


RESEARCH ARTICLE

Military sexual trauma in context: Ethnoracial differences in ecological resources among treatment-seeking veterans

Peter P. Grau^{1,2,3}  | Lisa M. Valentine^{2,3} | Tessa C. Vuper^{2,3} | Travis A. Rogers^{2,3} | Jennifer D. Wong⁴ | Minden B. Sexton^{2,3}

¹VA Serious Mental Illness Treatment Resource and Evaluation Center (SMITREC), Ann Arbor, Michigan, USA

²VA Ann Arbor Healthcare System, Ann Arbor, Michigan, USA

³Department of Psychiatry, University of Michigan Medical School, Ann Arbor, Michigan, USA

⁴New Mexico Veterans Affairs Healthcare System, Albuquerque, New Mexico, USA

Correspondence

Peter P. Grau, Serious Mental Illness Treatment Resource and Evaluation Center, 2800 Plymouth Road, 016, Ann Arbor, MI 48109.

Email: peter.graul@va.gov

Abstract

Veterans who have experienced military sexual trauma (MST) are at increased risk for a host of negative outcomes, including posttraumatic stress disorder, depressive disorders, and substance use disorders. Previous studies have shown racial differences in MST exposure, namely that Black veterans experience MST more frequently than White veterans. One way to help clinicians and researchers understand the impact of these ethnoracial differences in MST exposure is through an applied theory of ecological resources, which has demonstrated ecological factors (e.g., aspects of identity, beliefs, and environmental stressors) contribute to veteran well-being in the aftermath of MST. The present study aimed to examine ethnoracial differences in ecological resources (i.e., available social support, spiritual coping, past-year interpersonal violence, financial sufficiency, and stable living environment). Participants ($N = 505$) were U.S. veterans who sought care at a Veterans Healthcare Administration clinic in the midwestern United States for mental health issues related to MST. Results demonstrated Black veterans were more likely than White veterans to report being financially insecure, $U = 18,091.50$, $z = -2.04$, $p = .042$, $r = .10$. Black veterans were also more likely to report spiritual beliefs that assisted with coping, Cramer's $V = .19$, but less likely to report having a social support system, Cramer's $V = .16$. These findings highlight the importance of assessing and addressing disparities illuminated by ethnoracial differences in ecological resources and barriers in veterans seeking care for MST.

The U.S Department of Veteran's Affairs defines military sexual trauma (MST) as sexual assault or sexual harassment experienced during military service and includes any sexual activity a service member is involved with against their will. A meta-analysis by Wilson (2018) found that over 15% of all service members and veterans report any type of MST (3.9% of men, 28.4% of women) and 13.9% report MST (1.9% of men, 23.6% of women) specifically related to assault. MST is associated with adverse outcomes,

including posttraumatic stress disorder (PTSD), depressive disorders, and substance use disorders (Lofgreen et al., 2017; Surís et al., 2013). Although research investigating challenges associated with MST has expanded significantly in the past several years, investigations of potential diversity-related differences in trauma-associated sequelae have been less common. In particular, whereas limited research suggests Black veterans are exposed to MST more frequently than their White counterparts (Bovin et al.,

2019), it is imperative to better recognize and respond to potential ethnoracial differences in experiences and needs. This is especially relevant given the close association between MST and PTSD (Williamson et al., 2017) and evidence suggesting that veterans who identify as ethnoracial minorities have higher rates of PTSD than White veterans (Algeria et al., 2013; Asnaani & Hall-Clark, 2017; Roberts et al., 2011). Given these findings, it is important to expand the focus of research beyond symptom presentation and explore the larger ecological contexts of veterans who have experienced MST.

An intersectional approach is critical to understanding the differential impact and experience of MST among minoritized veterans. Historical discrimination and longstanding prejudices can result in vastly different postassault experiences for Black versus White individuals. Black men have been highly sexualized and portrayed as serial abusers (Slatton & Richard, 2020), and Black women who have experienced sexual assault see their cases go to trial and result in conviction less frequently than White women (Curry, 2019). This, alongside the oversexualization and subsequent discrediting of both Black women and Black men who have experienced sexual assault (Curry, 2019; Meyers, 2004) can lead to understandably high levels of institutional distrust, which translates into low levels of reporting and treatment initiation (Slatton & Richard, 2020). Veterans seeking treatment for psychiatric distress related to MST are not removed from this sociohistorical context; in fact, these factors intersect with the veteran identity and military culture to create unique and persistent barriers to sexual assault disclosure and treatment-seeking (Bonnes, 2021).

Augmenting the field's understanding of veterans' ecological contexts may result in improved utilization of preferred strategies and the identification of barriers to service use that are potentially associated with disparate impacts for people who have experienced MST, especially those who identify as ethnoracial minorities, and highlight potential contextual factors that may benefit from incorporation into veteran-centered recovery efforts. Individuals who have experienced MST are not a monolithic group, and an increased understanding of characteristics related to different societies and cultures can impact the development of postassault sequelae, recovery, and resource equity. A promising, relevant conceptual framework can be found in research by Campbell and colleagues (2009) and Dworkin and Weaver (2020), both of whom applied models of ecological theory to the well-being of individuals who have experienced sexual assault. They note ecological factors, which may include characteristics of the veteran, the veteran's support system, and the veteran's sociocultural context (e.g., racial/ethnic identity, religion, military status, environmental stressors), impact the vet-

eran's conceptualization of and response to sexual violence and contribute to stress or resilience independent of the violence itself. This approach mirrors advances made by Hobfall and colleagues (2020) in the broader conceptual literature related to PTSD, specifically in their conservation of resources (COR) theory. According to the COR theory, the presence or absence of linked ecological resources (referred to as "resource caravans") are instrumental in the development and prevention of and recovery from PTSD, yet these elements are rarely addressed in other empirical frameworks for PTSD. As such, both sets of authors note that socioecological frameworks for understanding assault services are less often empirically tested (Campbell et al., 2009; Dworkin & Weaver, 2020).

Economics: Housing and financial security

One important sociocultural factor to consider is homelessness and housing security. Focus groups conducted with homeless female veterans by Hamilton and colleagues (2011) identified relational trauma during military service as one "pathway to homelessness." A retrospective cohort study of U.S. veterans conducted by Brignone and colleagues (2016) found that MST was an independent risk factor associated with postdeployment homelessness among women and men, with nearly 10% of veterans who screened positive for MST also experiencing homelessness within 5 years of their return from deployment. This incidence rate of homelessness was more than double that observed among veterans without a history of MST. Pavao and colleagues (2013) examined homeless veterans and reported that 39.7% of female and 3.3% of male veterans had experienced MST, and they were more likely to have mental health conditions compared to their counterparts who had not experienced MST. A related ecological variable is financial stability; however, little is known about the association between MST and financial resources, with current literature focusing largely on housing. One study examining male veterans did not find a link between experiencing MST and unemployment (Mondragon et al., 2015), though unemployment is not a direct correlate of financial stability. Importantly, poverty has been found to increase the risk of sexual violence, increase the risk of PTSD in Black women, and serve as a barrier to accessing appropriate mental and medical health care (Bryant-Davis et al., 2009). Further investigations of these economic resources among treatment-seeking veterans who have experienced MST would permit further consideration of resources in addition to mental health therapies and medication management, as well as identify factors that may require incorporation into interventions targeting symptom relief and recovery.

Interpersonal relationships: Social support and interpersonal violence

Characteristics of the support system are also relevant to well-being and help-seeking for individuals who have experienced MST. Social support is generally viewed as a protective factor following interpersonal violence (IV; Ulloa et al., 2015), and one's perceived level of support from coworkers has been shown to be associated with reduced impairment in social functioning among male and female veterans with a history of MST (Mondragon et al., 2015; Smith et al., 2020). Other research has demonstrated that MST predicts lower levels of perceived social support among male veterans (Mondragon et al., 2015); however, when support systems respond positively to disclosures of sexual assault, male veterans report viewing this interaction as facilitating their recovery (Monteith et al., 2019). In veterans who have experienced MST, it is unclear whether these trends vary based on ethnoracial identity, although some of the few studies with adequate numbers of minority participants (e.g., Mondragon et al., 2015) have not reported ethnoracial differences in perceived social support. Notably, the norms and expectations of a veteran's ecological context may significantly impact responses to disclosure of sexual assault (Dworkin & Weaver, 2020; Ulloa et al., 2015). Similarly, characteristics of the veteran's intimate relationships may lead to positive or negative outcomes. Veterans who have experienced MST are more likely to experience a broad range of current and historical IV, including childhood sexual abuse and intimate partner violence (Allard et al., 2011; Suris & Lind, 2008). This is particularly concerning because compared with noninterpersonal trauma, IV is associated with more severe psychological distress (Allard et al., 2011) as well as increased utilization of behavioral and health-related services (Dichter & Marcus, 2013). Perhaps most importantly, IV is often a pressing clinical concern that can warrant immediate safety planning, intervention, and follow-up, all of which are core elements of effective clinical screening and assessment (Dichter & Marcus, 2013).

Spirituality

Previous research has suggested that in some cases, the use of positive spiritual coping practices is associated with reduced PTSD symptoms (Gerber et al., 2011), although the associations between spirituality and mental health symptoms are complex (e.g., Hourani et al., 2012). Two investigations suggest Black individuals who have experienced sexual assault may be more likely to use spiritually based coping than other ethnoracial groups (Ahrens et al.,

2010; El-Khoury et al., 2004). However, despite higher levels of spiritual coping among Black women who have experienced sexual assault, Ahrens and colleagues (2010) did not find Black participants in their sample more likely to note reductions in depressive and posttraumatic symptoms or improved ratings of psychological well-being than their White peers. In fact, analyses of the interaction between spiritual coping and ethnicity found a significantly stronger association for White participants who experienced assault and posttraumatic growth (Ahrens et al., 2010). However, studies are limited regarding care-seeking veterans who have experienced MST. Improving the field's understanding of the potential intersections of ethnoracial and spiritual identities has important implications for incorporating diversity-centered practices and perspectives into evidence-based care, liaising with additional supports, and further contextualizing the assessment of associations between spiritual coping and clinical outcomes.

In sum, although ecological factors clearly play a role in the experience of veterans who have experienced MST, additional research is needed to explore how these factors differ across ethnoracial backgrounds. Therefore, the aims of the current study were to (a) examine ecological risk and protective factors for treatment-seeking veterans who have experienced MST and (b) identify potential resource gaps or coping divergences. Understanding these factors is important for screening, making treatment recommendations, maximizing treatment outcomes, and reducing inequities in the empirical understanding of resources among individuals who present for MST-specific care.

METHOD

Participants

Data were obtained from 509 veterans who presented to a large Veterans Healthcare Administration (VHA) hospital in the midwestern United States seeking care for mental health concerns associated with assaultive MST. Due to limited statistical power for White and Black veterans who also identified as Latinx, all veterans in this study identified as non-Latinx White and non-Latinx Black. Consistent with most MST-focused veteran samples, most participants were White (71.3%), female (69.4%), and unmarried (66.9%). Common diagnoses included PTSD (73.3%) and major depressive disorder (75.5%); other diagnoses in the sample included generalized anxiety disorder (16.5%) and panic disorder (11.9%). With respect to service era, approximately 38.5% of participants served in support of recent military operations in Iraq and Afghanistan, 23.8 served

TABLE 1 Demographic, military service, and clinical characteristics

Variable	n	Total sample (N = 509)		White (n = 363)		Black (n = 146)		Statistical test	p
		M	SD	M	SD	M	SD		
Age (years)	504	43.92	12.5	43.17	12.9	45.78	11.5	$t(507) = 2.61$.033
	n	n	%	n	%	n	%		
Sex	509							$\chi^2(1, N = 509) = 1.49$.222
Female		353	69.4	246	67.8	107	73.3		
Male		156	30.6	117	32.2	39	26.7		
Service era	509							$\chi^2(4, N = 509) = 5.76$.218
Iraq/Afghanistan		196	38.5	147	40.5	49	33.6		
Persian Gulf		124	24.4	83	22.9	41	28.1		
Post-Vietnam		121	23.8	80	22.0	41	28.1		
Vietnam		67	13.2	52	14.3	15	10.3		
Pre-Vietnam		1	0.2	1	0.3	0	0.0		
Service branch	509							$\chi^2(4, N = 509) = 9.26$.055
Air Force		86	16.9	59	16.3	27	18.5		
Army		244	47.9	162	44.6	82	56.2		
Coast Guard		3	0.6	2	0.6	1	0.7		
Marines		55	10.8	45	12.4	10	6.8		
Navy		121	23.8	95	26.2	26	17.8		
Ecological resources									
Spiritual beliefs	466	365	78.3	244	73.3	121	91.0	$\chi^2(1, N = 466) = 17.55$	<.001
Social support	498	347	69.7	269	74.1	78	57.8	$\chi^2(1, N = 498) = 12.42$	<.001
Past-year									
interpersonal violence	455	49	11.0	37	11.5	12	9.8	$\chi^2(1, N = 445) = 0.27$.601
Housing stability	449	370	82.4	271	83.4	99	79.8	$\chi^2(1, N = 449) = 0.78$.378

Note: N = 509.

during the Persian Gulf Era, 24.4% were denoted as Post-Vietnam Era veterans, 13.2% served during the Vietnam Era, and fewer than 1% served prior to the Vietnam Era. With respect to service branch, approximately 16.8% of the sample served in the Air Force, 48.6% served in the Army, 23.3% served in the Navy, 10.6% served in the Marines, and less than 1% served in the Coast Guard. The mean participant age was 43.9 years ($SD = 12.5$). Full demographic characteristics are presented in Table 1.

Procedure

Data collection occurred during routine clinical care between 2009 and 2019. Before their first session, veterans completed a comprehensive intake questionnaire that was used to assess demographic characteristics, psychosocial history, and current psychiatric symptoms. During semistructured interviews, clinicians assessed for MST exposure and exposure to additional traumatic events. Veterans were included in the study if they sought care for

concerns specifically related to assaultive MST. An independent chart audit and data extraction procedure were conducted to confirm the accuracy of MST designation and data collection. This study was approved by the hospital Institutional Review Board and Health Services Research and Development Board, and a waiver for informed consent was granted for analyses of retrospective review of standard clinical care.

Measures

Demographic characteristics and ecological resources

Demographic characteristics, such as age, sex, ethnoracial identity, service era, and military branch, were assessed via the self-report intake questionnaire. Participants also indicated existing ecological resources and barriers, including available social support, spiritual coping, past-year IV exposure, financial sufficiency, and stable living

environment. Veterans were asked to specify one of three levels of financial sufficiency: able to make ends meet (i.e., earning or having access to enough money to pay for housing, food, and other necessities without incurring debt), struggling to make ends meet but able to do so, or unable to make ends meet. All other ecological factors were binary outcomes (i.e., “yes” or “no”). Responses on the intake questionnaire were reviewed by the treating clinician and used to inform treatment on an individual basis. These questions are included in Appendix 1.

Data analysis

Descriptive information (i.e., means, percentages, and nonparametric group comparisons) was generated for the demographic variables under study. Due to minimal missing data, all available observations were included for each analysis. Chi-square analyses were used to compare ecological factors for Black and White veterans. Alpha was set at $p < .05$, and Cramer's V was used to measure effect size. Financial sufficiency was measured using a three-item ordinal scale, as described. Mann–Whitney U tests were performed to compare Black and White veterans across the three levels of financial sufficiency, and Pearson's r was used to measure effect size. All analyses were conducted with SPSS (Version 28).

RESULTS

Chi-square analyses and Mann–Whitney U tests were computed to assess differences in ecological resources between Black and White veterans (see Table 1). The results of these analyses demonstrated that Black and White veterans differed with respect to spiritual beliefs that assisted with coping, financial sufficiency, and social support. Participants did not differ on past-year IV exposure or housing stability. Approximately 18% of participants reported a lack of stable housing, and approximately 11% of participants reported past-year IV exposure.

Black veterans were more likely to report having spiritual beliefs that assisted with coping, $\chi^2(1, N = 466) = 17.55$, $p < .001$, than White veterans. Specifically, 91.0% of Black veterans reported having spiritual beliefs that assisted with coping versus 73.3% of White veterans; the effect size for this difference was small-to-moderate, Cramer's $V = .19$. However, Black veterans were also less likely than White veterans to report a social support system, $\chi^2(1, N = 498) = 12.42$, $p < .001$. Specifically, 57.8% of Black veterans reported having a social support system compared to 74.1% of White veterans, with a small-to-moderate effect size, Cramer's $V = .16$. Finally, a Mann–Whitney U test (Figure 1) indicated

Black ($n = 125$) and White ($n = 327$) veterans differed on levels of financial instability, although the effect size was small, $U = 18,091.50$, $z = -2.04$, $p = .042$, $r = .10$. Specifically, 57.4% of the veterans under study reported some degree of financial instability and 20.2% reported that their finances were not sufficient to make ends meet. For White veterans, 46.2% were able to make ends meet, 36.1% struggled to make ends meet, and 17.8% were unable to make ends meet. For Black veterans, 36.8% were able to make ends meet, 38.4% struggled to make ends meet, and 24.8% were unable to make ends meet.

DISCUSSION

This investigation applied an ecological theory framework to examine differences in ecological resources between Black and White veterans seeking mental health services for conditions related to MST. Overall, Black and White veterans with MST differed in terms of their levels of spiritual coping, social support, and financial stability, with Black veterans reporting higher levels of spiritual coping but lower levels of social support and financial stability than White veterans. Although effect sizes observed in this investigation were small to moderate in magnitude, the results indicate potentially meaningful differences in the ecological resources available to Black and White veterans exposed to MST and may shed light on important and modifiable factors in their ecological environment.

The largest observed effect concerned spiritual coping; although most Black and White veterans reported spiritual beliefs or practices that help them in life, a notably larger proportion of Black veterans (91% vs. 73%) endorsed such beliefs. This is consistent with previous literature demonstrating higher levels of spirituality and religious engagement within the Black community generally (Mouzon, 2017) and aligns with other investigations showing that Black individuals who have experienced sexual assault are more likely to engage in spiritual coping than those from other ethnoracial backgrounds (e.g., Ahrens et al., 2010; El-Khoury et al., 2004). Differences in the availability and salience of spiritual coping are relevant to mental health care providers for several reasons. Many active duty service members and veterans seek out spiritual and religious counseling for mental health concerns, and a desire for such services may be especially meaningful when trust in traditional mental health care is low (Nieuwsma et al., 2014). Different forms of spiritual coping, particularly engagement in a religious community and various spiritual and religious practices (e.g., prayer, meditation, spending time in nature, reading sacred texts), have been linked to improved overall mental health (Weber & Pargament, 2014; Yamada et al., 2020) and recovery

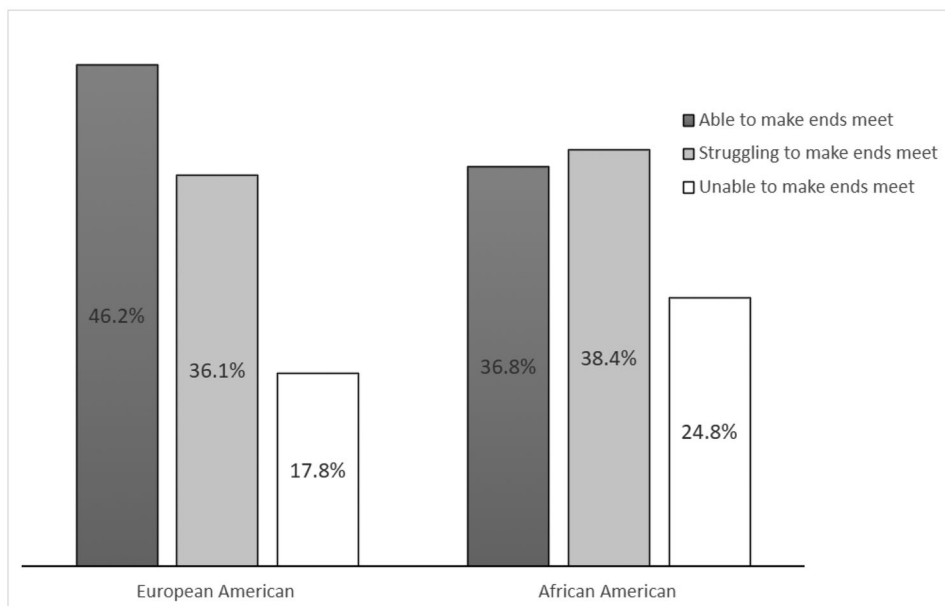


FIGURE 1 Participant economic sufficiency, by ethnoracial identification

following interpersonal trauma (Bryant-Davis & Wong, 2013). When applied within mental health services, research has demonstrated that general community members who rate spirituality and religion as important to them prefer the integration of their beliefs into their mental health treatment (Yamada et al., 2020). Research has shown good outcomes for a range of concerns following mental health interventions that either incorporate elements of patients' spiritual or religious practices or explicitly target patients' spirituality or religious beliefs (Weber & Pargament, 2014).

With regard to veterans' mental health care specifically, the VHA provides services related to spiritual and religious concerns, and such resources may augment services provided by other mental health teams (Smigelsky et al., 2020). Preliminary research has shown that group intervention focused on spiritual engagement and coping in veterans can be helpful in reducing posttraumatic stress symptoms following various types of traumatic events (Harris et al., 2011). Of note, the effectiveness of some spirituality-based interventions may vary across racial majority and minority groups, potentially aligning with differences found in the current investigation (Harris et al., 2011). Mental health care providers should also note, however, that the associations between spirituality and mental health are complex (e.g., Hourani et al., 2012); higher levels of spiritual engagement do not negate the need for treatment following sexual trauma, as the availability of spiritual coping is not always a sufficient condition for desired mental health outcomes (e.g., Ahrens et al., 2010). Rather, research suggests that a complementary or integrative approach to treatment following sexual trauma, wherein spiritual support

is applied in tandem with effective evidence-based intervention, enhances treatment outcomes (Bryant-Davis & Wong, 2013). There is also ample evidence that, if clinicians are sensitive to aspects of identity and context, evidence-based trauma treatments (e.g., prolonged exposure [PE] and cognitive processing therapy [CPT]) can effectively incorporate and address numerous elements of diversity. Recent literature has provided multiple examples of ways in which clinicians can incorporate and address patients' ethnoracial backgrounds and experiences (e.g., Williams et al., 2014), gender roles and sex-related expectations (Livingston et al., 2020), and faith systems (Smith et al., 2013) in both PE and CPT. This underscores the importance of clinicians taking active steps to incorporate contextual and identity-based factors into conceptualization and treatment.

In practice, the results of this investigation may help to inform providers of relevant differences in available spiritual coping between Black and White veterans seeking care for MST. When veterans with MST report a desire for but relative lack of such coping, referrals to spiritual counseling may complement evidence-based interventions and lead to improved outcomes. Conversely, when veterans are already engaged in their spiritual or religious systems and note the importance of their beliefs and faith practices, establishing more direct coordination and collaboration with community-based spiritual leaders and organizations may help enhance the effectiveness of mental health treatments and broadly support the recovery of individuals with a history of sexual trauma (Bryant-Davis & Wong, 2013).

Another key finding within this investigation relates to the perceived availability of social support, with 74.1% of

White veterans with MST but only 57.8 of Black veterans with MST reporting perceived social support, yielding a small-to-moderate and significant effect that may be of particular import to MST service providers. Social support theory posits that during times of stress, support is most beneficial when the type of support received matches the type of support desired by the support recipient (Harandi et al., 2017). Perceived social support is generally considered to correlate positively with mental health (Harandi et al., 2017) and facilitate recovery following IV (Ulloa et al., 2015), whereas a perceived lack of social support has been shown to predict poorer mental health outcomes, including depression, severe mental illness, and anxiety (Wang et al., 2018). A particularly relevant finding for the current investigation is that receiving social support from informal sources, such as friends and family, has been shown to increase the odds of seeking mental health care in the aftermath of sexual assault (Kirkner et al., 2018). Of note, the nature of veterans' social support, particularly negative support reactions, is likely to impact the outcome of disclosing sexual assault (Dworkin et al., 2019). Further, negative social reactions have been consistently associated with increased posttraumatic psychopathology, with specific types of negative reactions (e.g., controlling, distracting, treating survivors differently) demonstrating particularly large associations, and the receipt of negative support has been shown to have a larger impact on psychopathology than receipt of positive support and perceptions of positive support. For veterans who have experienced MST, this association can be complicated by experiences of institutional (i.e., fellow soldiers, leadership, and the military system) betrayal at the time of trauma exposure, which can be accompanied by a fear of revictimization and subsequent withdrawal from current and future social support networks (Monteith et al., 2016). Although these themes can be effectively addressed in treatment (Smith et al., 2013), veterans with MST who have experienced institutional betrayal often report distrusting VHA mental health care services due to their explicit connection to the military (Monteith et al., 2016).

Further complicating the role of social support in the aftermath of sexual trauma are the norms and expectations within a veteran's sociocultural context. Evidence suggests norms across different ethnoracial groups may either permit or dissuade individuals coping in the aftermath of stressful experiences to disclose their distress and explicitly request support from others (Dworkin & Weaver, 2020). Although the literature on social support within mental health is extensive (see Harandi et al., 2017, for a meta-analysis) and complex (Dworkin & Weaver, 2020), practical implications of the present investigation may include conducting a purposeful assessment of the social context of veterans with MST and taking a person-centered

approach when exploring veterans' desired levels and types of social support. Importantly, clinicians should also attend to potential differences in the sociocultural contexts across Black and White veterans who have experienced MST.

The last difference observed between Black and White veterans who experienced MST was reported financial stability; specifically, compared with White veterans, Black veterans were more likely to report some degree of financial instability, either struggling to make ends meet (38.4% vs. 36.1%) or being unable to make ends meet (24.8% vs. 17.8%). This is one of the few investigations to examine financial correlates of MST, as veterans' financial standing is seldom discussed within the MST literature. Potential proxy variables for overall financial stability include annual income and employment status. Some evidence in non-treatment-seeking samples suggests that MST predicts lower annual income among female veterans (Sadler et al., 2000). In contrast, Mondragon and colleagues (2015) found no association between MST exposure and employment status among male treatment-seeking veterans; however, the authors did not estimate rates of unemployment with attention to veterans' race. Financial security among MST-exposed, treatment-seeking veterans is an important consideration for treatment providers. Insufficient financial resources represent a notable barrier to accessing adequate care following an assault, on par with other frequently cited barriers, such as stigma, shame, and the fear of negative consequences after seeking care (Kantor et al., 2017).

Among military populations, literature reviews suggest that between 16% and 28% of individuals interested in mental health care cite costs and other financial barriers as obstacles to receiving care (Kantor et al., 2017). In practical terms, MST service providers would benefit from considering the implications of their patients' financial situation, as financial insecurity can serve as a major barrier to effective treatment engagement and success (Kantor et al., 2017). Contextual variables related to financial resources, including childcare availability, work schedule flexibility, and overall stress related to financial insecurity, are relevant factors for treatment. Clinicians conducting evidence-based trauma treatments typically ask veterans to engage in work outside of treatment and to attend therapy consistently. Although certain aspects of therapy (e.g., regular attendance) are crucial for success, sensitivity and creativity can help clinicians deliver evidence-based treatments with fidelity, which can help to offset the added stress of financial instability (Feske, 2008). Additionally, it is helpful for clinicians to remember that knowledge of relevant resources is another avenue to help address financial instability in veterans seeking treatment for MST. Referrals to individuals trained in assisting patients with financial

literacy, management, and accessing financial supports should be considered as a part of a comprehensive set of interventions, particularly for Black veterans coping in the aftermath of MST, given the higher proportion of Black veterans experiencing financial insecurity and associated adverse mental health outcomes (Bryant-Davis & Wong, 2013). Without regard to ethnoracial identity, over half of the current sample (57.4%) reported some degree of financial instability, and 20.2% reported that their finances were not sufficient to make ends meet. Given these high rates of reported financial instability, additional investigation of veterans' financial resources is strongly recommended, especially among veterans seeking care related to MST.

With regard to housing stability, although no differences were observed between Black and White veterans with MST, the overall rate of reported housing instability was notably high (17.7%), underscoring the importance of screening for stable housing among veterans to prevent unstable housing from deteriorating into homelessness. Veterans face higher rates of unstable housing and homelessness than the civilian population (Byrne et al., 2015), and rates of homelessness in the past month, year, and five years are more than doubled for veterans with a history of MST compared to those who have not experienced MST (Brignone et al., 2016). Clinicians should pay special attention to the impact of homelessness on therapy engagement and process, as homeless veterans are more likely to return to unstable and potentially dangerous living situations (Brignone et al., 2016), which can impact a patient's accurate assessments of (e.g., hypervigilance in response to a nonthreatening situation vs. vigilance in a currently dangerous living situation) and ability to engage in evidence-based treatment within their home environment.

With respect to IV exposure, no significant differences were observed between Black and White veterans, yet a sizable proportion of the sample (11.0%) endorsed being exposed to past-year IV. Research has demonstrated a link between different forms of IV, such as intimate partner violence, and housing instability among the general population (e.g., Pavao et al., 2007) and veteran populations (e.g., Yu et al., 2020). Given the results of the current investigation and the broader literature on MST exposure and socioecological vulnerabilities among veterans, providers are encouraged to attend to patients' reports of housing stability and perceived safety within their interpersonal contexts and consider appropriate referrals to additional services, such as VHA Homeless Program and Intimate Partner Violence Assistance Program coordinators, to facilitate effective coping and recovery from MST at multiple levels of socioecological functioning. In treatment, clinicians should also consider how access to ecological resources intersects with veterans' ethnoracial

and cultural identities. Prior work from Asnaani and Hall-Clark (2017) has demonstrated how ethnoracial factors, including acculturation, experiences of discrimination, and stigma, can impact PTSD symptom presentation and treatment response. Their work highlights the importance of actively integrating factors related to veterans' ethnoracial identity into treatment and making accommodations to fit the veterans' needs outside of the therapy room, which is supported by the current results.

The present findings must be viewed in light of study limitations. First, data in this study were cross-sectional in nature and preclude any assumptions about casual associations. Not only might unidirectional associations exist between ecological resources and mental health outcomes following MST but reciprocal associations between MST exposure and ecological resources across different ethnoracial groups may also be likely, leaving multiple avenues open for extending this line of research into longitudinal data designs. Relatedly, this study utilized multiple single-item scales with limited choices to capture the absence or presence of ecological resources. Although this is a helpful approach for limiting the assessment burden for veterans seeking clinical care, it may also have limited the depth and precision of the present analysis. Social support and spiritual coping, in particular, are areas that could benefit from a more nuanced investigation, as we were unable to assess the quality of social support or spiritual coping or determine whether veterans perceived their current social supports as positive or negative. Second, the data were collected from a treatment-seeking sample. Although we consider this to be a strength of the current investigation, as the data yield insights of direct clinical relevance to treatment providers, the results may not be generalizable to veterans who have experienced nonassaultive MST or those who did not seek help within the VHA. It is also possible that restricting the sample to veterans seeking treatment may have attenuated ethnoracial differences that might otherwise be observed in the larger veteran population. Additionally, this investigation cannot address potential differences in ecological resources across Black and White veterans with MST who have not sought any treatment; such differences may exist outside of treatment-seeking samples, and exploring differences in spiritual coping, social support, and financial stability may be crucial to understanding why many veterans exposed to MST do not seek treatment. Finally, given the limited statistical power, we could not probe potential differences in ecological resources across intersecting identities (e.g., ethnoracial group membership and gender identity among individuals who have experienced MST) or additional ethnoracial groups not represented in this sample (e.g., Asian, biracial, American Indian/Alaskan Native). Proper consideration of intersectional identities, including those that

intersect with ethnoracial identities not included in this paper, is important for understanding the nuances of processes and experiences following interpersonal trauma. In line with these points, it is also likely important to explore the interaction of race, ecological resources, and diagnostically relevant symptom measures (i.e., measures of PTSD or depression severity) in future work. This information would help clinicians better understand how access and barriers to ecological resources directly impact the symptom course during treatment across conditions related to the experience of MST.

In addition to recommendations associated with the potential incorporation of our findings into individual care settings, it is important to consider the influence of pervasive sociocultural issues, such as systemic racism. As is exemplified by the intersection of race and the experience of MST in the discussion of institutional betrayal, seeking and receiving treatment is strongly tied to organizational factors. Clinicians can make a significant impact by actively confronting these challenges in the therapy room; however, issues of treatment access and stigma for Black veterans who have experienced MST also require attention and intervention at the organizational level. Policymakers and leadership in active duty military and veteran organizations have an important role in addressing the points raised in this paper and elsewhere in related literature (e.g., Asnaani & Hall-Clark, 2017).

In sum, the results of this investigation include significant differences in the ecological resources available to Black and White veterans with MST, specifically spiritual coping, financial stability, and perceived social support. Increasing veteran access to and awareness of spiritual (e.g., chaplaincy referrals) and financial (e.g., Veterans Benefits Administration consultation) resources can help create a more equitable treatment-seeking experience, as can improving provider awareness of ethnoracial differences in ecological resources. Past research has shown both Black civilians and veterans to suffer higher rates of mental illness following trauma (Algeria et al., 2013; Asnaani & Hall-Clark, 2017), lower rates of treatment engagement (Roberts et al., 2011), and higher incidences of dropout from trauma-focused treatments than their White civilian and veteran peers (Spoont et al., 2015). As a caveat, these trends are not universally observed, with some PTSD treatment-focused studies reporting higher rates of PE completion for Black veterans (Maguen et al., 2019) and others demonstrating no difference in dropout between ethnoracial groups (Eftekhari et al., 2020). Regardless, researchers and clinicians would benefit from attending to salient differences in the psychosocial environments of veterans exposed to MST, as such attention may lead to a more nuanced understanding of the mitigating and exacerbating factors for different veteran populations and, in turn,

may aid in tailoring more effective interventions for those seeking care related to sexual assault.

OPEN PRACTICES STATEMENT

This article has been contributed to by U.S. Government employees and their work is in the public domain in the United States.

AUTHOR NOTE

The authors declare no relevant competing interests. This work was supported by the Ann Arbor Veterans Healthcare System Mental Health Service and the University of Michigan Department of Psychiatry. The contents do not necessarily represent the views of the U.S. Department of Veterans Affairs or the United States Government.

ORCID

Peter P. Grau  <https://orcid.org/0000-0003-4520-1941>

REFERENCES

- Ahrens, C. E., Abeling, S., Ahmad, S., & Hinman, J. (2010). Spirituality and well-being: The relationship between religious coping and recovery from sexual assault. *Journal of Interpersonal Violence, 25*(7), 1242–1263. <https://doi.org/10.1177/0886260509340533>
- Algeria, M., Fortuna, L. R., Lin, J. Y., Norris, L. F., Gao, S., Takeuchi, D. T., & Jackson, J. S. (2013). Prevalence, risk, and correlates of PTSD across ethnic and minority groups in the U.S. *Medical Care, 51*(2), 1114–1123. <https://doi.org/10.1097/mlr.0000000000000007>
- Allard, C. B., Nunnink, S., Gregory, A. M., Klest, B., & Platt, M. (2011). Military sexual trauma research: A proposed agenda. *Journal of Trauma & Dissociation, 12*(3), 324–345. <https://doi.org/10.1080/15299732.2011.542609>
- Asnaani, A., & Hall-Clark, B. (2017). Recent developments in understanding ethnocultural and race differences in trauma exposure and PTSD. *Current Opinion in Psychology, 14*, 96–101. <https://doi.org/10.1016/j.copsyc.2016.12.005>
- Bonnes, S. (2021). An intersectional approach to military sexual violence. *Sociology Compass, 15*(12), e12939. <https://doi.org/10.1111/soc4.12939>
- Bovin, M. J., Black, S. K., Kleiman, S. E., Brown, M. E., Brown, L. G., Street, A. E., Rosen, R., Keane, T. M., & Marx, B. P. (2019). The impact of assessment modality and demographic characteristics on endorsement of military sexual trauma. *Women's Health Issues, 29*, S67–S73. <https://doi.org/10.1016/j.whi.2019.03.005>
- Brignone, E., Gundlapalli, A. V., Blais, R. K., Carter, M. E., Suo, Y., Samore, M. H., Kimerling, R., & Fargo, J. D. (2016). Differential risk for homelessness among U.S. male and female veterans with positive screen for military sexual trauma. *JAMA Psychiatry, 73*(6), 582–589. <https://doi.org/10.1001/jamapsychiatry.2016.0101>
- Bryant-Davis, T., Chung, H., & Tillman, S. (2009). From the margins to the center: Ethnic minority women and the mental health effects of sexual assault. *Trauma, Violence, & Abuse, 10*(4), 330–357. <https://doi.org/10.1177/1524838009339755>

- Bryant-Davis, T., & Wong, E. C. (2013). Faith to move mountains: Religious coping, spirituality, and interpersonal trauma recovery. *American Psychologist*, *68*(8), 675–684. <https://doi.org/10.1037/a0034380>
- Byrne, T., Fargo, J. D., Montgomery, A. E., Roberts, C. B., Culhane, D. P., & Kane, V. (2015). Screening for homelessness in the Veterans Health Administration: Monitoring housing stability through repeat screening. *Public Health Records*, *130*(6), 684–692. <https://doi.org/10.1177/003335491513000618>
- Campbell, R., Dworkin, E., & Cabral, G. (2009). An ecological model of the impact of sexual assault on women's mental health. *Trauma, Violence, & Abuse*, *10*(3), 225–246. <https://doi.org/10.1177/1524838009334456>
- Curry, T. J. (2019). Expendables for whom: Terry Crews and the erasure of black male victims of sexual assault and rape. *Women's Studies in Communication*, *42*(3), 287–307. <https://doi.org/10.1080/07491409.2019.1641874>
- Dichter, M. E., & Marcus, S. C. (2013). Intimate partner violence victimization among women veterans: Health, health care service use, and opportunities for intervention. *Military Behavioral Health*, *1*(2), 107–113. <https://doi.org/10.1080/21635781.2013.830062>
- Dworkin, E. R., Brill, C. D., & Ullman, S. E. (2019). Social reactions to disclosure of interpersonal violence and psychopathology: A systematic review and meta-analysis. *Clinical Psychology Review*, *72*, 101750. <https://doi.org/10.1016/j.cpr.2019.101750>
- Dworkin, E. R., & Weaver, T. (2020). The impact of sociocultural contexts on mental health following sexual violence: A conceptual model. *Psychology of Violence*, *11*(5), 476–487. <https://doi.org/10.1037/vio0000350>
- Eftekhari, A., Crowley, J. J., Mackintosh, M. A., & Rosen, C. S. (2020). Predicting treatment dropout among veterans receiving prolonged exposure therapy. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(4), 405–412. <https://doi.org/10.1037/tra0000484>
- El-Khoury, M. Y., Dutton, M. A., Goodman, L. A., Engel, L., Belamaric, R. J., & Murphy, M. (2004). Ethnic differences in battered women's formal help-seeking strategies: A focus on health, mental health, and spirituality. *Cultural Diversity and Ethnic Minority Psychology*, *10*(4), 383–393. <https://doi.org/10.1037/1099-9809.10.4.383>
- Feske, U. (2008). Treating low-income and minority women with posttraumatic stress disorder: A pilot study comparing prolonged exposure and treatment as usual conducted by community therapists. *Journal of Interpersonal Violence*, *23*(8), 1027–1040. <https://doi.org/10.1177/0886260507313967>
- Gerber, M. M., Boals, A., & Schuettler, D. (2011). The unique contributions of positive and negative religious coping to posttraumatic growth and PTSD. *Psychology of Religion and Spirituality*, *3*(4), 298–307. <https://doi.org/10.1037/a0023016>
- Harandi, T. F., Taghinasab, M. M., & Nayeri, T. D. (2017). The correlation of social support with mental health: A meta-analysis. *Electronic Physician*, *9*(9), 5212–5222. <https://doi.org/10.19082/5212>
- Harris, J. I., Erbes, C. R., Engdahl, B. E., Thuras, P., Murray-Swank, N., Grace, D., Ogden, H., Olson, R. H., Winkowski, A. M., Bacon, R., & Malec, C. (2011). The effectiveness of trauma-focused spiritually integrated intervention for veterans exposed to trauma. *Journal of Clinical Psychology*, *67*(4), 425–438. <https://doi.org/10.1002/jclp.20777>
- Hobfoll, S. E., Gaffey, A. E., & Wagner, L. M. (2020). PTSD and the influence of context: The self as a social mirror. *Journal of Personality*, *88*(1), 76–87. <https://doi.org/10.1111/jopy.12439>
- Hourani, L. L., Williams, J., Forman-Hoffman, V., Lane, M. E., Weimer, B., & Bray, R. M. (2012). Influence of spirituality on depression, posttraumatic stress disorder, and suicidality in active duty military personnel. *Depression Research and Treatment*, *2012*, 425463. <https://doi.org/10.1155/2012/425463>
- Kantor, V., Knefel, M., & Lueger-Schuster, B. (2017). Perceived barriers and facilitators of mental health service utilization in adult trauma survivors: A systematic review. *Clinical Psychology Review*, *52*, 52–68. <https://doi.org/10.1016/j.cpr.2016.12.001>
- Kirkner, A., Relyea, M., & Ullman, S. E. (2018). PTSD and problem drinking in relation to seeking mental health and substance use treatment among sexual assault survivors. *Traumatology*, *24*(1), 1–7. <https://doi.org/10.1037/trm0000126>
- Livingston, N. A., Berke, D., Scholl, J., Ruben, M., & Shipherd, J. C. (2020). Addressing diversity in PTSD treatment: Clinical considerations and guidance for the treatment of PTSD in LGBTQ populations. *Current Treatment Options in Psychiatry*, *7*(2), 53–69. <https://doi.org/10.1007/s40501-020-00204-0>
- Lofgreen, A. M., Carroll, K. K., Dugan, S. A., & Karnik, N. S. (2017). An overview of sexual trauma in the U.S. military. *Focus*, *15*(4), 411–419. <https://doi.org/10.1176/appi.focus.20170024>
- Maguen, S., Li, Y., Madden, E., Seal, K. H., Neylan, T. C., Patterson, O. V., DuVall, S. L., Lujan, C., & Shiner, B. (2019). Factors associated with completing evidence-based psychotherapy for PTSD among veterans in a national healthcare system. *Psychiatry Research*, *274*, 112–128. <https://doi.org/10.1016/j.psychres.2019.02.027>
- Meyers, M. (2004). African American women and violence: Gender, race, and class in the news. *Critical Studies in Media Communication*, *21*(2), 95–118. <https://doi.org/10.1080/07393180410001688029>
- Mondragon, S. A., Wang, D., Pritchett, L., Graham, D. P., Plasencia, M. L., & Teng, E. J. (2015). The influence of military sexual trauma on returning OEF/OIF male veterans. *Psychological Services*, *12*(4), 402–411. <https://doi.org/10.1037/ser0000050>
- Monteith, L. L., Bahraini, N. H., Matarazzo, B. B., Soberay, K. A., & Smith, C. P. (2016). Perceptions of institutional betrayal predict suicidal self-directed violence among veterans exposed to military sexual trauma. *Journal of Clinical Psychology*, *72*(7), 743–755. <https://doi.org/10.1002/jclp.22292>
- Monteith, L. L., Brownstone, L. M., Gerber, H. R., Soberay, K. A., & Bahraini, N. H. (2019). Understanding suicidal self-directed violence among men exposed to military sexual trauma: An ecological framework. *Psychology of Men & Masculinities*, *20*(1), 23–35. <https://doi.org/10.1037/men0000141>
- Mouzon, D. M. (2017). Religious involvement and the Black-White paradox in mental health. *Race and Social Problems*, *9*(1), 63–78. <https://doi.org/10.1007/s12552-017-9198-9>
- Nieuwsma, J. A., Fortune-Greeley, A. K., Jackson, G. L., Meador, K. G., Beckham, J. C., & Elbogen, E. B. (2014). Pastoral care use among post-9/11 veterans who screen positive for mental health problems. *Psychological Services*, *11*(3), 300–308. <https://doi.org/10.1037/a0037065>
- Pavao, J., Alvarez, J., Baumrind, N., Induni, M., & Kimerling, R. (2007). Intimate partner violence and housing instability. *American Journal of Preventive Medicine*, *32*(2), 143–146. <https://doi.org/10.1016/j.amepre.2006.10.008>

- Pavao, J., Turchik, J. A., Hyun, J. K., Karpenko, J., Sawelkis, M., McCutcheon, S., Kane, V., & Kimerling, R. (2013). Military sexual trauma among homeless veterans. *Journal of General Internal Medicine*, *28*(Suppl 2), S536–S541. <https://doi.org/10.1007/s11606-013-2341-4>
- Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2011). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*, *41*(1), 71–83. <https://doi.org/10.1017/S0033291710000401>
- Sadler, A. G., Booth, B. M., Nielson, D., & Doebbeling, B. N. (2000). Health-related consequences of physical and sexual violence: Women in the military. *Obstetrics & Gynecology*, *96*(3), 473–480. <https://doi.org/10.1097/00006250-200009000-00027>
- Slatton, B. C., & Richard, A. L. (2020). Black Women's experiences of sexual assault and disclosure: Insights from the margins. *Sociology Compass*, *14*(6), e12792. <https://doi.org/10.1111/soc4.12792>
- Smigelsky, M. A., Jardin, C., Nieuwsma, J. A., Brancu, M., Meador, K. G., Molloy, K. G., & Elbogen, E. B. (2020). Religion, spirituality, and suicide risk in Iraq and Afghanistan era veterans. *Depression and Anxiety*, *37*(8), 728–737. <https://doi.org/10.1002/da.23013>
- Smith, E. R., Duax, J. M., & Rauch, S. A. (2013). Perceived perpetration during traumatic events: Clinical suggestions from experts in prolonged exposure therapy. *Cognitive and Behavioral Practice*, *20*(4), 461–470. <https://doi.org/10.1016/j.cbpra.2012.12.002>
- Smith, N. A., Brady, J. M., Hammer, L. B., Carlson, K. F., & Mohr, C. D. (2020). Military sexual trauma among women Veterans: The buffering effect of coworker support. *Military Psychology*, *32*(6), 441–449. <https://doi.org/10.1080/08995605.2020.1806635>
- Spoont, M. R., Nelson, D. B., Murdoch, M., Sayer, N. A., Nugent, S., Rector, T., & Westermeyer, J. (2015). Are there racial/ethnic disparities in VA PTSD treatment retention? *Depression and Anxiety*, *32*, 415–425. <https://doi.org/10.1002/da.22295>
- Suris, A., & Lind, L. (2008). Military sexual trauma: A review of prevalence and associated health consequences in veterans. *Trauma, Violence, & Abuse*, *9*(4), 250–269. <https://doi.org/10.1177/1524838008324419>
- Suris, A., Link-Malcolm, J., Chard, K., Ahn, C., & North, C. (2013). A randomized clinical trial of cognitive processing therapy for veterans with PTSD related to military sexual trauma. *Journal of Traumatic Stress*, *26*(1), 28–37. <https://doi.org/10.1002/jts.21765>
- Ulloa, E. C., Hammett, J. F., Guzman, M. L., & Hokoda, A. (2015). Psychological growth in relation to intimate partner violence: A review. *Aggression and Violent Behavior*, *25*, 88–94. <https://doi.org/10.1016/j.avb.2015.07.007>
- Wang, J., Mann, F., Lloyd-Evans, B., Ma, R., & Johnson, S. (2018). Associations between loneliness and perceived social support and outcomes of mental health problems: A systematic review. *BMC Psychiatry*, *18*(1), 1–16. <https://doi.org/10.1186/s12888-018-1736-5>
- Weber, S. R., & Pargament, K. I. (2014). The role of religion and spirituality in mental health. *Current Opinion in Psychiatry*, *27*(5), 358–363. <https://doi.org/10.1097/yco.0000000000000080>
- Williams, M. T., Malcoun, E., Sawyer, B. A., Davis, D. M., Nouri, L. B., & Bruce, S. L. (2014). Cultural adaptations of prolonged exposure therapy for treatment and prevention of posttraumatic stress disorder in African Americans. *Behavioral Sciences*, *4*(2), 102–124. <https://doi.org/10.3390/bs4020102>
- Williamson, M. L., Holliday, R., Holder, N., North, C. S., & Suris, A. (2017). A reexamination of military sexual trauma and posttraumatic stress disorder. *Psychiatric Annals*, *47*(3), 134–138. <https://doi.org/10.3928/00485713-20170206-01>
- Wilson, L. C. (2018). The prevalence of military sexual trauma: A meta-analysis. *Trauma, Violence, & Abuse*, *19*(5), 584–597. <https://doi.org/10.1177/1524838016683459>
- Yamada, A. M., Lukoff, D., Lim, C. S., & Mancuso, L. L. (2020). Integrating spirituality and mental health: Perspectives of adults receiving public mental health services in California. *Psychology of Religion and Spirituality*, *12*(3), 276–287. <https://doi.org/10.1037/rel0000260>
- Yu, B., Montgomery, A. E., True, G., Cusack, M., Sorrentino, A., Chhabra, M., & Dichter, M. E. (2020). The intersection of interpersonal violence and housing instability: Perspectives from women veterans. *American Journal of Orthopsychiatry*, *90*(1), 63–69. <https://doi.org/10.1037/ort0000379>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Grau, P. P., Valentine, L. M., Vuper, T. C., Rogers, T. A., Wong, J. D., & Sexton, M. B. (2022). Military sexual trauma in context: Ethnoracial differences in ecological resources among treatment-seeking veterans. *Journal of Traumatic Stress*, *35*, 1535–1545. <https://doi.org/10.1002/jts.22859>