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Does military sexual trauma moderate the impact of critical warzone experiences?

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Abstract

The present research sought to replicate the finding that military sexual trauma (MST) moderates the effect of critical warzone experiences on mental health outcomes in a sample of male veterans. One-hundred eighty-one male veterans completed measures of MST, critical warzone experiences, and mental health symptoms. The hypothesized interaction was not significant, nor was a significant main effect observed for MST. In contrast, both critical warzone experiences and childhood maltreatment had significant main effects.

Keywords

PTSD; depression; anxiety

1. Introduction

Military personnel experience multiple sources of stress, including combat exposure and military sexual trauma (MST; Maguen et al., 2012). While the impact of warzone experiences on veterans' mental health is well-established (Keane et al., 1989; Kimbrel et al., 2014), less research has focused on MST, which refers to sexual harassment and assault during military service (Allard et al., 2011). While women are more likely to experience MST than men (Maguen et al., 2012), Suris and Lind (2008) estimate that there are approximately the same number of males and females who experience MST because of the higher percentage of males in the military. In recent years, combat exposure and MST have

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both been linked to psychological difficulties among Iraq and Afghanistan veterans (Maguen et al., 2012; Kimbrel et al., in 2014). Accordingly, researchers have been encouraged to investigate more complex relationships among different types of traumatic experiences (Allard et al., 2011).

To this end, Scott et al. (2014) recently reported that MST moderated the effect of combat exposure on posttraumatic stress disorder (PTSD) symptoms among a sample of female Iraq and Afghanistan veterans, such that the effect of combat exposure on PTSD symptoms was greatest among those who had experienced MST, even after controlling for childhood maltreatment (i.e., physical abuse, sexual abuse, witnessing family violence). The objective of the present study was to test the hypothesis that MST moderates the effect of critical warzone experiences on mental health symptoms among male Iraq and Afghanistan veterans after controlling for childhood maltreatment. To date, no studies have investigated the differential impact of MST and combat among male veterans. The current study expands upon the existing literature by: (1) testing for the interaction among men; and (2) including a wider range of mental health symptoms (i.e., PTSD, depression, anxiety, stress).

2. Methods

2.1 Participants & Procedures

The sample consisted of 181 male Iraq and Afghanistan veterans. The sample was predominantly white (67.4%) and had an average of 16.11 ($SD = 9.32$) years of military service. Participants' mean age was 40.11 ($SD = 10.22$) years. The majority (86.2%) of participants were Army veterans. After providing informed consent, participants completed the measures in private offices at a VA medical center. Participants were recruited in the same geographical location, and many were receiving VA care, though this was not a requirement. The study was advertised as a study of post-deployment adjustment through flyers, mailings to Iraq/Afghanistan veterans enrolled in the local VA system, and presentations to VA staff.

2.2 Measures

The 7-item Deployment Risk and Resilience Inventory-Relationships within Unit (RWU; King et al., 2003) scale assessed MST. Examples of items include: "Threatened me with some sort of retaliation for not being sexually cooperative," "Made unwanted attempts to have sex with me," and "Forced me to have sex." Consistent with Wilson et al. (2015), participants endorsing one or more items on the RWU were categorized as having experienced MST. The 7-item *Critical Warzone Experiences Scale* (CWE; Kimbrel et al., 2014) assessed combat exposure. This brief scale has excellent psychometric properties and is strongly associated with PTSD and depression. The 28-item *Childhood Trauma Questionnaire* (CTQ; Bernstein and Fink, 1998) assessed child maltreatment, including emotional, physical and sexual abuse, and emotional and physical neglect. Participants with scores above the cut-offs suggested by Bernstein and Fink (1998) for low to moderate maltreatment on any of the five subscales were categorized as having experienced child maltreatment. The 22-item *Impact of Event Scale-Revised* (IES-R; Weiss and Marmar, 1996) assessed PTSD symptom severity, whereas the 21-item *Depression Anxiety Stress Scales*

(DASS; Lovibond and Lovibond, 1995) assessed symptoms of depression, anxiety, and stress.

2.3 Data Analysis

Hierarchical moderated regression analysis was used to test the main hypothesis. The models were constructed to be as similar as possible to Scott et al. (2014). Age (continuous), education (continuous), ethnicity (1 = Hispanic; 0 = non-Hispanic), White (1 = yes; 0 = no), Black (1 = yes; 0 = no), relationship status (1 = married and living with partner; 0 = single, dating, divorced or separated), and Reserves/Guard (1 = Reserves/Guard; 0 = active duty) were entered in step 1. Childhood maltreatment (1 = yes; 0 = no), MST (1 = yes; 0 = no), and critical warzone experiences (centered) were entered in step 2. The interaction of MST and critical warzone experiences was entered in step 3. Symptoms of PTSD, depression, anxiety, and stress were included as outcome variables in four separate regressions.

3. Results

The findings from the regressions are summarized in Table 1. Combat exposure was normally distributed (skewness = .982; kurtosis = .235). A total of 22 (12.2%) male Iraq and Afghanistan veterans reported some type of MST, whereas 129 (71.3%) reported some type of childhood maltreatment. Combat exposure was the strongest and most consistent predictor across all four mental health outcomes; childhood maltreatment was associated with PTSD, anxiety, and stress. In contrast, neither MST nor the MST x combat interaction had significant effects in any of the models.

4. Discussion

Critical warzone experiences and childhood maltreatment both had significant main effects on mental health symptoms within this sample of male veterans. In contrast, MST did not have main effects, nor did MST moderate the effect of critical warzone experiences on mental health outcomes among male veterans as hypothesized. One possible explanation for the discrepancy between this study and Scott et al. (2014) is that gender may moderate the effect of MST on mental health outcomes, such that MST produces more adverse outcomes among female veterans; however, such an explanation is not consistent with recent research (Maguen et al., 2012). A second possibility is that the low base rate of MST (12.2%) and the high rate of childhood maltreatment (71.3%) may have influenced our ability to detect the hypothesized interaction. Third, prior research has suggested that male and female veterans may display differences in psychopathology stemming from MST, with women demonstrating greater risk for comorbid disorders and trauma-related disorders, such as PTSD and dissociative disorders (Kimerling et al., 2007). Lastly, the current study used a more recent measure of critical warzone experiences, considerably longer measures of MST and childhood maltreatment, and a different measure of PTSD symptoms. It is possible that the stronger effects for combat exposure and childhood maltreatment observed in the present study were partly responsible for the discrepant findings.

Several limitations should be noted when interpreting these findings, including the cross-sectional design of this study, the use of self-report, and the retrospective assessment of

traumatic experiences. Furthermore, MST was broadly defined to include both verbal and physical sexual violence in this study; however, this definition is consistent with those used by Scott et al. (2014) and the VA. Despite these limitations, we believe that the present research adds to the growing body of literature demonstrating that multiple types of trauma influence mental health outcomes among returning veterans.

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Table 1

Summary of the hierarchical regression models examining the effects of military sexual trauma and combat exposure on symptoms of PTSD, depression, anxiety, and stress in male veterans (N = 181).

Step	Variable	PTSD		Depression		Anxiety		Stress	
		R^2	β	R^2	β	R^2	β	R^2	β
1		0.08		0.04		0.09		0.04	
	Age		−0.11		−0.09		−0.14		−0.09
	Education		−0.14		−0.13		−0.15		−0.10
	Hispanic		0.09		0.00		0.02		0.00
	Black		0.12		−0.01		−0.11		0.05
	Reserves/Guard		0.10		0.13		0.16		0.02
	Relationship Status		−0.04		−0.01		−0.02		0.00
2		0.34		0.23		0.25		0.34	
	Age		0.01		0.00		−0.04		0.03
	Education		−0.14		−0.14		−0.16		−0.10
	Hispanic		0.09		0.01		0.02		−0.01
	Black		0.05		−0.06		−0.17		−0.03
	Reserves/Guard		0.15		0.18		0.21 [*]		0.07
	Relationship Status		−0.11		−0.08		−0.08		−0.05
	Child Maltreatment		0.22 ^{**}		0.17		0.19 [*]		0.24 [*]
	MST		0.06		0.01		0.06		0.14
	Combat Exposure		0.52 ^{***}		0.44 ^{***}		0.44 ^{***}		0.49 ^{***}
3		0.01		0.00		0.00		0.01	
	Age		0.00		0.00		−0.04		0.02
	Education		−0.14		−0.14		−0.16		−0.10
	Hispanic		0.09		0.00		0.02		−0.01
	Black		0.05		−0.06		−0.17		−0.03
	Reserves/Guard		0.17		0.17		0.22 [*]		0.10
	Relationship Status		−0.10		−0.08		−0.08		−0.04
	Child Maltreatment		0.22 ^{**}		0.17		0.19 [*]		0.24 [*]
	MST		0.07		0.01		0.06		0.15
	Combat Exposure		0.56 ^{***}		0.43 ^{***}		0.45 ^{***}		0.54 ^{***}
	MST × Combat		−0.09		0.01		−0.04		−0.13
	Total R^2	0.43		0.27		0.34		0.40	

Note:

MST = military sexual trauma; PTSD = posttraumatic stress disorder.

*
 $p < .05$

**
 $p < .01$

 $p < .001$

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