive disorder) were significantly associated with suicidal ideation and suicide attempts (Sareen et al., 2005). Other studies have found that last year substance abuse and mood and anxiety disorders were associated with recurrent SI (Dugas, Low, O'Loughlin, and O'Loughlin, 2015) and anxiety symptoms were associated with the onset of SI (Baek et al., 2015). Psychiatric risk factors commonly associated with SI and suicide attempts in veteran populations include major depressive disorder, PTSD, anxiety disorders, and substance use disorders (e.g., Pietrzak et al., 2010; Lemaire and Graham, 2011; Fanning and Pietrzak, 2013; Nock et al., 2013; Conner et al., 2014; Dobscha et al., 2014; Thompson et al., 2014; Wisco et al., 2014; Ejdesgaard et al., 2015; Zivin et al., 2015). Physical health problems, such as heart attack/stroke, high blood pressure, arthritis, chronic pain, respiratory problems, and gastrointestinal disorders, are also associated with increased rates of SI (Fanning and Pietrzak, 2010; Scott et al., 2010; Thompson et al., 2014). Collectively, results of these studies suggest that a broad range of sociodemographic, psychiatric, and physical health factors are correlated with SI in both civilian and veteran populations.

While a large body of research has examined risk factors for SI, relatively fewer studies have examined protective factors. Available data suggest that characteristics such as an optimistic or positive attribution style and increased agency (e.g., one's sense that they are in control) may be negatively related to SI (for a review, see Johnson et al., 2011). Among Veterans, sense of purpose and control (Pietrzak et al., 2010), acceptance of change (Pietrzak et al., 2011; Youssef et al., 2013), value importance and success (Bahraini et al., 2013), and greater meaning in life (Braden et al., 2015) have been associated negatively with SI. Further, greater social connectedness (Pietrzak et al., 2010; Pietrzak et al., 2011; Fanning and Pietrzak, 2013), social support (Lemaire and Graham, 2011; Kleiman and Liu, 2013; Ejdesgaard et al., 2015), and secure relationships (Youssef et al., 2013) have also been found to be protective. While these studies help inform models of suicide risk, most are based on cross-sectional data; thus, it is unclear whether these factors can influence presentations of SI over time. Consequently, it is unclear whether these factors are in fact protective or whether distressed individuals tend to score lower on measures of protective factors. Longitudinal studies are needed to address this question.

Better characterization of SI over time can be helpful in understanding suicide risk, as risk factors may have a delayed impact and better identification of high-risk individuals could lead to enhanced clinical care (Gutierrez, 2014). Similarly, better understanding of the nature and prevalence of SI over time among veterans, which may be characterized by remitting, onset, and chronic SI, can provide insight into the predominant patterns and determinants of SI, and inform targets for prevention and treatment. For example, among Danish soldiers, risk for SI differed based on different PTSD symptom trajectories over a three-year period (Madsen et al., 2014). In Israeli prisoner of war veterans, SI increased over time and was related to PTSD symptoms (Zerach et al., 2014). Among a sample of acutely suicidal U.S. Army soldiers, chronic stressors were associated with more persistent SI, whereas low-to-average chronic stress was associated with the remittance of SI at the six-month follow-up (Bryan et al., 2015). Thus, it is likely that risk and protective correlates for different presentations of SI may vary. To date, however, predominant presentations of SI across time have not been examined in a nationally representative sample of U.S. military veterans.

To address the aforementioned gaps in the literature, the aims of this study were to analyse data from a large, contemporary, and nationally-representative sample of U.S. veterans and evaluate: (1) the prevalence of predominant, population-based presentations of SI (i.e., chronic, onset, remitted SI) over a two-year period; and (2) how a comprehensive range of sociodemographic, risk, and protective variables assessed at baseline relate to predominant presentations of SI.

2. Method

2.1. Participants

A nationally representative sample of U.S. military veterans who completed two survey waves (Waves 1 and 2; described below) of the National Health and Resilience Veterans Study (NHRVS), a prospective cohort study of U.S. veterans ages 18 and older, participated in this study. This sample was ascertained from a larger, nationally representative sample of more than 50,000 U.S. households who are part of KnowledgePanel, a survey research panel maintained by GfK Knowledge Networks, Inc. (Menlo Park, CA). KnowledgePanel uses probability-based sampling of addresses from the U.S. Postal Service's Delivery Sequence File (DSF). The key advantage of this methodology is that it allows sampling of almost all U.S. households. Regardless of household telephone status, all households can be reached and contacted through postal mail, including households without a home telephone number or Internet access (potential participants without computer and/or Internet access are provided with them). Wave 1 data were collected between October and December 2011. Wave 2 data were collected two years later between October and December 2013.