



## Research paper

## Shame as a mediator between posttraumatic stress disorder symptoms and suicidal ideation among veterans



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## ABSTRACT

**Background:** Suicidal ideation is a problem that disproportionately affects veterans. Moreover, veterans with posttraumatic stress disorder (PTSD) appear to be at particularly high risk for suicide.

**Objective:** The purpose of the present research was to examine whether shame mediates the association between PTSD and suicidal ideation.

**Methods:** Secondary analyses were conducted in a sample of 201 veterans with PTSD seeking care through an outpatient Veterans Affairs specialty PTSD clinic.

**Results:** Path analysis revealed that shame fully accounted for the effects of PTSD on suicidal ideation, suggesting that shame may represent a key link between PTSD and suicidal ideation among veterans.

**Limitations:** Although the reverse mediation effect was also examined, the present sample was cross-sectional and predominantly male.

**Conclusions:** The present findings suggest that shame may be an effective point of treatment intervention to reduce suicidal ideation among veterans with PTSD; however, additional prospective research is still needed to delineate the precise nature of these associations over time.

According to recent data, approximately 20 veterans die by suicide each day (Office of Suicide Prevention [OSP/VHA], 2016), and almost 14% of veterans report current suicidal ideation (SI; Smith et al., 2016). Veterans face many factors that place them at greater risk for experiencing suicidal ideation (SI) and engaging in suicidal behavior, including elevated rates of posttraumatic stress disorder (PTSD), depression, and substance use disorders (OSP/VHA, 2016). Such mental health conditions have been associated with both increased risk for suicidal behavior (i.e., ideation, plans, or attempts) and death by suicide (Bullman and Kang, 1994; Kimbrel et al., 2014) among veterans. PTSD is a particularly important suicide risk factor given the high prevalence of PTSD among veterans (12–15% across war eras; Kang et al., 2003; Kulka et al., 1990; Tanielian et al., 2008). Jakupcak et al. (2009) reported that veterans with a PTSD diagnosis were four times more likely to experience SI than veterans without PTSD. Furthermore, veterans diagnosed with PTSD exhibit particularly high rates of suicidal behavior and death by suicide (see Panagioti

et al., 2009; Pompili et al., 2013 for reviews).

Emotional responses to trauma play a role in PTSD symptom severity and may contribute to increased risk for suicidal behavior. Shame is a negative self-conscious emotion that has been associated with both PTSD symptoms (Cunningham et al., 2017; Saraiya and Lopez-Castro, 2016) and SI (Bryan et al., 2013; Kealy et al., 2017). Øktedalen et al. (2015) found that higher levels of pretreatment shame were associated with more severe PTSD among civilians receiving inpatient treatment. Importantly, they also demonstrated that changes in shame during Prolonged Exposure Therapy (PE) for PTSD predicted changes in PTSD symptom severity, but not vice versa, providing evidence that shame plays an important causal role in PTSD symptoms (Øktedalen et al., 2015). Moreover, while the extant literature on shame and PTSD remains small at present, shame has consistently emerged as a predictor of PTSD symptom severity (Beck et al., 2011; Cunningham et al., 2017; Leskela et al., 2002; Pineles et al., 2006).

Shame has also been associated with higher levels of SI above and

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beyond the effects of PTSD (Bryan et al., 2013). Preliminary research suggests that shame may partially account for the relationship between PTSD and increased SI (Bryan et al., 2013; Bryan et al., 2015; Tripp and McDevitt-Murphy, 2016). Findings from a study with a trauma-exposed, treatment-seeking civilian sample showed that shame schemas were positively associated with frequency of SI, current suicide plan, and suicide attempts within the past 3 months (Dutra et al., 2008). Bryan et al. (2013) found evidence that combined shame and guilt mediated the effects of PTSD and depression on SI among military service members. However, research examining shame's relationship to SI is relatively lacking and a better understanding of this relationship is imperative.

In light of the increasing suicide rates among veterans, there is an urgent need to identify suicide risk factors and potential targets for therapeutic intervention to reduce suicide risk. Because veterans with PTSD are at elevated risk for suicidal thoughts and behavior (Jakupcak et al., 2009) and shame has been shown to be directly predictive of PTSD symptom severity (Øktedalen et al., 2015), we need a better understanding of shame's potential impact on suicide risk.

## 1. Present study

The aim of the present study was to examine shame in relationship to PTSD and SI among veterans. We examined the direct and indirect effects of PTSD symptom severity and shame on SI. We hypothesized that PTSD symptoms and shame would be positively associated with SI and that shame would partially mediate the relationship between PTSD and SI. We also tested the reverse mediation (i.e., PTSD as a mediator between shame and SI), which we hypothesized would result in non-significant indirect effects.

## 2. Methods

### 2.1. Participants & procedure

We analyzed archival data from a sample of 201 veterans receiving care at an outpatient Veterans Affairs (VA) specialty PTSD clinic between 2004 and 2008. As part of a standard initial evaluation for the PTSD clinic, participants completed a clinical interview and a battery of self-report questionnaires. All veterans had a diagnosis of PTSD based on structured clinical interview. Use of these data for research purposes was approved by the institutional review board.

### 2.2. Measures

#### 2.2.1. Demographic Information

Demographic information collected included age, gender, race, and marital status.

#### 2.2.2. PTSD symptom severity

The Mississippi Scale for Combat-Related PTSD (M-PTSD; Keane et al., 1988) is a 35-item self-report measure that assesses DSM-III symptoms of PTSD in veteran populations. Participants respond to items using a 5-point Likert scale on which 1 = *Not at all true* and 5 = *Extremely true*. Responses are summed to provide an overall score of PTSD symptom severity. This measure has demonstrated strong internal consistency, test-retest reliability, and sensitivity distinguishing between veterans with and without PTSD. For the present analyses, the two items assessing suicide/death ideation (items 8 and 10) and the item assessing feelings of guilt (item 2) were not included in the M-PTSD total score due to conceptual overlap with our other variables. Internal consistency in the present sample was acceptable, Cronbach's  $\alpha = 0.75$ .

#### 2.2.3. Suicidal ideation

The Personality Assessment Inventory (PAI) is a 344-item norm-

referenced assessment. Respondents rate each self-report item on a 4-point Likert scale indicating the degree to which each statement describes them, and T-scores are calculated for each clinical scale and subscales. The present analyses used the Suicidal Ideation Scale (SUI) of the PAI, and the standardized T-scores were treated as a continuous variable. The SUI subscale consists of 12 items that assess morbid (e.g., "I've thought about death") and suicidal (e.g., "I've made plans about how to kill myself") thoughts.

#### 2.2.4. Shame

The Internalized Shame Scale (ISS; Cook, 1996) is a 30-item self-report measure composed of two subscales: Internalized shame (24 items; e.g., "I feel intensely inadequate...") and self-esteem (6 items; e.g., "I have a number of good qualities"). Respondents rate each statement using a 5-point Likert scale to indicate the frequency with which they feel or experience what is described in each item (i.e., *Never, Seldom, Sometimes, Often, Almost Always*). For the present analyses, we excluded the six self-esteem items and used the internalized shame subscale only. Internal consistency for the internalized shame subscale in the present sample was excellent, Cronbach's  $\alpha = 0.96$ .

#### 2.2.5. Data analyses

Univariate statistics and bivariate relationships among variables were examined prior to hypothesis testing. We examined the direct and indirect effects of PTSD on SI via shame using path analysis (PROCESS Macros for SAS, Model 4; Hayes, 2013). Because causal relationships cannot be inferred from cross-sectional data, we also tested the reverse model. In the first model, we examined the direct effects of PTSD on SI and the indirect effects of PTSD via shame on SI. We then examined the direct effects of shame on SI and indirect effects of shame via PTSD.

We examined direct and indirect effects using 5000 bootstrap samples to examine the mediation effect of shame on the relationship between PTSD symptom severity and SI. Resampling offers an advantage over conventional tests, such as Sobel's  $z$ , because it takes into account the positive skew inherent to indirect effects (Preacher and Hayes, 2008). As such, bootstrapping methods are more powerful than conventional tests, with mediation deemed significant when the resulting 95% confidence interval (CI) does not span 0.

## 3. Results

The sample ( $N = 201$ ) consisted of 189 men (94%) and 12 women (6%). Participants' mean age was 40 years ( $SD = 13.29$ , range 21–72). Over half the participants were married ( $n = 118$ , 58.7%). The rest were divorced, separated, or widowed ( $n = 43$ , 21.4%) or had never been married ( $n = 40$ , 19.9%). Participants were 48.3% Caucasian American ( $n = 97$ ), 44.8% African American ( $n = 90$ ), 2% Native American ( $n = 4$ ) 3% White Hispanic ( $n = 6$ ) and 2% "other" ( $n = 4$ ).

Univariate statistics and bivariate relationships are presented in Table 1. All variables were significantly correlated with one another at  $p < .0001$ . Together, PTSD and shame accounted for a significant amount of variance in SI,  $F(2,197) = 50.04$ ,  $R^2 = 0.34$ ,  $p < .001$ . PTSD exhibited significant direct effects on shame and SI. Shame also had a direct effect on SI. PTSD had significant indirect effects on SI via shame,  $\text{coeff.} = 0.45$ , 95% CI = 0.32, 0.59, such that the direct effect of PTSD became nonsignificant when shame was included in the model,  $c'$

**Table 1**  
Univariate statistics and bivariate correlations.

	<i>M(SD)</i>	Range	1	2
1. PTSD	93.45(12.77)	59–129		
2. Shame	41.08(22.36)	0–94	0.63	
3. SI	59.89(18.03)	5–113	0.41	0.56

All correlations significant at  $p < .0001$ .

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