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Psychological Outcomes Following Sexual Assault: Differences by Sexual Assault Setting

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Abstract

Background: Sexual assault is associated with increased psychological distress. It is possible that military sexual assault (MSA) is associated with heightened psychological distress compared to adult sexual assault that occurs pre- or post-military service due to the nature of the military setting.

Procedures: Veterans and service members ($N = 3,114$; 19.6% women) who participated in the Post-Deployment Mental Health Study completed self-report measures of sexual assault history, symptoms of posttraumatic stress disorder (PTSD), symptoms of depression, hazardous alcohol use, drug use, and suicidal ideation.

Results: Women who reported a history of MSA endorsed higher levels of all types of psychological distress than women who did not experience adult sexual assault. Women who reported a history of MSA also endorsed higher levels of PTSD and depression symptoms than women who experienced pre- or post-military adult sexual assault. Men who reported a history of adult sexual assault, regardless of setting, reported higher levels of PTSD and depression symptoms than individuals who did not experience adult sexual assault.

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Conclusions: MSA was associated with higher psychological distress than pre- or post-military adult sexual assault among women. Among men, distress associated with MSA was comparable to sexual assault outside the military. Women may face unique challenges when they experience sexual assault in the military, and men may face additional stigma (compared to women) when they experience sexual assault, regardless of setting.

Keywords

sexual trauma; veterans; military; civilian

The Veterans Health Administration defines military sexual trauma (MST) as sexual assault or sexual harassment that occurs during military service (Kimerling, Gima, Smith, Street, & Frayne, 2007). Among U.S. military veterans, the prevalence of MST is higher in women than in men (Hoyt, Rielage, & Williams, 2011; Kimerling et al., 2007); however, examination of positive screenings for MST in the Department of Veterans Affairs (VA) reveal that a substantial number of both men and women who served in the military experienced some form of MST. Specifically, the VA states that 25% of women seeking VA care experienced MST and half of veterans seeking MST-related care in the VA are men (Veterans Health Administration, 2016). Furthermore, a recent meta-analysis of 69 studies demonstrated high prevalence rates among veterans, with 3.9% of men and 38.4% of women experiencing MST (Wilson, 2016). Notably, the meta-analysis revealed that studies relying on VA medical records had lower rates of MST than those relying on self-report measures (Wilson, 2016). Despite the prevalence and impact of MST for men and women who served in the military, there is little empirical data exploring the ways in which MST may differ from non-military sexual trauma. Furthermore, many studies examining the effects of MST include both sexual assault and sexual harassment (e.g., Kimerling et al., 2007; Kimerling et al., 2010; Maguen Cohen, et al., 2012; Maguen, Luxton, et al., 2012), which is potentially problematic, as sexual harassment may not meet the definition of a traumatic event per DSM-5 Criterion A for PTSD (American Psychiatric Association, 2013). As a result, research focused only on sexual assault among military personnel is needed.

In general, sexual assault has been consistently associated with increased risk of mental health symptoms and diagnoses (e.g., Chivers-Wilson, 2006; Kilpatrick & Acierno, 2003; Kilpatrick, Amstadter, Resnick, & Ruggiero, 2007). Therefore, it is unsurprising that the negative psychological effects of MST are well-established. MST is associated with increased likelihood of having a diagnosis of posttraumatic stress disorder (PTSD), depression, and/or a substance use disorder (Haskell et al., 2010; Kimerling et al., 2010; Suris & Lind, 2008). Furthermore, for women veterans, MST is associated with increased risk of PTSD even when compared to the risk conveyed by other types of trauma, including both military and civilian traumas (Suris, Lind, Kashner, & Borman, 2007; Suris, Lind, Kashner, Borman, & Petty, 2004; Yaeger, Himmelfarb, Cammack, & Mintz, 2006). Women veterans who present for MST-related mental health treatment endorse high rates of PTSD, depression, and sleep problems (Kelly, Skelton, Patel, & Bradley, 2011). Similarly, there is a significant association between MST and both PTSD and depression among men who served in the military (Kimerling et al., 2007; Kimerling et al., 2010; Maguen Cohen, et al., 2012; Maguen, Luxton, et al., 2012). Findings regarding MST and substance use disorders have

yielded mixed results among men who served in the military, as some studies have found that MST is associated with increased risk of substance-related misuse (e.g., Kimerling et al., 2007; Kimerling et al., 2010) and others have failed to find an association between MST and substance misuse (e.g., Maguen Cohen, et al., 2012; Maguen, Luxton, et al., 2012).

Sexual trauma may also increase risk of suicidality. Among women veterans who experienced MST, PTSD symptoms secondary to MST were associated with higher risk of suicide ideation than PTSD symptoms secondary to other types of trauma (Blais & Monteith, 2018), suggesting that MST-related distress serves as a specific risk factor for suicidality in women. In one study, the effects of sexual trauma on suicidality among student veterans varied by timing of sexual assault and gender of the participants. Specifically, premilitary sexual trauma was associated with higher levels of suicidality while in the military among women, but MST was associated with higher levels of suicidality post-military among men (Bryan, Bryan, & Clemans, 2015). In another study, men who experienced military sexual assault (MSA) reported higher levels of suicidal ideation than those who did not experience MSA, even in analyses using a sample matched on demographic variables, child abuse, and pre-military adult sexual assault (Schry et al., 2015).

To date, very little research has examined differences in the effects of sexual assault that occurs during military service and sexual assault that occurs either before or after military service (i.e., civilian sexual assault). Specifically, when sexual assault occurs in the military, an individual may feel particularly unsafe and/or betrayed. For example, an individual may believe their unit should have been able to keep them safe; therefore, if the assault was perpetrated by another military service member, the survivor may feel betrayed by those they are protecting. In addition, survivors of MSA may fear retaliation in the form of professional reprisal, ostracism, or maltreatment if they report the sexual assault (Breslin et al., 2019). Isolation and separation from social supports (family and friends) may also contribute to differences in psychological outcomes to sexual assault during active duty compared to pre- or post-military service. As a result, it is possible that MSA may result in more severe effects than sexual assault that occurs before or after military service.

Study Objective

Consistent with the need for more research on sexual assault (rather than MST more broadly), the present study focused only on the experience of sexual assault and did not include sexual harassment. The objective of the present study was to examine whether participants' scores on psychological outcome assessments differed between those who did not experience adult sexual assault, those who experienced pre- or post-military adult sexual assault (henceforth referred to as civilian adult sexual assault [CASA]), and those who experienced MSA. Given that survivors of MSA may experience additional safety and betrayal concerns, we hypothesized that the MSA group would have higher scores on all measures than the CASA group and the group that had not experienced adult sexual assault, and we hypothesized that the CASA group would have higher scores on all measures than the group that had not experienced any type of adult sexual assault. While we ran analyses separately for men and women because of the possibility of gender differences, no a priori

hypotheses were proposed due to lack of foundational literature; therefore, these analyses were exploratory.

Materials and Methods

Participants

Participants were 3,114 Iraq/Afghanistan-era U.S. military veterans, Active Duty military personnel, and members of the Reserves and National Guard who served post-September 11th, 2001 and were recruited for the Post-Deployment Mental Health (PDMH) Study (Branco et al., 2017) via mailings, VA clinician referrals, and advertisements. Exclusion criteria were minimal: primary language other than English; difficulty comprehending the informed consent form or process; and/or inability to travel to one of the participating data-collection sites. Individuals were not required to be seeking mental health treatment (or any health care services) to be included. Demographic information for the sample is presented in Table 1.

Procedures

Data collection occurred across four VA medical centers in Virginia and North Carolina between 2005 and 2015. Study recruitment utilized invitational letters, clinic referrals, and advertisements. Participants attended a single visit to complete informed consent and subsequent study procedures. PDMH Study procedures relevant to the current analysis included self-report measures collected using a digital web interface with a back-end Microsoft Structured Query Language (SQL) Server Database. Participants were compensated \$175 for completion of the study plus a travel stipend based on distance traveled (\$8–\$75 for 25–200+ miles). All study procedures were approved by institutional review boards at each of the four study sites. A previous publication describes further details of the original PDMH Study (Branco et al., 2017).

Measures

Sexual Assault History.—History of adult sexual assault was assessed using the Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000). The TLEQ is a 23-item measure of potentially traumatic events over the lifetime (e.g., warzone exposure, natural disasters, and childhood sexual and physical abuse). Participants reported the number of times they experienced each event (never to more than 5 times) and indicated whether it occurred before, during, or after military service. The TLEQ has demonstrated good test-retest reliability and content validity (Kubany et al., 2000). For the present study, only responses from item assessing adult sexual assault (i.e., unwanted sexual touching that occurred after the participant's 18th birthday) were used. Participants' responses to the item assessing adult sexual assault were used to classify participants into three groups: 1) MSA (i.e., at least one sexual assault during military service); 2) CASA only (i.e., denied experiencing a sexual assault during military service, but did experience at least one sexual assault prior to or after military service), and 3) no adult sexual assault (i.e., never experienced MSA or CASA).

PTSD symptoms.—PTSD symptoms were measured with the Davidson Trauma Scale (DTS), which consists of 17 items that assess DSM-IV symptoms of PTSD and has excellent test-retest reliability and criterion validity (Davidson et al., 1997). Item responses are measured on a 5-point frequency and a 5-point severity rating scale and are summed to indicate PTSD severity. DTS total severity scores can range from 0 to 136, with higher scores indicating greater PTSD symptom severity. In the current study, internal consistency was excellent ($\alpha = 0.98$).

Depression symptoms.—Depression symptoms were measured using the Beck Depression Inventory-II (BDI-II), a 21-item self-report measure assessing affective, cognitive, and physical symptoms (Beck, Steer, & Brown, 1996). Item responses were measured on a 4-point ascending scale (0 to 3) and were summed for a total depression severity score (0 to 63). The BDI-II has previously shown excellent test-retest reliability (Sprinkle et al., 2002). Cronbach's alpha in the current study was 0.94.

Suicidal ideation.—Suicidality was measured with the Beck Scale for Suicide Ideation (BSS), a 21-item measure that assesses the presence and intensity of suicidal thoughts during the past week (Beck & Steer, 1991). Items are rated on a 3-point (0 to 2) scale and total scores range between 0 and 63. Cronbach's alpha in the current study was 0.86. Participants were determined to have clinically significant suicidal ideation if they scored 3 or higher on the BSS (Guerra, Mid-Atlantic MIRECC Workgroup, & Calhoun, 2011).

Alcohol misuse.—Participants completed the Alcohol Use Disorders Identification Test (AUDIT), a set of ten questions assessing hazardous alcohol use (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The AUDIT has shown adequate reliability and validity with regard to screening for hazardous drinking and AUD within general U.S. populations (Babor et al., 2001; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Cronbach's alpha in the current study was 0.86.

Drug use.—Symptoms of drug use disorder were measured using the Drug Abuse Screening Test (DAST-20; Skinner, 1982). This 20-item measure of drug use disorder symptoms is regarded as easy to administer, with satisfactory reliability and validity (Yudko, Lozhkina, & Fouts, 2007). Participants indicated yes/no answers to questions gauging drug use within the past 12 months, with a potential overall score range from 0 to 20. Internal consistency was good in the current study ($\alpha = .86$).

Statistical Analyses

All analyses were conducted in SPSS, Version 23. Chi-square analyses were used to examine whether clinically significant suicidal ideation (as defined by BSS category) differed by sexual assault category. Kruskal Wallis tests were used to examine whether total scores on continuous outcome measures (PTSD, depression, alcohol misuse, and drug use) differed by sexual assault category; Mann-Whitney U tests were used to conduct pairwise comparisons when the Kruskal Wallis test was statistically significant. Non-parametric tests were used because the outcome variables were not normally distributed.

Results

Descriptive statistics are presented in Table 2. More than one-fifth (20.6%; $n = 126$) of the women reported experiencing at least one sexual assault in adulthood with 13.4% ($n = 82$) experiencing MSA and 7.2% ($n = 44$) experiencing CASA only. Nearly one in 30 (3.2%; $n = 80$) men reported experiencing at least one sexual assault in adulthood, with 2.0% ($n = 51$) experiencing MSA and 1.2% ($n = 29$) experiencing CASA only.

Among women, the prevalence of clinically significant suicidal ideation was 15.9% ($n = 13$) in the MSA group, 6.8% ($n = 3$) in the CASA-only group, and 7.6% ($n = 37$) in the group with no history of adult sexual assault. Results of the overall chi-square test indicated that the likelihood of having clinically significant suicidal ideation varied by group ($\chi^2(2) = 6.20, p = .045$). Follow-up analyses revealed that women who experienced MSA were more likely to have clinically significant suicidal ideation compared to women who did not experience adult sexual assault ($\chi^2(1) = 5.90, p = .015$), but there were no differences between the CASA-only group and the MSA group ($\chi^2(1) = 2.11, p = .146$) or between the CASA-only group and the group with no history of adult sexual assault ($\chi^2(1) = 0.04, p = .826$).

Among men, the prevalence of clinically significant suicidal ideation was 31.4% ($n = 16$) in the MSA group, 13.8% ($n = 4$) in the CASA-only group, and 9.6% ($n = 231$) in the no-history of adult sexual assault group. The overall chi-square analysis revealed differences between groups in the likelihood of having clinically significant suicidal ideation ($\chi^2(2) = 26.76, p < .001$). Similar to the findings with women, among men, the MSA group was more likely to have clinically significant suicidal ideation than the group without adult sexual assault ($\chi^2(1) = 26.41, p < .001$), but there were no differences between the CASA-only and the MSA groups ($\chi^2(1) = 3.05, p = .081$) or the CASA-only group and the group with no history of adult sexual assault ($\chi^2(1) = 0.59, p = .441$).

Among women, the results of the Kruskal Wallis tests revealed group differences on all four measures ($\chi^2(2) = 6.54, ps = .038$). Post-hoc tests revealed that the MSA group had higher scores than the group with no history of adult sexual assault group on all four measures ($zs = -2.55, ps = .011$). The CASA-only group scored higher than the group with no history of sexual assault only in symptoms of alcohol misuse as measured by the AUDIT ($z = -2.19, p = .028$).

The MSA and CASA group only differed in depression and PTSD symptoms ($zs = -2.78, ps = .005$). For men, severity of alcohol misuse and drug use did not vary by sexual assault group ($\chi^2(2) = 0.38, ps = .828$). Group differences were found for depression and PTSD symptoms ($\chi^2(2) = 29.75, ps < .001$). Both the CASA-only group and the MSA group had higher scores on depression and PTSD than the group with no history of adult sexual assault ($zs = -2.30, ps = .022$). The MSA group and CASA-only group did not differ on depression or PTSD symptom scores ($zs = -1.42, ps = .152$).

Discussion

The present study examined differences in psychological symptoms among a convenience sample of post-9/11 U.S. military veterans and service members based on history of sexual assault at any time during adulthood, including if there were any differences based on setting of the sexual assault (i.e., military versus civilian). Analyses were conducted separately for men and women due to the possibility that effects may differ by gender. The overall rates of adult sexual assault in this sample of veterans and service members – among both men (i.e., 3.2%) and women (i.e., 20.6%) – were comparable to those that have been demonstrated in the general population (i.e., 3.8% of men and 22% of women; Elliott, Mok, & Briere, 2004). Furthermore, both men and women in this study were more likely to have experienced MSA than to have experienced sexual assault only in a civilian setting (i.e., CASA). This finding is in line with prior research demonstrating that women veterans were more likely to endorse sexual assault during military service than prior to or after their service (Himmelfarb, Yaeger, & Mintz, 2006). The present study extended the existing literature by demonstrating that this heightened risk for sexual assault during military service is also experienced by men who have served in the military.

Specific to MSA, the prevalence demonstrated among women in the present study (i.e., 13.4%) was lower than rates based on both VA data (i.e., 25%; Military Sexual Trauma Support Team, 2015) and a meta-analytic review (i.e., 23.6%; Wilson, 2016), but similar to the 15.1% rate demonstrated by Kimerling and colleagues (2010). The prevalence demonstrated among men (i.e., 2.0%) was comparable to those demonstrated in VA data (i.e., 1%; Military Sexual Trauma Support Team, 2015) and meta-analytic evidence (i.e., 1.9%; Wilson, 2016). As discussed by Wilson (2016), measurement heterogeneity and inconsistencies in definitions have impacted the field's ability to establish consistent prevalence rates of MST across studies. Consistent with this assertion, it is important to note that the VA data and Kimerling and colleagues study included both sexual assault and sexual harassment in their definitions of MST. Whereas, Wilson (2016) provided mean prevalence estimates that were restricted to only MSA, which is consistent with the current study. Regardless, the rates found here, coupled with existing empirical evidence indicating that MSA is a pervasive problem among both men and women, support the importance of examining psychosocial functioning following MSA. There is a particular need for this line of research to include veterans and service members who are men, as was done in this study, given that the majority of the literature has focused on women veterans (Wilson, 2016).

In the present study, differential patterns in psychological outcomes following adult sexual assault based on the gender of the survivor and the setting of the incident were observed. Among women, survivors of MSA were more likely to report clinically significant suicidal ideation, as well as significantly greater PTSD symptoms, depression symptoms, alcohol-related problems, and drug abuse problems than those who did not experience adult sexual assault. This finding replicates a large knowledge base supporting the negative psychosocial consequences of MSA (e.g., Suris et al., 2007; Suris et al., 2004). Additionally, women who reported CASA only demonstrated greater alcohol-related problems than those who did not report adult sexual assault. Again, this is consistent with prior studies that have shown both that drinking is associated with increased likelihood of victimization and alcohol

misuse increases as a consequence of victimization (Bryan et al., 2016). Consistent with the hypothesis, women who experienced MSA reported greater PTSD and depression symptoms than those who reported CASA only. This supports prior studies (e.g., Himmelfarb et al., 2006; Suris et al., 2007; Suris et al., 2004) and suggests that MSA may be a particularly robust risk factor for negative psychosocial consequences among women compared to other traumas, even sexual violence that occurs in other settings (e.g., civilian). Additionally, the present study suggests that the unique impact of MSA on survivor outcomes may specifically apply to depression and PTSD symptoms rather than all forms of psychosocial difficulties.

The concept of institutional betrayal provides one possible explanation for the finding of more severe effects of MSA relative to CASA. Institutional betrayal has been defined as “institutional action and inaction that exacerbate the impact of traumatic experiences” (Smith & Freyd, 2014, p. 577). When individuals experience sexual assault within an institution and the response of the institution is perceived as unsupportive, survivors are thought to be at increased risk for psychological difficulties (Smith & Freyd, 2014). MST is likely to be associated with factors that are known to increase the likelihood of experiencing institutional betrayal, including institutional denial and barriers to change (Smith & Freyd, 2014). A previous study found that institutional betrayal following MST was associated with increased suicidal behaviors in a small non-representative sample of female veterans (Monteith, Bahraini, Matarazzo, Soberay, & Smith, 2016). Given that the pattern of findings are consistent with what would be expected if women experience higher levels of institutional betrayal when sexual assault occurs during military service, further research into the role of institutional betrayal in outcomes following MSA is needed. Given that institutional betrayal can refer to actions (or inactions) on behalf of the overarching institution (e.g., the U.S. military) or smaller components of the institution (e.g., the survivor’s unit), it is important that clinicians discuss survivors’ experiences and attributions of responsibility for perceived institutional betrayal in order to address safety concerns and to address experiences of institutional betrayal in treatment.

The pattern of outcomes among men was distinct from the findings observed among women. This highlights the importance of including veterans and service members who are men in this area of the literature and examining how this phenomenon may differ based on gender. Specifically, alcohol-related problems and drug abuse did not differ between men who experienced MSA, CASA only, and did not report a history of adult sexual assault. Because prior literature has demonstrated that men who serve in the military are particularly prone to alcohol problems compared to women veterans, it is possible that sexual assault does not contribute additional risk above and beyond other military-related traumatic stressors associated with problem drinking (e.g., witnessing death, being injured; Maguen et al., 2012). Consistent with prior research (e.g., Schry et al., 2015), survivors of MSA were more likely to report clinically significant suicidal ideation than those who did not report a history of adult sexual assault. Finally, men who experienced either MSA or CASA only reported greater depression and PTSD symptoms than those who did not report a history of adult sexual assault. This finding suggests that sexual assault, regardless of setting, is associated with heightened risk of depression and PTSD among men. Therefore, the setting in which

the sexual victimization occurred is not associated with the level of risk for psychiatric concerns among men.

In sum, among women, sexual assault during military service was associated with heightened risk for PTSD and depression symptoms compared to sexual assault in a civilian setting. Conversely, sexual assault, regardless of the setting, was associated with greater PTSD and depression symptoms among men compared to those who did not experience sexual assault. However, it is important to note that the evidence base has consistently demonstrated that all sexual victimization is associated with increased risk for a plethora of mental health consequences (see Dworkin, Menon, Bystrynski, & Allen, 2017, for a review). The present study contributes to the existing literature by providing evidence that the setting in which sexual victimization occurs may play a larger role in understanding outcomes following sexual assault among women compared to men.

One possible explanation for the present findings is that men and women may experience different forms of stress during their military service (Norwood, Gabbay, & Ursano, 1997). This difference in stressors may lead to differential reactions to traumatic incidents, such as MSA. For example, women may experience additional stress because they are a minority in an occupation dominated by men. This issue is compounded because women are more vulnerable to the negative consequences of low social support following trauma than men (Ahern et al., 2004). Another possible explanation for the present findings is a possible ceiling effect regarding the effects of sexual assault among men. Specifically, men who experience sexual assault face unique challenges (e.g., possible questions regarding their masculinity or sexual orientation; see Davies, 2002, for a review), so it may be that sexual assault among men results in extreme psychological distress regardless of setting. For example, there may be higher expectations that men “should” be able to protect themselves against sexual assault, which could lead to more self-blame among men.

Limitations

The limitations of the current study include the small number of participants in the MSA and CASA only groups compared to the group without a history of adult sexual assault for both men and women. This may have impacted our ability to detect differences between the groups. In addition, the sample was recruited over a 10-year period. While this allowed for the collection of a large sample beginning shortly after the wars in Iraq and Afghanistan began, there is a possibility that there are cohort differences (e.g., due to changes in the way the VA and military respond to disclosures of MSA given that the Department of Defense Sexual Assault Prevention and Response [SAPR] program began in 2004) that may have affected findings.

The retrospective assessment of sexual assault both in military and civilian settings may have led to recall errors or bias and the cross-sectional design impacted our ability to talk about temporal order. The present study did not take into account the role of childhood sexual abuse and the groups did not account for whether or not the MSA group also experienced CASA. Characteristics of the sexual assault were not assessed, so it is possible that some experiences classified as MSA more closely resembled CASA (e.g., a sexual assault perpetrated by a civilian while an active duty member was on leave). Previous

mental health treatment was not examined as a covariate, which may have attenuated the psychological effects of sexual assault for some participants.

Furthermore, participants did not identify which traumatic event they considered when completing the DTS; therefore, it is unclear whether the PTSD symptoms were due to the effects of sexual trauma. Information about time since the sexual assault occurred was not available but could impact results, as previous research has demonstrated that, for many individuals, the severity of psychological symptoms decreases over time (e.g., Steenkamp, Dickstein, Salters-Pedneault, Hofmann, & Litz, 2012). The DTS also assesses PTSD symptoms per DSM-IV criteria; therefore, findings should be replicated using a measure of DSM-5 symptoms of PTSD. The study used a convenience sample of post-9/11 veterans and active duty personnel, and given that the sample was predominately recruited through the VA healthcare system, individuals seeking health services may be overrepresented. Additionally, the present study used a dichotomous measure of gender that did not capture the full spectrum of birth sex and gender identity. This use of binary gender may limit our understanding of how gender identity relates to the experience of psychiatric distress following military and civilian sexual assault. Also, the impact of sexual orientation was not examined in this study; given that rates of sexual assault are higher among service members who identify as LGBTQ+ compared to those who identify as heterosexual (Breslin et al., 2019), future research should examine whether these findings are impacted by survivors' sexual orientation.

Implications for Practice and/or Policy

In terms of research implications, the present study supports that research examining MSA in both men and women is warranted. It is well documented in the literature that MSA is not specific to women veterans or service members and the present study suggests that the findings demonstrated in samples of women may not apply to veterans or service members who identify as men. Although the documented prevalence rate of MSA is higher in women than in men, the greater number of men in the military results in approximately the same number of men and women who are survivors of MSA (Wilson, 2016). Therefore, we would like to echo the call for research stated by Wilson (2016) that highlights the need for MSA research to expand beyond women only samples.

In terms of clinical implications, the present study suggests that clinicians need to consider whether the setting of the victimization incident is pertinent to how the client is coping with the incident and therefore, may be relevant to recovery. Specifically, the present study suggests that women veterans or service members in particular may experience greater PTSD and depression symptoms related to MSA than CASA only. Therefore, clinicians should assess for and address factors related to setting (e.g., minority stress, social support, institutional betrayal, justice system involvement, workplace interactions) that may be contributing to the client's symptomatology.

Conclusions

The main contribution of the present study was to highlight differences in psychological outcomes following sexual assault based on setting and possibly based on gender. Although

sexual assault during military service was found to convey a heightened level of risk for PTSD and depression symptoms among women, sexual assault, regardless of context, conferred heightened psychological distress for men. However, it is unclear what contributed to these differential outcomes. Future research should focus on potential explanations, including minority stress, social support, and institutional betrayal. This research area will contribute to the field's understanding of how to better support veterans or service members who have experienced military and civilian sexual assault.

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Impact Statement

The results revealed that sexual assault that occurred during military service had a greater impact on mental health outcomes compared to sexual assault that occurred pre- or post-military service for women. In contrast, the impact of sexual assault on mental health symptoms did not vary by setting for men. Clinicians who work with veterans should assess for factors unique to the military setting that may have increased the impact of MSA for women and for factors unique to men that may influence mental health outcomes following any sexual assault.

Table 1

Sample Demographics

Variable	Women <i>n</i> = 611		Men <i>n</i> = 2503	
	<i>n</i>	%	<i>n</i>	%
Race				
White	207	33.9	1308	52.3
Black	387	63.3	1120	44.7
Other	17	2.8	75	3.0
Ethnicity – Not Hispanic				
	577	94.4	2320	92.7
Branch				
Army	431	70.5	1609	64.3
Navy	106	17.3	378	15.1
Marine Corps	14	2.3	294	11.7
Air Force	47	7.7	177	7.1
Coast Guard	3	0.5	11	0.4
Missing	10	1.6	34	1.4
Reserves or National Guard ^a	212	34.7	846	33.8
Active Duty at Time of Study	37	6.1	131	5.2
Warzone Exposure	412	67.4	2143	85.6

^aServed in the Reserves or National Guard at any time during military career.

Table 2

Descriptive Statistics

Measure	Women n = 611						Men n = 2503											
	No Adult Sexual Assault n = 485			CASA Only n = 44			MSA n = 82			No Adult Sexual Assault n = 2423			CASA Only n = 29			MSA n = 51		
	M	SD		M	SD		M	SD		M	SD		M	SD		M	SD	
DTS	35.88	39.49		41.89	37.24		62.74	39.89		40.46	39.75		62.34	38.47		65.59	37.48	
BDI-II	13.82	12.94		16.34	12.72		24.79	13.85		13.92	12.45		19.07	13.34		23.40	13.42	
AUDIT	2.50	3.79		4.44	5.48		4.21	6.26		5.20	6.01		5.38	6.24		5.67	6.25	
DAST	0.51	1.77		0.77	2.62		1.16	2.52		1.07	2.73		1.00	3.01		1.25	3.14	
BSS	0.77	2.65		0.48	1.32		1.59	4.17		0.93	3.10		3.34	8.50		2.98	4.95	

Notes. AUDIT = Alcohol Use Disorders Identification Test; BDI-II = Beck Depression Inventory – II; BSS = Beck Scale for Suicide Ideation; CASA = Civilian Adult Sexual Assault; DAST = Drug Abuse Screening Test; DTS = Davidson Trauma Scale; MSA = Military Sexual Assault.