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Hopelessness and Suicidal Ideation in Iraq and Afghanistan War Veterans Reporting Subthreshold and Threshold Posttraumatic Stress Disorder

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Abstract: We examined hopelessness and suicidal ideation in association with subthreshold and threshold posttraumatic stress disorder (PTSD) in a sample of Iraq and Afghanistan War Veterans (U.S., $N = 275$) assessed within a specialty VA postdeployment health clinic. Veterans completed paper-and-pencil questionnaires at intake. The military version of the PTSD Checklist was used to determine PTSD levels (No PTSD; subthreshold PTSD; PTSD), and endorsement of hopelessness or suicidal ideation were used as markers of elevated suicide risk. Veterans were also asked if they received mental health treatment in the prior 6 months. Veterans reporting subthreshold PTSD were 3 times more likely to endorse these markers of elevated suicide risk relative to the Veterans without PTSD. We found no significant differences in likelihood of endorsing hopelessness or suicidal ideation comparing subthreshold and threshold PTSD groups, although the subthreshold PTSD group was less likely to report prior mental health treatment. Clinicians should be attentive to suicide risk in returned Veterans reporting both subthreshold and threshold PTSD.

Key Words: Suicide risk, Iraq and Afghanistan war veterans, subthreshold PTSD.

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Veterans returning to the U.S. from deployments to Iraq and Afghanistan who have been diagnosed with psychiatric disorders are at elevated risk for suicide (Kang and Bullman, 2008). Expressions of hopelessness and thoughts of committing suicide are often used as behavioral markers for elevated suicide risk (Rudd, 2008) and 2 recent studies found that Iraq and Afghanistan Veterans (U.S.) reporting symptoms suggestive of posttraumatic stress disorder (PTSD) diagnosis are at increased risk for suicidal ideation. Pietrzak et al. (2010) examined risk and protective factors for suicidal ideation in a community sample of Iraq and Afghanistan Veterans; Veterans who screened positive for PTSD were 13.6 times more likely to report suicidal ideation than Veterans who did not screen positive for PTSD. Jakupcak et al. (2009) found that among treatment-seeking Iraq and Afghanistan Veterans referred for mental health services, those who screened positive for PTSD were 4.5 times more likely to endorse suicidal ideation compared to those who did not screen positive for PTSD. In both of these studies, the PTSD variable was coded as dichotomous (No PTSD/PTSD), providing no information about the risk for suicidal ideation among Veterans reporting partial or subthreshold PTSD.

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Conservative estimates of PTSD rates among Iraq and Afghanistan Veterans after deployment ranged from 6% to 13%, although many Veterans are experiencing subthreshold PTSD symptoms (Hoge et al., 2004; Thomas et al., 2010). In both civilian and Veteran samples, subthreshold PTSD has been associated with impaired occupational and interpersonal functioning and psychiatric distress (Grubaugh et al., 2005; Jakupcak et al., 2007; Mylle and Maes, 2004; Pietrzak et al., 2009; Stein et al., 1997; Weiss et al., 1992), including suicidality (Marshall et al., 2001; Zlotnick et al., 2002). However, Veterans and healthcare providers may not appreciate the serious clinical implications of subthreshold PTSD symptoms, resulting in insufficient treatment (Grubaugh et al., 2005).

This study was conducted to examine the association between subthreshold and threshold PTSD symptom levels and markers of elevated suicide risk in treatment-seeking Iraq and Afghanistan War Veterans. We predicted that Veterans reporting subthreshold PTSD would be more likely to endorse hopelessness or suicidal ideation relative to Veterans reporting few or no PTSD symptoms. On the basis of previous evidence regarding intermediate levels of impairment associated with subthreshold PTSD (Pietrzak et al., 2009), we predicted that the subthreshold PTSD group would be less likely to endorse hopelessness or suicidal ideation relative to Veterans reporting threshold PTSD.

METHOD

Participants

The sample was drawn from Iraq and Afghanistan War Veterans in the U.S. ($N = 336$) consecutively assessed at intake to the Seattle Deployment Health Clinic of the VA Puget Sound Health Care System from May 3, 2004 to January 1, 2007. The Deployment Health Clinic is a specialty primary care-based clinic designed to integrate medical, mental health, and social work services for returning Veterans. The study protocol was approved by the University of Washington Internal Review Board and the Research and Development Committee of VA Puget Sound Health Care System.

Approximately 12% of the sample did not complete self-report assessments of alcohol use and 4.7% did not complete the question assessing race. All other variables were missing less than 2.5%. After removing cases with missing data on key variables, the final sample consisted of 275 Veterans. Demographic and clinical features of the full sample and its stratification across levels of PTSD are presented in Table 1. Social support, combat exposure, alcohol use, depression, and annual household income differed significantly across PTSD strata ($p < 0.05$).

Measures

An initial assessment packet was administered as part of routine clinical care. The packet assessed demographic information and nature of military status (e.g., active duty vs. reserve). Combat exposure was assessed using items drawn from Laufer Combat Exposure Scale (Laufer et al., 1984) and the Desert Storm Trauma Questionnaire (Southwick et al., 1993). Social support was assessed

TABLE 1. Sample Characteristics: Overall, by PTSD Level, and Bivariate Associations With Markers of Suicide Risk

Variables	% or Mean (SD)				Markers of Suicide Risk %
	Full Sample	No PTSD	Sub Threshold	Threshold	
Age ^a	31.0 (8.5)	31.9 (8.9)	30.4 (8.5)	30.2 (7.9)	—
Social support ^{a*}	18.8 (4.8)	19.9 (4.7)	19.1 (4.7)	17.3 (4.7)	—
Combat exposure ^{a*}	10.1 (5.7)	7.2 (5.2)	10.7 (4.5)	13.5 (4.9)	—
Sex					
Male	91.3	91.3	91.5	91.2	37.5
Female	8.7	8.7	8.5	8.8	33.3
Race/ethnicity ^{**}					
White	74.8	75.4	71.7	75.5	36.2
African-American	9.2	10.7	10.9	6.4	16.7
Hispanic	6.5	5.7	6.5	7.4	64.7
Asian/Pacific Isl.	6.1	7.4	8.7	3.2	25.0
American Indian	2.7	0.8	2.2	5.3	42.9
Other	0.8	0.0	0.0	2.1	50.0
Marital status					
Not married	52.4	53.2	46.8	53.9	36.8
Married	47.6	46.8	53.2	46.1	37.4
Employment status					
Unemployed	34.2	31.0	29.8	40.2	42.6
Employed	65.8	69.0	70.2	59.8	34.3
Income ^{***}					
<\$15,000	13.1	10.3	6.4	19.6	61.1
\$15–24,999	26.9	22.2	29.8	31.4	40.5
\$25–34,999	19.6	19.8	25.5	16.7	37.0
\$35–49,999	14.9	13.5	12.8	17.6	34.1
≥\$50,000	25.5	34.1	25.5	14.7	22.9
Military branch					
Army	75.5	74.4	68.1	80.4	37.7
Marines	9.5	6.4	19.1	8.8	34.6
Navy	10.6	13.6	6.4	8.8	37.9
Air force	4.4	5.6	6.4	2.0	33.3
Service type					
Active duty	47.3	44.4	48.9	50.0	43.1
Reserves	52.7	55.6	51.1	50.0	31.7
PTSD [*]					
Threshold	37.1	—	—	—	66.7
Subthreshold	17.1	—	—	—	38.3
No PTSD	45.8	—	—	—	12.7
Depression [*]					
Criteria met	37.5	7.9	31.9	76.5	70.9
Criteria not met	62.5	92.1	68.1	23.5	16.9
Alcohol use [*]					
Criteria met	29.1	15.9	29.8	45.1	62.5
Criteria not met	70.9	84.1	70.2	54.9	26.7
Tobacco use					
Tobacco user	27.3	23.8	19.1	35.3	44.0
Nontobacco user	72.7	76.2	80.9	64.7	34.5

^aMean (SD) for veterans with markers versus no markers of elevated suicide risk are presented in text for continuous variables.

PTSD indicates posttraumatic stress disorder.

* $p < 0.001$ (bivariate associations with markers of elevated suicide risk).

** $p < 0.05$.

*** $p < 0.01$.

using 5 items drawn from the Medical Outcomes Study social support survey (Sherbourne and Stewart, 1991). A single item asked Veterans about smoking status. A single item asked whether, in the past 6 months, Veterans had sought out treatment from a psychiatrist, psychologist, social worker, or counselor, with 48.8% reporting prior mental health treatment.

The military version of the PTSD Checklist (PCL-M; Weathers et al., 1993) was used to assess PTSD symptom levels (past month). The PCL-M asks respondents to indicate the degree to which they are bothered by each of the 17 symptoms of PTSD, using a 5-point Likert-type scale (1 = not at all bothered; 5 = extremely bothered), with global scores ranging from 17 to 85. Threshold PTSD screening criteria used in prior studies of Iraq and Afghanistan War Veterans (Jakupcak et al., 2009; Pietrzak et al., 2010) required a global score of 50 and the presence of symptoms endorsed at moderate or high levels across the symptom clusters per the DSM-IV PTSD diagnostic algorithm. Subthreshold PTSD was defined as the endorsement of at least one symptom at moderate or higher levels across the 3 PTSD symptom clusters (Pietrzak et al., 2009) and a PCL-M global score within the severity range of 35 to 49 (Jakupcak et al., 2007). The No-PTSD classification was defined as a PCL-M score of 34 or less, suggesting the Veteran was bothered no more than “a little bit” by PTSD symptoms.

The initial assessment packet also included the Patient Health Questionnaire (PHQ; Spitzer et al., 1999), a well-validated, self-report screening measure that assesses for mental health disorders common in primary care. The PHQ-9 Depression subscale assessed the presence of 5 or more depressive symptoms (past 2 weeks) endorsed at moderately severe or more severe level, suggestive of a depressive episode per the DSM-IV algorithm. The PHQ Alcohol Abuse subscale was used to assess alcohol abuse (past 6 months).

Hopelessness and suicidal ideation were assessed using 2 items drawn from the Brief Symptom Inventory (Derogatis and Melisaratos, 1983). These items assessed a respondent’s level of endorsement (0 = Not at all; 1 = A little bit; 2 = Moderately; 3 = Quite a bit; 4 = Extremely) regarding “feeling hopeless about the future” and “thoughts of ending your life” during the prior month. These items were selected in part because they approximate standardized initial assessment questions used by the Veterans Health Administration to detect elevated suicide risk for patients who screen positive for PTSD or depression. More than one-third (37.1%) of the sample endorsed hopelessness and/or thoughts of self-harm rated at moderate or greater levels, and was classified as positive for having markers of elevated suicide risk.

RESULTS

Preliminary Analyses

Analysis of variance, independent *t* tests, and *chi square* analyses were used to determine potential covariates (Table 1). Those reporting hopelessness or suicidal ideation had significantly poorer social support ($M = 16.85$; standard deviation [SD] = 4.72) than those without these markers of elevated risk ($M = 19.94$; $SD = 4.55$), $t = 5.32$, $p < .001$. Combat exposure levels were significantly higher among those with hopelessness or suicidal ideation ($M = 11.90$; $SD = 5.59$ vs. $M = 9.11$; $SD = 5.60$), $t = -4.0$, $p < 0.001$. Hopelessness and suicidal ideation were also more likely among Veterans with lower income, depressed Veterans, and Veterans reporting alcohol abuse. Veteran race/ethnicity was also significantly associated with endorsement of hopelessness or suicidal ideation. Income, social support, combat exposure, depression, alcohol use, and race/ethnicity were included in the multivariate model as covariates.

TABLE 2. Multivariate Associations With Markers of Suicide Risk Among Iraq and Afghanistan War Veterans

Variables	Odds Ratio	95% Confidence Interval
Sociodemographic variables		
Race/ethnicity	1.15	0.91–1.46
Low annual household income	1.25	0.98–1.59
Low social support	1.09*	1.02–1.16
Military experience		
Combat exposure	0.99	0.92–1.06
Mental health status		
Alcohol abuse criteria met	2.48*	1.24–4.96
Depression criteria met	5.36**	2.50–11.53
Posttraumatic stress disorder ^a		
Threshold vs. no PTSD	3.49*	1.34–9.10
Subthreshold vs. no PTSD	2.73*	1.07–6.97
Threshold vs. subthreshold	1.28	0.52–3.17

^aDummy coding was used to obtain all 3 comparisons.

PTSD indicates posttraumatic stress disorder.

* $p < 0.05$.

** $p < 0.001$.

Primary Analyses

Multivariate logistic regression was used to examine the likelihood of positive classification (yes/no) for hopelessness or suicidal ideation stratified across PTSD symptom levels. The results of the regression equation were significant, ($\chi^2 (8) = 111.82, p < 0.001$, Nagelkerke $R^2 = 0.477$ (Table 2). Hopelessness and/or suicidal ideation were significantly more likely among Veterans with poorer social support, alcohol abuse, and depression, the latter being the strongest correlate in the model. PTSD was the second strongest correlate in the model. Veterans with threshold PTSD had significantly greater likelihood of endorsing hopelessness or suicidal ideation relative to Veterans in the no-PTSD group. Although the effect was minor, subthreshold PTSD was also significantly associated with an increased likelihood of hopelessness or suicidal ideation relative to the no-PTSD group. Hopelessness and/or suicidal ideation were not significantly more common among those in the threshold PTSD group versus those in the subthreshold PTSD group.

Chi square analyses were conducted to examine associations between PTSD symptom levels and recent prior mental health treatment (yes/no). Results indicated that level of PTSD was significantly associated with prior mental health treatment, ($\chi^2 (2) = 41.27, p < 0.001$), with prior treatment most common among those with threshold PTSD (73.3% received services) and least common among those without PTSD (30.4% received services). Those in the subthreshold group, 53.2% of whom received mental health treatment, were significantly less likely than those with threshold PTSD to have had prior mental health treatment, $\chi^2 (1) = 5.84, p = 0.02$.

DISCUSSION

As predicted, Veterans reporting subthreshold PTSD were more likely to express hopelessness or suicidal ideation compared with treatment-seeking Veterans without PTSD. Similar to the results of the Zlotnick et al. (2002) study, we did not find a significant difference in the likelihood of these markers of elevated suicide risk on comparing the subthreshold and threshold PTSD groups. However, the former group was less likely to report prior mental health treatment.

The results of this study contribute to a growing literature specific to the clinical implications of subthreshold PTSD, including

its association with suicide-related behavior (Marshall et al., 2001; Zlotnick et al. 2002). Because individuals experiencing subthreshold PTSD may be less likely to receive mental health treatment, there is a need to educate providers to detect and address these symptoms to improve health and functioning and address potential suicide risk. This is particularly important for treating Iraq and Afghanistan War Veterans, as stigma and practical barriers to mental health care are common (Hoge et al., 2004) and engagement in specialty mental health services is low, even among those diagnosed with PTSD (Seal et al., 2010).

Study limitations suggest the need to interpret these findings with caution. First, this study relied on self-report measures to classify psychiatric disorders and markers of elevated suicide risk among a treatment-seeking sample, and Deployment Health Clinic intake procedures did not assess Veterans' primary reasons for seeking postdeployment VA care. Thus, the rates of PTSD and subthreshold PTSD, and the frequency of hopelessness and suicidal ideation are likely higher relative to those found in population-based studies or community samples, but may be lower than those found among Veterans specifically seeking mental health treatment. For example, Pietrzak et al. (2009) found that 12.5% of a community sample of Iraq and Afghanistan War Veterans endorsed suicidal ideation, whereas Jakupcak et al. (2009) found that nearly 46% of treatment-seeking Iraq and Afghanistan War Veterans referred for mental health treatment endorsed recent suicidal ideation. Second, Veterans Health Administration procedures assess for hopelessness or suicidal ideation as behavioral markers of elevated suicide risk in Veterans who screen positive for PTSD or depression, but it is important to differentiate these markers of risk from more severe expressions of suicide behavior, including active plans for self-harm or suicide attempts. In addition, assessing for hopelessness and suicidal ideation represent brief, initial assessment procedures, but comprehensive suicide risk assessment and classification should take into consideration both proximal warning signs (e.g., expressions of suicidal ideation) as well as other acute and long-term risk factors (Rudd et al., 2006). Finally, the cross-sectional nature of the data used in this study precludes assumptions of causal relationships.

CONCLUSIONS

Many Iraq and Afghanistan War Veterans may be experiencing subthreshold PTSD. Veterans with subthreshold PTSD may be more likely to endorse hopelessness or suicidal ideation relative to those without PTSD but less likely to receive mental health treatment compared with Veterans reporting threshold PTSD. Given that subthreshold PTSD may predict later onset of PTSD (Gray et al., 2004), it is important that providers intervene early to prevent increased psychiatric distress and to address potential suicidality.

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