Military Sexual Trauma and Sexual Revictimization

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ABSTRACT

Military sexual trauma (MST), defined as experiencing sexual harassment or assault during military service, is associated with a host of deleterious outcomes, including sexual dysfunction. Less is known about how MST may relate to risk for future victimization. This systematic review identified 10 studies that examined the association between MST and revictimization. Studies generally indicated that the more frequent or severe MST was, the more strongly it was associated with risk for future victimization. Most of these studies did not statistically evaluate the role of gender in the relation between MST and sexual revictimization, suggesting an important avenue for future research. Clinicians working with survivors of MST, particularly those who have experienced military sexual assault, may need to address issues of sexual safety with these veterans.


Military sexual trauma (MST) refers to experiences of sexual harassment, unwanted sexual contact, attempted rape, or completed rape during active duty. It is estimated that 16% of veterans will experience MST during their service. This systematic review seeks to synthesize current findings regarding the relation between MST and sexual revictimization, and specifically, experiencing additional sexual assault post-service. Because research suggests that the impact of MST on other outcomes can differ based on MST characteristics (eg, sexual assault versus harassment), the relationship between MST characteristics and sexual revictimization risk will be explored. Additionally, because male and female veterans may differ in their risk for sexual victimization, we will also describe findings regarding the impact of gender on the association between MST and sexual risk.

Civilian research has established that the relation between MST and sexual victimization increases the likelihood that the victim will experience at least one other incident of sexual victimization during their lifetime. Unfortunately, veterans may have particular difficulty establishing sexual safety, as they report higher rates of lifetime sexual assault compared to civilians. Research among veteran and civilian populations suggest that posttraumatic stress disorder (PTSD) symptoms, maladaptive cognitions, threat perception, and physiological reactivity play a role in risk for sexual revictimization. Thus, as a population that suffers from high rates of severe PTSD, survivors of MST may be particularly vulnerable to sexual revictimization.

MST characteristics are one factor that may affect the association between MST and sexual risk. MST can differ based on whether it is characterized exclusively by MST characteristics (eg, sexual assault or repeated MSA from an intimate partner), or some combination thereof. Single-incident MSA can vary in the degree of violence or number of perpetrators involved. In other cases, veterans experience repeated MSA by other service members who outrank them, or repeated MSA from an intimate partner while they are serving. Research on the effect of sexual victimization on mental health among veterans and civilians suggests that the more severe and frequent sexual victimization is, the greater the effect it will have on the survivor.

Gender is another factor that may influence the association between MST and sexual risk. Because female veterans experience MST at much higher rates (38%) than male veterans (4%), a higher percent-
age of female veterans may be at risk for revictimization. However, it is not known if, among MST survivors, gender affects revictimization. A recent meta-analysis that examined sexual revictimization among survivors of childhood sexual abuse found no impact of gender on revictimization rates. Additionally, research among male survivors of MST suggests that proving one’s masculinity and sexuality is a chief concern for male survivors of MST. Thus, although women generally bear the burden of greater exposure to sexual violence, it is possible that changes in male veterans’ behavior after MST may increase their risk for violence.

**METHOD**

**Search Strategy**

In this systematic review of the literature, controlled vocabulary (ie, medical subject heading terms) were used, and keywords were searched in the title or abstract fields. Databases searched include PubMed, Scopus, CINAHL, Cochrane Central Register of Controlled Trials, PsycINFO, and Google Scholar. No limitations were put on the search in terms of language, geography, or date of publication. Search terms are summarized in Table 1. This search yielded 280 citations that were imported into proprietary software that manages systematic reviews. Three additional studies that contained relevant variables were identified from a broader search previously conducted on MST, revictimization, and sexual health outcomes. In total, after 134 duplicates were removed, 149 citations were reviewed.

**Inclusion Criteria**

Inclusion criteria required studies to be conducted in a sample of veterans who were 18 years or older. Studies were required to have measured MST and sexual revictimization, defined as re-experiencing sexual assault, sexual harassment, or sexual intimate partner violence (IPV). Studies were limited to peer-reviewed articles that were written in English. Studies were excluded if they did not contain any original data collection.

**Study Selection**

During the abstract review stage, groups of two authors evaluated each abstract on study criteria. In cases where there was a discrepancy between authors as to whether or not a study met inclusion criteria, the abstract was discussed among the study staff (V.T., J.M.B., R.B., K.P.) to achieve consensus. The same process was used to evaluate articles that were selected for full text review. Figure 1 shows a PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram that describes inclusion decisions for all articles identified in the search.

**Data Extraction**

A data extraction tool was created by the authors to assess sample characteristics, research methods, results, and quality. The extraction tool is described in detail in Table 2. The first four authors acted as coders and attended meetings to discuss the
interpretation of each item to certify these items were being coded consistently. Coders were then split up into two pairs, with each pair reviewing the same articles and discussing discrepancies.

RESULTS
Study Characteristics

The sample characteristics and findings of included studies are described in Table 3. Most studies consisted of exclusively female samples (n = 7), were based on cross-sectional design (n = 8), and used self-report data collection (n = 6). Among studies that reported service-related characteristics, most participants served after the September 11, 2001 terrorist attacks (n = 3; 73%), and fewer were deployed and/or had combat exposure (n = 3; 38%). Most studies did not report sexual orientation of participants, but among those that did, participants were predominately heterosexual (n = 3; 84%). On average, studies were the strongest in terms of accounting for confounding bias (mean = 1.33; possible range 0-2) but were weaker in terms of validity (1.20; possible range 0-2). In many cases, validity ratings were affected by the use of a single item from a trauma checklist or incomplete information available regarding the measure used to assess sexual victimization. Most studies (n = 7) were rated as adequate in terms of their handling and description of missing data. Thus, all studies were deemed to be of adequate quality to be retained for review.

Sexual Revictimization

Studies generally fell into two main categories: (1) those that examined risk for any post-military sexual victimization, and (2) those that examined sexual victimization that occurred specifically in the context of a romantic relationship (i.e., sexual IPV). Because studies of sexual IPV tended to focus on a restricted time period (e.g., past 6 months), these results are summarized separately from general sexual revictimization.

Six studies examined general sexual victimization post-military service. The first examined the revictimization risk associated with MST (broadly defined). Booth et al.14 reported a correlation of .13 (P < .001) between MST and experiencing rape after military service. The remaining five studies examined the revictimization risk associated specifically with having experienced MSA. Himmelfarb et al.15 observed that compared to women without a history of MSA, women who had experienced MSA had a greater risk of post-military service sexual assault: $\chi^2 (N = 196) = 3.9; P < .05$; odds ratio (OR) = 1.99; 95% confidence interval (CI), 1.01 to 3.95. In a logistic regression that controlled for age, length of time since military service, and service era, Creech and Orchowski12 observed that women who experienced MSA were at risk for post-military forced sex (beta = 3.55; standard error = 1.11; $P < .01$, OR = 34.69, 95% CI, 3.91 to 84.92). Luterek et al.16 found that among women survivors of MSA, 28.8% reported sexual assault after their service, and 47% reported post-service sexual harassment. This is compared to 10.5% and 26.3% among the no-MSA group. (Notably, 55.3% of this group did experience sexual harassment in the military). The statistical significance of differences between the MSA and no-MSA groups was not evaluated. Prevalence of post-service trauma was not reported for men due to low rates of MSA among men. Using pairwise comparisons, Sadler et al.17 found that women who experienced multiple MSAs during their time in the military were more likely than women who experienced no MSA (P < .001) to be raped after completion of their military service, and their risk was also greater than those who had experienced a single MSA (P = .023). Women who experienced a single MSA during their service in the military were not more likely than those without a history of MSA to be raped after the military (P = .403). Women who were gang raped during their time in the military had a greater risk of post-military service rape compared to women who had no MSA (P = .005) or one MSA (P = .042) during their military service but did not differ from those who had been raped multiple times while in the military.
(P = .302). Schry et al.\(^18\) used separate logistic regressions for men and women to examine revictimization risk. Among women, in a model that included race, time since active duty, and history of pre-military sexual assault, MSA trended toward risk for post-military sexual assault (OR = 2.81; Wald statistic = 3.12; 95% CI, 0.89 to 8.81; P < .10). Similar results were observed among men (OR = 5.31; Wald statistic = 3.87; 95% CI, 1.01 to 28.08; P < .05). The authors discussed lacking power to observe a statistically significant effect for women.

Four studies examined the association between MST and sexual IPV. The first two studies described below focused on MST, broadly defined, whereas the remainder examined specific types of MST in more detail. Dichter et al.\(^19\) found that among the 96 women who reported sexual IPV in the past year, 54.3% had a history of MST and 55.7% did not. This difference was not examined statistically. In the Iversen et al.\(^20\) sample of women with a history of IPV-related traumatic brain injury the correlation between MST and sexual IPV in the past year was .28 (P > .05). Notably, due to the small sample size for this study, the authors may have lacked power for statistical significance in spite of a sizable correlation. Portnoy et al.\(^6\) used a path model that simultaneously analyzed the direct and indirect effects (through PTSD) of MSH and MSA on three different IPV outcomes (severe psychological, physical, and sexual IPV in the past 6 months). MSA had a significant indirect effect on sexual IPV (β = .10; P < .05). There were no direct or indirect effects of MSH on sexual IPV. Relya et al.\(^21\) found that, compared to women without MST, women with prior MST had higher odds of experiencing sexual IPV (OR = 3.20; 95% CI, 1.18 to 8.66). Among women, MSH was not associated with sexual IPV but MSA was, after controlling for age and child sexual abuse/adolescent assault (OR = 3.08; 95% CI, 1.30 to 7.54). Among men, general MST, MSH, and MSA were unrelated to sexual IPV.

Most studies, whether they examined the association between MST and risk for general post-service assault or sexual IPV, featured exclusively samples from women. The three studies that included men in their sample did not statistically evaluate potential differences between men and women in the association between MST and sexual revictimization.

### Table 2.

<table>
<thead>
<tr>
<th>Variable type</th>
<th>Variable</th>
<th>Coding scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample characteristics</td>
<td>Sample size</td>
<td>n</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>% female</td>
</tr>
<tr>
<td></td>
<td>Race</td>
<td>% white</td>
</tr>
<tr>
<td></td>
<td>Sexual orientation</td>
<td>% heterosexual</td>
</tr>
<tr>
<td></td>
<td>Service era</td>
<td>% who served after September 11th, 2001</td>
</tr>
<tr>
<td></td>
<td>Combat exposure</td>
<td>% who endorsed combat exposure or deployment</td>
</tr>
<tr>
<td>Method</td>
<td>Recruitment site</td>
<td>VA hospital, DOD, web-based, community, or other</td>
</tr>
<tr>
<td></td>
<td>Design</td>
<td>Cross-sectional or prospective</td>
</tr>
<tr>
<td></td>
<td>Inclusion criteria</td>
<td>Free text entry</td>
</tr>
<tr>
<td></td>
<td>Data collection</td>
<td>Self-report, chart review, or interview</td>
</tr>
<tr>
<td></td>
<td>MST measure</td>
<td>Free text entry</td>
</tr>
<tr>
<td></td>
<td>Revictimization measure</td>
<td>Free text entry</td>
</tr>
<tr>
<td>Results</td>
<td>MST and revictimization</td>
<td>Free text entry</td>
</tr>
<tr>
<td></td>
<td>MST characteristics</td>
<td>Free text entry</td>
</tr>
<tr>
<td></td>
<td>Gender effects</td>
<td>Free text entry</td>
</tr>
<tr>
<td>Quality</td>
<td>Confounding bias</td>
<td>Sample selection and analyses were reviewed for matching, stratification, interaction terms, multivariate analyses, and other statistical adjustments; 0 = none of these methods were used; 1 = confounding variables were assessed but not used in the analyses; 2 = confounding variables were taken into account in the analyses(^25)</td>
</tr>
<tr>
<td></td>
<td>Validity bias</td>
<td>0 = reliable measures were not implemented consistently for MST and revictimization; 1 = MST and/or the revictimization were assessed consistently but some measures were low quality; 2 = all measures of MST and revictimization were high quality and used consistently(^26)</td>
</tr>
<tr>
<td></td>
<td>Missing data</td>
<td>0 = did not report the degree of missing data or missing data was &gt; 10%; 1 = data were complete or the amount of missing data was &lt;10% (ROBINS-I)(^26)</td>
</tr>
</tbody>
</table>

Abbreviations: DOD, Department of Defense; MST, military sexual trauma; ROBINS-I, Risk of Bias in Nonrandomized Studies of Interventions; VA, Veterans Affairs.
<table>
<thead>
<tr>
<th>Study</th>
<th>Participants, ( N )</th>
<th>Mean age, y</th>
<th>% F</th>
<th>% W</th>
<th>Site</th>
<th>Inclusion criteria</th>
<th>MST measure</th>
<th>Revictimization measure</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booth et al.(^{14})</td>
<td>1,004</td>
<td>38</td>
<td>100</td>
<td>80</td>
<td>VA</td>
<td>VA health care users younger than age 52 years</td>
<td>Author-developed items based on AMA and ACOG</td>
<td>Author-developed items based on definition from AMA and ACOG</td>
<td>Positive correlation between MST and post-military SA</td>
</tr>
<tr>
<td>Creech and Orchowski(^{12})</td>
<td>101</td>
<td>46</td>
<td>100</td>
<td>73</td>
<td>VA</td>
<td>VA health care users</td>
<td>Author-developed survey (including item adapted from McIntyre et al.(^{27}))</td>
<td>Author-developed survey (including item adapted from McIntyre et al.(^{27}))</td>
<td>MSA positively correlated with post-military SA</td>
</tr>
<tr>
<td>Dichter et al.(^{10b})</td>
<td>8,888</td>
<td>45</td>
<td>100</td>
<td>53</td>
<td>VA</td>
<td>IPV screen between 2014 and 2016</td>
<td>VA MST Screen(^{27})</td>
<td>E-HITS(^{28})</td>
<td>Among women with past year sexual IPV, 54% had history of MST and 55.7% did not</td>
</tr>
<tr>
<td>Himmelfarb et al.(^{15})</td>
<td>196</td>
<td>48</td>
<td>100</td>
<td>40</td>
<td>VA</td>
<td>MST that involved a Criterion A experience</td>
<td>Amended SLEQ(^{29})</td>
<td>Amended SLEQ(^{29})</td>
<td>MSA significantly correlated with post-military SA</td>
</tr>
<tr>
<td>Iverson et al.(^{20})</td>
<td>33</td>
<td>49</td>
<td>100</td>
<td>52</td>
<td>Knowledge panel Veterans who completed surveys at T1 and T2 endorsing IPV-related TBI</td>
<td>VA MST Screen(^{27})</td>
<td>CTS-2(^{30})</td>
<td>Moderate correlation between MST and past year sexual IPV, not statistically significant</td>
<td></td>
</tr>
<tr>
<td>Luterek et al.(^{16})</td>
<td>208</td>
<td>49</td>
<td>50</td>
<td>75</td>
<td>VA</td>
<td>VA health care users not in substance use treatment or with psychosis</td>
<td>TLEQ(^{31})</td>
<td>TLEQ(^{31})</td>
<td>Among MST survivors 29% reported post-military SA, 47% experienced post-military sexual harassment</td>
</tr>
<tr>
<td>Portnoy et al.(^{6})</td>
<td>187</td>
<td>54</td>
<td>100</td>
<td>73</td>
<td>Other</td>
<td>Veterans</td>
<td>VA MST Screen(^{27})</td>
<td>CTS-2(^{30})</td>
<td>MSA had a positive indirect effect on sexual IPV through T2 PTSD; there were no direct or indirect effects of MSH on sexual IPV</td>
</tr>
</tbody>
</table>
### Table 3. (continued)

#### Studies that Examined Military Sexual Trauma and Revictimization (N = 10)

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants, N</th>
<th>Mean age, y</th>
<th>% F[^a^]</th>
<th>% W[^a^]</th>
<th>Site</th>
<th>Inclusion criteria</th>
<th>MST measure</th>
<th>Revictimization measure</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relyea et al.[21]</td>
<td>1,094</td>
<td>44</td>
<td>52</td>
<td>84</td>
<td>DoD dataset</td>
<td>OEF, OIF, OND VA health care users</td>
<td>VA MST Screen[^17^]</td>
<td>E-HITS[^18^]</td>
<td>Women with MST had higher odds of sexual IPV. MSH was not associated with sexual IPV, but MSA predicted recent sexual IPV. For men, MST, MSH, and MSA were unrelated to sexual IPV.</td>
</tr>
<tr>
<td>Sadler et al.[27]</td>
<td>540</td>
<td>42</td>
<td>100</td>
<td>74</td>
<td>VA</td>
<td>Vietnam, post-Vietnam, Persian Gulf War VA health care users</td>
<td>Interview using legal definition of rape from ACOG and AMA</td>
<td>Interview using legal definition of rape from ACOG</td>
<td>Women who experienced multiple incidents of MSA or one incident of MSA by multiple perpetrators were at greater risk for post-military SA compared to women with no MSA or a one-time SA by a single perpetrator.</td>
</tr>
</tbody>
</table>

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**Abbreviations:** ACOG, American College of Obstetricians & Gynecologists; AMA, American Medical Association; CSA, child sexual assault; DoD, Department of Defense; CTS-2, Conflict Tactics Scale; E-HITS, Extended Hurt, Threaten, Scream; F, female; IPV, intimate partner violence; MSA, military sexual assault; MSH, military sexual harassment; MST, military sexual trauma; OEF, Operation Enduring Freedom; OIF, Operation Iraqi Freedom; OND, Operation New Dawn; PTSD, posttraumatic stress disorder; SA, sexual assault; SLEQ, Stressful Life Events Questionnaire; TBI, traumatic brain injury; TLEQ, Traumatic Life Events Questionnaire; T1, Time 1; T2, Time 2; VA, Veterans Affairs; W, White people.

[^a^]: Means and percentages are rounded to the nearest whole number. The methods for these studies included interviews, self-report, and chart review. Although design of these studies was mostly cross-sectional, one study was prospective and the other longitudinal.

[^b^]: This sample included a small number of non-veteran VA users. The number of veterans in the sample was 8,247.
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DISCUSSION

This review identified 10 studies that examined the association between MST and sexual revictimization based on our search criteria. Studies that focused on the association between MST and risk for general post-military sexual assault suggest a positive association between a history of MST and sexual revictimization. However, the study by Sadler et al. suggests that the association between MST and re-victimization may be stronger as severity and frequency of MST increases. Findings also generally indicated a positive association between a history of MST and recent sexual IPV. Two studies suggested that although MST and re-victimization risk are positively related, such a relationship does not exist for MSH. Across studies that focused on general sexual revictimization and sexual IPV, most samples were exclusively female, precluding the examination of gender effects. Further, the two studies that examined the association between MST and sexual revictimization by gender ran separate analyses among men and women without statistically evaluating the significance of gender as a moderator.

The findings of this review suggest several clinical implications. Foremost, they support recommendations that clinicians should assess characteristics of patients’ assault history, because patients with the most severe sexual victimization histories may have the greatest need for sexual violence prevention interventions. Notably, self-defense treatment has been shown to decrease MST survivors’ symptoms and increase their self-defense self-efficacy, although the impact on revictimization has not been evaluated. Additionally, although the literature supports screening female veterans in general for IPV, more comprehensive or frequent screening may be appropriate for survivors of MST specifically due to their elevated risk.

The results of this review also suggest several avenues for future research. Further studies that include male as well as female participants are needed, and these studies should examine gender as a moderator of risk for sexual revictimization. Additional longitudinal research is also needed to better understand survivors’ risk for revictimization over time. For example, although Sadler et al. examined MSA during military service as a risk factor for assault post-service, the fact is that all the women in the multiple MSA group already experienced sexual revictimization after an initial MSA before leaving the service. It is possible that MST survivors’ risk differs during their service, where they could be struggling to deal with the effects of the initial assault in isolation and could be targeted for retaliation, compared to after their service ends. Meanwhile, for some, the MST itself could be perpetrated by a person with whom the veteran is in an ongoing relationship post-service. Better understanding the trajectories of revictimization risk associated with MST could help shape assault prevention interventions.

STUDY LIMITATIONS

Limitations of the present review should be noted. Among the included studies, the MST screen was the most commonly used measure to assess experiences of assault or harassment in the military. Research suggests that this measure may lack sensitivity, particularly in identifying MST history for men. This methodology may explain, in part, why some studies on the impact of MST exclude men entirely or lack power to examine MST-related consequences among male veterans. Additionally, few studies assessed sexual orientation and none assessed nonbinary gender identity. This represents a failure to account for a significant control variable within the literature, as sexual and gender minority persons experience particularly high rates of interpersonal violence.

CONCLUSION

The results of this systematic review suggested that MST survivors are at increased risk for sexual revictimization. Risk for revictimization seems to vary based on whether veterans experienced assault or harassment. More research is also needed on the impact of gender on both aspects of sexual risk. Based on these findings, clinicians may want to incorporate interventions that reduce risk for violence.

REFERENCES


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