

## The Influence of Military Sexual Trauma on Returning OEF/OIF Male Veterans

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Military sexual trauma (MST) encompasses experiences of sexual harassment and/or assault that occur during active duty military service. MST is associated with postdeployment mental health, interpersonal, and physical difficulties and appears to be more influential in the development of posttraumatic stress disorder (PTSD) than other active duty experiences, including combat, among women veterans. Although some literature suggests that men who experience MST also evidence significant postdeployment difficulties, research in this area is lacking. The current study evaluated a large sample of returning male veterans ( $N = 961$ ) who served in Iraq and/or Afghanistan. Veterans were referred for treatment in a trauma and anxiety specialty clinic at a large VA hospital. Of this sample, 18% ( $n = 173$ ) reported MST perpetrated by a member of their unit. Results indicated veterans who reported MST were younger ( $p = .001$ ), less likely to be currently married ( $p < .001$ ), more likely to be diagnosed with a mood disorder ( $p = .040$ ), and more likely to have experienced non-MST sexual abuse either as children or adults ( $p < .001$ ). Analyses revealed that MST was negatively associated with postdeployment social support ( $p < .001$ ) and positively associated with postdeployment perceived emotional mistreatment ( $p = .004$ ), but was not associated with postdeployment loss of romantic relationship ( $p = .264$ ), job loss ( $p = .351$ ), or unemployment ( $p = .741$ ) after statistically controlling for other trauma exposures and current social support. Results reflect the detrimental associations of MST on male veterans and the need for more research in this area. These findings also highlight the need for treatment interventions that address social and interpersonal functioning in addition to symptoms of depressive disorders.

*Keywords:* male veterans, military sexual trauma, mood disorders, postdeployment adjustment, substance abuse

Military sexual trauma (MST) is a term commonly used within the Veterans Health Administration (VHA) to refer to sexual harassment and/or sexual assault experienced by military personnel during active duty service (U.S. Code, Title 38, §1720D; Kimerling et al., 2007). MST encompasses gender harassment (discrimination based on gender), unwanted sexual attention, sexual coercion (the use of job-related threats or benefits to coerce a

sexual relationship), and sexual assault (Fitzgerald, 1996). Research indicates that a large percentage of veterans have experienced MST (Kimerling et al., 2007; Lipari & Lancaster, 2002; Vogt et al., 2005) and that MST has a detrimental effect on mental and physical health (Fontana & Rosenheck, 1998; Katz et al., 2007; Kimerling et al., 2007; Skinner et al., 2000; Street et al., 2007; Surís et al., 2007). Existing research examining the impact

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of MST on veterans postdeployment emphasizes the link between MST and high rates of mental health diagnoses such as posttraumatic stress disorder (PTSD), depression, anxiety, and substance abuse disorders. The research also highlights the compounding negative impact of MST on military personnel who are already subjected to significant environmental and emotional stressors (i.e., combat, distance from family, etc.) while on active duty. Less is known about the influence of MST on overall well-being, including interpersonal and social functioning.

To date, research addressing the influence of MST in military personnel has generally focused on women (Skinner et al., 2000; Wolfe et al., 1998). High prevalence rates of MST among women in the military have been clearly documented (Goldzweig et al., 2006; Kimerling et al., 2007; Kimerling et al., 2010; Yaeger et al., 2006). A recent study examined a large number of Operation Iraqi Freedom (OIF) and Enduring Freedom (OEF) veterans and found that 31% of female veterans reported MST (Maguen et al., 2012). Among women, MST has been shown to be associated with depression, eating disorders, alcohol abuse problems, substance abuse disorders, and poorer physical health (Kimerling et al., 2007; Skinner et al., 2000; Surís et al., 2007). MST may also be a greater contributing factor to the development of symptoms related to posttraumatic stress disorder (PTSD) than stress related to other active duty experiences, including combat exposure (Dutra et al., 2010; Fontana & Rosenheck, 1998; Kang, Dalager, Mahan, & Ishii, 2005; Suris et al., 2004). Although MST is not a mental health diagnosis, research clearly indicates that MST is a significant trauma that often precedes subsequent mental health diagnoses (i.e., PTSD, substance abuse disorders, mood disorders) as well as poorer overall postdeployment adjustment and quality of life.

Among female veterans, experiences of MST are associated with complex posttraumatic reactions, including negative impacts on interpersonal relationships, difficulties with emotional regulation, and negative perceptions of self as well as somatic complaints and dissociation (Luterek et al., 2011). Katz and colleagues (2007) reported on the postdeployment and psychotherapy experiences of 18 treatment-seeking, returning female veterans. A large proportion of women in the study reported MST and the most common treatment themes involved processing experiences that occurred during active duty service, difficulties within their interpersonal relationships, and experiences of feeling "lost, unmotivated, and unproductive" (p. 243), often in a vocational sense. Results of these studies highlight the importance of research that extends beyond diagnostic symptom presentations of veterans who experience MST.

Men also experience and report MST, although research in this area is lacking. Self-reported rates of sexual harassment among active duty men range from 27% to 38%, with approximately 1% of men reporting sexual assault (Maguen et al., 2012; Street et al., 2008). Similarly, among male veterans who engage in health care services through the VHA, approximately 1.1% report sexual assault during their time in the military (Kimerling et al., 2007). Despite lower overall prevalence rates of MST in men versus women, actual numbers of identified cases are very similar, related to the higher percentage of men in the military (Hoyt, Rielage, & Williams, 2012). Additionally, these rates are likely conservative estimates of the prevalence of MST among male veterans given stigma related to reporting MST, especially in the context of expected gender roles within a military and veteran culture (Tur-

chik & Edwards, 2012). For example, research indicates that men may view unwanted sexual experiences as "not important enough to report to authorities" (Murdoch et al., 2007, p. 718; Settles et al., 2012). Moreover, men with MST are less likely to receive MST-related mental health care compared with female veterans, with concerns related to stigma and gender role expectations being the most frequently reported barriers to treatment in male veterans with MST (e.g., fear of not being believed, fear of being judged as gay, belief that men should not be emotionally affected by sexual assault; Turchik et al., 2013).

Stereotypically masculine characteristics such as emotional control, strength, and self-sufficiency tend to be emphasized in the military and may at times be necessary for completion of military missions; however, this emphasis may be accompanied by a concomitant devaluing of traditionally "non-masculine" characteristics such as emotionality or homosexuality, which may contribute to the stigma of reporting MST or seeking treatment (Bell, Turchik, & Karpenko, 2014; Hoyt, Rielage, & Williams, 2012). Further, perceived nonconformity to expected masculine gender role norms is associated with significant conflict and stress (Mahalik et al., 2003). Male veterans may be especially vulnerable to embarrassment or self-blame, which can be exacerbated by the endorsement of myths regarding masculinity or sexual identity after experiencing MST (e.g., "real men" cannot be overpowered and raped, only gay men may be victims of rape, gay/bisexual men are immoral and deserve to be assaulted, being sexually assaulted by another man causes homosexuality; Hoyt, Rielage, & Williams, 2012; Turchik & Edwards, 2012). Research focusing on the influence of MST on male veterans is especially important given that the already concerning rates of reported MST among males is likely a significant underrepresentation of actual occurrences.

The small body of research examining the influence of MST on the postdeployment mental health functioning of male veterans suggests that those male veterans who experienced MST evidence marked increases in postdeployment symptoms of psychological maladjustment and functional impairment (Fitzgerald et al., 1999; Murdoch et al., 2007; Settles et al., 2012; Street et al., 2007; Street et al., 2008). Within a sample of Army and active duty servicemen, increased symptoms of PTSD, depression, anxiety, and somatic complaints were more prevalent among those who experienced sexual stressors including sexual harassment and/or sexual assault (Murdoch et al., 2007). Men who experienced sexual harassment also exhibited difficulties related to employment and utilized sick days as well as leave without pay in a manner similar to women who experienced sexual harassment (Murdoch et al., 2007).

A comprehensive understanding of the impact of MST on male veterans has yet to be developed. There is need for examination of the influence of MST in relation to symptoms of depression, anxiety, and PTSD, and additional research is needed to elucidate the impact of MST on male veterans upon their return to civilian life. Few studies have examined the influence of MST on the overall functioning and well-being of male veterans postdeployment (i.e., interpersonal relationships, social support, and vocational performance). Furthermore, no studies could be identified regarding male veterans who have experienced MST that would be comparable to the work by Luterek and colleagues (2011) or Katz et al. (2007) for female veterans.

In the absence of research focused on male veterans who have experienced MST, the current study sought to examine the clinical

profiles and postdeployment functioning of OIF/OEF male veterans who reported MST. We hypothesized that Men who experienced MST would be diagnosed with mood disorders, substance abuse disorders, and PTSD at significantly higher rates than male veterans who did not report MST (Hypothesis 1); MST would predict poorer interpersonal functioning in terms of postdeployment support, emotional mistreatment, and the loss of a relationship with a significant other (Hypothesis 2); and MST would predict poorer vocational functioning (unemployment and job loss; Hypothesis 3).

## Method

### Participants

A large sample ( $N = 961$ ) of returning male veterans completed psychosocial and diagnostic mental health clinical evaluations as well as completing a risk and resiliency self-report measure at a large VA Medical Center between May 2004 and March 2008. All veterans completed at least one tour of active duty in Iraq or Afghanistan.

### Measures

**The Deployment Risk and Resilience Inventory (DRRI).** The DRRI is a collection of self-report measures designed to assess several risk and protective factors that veterans experienced before, during, and after deployment (King, King, & Vogt, 2003). The DRRI scales consists of predeployment/prewar factors (2 scales), deployment/war-zone factors (10 scales), and post deployment/post-war factors (2 scales). Selected subscales and single items from the DRRI were utilized in this study and are described below.

**Military sexual trauma.** MST was measured by the 7-item *sexual harassment scale* (within the *relationships within unit scale*) from the DRRI. The sexual harassment scale is used to assess exposure to sexual harassment (i.e., gossip/rumors regarding sexual behavior, crude sexual remarks, quid-pro-quo), threats for not engaging in sexual activities, and/or sexual assault (i.e., unwanted sexual touching, attempted touching/rape, and/or rape) from unit leaders or unit members during deployment. Example items include, "While I was deployed, unit leaders or other unit members made crude and offensive sexual remarks directed at me either publicly or privately; made unwanted attempts to stroke or fondle me; forced me to have sex." Items on this scale demonstrate relatively high internal consistency (Cronbach's  $\alpha = .86$ ; King et al., 2006). Responses ranged from 1 (*never*) to 4 (*many times*). Given the VHA definition of MST that includes sexual harassment and/or trauma (U.S. Code, Title 38, §1720D), veterans were included in the MST group if they endorsed any item on the sexual harassment scale. Our sample's sexual harassment scale had a high overall internal consistency (Cronbach's  $\alpha = .72$ ).

### Other Trauma Exposure

**Predeployment trauma.** Experiences of physical and sexual assault predeployment were assessed using two items from the DRRI. The DRRI *predeployment life events scale* contains one item that assesses for physical trauma (item 14; "Before I was deployed, I had been physically injured by another person, for example, hit, kicked, beaten up") and one item that assesses for

sexual trauma (item 15; "Before I was deployed I experienced unwanted sexual activity as a result of force, threat of harm, or manipulation"). Both items are scored on a dichotomous scale (*yes* or *no*). The full predeployment life events scale was not used because of our interest in identifying veterans with predeployment experiences of physical or sexual trauma. In order to statistically control for trauma exposure other than MST, we used a modified predeployment life events scale (omitting items 14 and 15) as a covariate in analyses to control for other predeployment trauma exposures. Our sample predeployment life events scale had a high overall internal consistencies when the designated items were included (Cronbach's  $\alpha = .76$ ) and when the designated items were excluded (Cronbach's  $\alpha = .70$ ).

**Combat trauma.** Given that all participants served at least one tour of duty in Iraq or Afghanistan, trauma exposure that could occur during combat operations was measured by two scales on the DRRI (the *combat experiences scale* and the *postbattle experiences scale*). The *combat experiences scale* is a 15-item self report measure used to assess exposure to combat experiences such as firing a weapon, being fired on, or witnessing injury or death. Items on this scale have a relatively high internal consistency (Cronbach's  $\alpha = .85$ ; King et al., 2006; our sample Cronbach's  $\alpha = .91$ ). The 15-item *postbattle experiences scale* was used to assess exposure to the aftermath of combat such as witnessing the destruction of land, villages, homes, and animals, interacting with prisoners of war, or caring for injured/dying soldiers. This scale has a relatively high internal consistency (Cronbach's  $\alpha = .86$ ; King et al., 2006; our sample Cronbach's  $\alpha = .93$ ). Responses on these scales were dichotomous (present or absent) and were summed to obtain a total score that ranged from 0 to 15, with higher scores indicating greater exposure to combat or to consequences of war.

### Postdeployment Interpersonal Functioning

**Postdeployment social support.** Social support was measured using the *postdeployment support scale* of the DRRI, a 15-item scale that assesses perceived support from family, friends, coworkers, employers, and the community postdeployment. Example items include, "Among my friends or relatives, there is someone who makes me feel better when I am feeling down," and "I am carefully listened to and understood by family members or friends." Responses on this scale range from one (*strongly disagree*) to five (*strongly agree*), with a total score ranging from 15 to 75 and higher scores indicating higher levels of social support (King et al., 2006). Items on this scale have a relatively high internal consistency (Cronbach's  $\alpha = .82$ ; King et al., 2006; our sample Cronbach's  $\alpha = .81$ ).

**Other aspects of interpersonal functioning.** Two single items from the DRRI were used to further evaluate other aspects of interpersonal functioning postdeployment, specifically, loss of romantic relationships and quality of relationships/emotional mistreatment. Since previous research indicates that MST interferes with functioning in romantic relationships, a single item from the postdeployment life events scale was utilized to evaluate the loss of an important romantic relationship postdeployment. Item 16 evaluates whether the veteran has "gone through a divorce or been left by a partner or significant other." Another important aspect of interpersonal functioning involves the quality of one's relationships. One item assessed for emotional mistreatment postdeploy-

ment (Item 12; "Since returning home, I have been emotionally mistreated, for example, shamed, embarrassed, ignored or repeatedly told I was no good.") This item was utilized to evaluate the overall quality of veterans' interpersonal interactions postdeployment. Responses to both items are dichotomous (*yes* or *no*). Our sample postdeployment life events scale had a high overall internal consistencies both when the designated items were included (Cronbach's  $\alpha = .73$ ) and when the designated items were excluded (Cronbach's  $\alpha = .70$ ).

**Postdeployment vocational functioning.** Two single items from the *postdeployment life events scale* were utilized to evaluate vocational functioning. Both items require a dichotomous (*yes* or *no*) response. Item 11 assesses for difficulties obtaining employment ("Since returning home, I have been unemployed and seeking unemployment for at least 3 months"). Item 15 evaluates whether veterans have lost a job postdeployment ("Since returning home, I have lost my job"). Our sample postdeployment life events scale had a high overall internal consistencies both when the designated items were included (Cronbach's  $\alpha = .73$ ) and when the designated items were excluded (Cronbach's  $\alpha = .70$ ).

**Diagnostic information.** Dichotomous variables were used to assess the presence or absence of PTSD, other anxiety and mood disorders, and substance use disorders. Veterans were classified based on the clinical diagnostic categories of psychotic spectrum disorders, bipolar disorders, mood disorders, PTSD, other anxiety disorders, panic disorders, adjustment disorders, and the substance use disorders of abuse or dependence to alcohol, tobacco, cannabis, or cocaine. Those classified as having a psychotic spectrum disorder met *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (*DSM-IV-TR*) criteria for Schizophrenia, Schizoaffective Disorder, Delusional Disorder, or Psychosis Not Otherwise Specified (NOS). Those classified as having a Bipolar Disorder met *DSM-IV-TR* criteria for Bipolar I, Bipolar II, Cyclothymia, or Bipolar NOS. Those classified as having a mood disorder met *DSM-IV-TR* criteria for Major Depressive Disorder, Dysthymia, or Depression Not Otherwise Specified (NOS). Those classified as having an Other Anxiety disorder met *DSM-IV-TR* criteria for Generalized Anxiety Disorder, Obsessive-Compulsive Disorder, or Anxiety NOS. Those classified as having a Panic disorder met *DSM-IV-TR* criteria for Panic Disorder with or without Agoraphobia.

## Procedure

Veterans participated in clinical mental health evaluations, which were conducted by PTSD providers. The mental health evaluations consisted of a psychosocial and diagnostic assessment that spanned 1.5 to 2 hours. In completing the diagnostic evaluation, providers followed a structured template (developed for general intakes) covering full diagnostic criteria for major *DSM-IV* disorders. Veterans also completed the Deployment Risk and Resiliency Inventory (DRRI) as part of the intake assessment process. Five psychiatrists, nine staff psychologists, and four psychology postdoctoral fellows under the supervision of a staff psychologist completed the diagnostic evaluations. Referrals for the mandated evaluations were received through OEF/OIF postdeployment screenings, primary care clinics, as well as settings outside of the VA. Therefore, this was a broad sampling of community dwelling OEF/OIF veterans, not a sample solely composed of treatment

seeking individuals. Following IRB approval, researchers reviewed and extracted information from veterans' medical records. Coders received training regarding extraction methods and a high interrater reliability was established among four coders on 10 electronic records ( $ICC = .99$ ; Shrout & Fleiss, 1979). Two additional coders were later trained and established high interrater reliability with the original coders ( $ICC = .98$ ). All social, demographic, and clinical data were extracted from the medical record via standardized chart review procedures. All DRRI data were directly extracted from the completed self-report questionnaires.

## Data Analysis

Social and demographic factors were assessed by *t* test for the single continuous variable or by the Kruskal-Wallis test for categorical variables for differences between persons with and without a history of MST. Those variables resulting in a statistically significant difference were included as covariates in all subsequent regression analyses. Next we report on the percentage of the MST group reporting each aspect of sexual harassment. The non-MST group is not included in this second reporting as by definition the non-MST group had not endorsed any sexual harassment items used for identifying the MST group.

To evaluate the association of MST on postdeployment social support we conducted a hierarchical linear regression. The dependent variable was the total score of the postdeployment social support scale. On step 1 we entered those social factors, demographic factors, and clinical diagnoses identified as having a difference between those with versus without MST. On step 2 we entered the covariates of predeployment history of physical abuse, predeployment history of sexual abuse, and predeployment history of nonphysical or sexual abuse related traumas. On step 3 we entered deployment stressors of combat experiences and postcombat experiences. On step 4 we entered the deployment sexual harassment total score.

The final four analyses all involve hierarchical logistic regression. On step 1 we entered those social factors, demographic factors, and clinical diagnoses identified as having a difference between those with versus without MST. On step 2 we entered the covariates of predeployment history of physical abuse, predeployment history of sexual abuse, and predeployment history of nonphysical or sexual abuse related traumas. On step 3 we entered deployment stressors of combat experiences and postcombat experiences. On step 4 we entered the postdeployment social support score and a modified postdeployment life events score (omitting the four dependent variables being evaluated). On step 5 we entered the deployment sexual harassment total score. The first logistic regression examined the association of MST with Perceived Emotional Mistreatment, with the dependent variable being Yes/No for the perception of emotional mistreatment. The second logistic regression examined the association of MST with Loss of Romantic Relationship, with the dependent variable being Yes/No for the loss of a romantic relationship. The third logistic regression examined the association of MST with Job Loss, with the dependent variable being Yes/No for the loss of a job. The final logistic regression examined the association of MST with Unemployment, with the dependent variable being Yes/No for unemployment.

To account for the increased chance of Type I error as a result of multiple testing, we used the Bonferroni Correction resulting in a new  $\alpha = .007$  to guide our interpretations of results.

## Results

### Social and Demographic Factors

The overall sample was ethnically and racially diverse (51% Caucasian, 25% African American, 19% Hispanic, 2% Asian, and

3% mixed race or "other"), with an average age of 29 years ( $SD = 7.3$ ). Of the sample, 44% were married, 36% were single (never married), 19% were divorced/separated, and less than 1% were widowed. Demographic information of participants is summarized in Table 1.

Among the 961 OIF/OEF male veterans included in the study, 18.0% ( $n = 173$ ) reported MST as determined by the DRRI Sexual Harassment Scale as compared with only 0.3% ( $n = 3$ ) having been reported during a clinical diagnostic interview. The specific types of MST experienced among veterans ranged from "crude

Table 1  
Demographic Characteristics for 961 Male OEF/OIF Veterans Overall and by Military Sexual Trauma Grouping

Characteristic	Full sample ( $n = 961$ )	MST ( $n = 173$ )	No MST ( $n = 788$ )	$p$ value
Age				
Mean ( $SD$ ) overall sample	29.2 (7.3)	27.6 (6.6)	29.6 (7.4)	.001**
Age cohort				<.001**
Percent 18–24 ( $n$ )	31.0% (298)	45.1% (78)	27.9% (220)	
Percent 25–29 ( $n$ )	35.5% (341)	29.5% (51)	36.8% (290)	
Percent 30–39 ( $n$ )	21.6% (208)	18.5% (32)	22.3% (176)	
Percent 40+ ( $n$ )	11.9% (114)	6.9% (12)	12.9% (102)	
Race/Ethnicity				.879
White ( $n$ )	50.8% (488)	48.6% (84)	51.3% (404)	
African-American ( $n$ )	25.4% (244)	29.5% (51)	24.5% (193)	
Hispanic ( $n$ )	19.1% (184)	18.5% (32)	19.3% (152)	
Asian ( $n$ )	1.8% (17)	1.7% (3)	1.8% (14)	
Other ( $n$ )	2.9% (28)	1.7% (3)	3.2% (25)	
Marital status				<.001**
Never married ( $n$ )	36.3% (349)	46.2% (80)	34.1% (269)	
Married ( $n$ )	43.9% (422)	31.2% (54)	46.7% (368)	
Separated ( $n$ )	6.1% (59)	7.5% (13)	5.8% (46)	
Divorced ( $n$ )	13.3% (128)	15.0% (26)	12.9% (102)	
Widowed ( $n$ )	0.3% (3)	0.0% (0)	0.4% (3)	
Education				.620
Grades 9 through 11 ( $n$ )	0.2% (2)	0.6% (1)	0.1% (1)	
High school/GED ( $n$ )	32.3% (310)	31.8% (55)	32.4% (255)	
Some college ( $n$ )	55.2% (530)	57.8% (100)	54.6% (430)	
Completed college + ( $n$ )	12.4% (119)	9.8% (17)	12.9% (102)	
Psychiatric diagnoses				
Psychotic spectrum ( $n$ )	0.5% (5)	0.0% (0)	0.6% (5)	.290
Mood disorders ( $n$ )	35.0% (366)	41.4% (79)	33.5% (287)	.040*
Bipolar disorders ( $n$ )	0.5% (5)	0.0% (0)	0.6% (5)	.290
PTSD ( $n$ )	28.2% (295)	30.4% (58)	27.7% (237)	.457
Other anxieties ( $n$ )	19.7% (206)	24.1% (46)	18.7% (160)	.090
Panic disorder ( $n$ )	7.3% (76)	6.3% (12)	7.5% (64)	.565
Adjustment disorder ( $n$ )	4.3% (45)	3.7% (7)	4.4% (38)	.633
Alcohol abuse/dependence ( $n$ )	16.5% (172)	17.9% (34)	16.1% (138)	.555
Tobacco abuse/dependence ( $n$ )	9.6% (100)	10.5% (20)	9.3% (80)	.617
Cannabis abuse/dependence ( $n$ )	2.6% (27)	3.7% (7)	2.3% (20)	.293
Cocaine abuse/dependence ( $n$ )	1.1% (12)	1.0% (2)	1.2% (10)	.885
Physical abuse				.096
None reported ( $n$ )	87.5% (841)	83.8% (145)	88.3% (696)	
As child ( $n$ )	7.4% (71)	8.7% (15)	7.1% (56)	
As adult ( $n$ )	5.0% (48)	7.5% (13)	4.4% (35)	
Both as child and adult ( $n$ )	0.1% (1)	0.0% (0)	0.1% (1)	
Sexual abuse (not MST)				<.001**
None reported ( $n$ )	98.1% (943)	94.8% (164)	98.9% (779)	
As child ( $n$ )	1.6% (15)	4.6% (8)	0.9% (7)	
As adult ( $n$ )	0.2% (2)	0.6% (1)	0.1% (1)	
Both as child and adult ( $n$ )	0.1% (1)	0.0% (0)	0.1% (1)	
Combat trauma				
Mean ( $SD$ ) combat experiences	7.3 (4.7)	7.3 (4.6)	7.3 (4.7)	.927
Mean ( $SD$ ) post-battle experiences	7.7 (5.2)	7.8 (5.0)	7.6 (5.2)	.760

\*  $p < .05$ . \*\*  $p \leq .007$ .

comments" to sexual assault and are summarized in Table 2. Veterans who reported MST were significantly less likely to be married than those who did not ( $p < .001$ ). No statistically significant differences were observed concerning the distribution of participants across race/ethnicity, educational level, or a history of physical abuse ( $p = .096$ ). Veterans reporting MST were more likely to report a history of either childhood or adult non-MST sexual abuse ( $p < .001$ ) than did those veterans not reporting MST.

## Hypotheses

**Hypothesis 1.** Men who experienced MST would be diagnosed with mood disorders, substance abuse disorders, and PTSD at significantly higher rates than male veterans who did not report MST.

Veterans who reported MST were significantly more likely to have a mood disorder than those who did not report MST ( $p = .040$ ; Kruskal-Wallis test for categorical variables). No statistically significant distinctions were observed concerning any other clinical psychiatric disorder (all other diagnoses at  $p \geq .090$ ).

**Hypothesis 2.** MST would predict poorer interpersonal functioning in terms of postdeployment support, emotional mistreatment, and the loss of a relationship with a significant other.

Postdeployment social support was examined in relation to reported MST among male veterans. Hierarchical linear regression analysis revealed that MST remained a significant negative predictor of postdeployment support ( $p < .001$ ) even after statistically controlling for age, marital status, the presence of a current mood disorder, a history of physical or sexual abuse, a history of other nonabuse traumas, combat experiences (e.g., contact with the enemy), and postcombat experiences (e.g., exposure to injured/deceased people following battle) (see Table 3). When MST was added into the regression model following the covariates, the model accounted for an additional 2.2% of the observed variance in perceived postdeployment support. This final model represented 17.2% of the total variance.

Hierarchical logistic regression analyses were conducted to investigate the relationship between MST and indicators of postdeployment interpersonal functioning, including perceived emotional mistreatment (see Table 4) and the loss of a significant romantic relationship (e.g., divorce, being left by a romantic partner). Findings from our statistical analyses indicated that MST was signifi-

cantly associated with a greater tendency to experience emotional mistreatment postdeployment ( $p = .004$ ).

Contrary to our prediction, MST was not significantly associated with the postdeployment loss of a significant romantic relationship. Regarding loss of a significant romantic relationship, after controlling for current marital status, having a currently diagnosed mood disorder ( $p = .005$ ), worse postcombat experiences ( $p = .045$ ), and more negative and stressful life events ( $p < .001$ ) were the associated factors.

**Hypothesis 3.** MST would predict poorer vocational functioning (unemployment and job loss).

Hierarchical logistic regression analyses were conducted to investigate the relationship between MST and indicators of vocational functioning, including job loss and unemployment. Contrary to our prediction, MST was not significantly associated with job loss or unemployment. Concerning postdeployment job loss, greater ratings of stressful life events (odds ratio = 1.373,  $p < .001$ ) was associated with a greater likelihood of job loss, whereas greater ratings of social support were associated with a decreased likelihood of job loss (odds ratio = 0.963,  $p < .001$ ). Finally, regarding unemployment, greater ratings of stressful life events (odds ratio = 1.253,  $p < .001$ ) were associated with a greater likelihood of unemployment, whereas greater ratings of social support (odds ratio = 0.971,  $p < .001$ ) and increasing age (odds ratio = 0.974,  $p < .021$ ) were associated with a decreased likelihood of unemployment.

## Discussion

The majority of the extant literature on male veterans' experiences of MST focuses on the evaluation of specific diagnostic symptoms following MST. However, in addition to diagnostic symptoms, it is important to examine factors related to overall functioning and well-being, such as interpersonal processes in close relationships. The current study examined the demographic and diagnostic profiles as well as interpersonal and vocational postdeployment functioning in a large sample of OIF/OEF men who reported MST. We hypothesized that MST would predict functional impairments in social support, interpersonal relationships, and vocational experiences. Further, we expected that MST would predict significantly higher rates of PTSD, mood, and substance abuse disorders.

Table 2  
Experiences of Sexual Harassment Among Those Veterans Reporting Military Sexual Trauma  
( $N = 173$ )

Description of military sexual trauma	<i>n</i>	Percentage
Gossiped about sex life/spread rumors about sexual activities.	164	87.5%
Made crude and offensive sexual remarks directed at me.	100	57.8%
Offered reward/special treatment to take part in sexual behavior.	19	11.0%
Threatened with retaliation for not being sexually cooperative.	14	8.1%
Member of unit made unwanted attempts to stroke/fondle.	19	11.0%
Member of unit made unwanted attempts to have sex.	15	8.7%
Forced to have sex.	9	5.2%

Note. Experiences of military sexual trauma (MST) were reported on the DRRI *sexual harassment scale*, a subscale within the *relationships within unit scale*.

Table 3  
*Military Sexual Trauma's Association With Post-Deployment Social Support Controlling for Demographic, Predeployment, and Combat-Related Experiences Using Hierarchical Linear Regression*

Step	$R^2$	Adjusted $R^2$	$F(df)$	Significant $F$ change	Overall $p$ value
1	.117	.114	(3,957) = 42.206	<.001	<.001
2	.137	.132	(6,954) = 25.256	<.001	<.001
3	.150	.142	(8,952) = 20.937	.001	<.001
4	.172	.164	(9,951) = 21.892	<.001	<.001

  

Model	$b$	$SE b$	$\beta$	$p$ value
Constant	67.207	2.294	—	<.001**
Step 1				
Age	-.011	.046	-.008	.812
Marital status	-.064	.186	-.011	.729
Mood disorder diagnosis	-6.228	.684	-.282	<.001**
Step 2				
Predeployment physical trauma	-.387	.818	-.016	.636
Predeployment sexual trauma	-1.004	1.445	-.022	.487
Predeployment other trauma	-.440	.160	-.097	.006**
Step 3				
Combat experiences	.225	.126	.100	.075
Postcombat experiences	-.388	.115	-.190	.001**
Step 4				
Sexual harassment total score	-.933	.186	-.152	<.001**

Note. Only the results from the final fourth step are shown ( $N = 961$ ).

\*\* $p \leq .007$ .

Our results indicate that MST was a significant predictor of lower social support, even after statistically controlling for other trauma exposure, and was significantly associated with emotional mistreatment postdeployment. One potential explanation for our finding that male victims of MST report lower social support and perceive greater levels of emotional mistreatment postdeployment centers around the conceptualization of MST as a significant rupture within a relationship that is expected to serve as a protective factor. Victims of MST often continue to work and potentially live with the perpetrator(s) as well as the perpetrator(s) friend(s), sometimes on a daily basis without the option to leave (Allard et al., 2011; Katz et al., 2007). Further, within the military, victims may depend on perpetrators of MST for vocational resources including promotions, duty assignments, and various administrative issues in addition to physical safety when under attack (Katz et al., 2007).

The context of the military unit as a family, and the military more broadly as a trusted institution, must also be considered (Smith & Freyd, 2013). MST that occurs within a military unit is a serious violation of norms, expectations, and trust. Members of one's unit are expected to serve protective and supportive roles in the extreme cases of danger and combat exposure. Experiences of MST within a unit are likely to lead to emotional distress associated with sexual violence but also to an experience of a significant betrayal within a relationship that supposedly serves the specific function of keeping one safe (Smith & Freyd, 2013). Traumatic events involving betrayal within a trusted or depended-on relationship are among the most damaging types of traumas, and are related to poorer mental health outcomes and interpersonal difficulties (Goldsmith, Freyd, & DePrince, 2012; Kaehler & Freyd,

2009). MST within a unit constitutes a violation of security and is likely comparable with a violation of trust that would occur within the context of close family relationships. Conceptualizing MST in this way allows for clinicians and potentially family members/friends of victims to understand why those who reported MST would attempt to isolate themselves from other close relationships in an attempt to feel safe. The link between betrayal trauma and interpersonal difficulties—and borderline personality disorder at the extreme—may also help explain the link between MST and emotional mistreatment postdeployment (e.g., difficulties distinguishing healthy from unsafe relationships; Smith & Freyd, 2013).

Another explanation for our finding of lower social support in men with MST may be that men are more reticent to disclose sexual trauma compared with other forms of trauma because of fears that others will question their masculinity or sexuality. Indeed, the prevalence of rape myths contributes to the likelihood that others will blame the victim for not preventing the assault and provide less social support in turn than for other types of trauma (Turchik & Edwards, 2012). Feelings of shame, humiliation, or of being “damaged” in some way may also contribute to a desire to isolate (Bell, Turchik, & Karpenko, 2014). Given these interpersonal concerns, group interventions may be especially helpful for male veterans who have experienced MST, as well as therapies focused on interpersonal process and effectiveness (Hoyt, Rielage, & Williams, 2012).

Certain mood disorders (such as depression) can be conceptualized as a sadness and/or emptiness that can occur after a significant loss (Gabbard, 2000). Those who experience MST are at risk for experiencing loss in several ways. MST constitutes not only a loss of control in a specific situation but also a loss of trust for

Table 4  
*Military Sexual Trauma's Association With Post-Deployment Perceived Emotional Mistreatment Controlling for Demographic, Predeployment, Combat-Related, and Postdeployment Experiences Using Hierarchical Logistic Regression*

Step	Model $\chi^2$	Model <i>p</i> value	Nagelkerke <i>R</i> <sup>2</sup>		
1	(6) 59.011	<.001	.111		
2	(9) 80.727	<.001	.150		
3	(11) 81.969	<.001	.152		
4	(13) 154.353	<.001	.277		
5	(14) 161.965	<.001	.289		

  

Model	<i>p</i> value	Odds ratio	95% CI lower	95% CI upper
Constant	.107	n.s.	—	—
Step 1				
Age	.064	n.s.	—	—
Marital status				
Married (reference)	—	—	—	—
Separated	.002**	3.114	1.519	6.384
Divorced	.972	n.s.	—	—
Widowed	.999	n.s.	—	—
Never married	.873	n.s.	—	—
Mood disorder diagnosis	.012*	1.781	1.134	2.799
Step 2				
Predeployment physical trauma	.357	n.s.	—	—
Predeployment sexual trauma	.089	n.s.	—	—
Predeployment other trauma	.398	n.s.	—	—
Step 3				
Combat experiences	.412	n.s.	—	—
Postcombat experiences	.417	n.s.	—	—
Step 4				
Postdeployment social support	.002**	.968	.947	.988
Modified postdeployment life events	<.001**	1.402	1.263	1.557
Step 5				
Sexual harassment total score	.004**	1.149	1.044	1.264

Note. Only the results from the final fifth step are shown (*N* = 961). n.s. = nonsignificant.  
 \* *p* < .05. \*\* *p* ≤ .007.

fellow soldiers who are expected to serve a protective role. Additionally, loss of self-esteem, relationships, and decreases in job performance/role functioning may accompany experiences of MST. Thus, it is not surprising that these losses compounded with stigma and potential vocational consequences associated with reporting MST among male soldiers may influence increased experiences of symptoms associated with mood disorders, as indicated in these findings.

Given difficulties with postdeployment interpersonal relationships among veterans who experience trauma, we expected that MST would predict the end or loss of a significant romantic relationship postdeployment. However, MST did not predict the loss of a significant romantic relationship in this sample. These findings may speak to the intimate nature of romantic relationships and to the ability for partners to provide support and commitment through times of postdeployment readjustment. Some research indicates that significant others can be a source of motivation and support for returning veterans that facilitates help-seeking (e.g., Sayer et al., 2009). Perhaps veterans in this sample were influenced by their significant others when considering and beginning treatment. Another explanation for this finding is that those who reported MST were significantly more likely to be single than males who did not. Future research is needed to examine whether our findings are generalizable as well as the general influence of

romantic relationships among returning male veterans who experience MST.

Contrary to our predictions, MST was not significantly associated with veteran job loss or unemployment. It is possible that interpersonal concerns are more prominent for veterans who have experienced MST whereas employment is less affected. Alternatively, given these were recently returning veterans, it is possible that there had not been sufficient time to observe significant differences in employment experiences that might develop postdeployment between veterans who did or did not experience MST.

Findings from this study are particularly relevant for those providing treatment to returning male veterans who have experienced MST. In addition to awareness of stigma associated with MST among male veterans and likely hesitancy to seek treatment (Turchik & Edwards, 2012), it is necessary for providers to be able to apply treatment approaches in a flexible manner to address not only symptom reduction but interpersonal functioning and social stressors as well. For example, Hoyt, Rielage, and Williams (2012) described a treatment program for men who have experienced MST that integrates elements of empirically supported treatments (i.e., dialectical behavior therapy, seeking safety, and cognitive processing therapy) into a series of interventions focused on building coping skills, such as interpersonal effectiveness and emotion regulation, prior to beginning intensive trauma-focused treatment.

Group therapy is thought to be one of the most beneficial aspects of this program and similar programs through increased connection with other men with MST (Hoyt, Rielage, & Williams, 2012). Ongoing support groups, in addition to psychoeducational skills groups, may be another avenue to explore to provide continued assistance for both relational and vocational struggles based on peer support. However, there is currently a lack of empirical research on interventions for men with MST. Continued research efforts for male veterans who experience MST can better inform clinicians of postdeployment needs and treatments that are likely to be most helpful for this population.

There are several study limitations that need to be considered. Using a dichotomous (rather than dimensional) classification of PTSD in this study may not have captured veterans with subthreshold symptoms but who were still experiencing significant distress. Relatedly, this approach may yield lower rates of MST than are actually present. The study was archival in nature, and prospective data that could provide more detailed information regarding experiences of MST and postdeployment adjustment were not available. Most notably, experiences of MST were evaluated through veteran's responses on the DRRI self-report measure during routine clinical treatment. The DRRI requires that veterans report on MST that occurred within their unit; thus, experiences of MST that may have occurred outside of the unit were likely not captured in the current sample. Although most incidents of MST are thought to be perpetrated by fellow service members (Allard et al., 2011; Sadler, Booth, Cook, & Doebbeling, 2003), rates of MST reported in this study likely underestimate occurrences of MST experienced by male veterans.

It is strongly recommended that future research be conducted to estimate the prevalence of MST among male soldiers and to better understand the contexts in which MST occurs. Relatedly, limitations in sample size for specific types of MST precluded further analyses to determine whether specific types of MST (e.g., harassment, sexual assault) have a differential impact on functioning and symptom severity. Future MST research should also include sexual orientation as a demographic variable, as this information may provide a better context for interpreting study findings. Further, mental health functioning was examined at postdeployment and although we statistically controlled for predeployment abuse histories, we were not able to control for predeployment mental health concerns or symptomatology. The extent to which preexisting mental health diagnoses and concerns influence veterans' reactions to MST is unknown. Finally, some aspects of functioning were measured by single scales or single items from various scales on the DRRI. These items were used as proxy variables with the hope of increasing future research in this area.

Findings of the current study indicate that male veterans who experience MST within their unit are more likely to be diagnosed with a mood disorder. Additionally, MST is a significant predictor of interpersonal difficulties postdeployment. Although the current study has several limitations, it contributes to the current body of knowledge regarding male veterans who experience MST. Research efforts have illustrated the detrimental influence of MST on female veterans and have emphasized the need for comprehensive mental health treatment for those veterans; however, research regarding MST and male veterans lags in comparison. Results indicate the need for increased efforts to treat depression and loss associated with MST, to improve social support for these veterans,

and to address potential interpersonal and emotional experiences related to perceived emotional mistreatment.

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