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# An Exploratory Examination of Trauma-Related Characteristics among United States Student Veterans

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**Abstract** Trauma exposure is common in U.S. adults, but veterans face elevated risks for both trauma and posttraumatic stress disorder (PTSD). Student veterans—veterans enrolled in postsecondary institutions—may be particularly vulnerable, facing challenges beyond those of civilian students and non-student veterans. This study examined demographic and trauma-related predictors of probable PTSD in a national sample of student veterans (N = 691). Participants completed validated measures of trauma exposure and PTSD symptoms. Results showed that 71.2% screened positive for probable PTSD—substantially higher than rates found in other groups. Key predictors of PTSD severity included older age, service-connected disability, interpersonal trauma, non-interpersonal trauma, and military sexual assault. These results underscore the need for targeted research and support for this underexamined population. Future studies should also explore cultural, economic, and identity-related factors that may further shape PTSD risk in student veterans.

**Keywords** "student veterans", PTSD, "military sexual assault", "service-connected disability", trauma exposure, higher education, diverse identities

## 1. An Exploratory Examination of Trauma-Related Characteristics Among United States Student Veterans

Approximately 68-89% of U.S. adults are exposed to at least one potentially traumatic event (PTE) during their lifetime (Boals et al., 2020; Gold, 2017; Overstreet et al., 2017), yet only approximately 9.4% go on to develop Post Traumatic Stress Disorder (PTSD; Wisco et al., 2022). PTSD has been linked to several influential variables including race, ethnicity, and gender, with other sociodemographic characteristics also associated with PTSD risk, though less consistently (i.e., age, income, socioeconomic status, disability; Hall-Clark et al., 2016; Kessler et al., 1995; Kobayashi et al., 2019; Tiet et al., 2024). Although there is an understanding that demographic and diverse identities contribute to a greater risk of trauma exposure and subsequent development of PTSD in certain individuals (Asnaani & Hall-Clark, 2017), there is a substantial need for better understanding of the impact of these characteristics.

More specifically, service members and veterans are significantly more likely to experience PTEs and to develop PTSD from those exposures than civilians, with up to 70% of soldiers reporting at least one combat experience, and an estimated lifetime prevalence of PTSD from 10% to 30% (Roberge et al., 2019; Sareen et al., 2021). Studies estimate that between 11% of veterans who have never been deployed and 22% of recent Iraq and Afghanistan combat veterans will struggle with PTSD (Haveman-Gould & Newman, 2018; U.S. Department of Veterans Affairs, 2022). Much like the general population, veteran populations are characterized by several factors that may influence the development and nature of the disorder.

The cumulative number of PTEs among male and female veterans is significantly higher than that of civilians when compared by gender identity and veteran status (Lehavot et al., 2018). Female veterans are currently one of the fastest growing groups of veterans and experience unadjusted lifetime PTSD 1.6 times more than civilian females and past-year PTSD prevalence that is 1.9 times higher. Male veterans demonstrate higher rates as well, with adjusted lifetime PTSD prevalence being 1.7 times higher, and past year PTSD prevalence being 1.9 times higher than civilian males. It is hypothesized that the discrepancy in prevalence rates is driven by exposure to traumatic stressors which are associated with gender (Portnoy et al., 2018). The primary traumatic events leading to PTSD in veterans, for men, are combat exposure during deployments and, for women, military sexual trauma (MST). Among both men and women student veterans, observed rates of military sexual trauma are higher than those of the general U.S. population and college students (Bryan et al., 2015). Comparatively, women in and out of the armed forces report greater exposure to sexual abuse, interpersonal violence, and unexpected violence which increase the possibility of developing PTSD (Lehavot et al., 2018; Portnoy et al., 2018), while men more often report stranger violence, accidents, and combat trauma (Portnoy et al., 2018).

Several theories have been posited to explain gender differences in PTSD prevalence. First, there is a variance in the type of potentially traumatic events (PTE). Women are more likely to report exposure to PTEs of a sexual nature than men (Stewart et al., 2024; Tolin & Foa, 2006; Valentine et al., 2019), whereas men, and veterans overall, are more likely to report non-interpersonal trauma such as exposure to serious accidents, assault, combat, and disaster (Macia et al., 2020; Tolin & Foa, 2006; Valentine et al., 2019). Although veterans tend to report combat-related events 1.7 times more as their index trauma for treatment than non-combat-related trauma (physical/sexual abuse, childhood

witnessed violence, serious accidents, and others), PTSD severity was significantly lower in comparison (Macia et al., 2020). Rape and sexual assault are highly pathogenic in terms of PTSD (Dworkin et al., 2017; Fayaz, 2023; Valentine et al., 2019), which may partially explain the higher rates of PTSD among women either by incidence or underreporting. In veteran populations, it remains true that women report higher levels of military sexual trauma (MST) than men. However, it has been found that when men do experience MST, they experience more severe PTSD symptoms than women. In addition to being related to gender, PTSD has also been associated with race, with black veterans experiencing more severe PTSD symptoms from MST than white veterans (Ceroni et al., 2023).

Other studies have found differences based on sexual and gender minority status, and minority groups within the military are more likely to be diagnosed with PTSD when compared with their cisgender and heterosexual counterparts (Holloway et al., 2021; Shipherd et al., 2021). Transgender military members are also a vulnerable population and experience challenges surrounding mental health outcomes and the development of PTSD. Transgender members have significantly worse mental health outcomes (depression, anxiety, etc.) and are more likely to report MST than their cis-gendered counterparts (O'Leary & Marcelli, 2022; Schein et al., 2021). Sexual assault as a major predictor of the formation of PTSD explains the elevated rates in the transgender community (Livingston et al., 2022; VA.gov | Veterans Affairs, n.d.). They face many different issues from cis-gendered military members such as gender dysphoria, and minority stressors due to interpersonal violence/discrimination due to their identity (O'Leary & Marcelli, 2022, Workman et al., 2025). Transgender individuals have been observed to be the group at highest risk, even among other LGBTQ groups (Marchi et al., 2023).

In addition to racial and gender factors, there has been some association found between PTSD and income. Though the research is very limited on this subject, some studies show veterans who have PTSD are more than twice as likely to be unemployed, and almost four times as likely to be disabled when compared to those without PTSD. Unsurprisingly, these factors lead to lower levels of income when compared to their peers; and in relation to gender, it is five times more likely that a disabled veteran is female than male. (Fischer et al., 2023). Additionally, while there is little research that discusses the differences in trauma type that higher-income individuals and lower-income individuals would experience, there is an increased risk of the development of PTSD when an individual lives in an area with high income inequality when compared to others who live in areas that are more equitable (Pabayo et al., 2017).

Findings on racial and ethnic differences in PTSD prevalence within military populations remain mixed. Some studies report higher risk, greater prevalence, or more severe PTSD symptoms among racial minorities. For example, even after controlling for demographic and service-related variables, Hispanic/Latinx and African American service members were found to report more severe PTSD symptoms than their non-Hispanic White counterparts (Kaczkurkin et al., 2016). Similarly, Asian American veterans were more likely to meet screening criteria for probably PTSD compared to other racial and ethnic groups, including European American and African American veterans (Whealin et al., 2013). However, other research has found no significant racial differences in PTSD prevalence (Asnaani & Hall-Clark, 2017; Coleman et al., 2019), highlighting ongoing inconsistencies in the literature.

In addition to race and ethnicity, factors such as age may also influence PTSD outcomes. Older veterans often exhibit more severe PTSD symptoms than the general population and current service members, despite similar trauma exposure patterns. For instance, they are more likely to report non-interpersonal PTEs over interpersonal ones (Moye et al., 2021). Beyond symptom severity, systematic disparities persist; black veterans are significantly less likely than white veterans to receive a service-connected PTSD diagnosis during the Department of Veterans Affairs (VA) compensation and pension process (Marx et al., 2017). These disparities suggest that PTSD risk is shaped by a complex interplay of factors beyond race alone. Intersectional influences, including social identity, group membership, and trauma type, play a critical role in shaping both the likelihood of developing PTSD and the ways it is recognized and treated (Alessi & Martin, 2017; Gold, 2017; Muldoon et al., 2019; Muldoon & Lowe, 2012).

However, exposure to PTE's and the subsequent development of PTSD is not unique to military and veteran populations (Forbes et al., 2019). For instance, one group with higher rates of PTSD among non-military trauma survivors were university students (i.e., those attending a post-secondary educational institution beyond high school, most commonly colleges and universities). It has been found that students were more likely to screen positive for PTSD compared to non-students (Asnaani & Hall-Clark, 2017; Fortney et al., 2016).

Further, the same trends and mixed findings in social, cultural, and environmental influences on trauma and PTSD in veterans have been observed in university students. Research consistently shows that Black and Latinx students report higher levels of interpersonal trauma compared to their White peers (Edman et al., 2015). While trauma

exposure is positively associated with symptoms of depression, eating disorders, and PTSD, ethnic differences in depression and PTSD scores are not consistently observed among students with trauma histories (Edman et al., 2015) Some studies suggest that Black individuals may possess protective factors (e.g., church involvement, strong family networks) that buffer the psychological impact of trauma (Lemos-Miller & Kearney, 2006). Others point to cultural stigma surrounding mental health in religious African American communities as a factor in underreporting depression symptoms (Bryant et al., 2013; Hankerson et al., 2013).

Additional findings indicate that Black and Latinx students are more likely to witness violence and experience physical punishment in the home and also report higher levels of perceived discrimination and negative campus racial climate compared to non-Black students (Tausen et al., 2023). Discrimination and racial climate perceptions have been shown to account for significant variance in trauma-related symptoms (10% among Black students and 7% among Asian students) beyond the effects of general life stressors (Pieterse et al., 2010). These experiences may also contribute to academic challenges, as trauma exposure among racial and ethnic minority students is linked to poorer academic performance (Edman et al., 2015)

Despite all of this evidence, there are also inconsistent results among studies of college students. Several large studies involving college students found that race did not significantly relate to PTSD symptoms (Hughes et al., 2011; Marx & Sloan, 2003; Read et al., 2011), and in a review by Boals et al. (2020**),** a large study of college students that reported a significant effect of race or ethnicity could not be found.

However, one group has recently been highlighted in the literature as having substantially different mental health outcomes than both veterans and college students: student veterans. Student veterans are veterans of the United States military who are enrolled in postsecondary academic institutions. Between 31.1% - 53% of student veterans have been found to have screened positive for probable PTSD (Drake-Brooks et al., 2020; Hinkson et al., 2021; Morissette et al., 2021; Valenstein et al., 2020) compared to 20% of university students who did not identify as military veterans **(**Bernstein et al., 2015**)** and 11-30% of military veterans (Lehavot et al., 2019; Roberge et al., 2019; Sareen et al., 2021; U.S. Department of Veterans Affairs, 2022).

While student veterans share some similar characteristics with civilian students, such as elevated risk for anxiety and mood disorders (Hinkson et al., 2021; Morissette et al., 2021; Valenstein et al., 2020) they differ from the traditional, civilian college student in several ways. Student veterans typically begin school when they are older in age, married, and have children at home, which along with funding limitations, restrictions, and the unpredictability of potential deployments and relocation, increases the pressure to finish their education at a rapid pace. Many student veterans also experience feelings of isolation, and issues acclimating to the college campus as civilians (Benbow & Lee, 2022; Dean et al., 2020). Feelings of ostracization may be attributed to cultural differences between civilian and veteran populations, and angry reaction stressors may lead to misunderstandings and strained relationships (Carter et al., 2023; Pedersen & Wieser, 2024). There are also tangible barriers surrounding on-campus classroom structures. For example, hypervigilance has been found to contribute to perceiving large lecture halls as stressful by student veterans due to difficulties with being able to monitor their surroundings, forcing them to sit with their backs toward people and doors (Pedersen & Wieser, 2024).

With up to 75% of student veterans reporting a service-connected disability (physical, psychological, or emotional conditions; Bryan et al., 2014), they have increased access issues and need for academic accommodations. As an example, student veterans suffering from PTSD have been found to be more dissatisfied with their college education and have more negative educational experiences than veterans without PTSD (Elliott, 2014; Morissette et al., 2021). Neurocognitive problems have been associated with veterans suffering from PTSD and have been attributed to neurobiological changes stemming from the trauma (Shalev et al., 2024; Stricker et al., 2016). Further, they are more likely to attribute their success (or failure) to forces outside of their control (Boyraz et al., 2016). It has also been posited that specific diagnostic items (see Appendix for full DSM-5 diagnostic criteria), D1 (psychogenic amnesia) and criterion E2 (reckless or self-destructive behavior) may hold more utility in veteran populations than others (Contractor et al., 2018; Guina et al., 2016). Thus, in addition to suffering psychological injuries which interfere with memory retrieval (criterion D1; APA, 2013) many veterans are suffering from PTSD which actively inhibits additional optimal memory functions (McFarland et al., 2015; Prieto et al., 2023) ultimately impeding optimum academic performance.

With the larger military actions drawing down in Iraq and Afghanistan, there has been a large influx of student veterans to college campuses. In 2018, 893,725 military/veteran service members received VA education benefits

(Department of Veteran Affairs, 2019). Accurately assessing and identifying PTSD and associated distress among this understudied and nested population would be advantageous for both clinical and academic purposes.

## 2. Methods

The aims of this study are to examine the association among the self-reported demographic characteristics and diverse identities within the student veteran population, and their potential contribution to the higher rates of probable PTSD. The main hypotheses for this study are aligned with findings from past research, as no prior studies have explored how demographic and personal variables are associated with PTSD within this group. It is hypothesized that participants who identify as African American, a sexual/gender minority, and/or report experiencing an unwanted sexual experience will have higher rates of reported distress associated with PTSD symptomology.

### 2.1 Participants

Participants included 691 veterans attending post-secondary institutions within the United States. Ages ranged from 18 to 45 years of age (M = 26.26, SD = 4.71), with 323 females (46.7%) and 358 males (51.8%), 9 (1.3%) identified as transgender, and 1 (0.1%) participant identifying themselves as "not male, female, or transgender." All branches of service were represented with 45% of respondents having endorsed serving in the Army, 10.7% in the Air Force, 20.8% in the Navy, 18.5% in the Marine Corps, and 2.5% in the Coast Guard. Three hundred eleven participants (45%) reported serving on Active Duty, 255 (36.9%) served on Reserve, and 125 (18.1%) respondents reported having served on both Active Duty and Reserve during their military career. In regard to disability, 25.6% reported receiving a service-connected disability rating during their time in service or after discharge. The racial distribution of participant endorsement was 78.7% Caucasian, 15.3% African American, 4.5% American Indian or Alaska Native, 1% Asian, and 0.3% Pacific Islander, with 37% of respondents identifying as having Hispanic/Latinx ethnicity.

### 2.2 Measures

#### 2.2.1 Demographic and Population Characteristics

Basic demographic information was collected from every participant including gender identity, age, disability status, race, ethnicity, military branch, service component, and income, among others.

#### 2.2.2 Exposure to Potentially Traumatic Events (PTEs)

Exposure to trauma and specific trauma types was assessed using the Life Events Checklist-5 (LEC-5; Weathers et al., 2013), wherein participants indicated whether they have experienced, witnessed, learned about, or have not been exposed to 17 different categories of traumatic events. Respondents were asked to keep "the worst event" in their minds as they answered questions about possible symptoms of PTSD. Items were transformed into two separate variables capturing interpersonal trauma (e.g., physical assault, sexual assault, combat, etc.) and non-interpersonal trauma (e.g., natural disaster, transportation accident, etc.). Additionally, various items were included in the questionnaire asking the participants to endorse or not endorse various experiences and situations of a sexual nature. These questions, along with the LEC-5, were used to create a variable representing the endorsement of an Adverse Sexual Experience.

#### 2.2.3 Posttraumatic Stress Disorder

The PTSD Checklist 5 (PCL-5; Weathers et al., 2013; Wortmann et al., 2016) uses PTSD symptoms identified in the DSM-5, and is a 20-item self-report measure. Each item measures how severely the participant has been distressed throughout the past month by symptoms of PTSD related to the respondent's most currently distressing event. The 20 items are rated from 0 (not at all) to 4 (extremely) and can be summed for a total score representing the severity of PTSD. The PCL-5 can also be transformed into a dichotomous variable representing those who are likely to be diagnosed with PTSD by meeting a cutoff score of 33 or higher (Bovin et al., 2016). Symptoms can also be grouped into the four DSM-5 symptom clusters including intrusions, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity. The Cronbach's alpha score has been consistently found to be high (0.90-0.95) and the subscale intercorrelations range has been found between 0.45 and 0.76 (Blevins et al., 2015; Sveen et al., 2016), demonstrating the PCL-5 to be a highly reliable and valid measure of PTSD.

### 2.3 Procedures

Nationwide recruiting efforts were made to scout for potential participants by distributing a study invitation to veteran support counselors, student veteran organizations, university counseling and rape recovery centers, university administrators, and social media groups for sexual assault survivors and student veterans. Each organization was asked to also forward the invitation to any student veterans potentially interested parties who may have experienced a form of sexual assault while attending college or while in the military. Potential participants were directed to an online platform to gain access to the study. The study website provided informed consent documents, and the participants were allowed to begin the survey after consenting to the terms of participation. The survey began by requiring a response from the participant to affirm they were a military veteran, had experienced a PTE as defined by the LEC-5, and had completed at least one semester at a university or college within the prior eight months. Participants who did not respond affirmatively to these questions were not allowed to proceed with the remainder of the survey. Following completion of the survey, participants were provided the opportunity to enter their email address – stored in a database separate from the survey results – to be emailed a $10 Amazon gift card as compensation for their time in completing the survey. This study was approved by the University of Utah Institutional Review Board (approval #00147060).

### 2.4 Data Analysis

All analyses were analyzed using SPSS version 28. The data were analyzed for descriptive statistics, and the distributional properties were checked to ensure that they met the assumptions of regression; all were within normal guidelines, with no adjustments or corrections considered necessary.

In order to begin exploring the higher rate of PTSD found within the student veteran subpopulation, a PTSD sum score and a probable PTSD diagnosis were considered and zero-order correlations were calculated with other variables of interest. For these correlations, gender, race, and sexual orientation were transformed into dichotomous versions of "Male Yes/No", "White Yes/No", and "Heterosexual Yes/No". Variables that were found to be significantly associated with PTSD sum score were then included in a multiple regression model.

Next, one-way ANOVAs and post hoc testing (i.e. Tukey HSD) were used to assess differences in PTSD sum scores for different characteristics of the participants including age, gender, race, ethnicity, sexual orientation, household income, branch of service, number of deployments, service-connected disability, learning disability, and financial aid through the VA, as well as endorsement of at least one non-interpersonal trauma, interpersonal trauma, adverse sexual Experience, and military sexual assault. These same characteristic and endorsement variables were then used in a chi-square test of independence as they related to a probable PTSD diagnosis, with effect size being calculated using Cramer's V.

## 3. Results

PTSD symptom severity and screening for a probable PTSD diagnosis (a cut score of 33 on the PCL-5; Bovin et al., 2016) were examined in this sample of student veterans (n = 691). PTSD symptom severity (PCL-5 Sum Score) ranged from 0 – 80 (M = 38.70, SD = 11.02), with 71.2% of the participants screening positive for probable PTSD.

In examining possible characteristics of this population that may be influencing these scores, intercorrelations of suspected variables were calculated. For exploratory purposes, some demographic variables were dichotomized (e.g. Gender values of male/female/transgender were transformed to Male – Yes or No) prior to correlations being run. Of note, PCL-5 sum scores were positively correlated with age ($r = .08$, $p = .035$) and having a service-connected disability (SCD; $r = .132$, $p < .001$), as well as the endorsement of an interpersonal trauma (IPT; $r = .179$, $p < .001$), non-interpersonal trauma (NIPT; $r = .137$, $p < .001$), and military sexual assault (MSA; $r = .258$, $p < .001$). A weak, negative correlation with the PTSD symptom severity was found with being male ($r = -.095$, $p = .013$).

These variables (age, having a service-connected disability, endorsement of an interpersonal trauma, a non-interpersonal trauma, and of a military sexual assault) were then used as predictors in linear regression to further test their association with PTSD severity. The model explained a statistically significant amount of variance in PTSD severity ($F = 12.451$ (6, 684), $p < .001$; $R^2 = .098$, $R^2_{adjusted} = .091$). Results indicated that the PCL-5 sum score was significantly associated with age ($\beta = .080$, $t = 2.175$, $p = .030$), having a service-connected disability ($\beta = .095$, $t = 2.511$, $p = .012$), endorsement of an interpersonal trauma ($\beta = .090$, $t = 2.331$, $p = .020$), and endorsement of a military sexual assault ($\beta = .226$, $t = 5.722$, $p < .001$).

Results of an ANOVA exploring differences in PTSD symptom severity among these variables are displayed in Table 1, along with the means and standard deviations of the PCL-5 within these factors. Transgender participants had significantly higher scores (M = 57.56, SD = 16.62; F (2, 687) = 15.72, p < .001) than either male (M = 37.70, SD = 11.43) or female participants (M = 39.26, SD = 10.01). While the ANOVA initially found household income to contain some differences in the PCL-5 score between groups, post hoc testing was unable to find a significant difference between any of the individual groups (Tukey HSD, followed by Duncan); however, above $25,000 a general trend is seen where PTSD symptom scores tended to increase as household income increased. Participants with service-connected disabilities had higher PTSD scores (M = 41.19, SD = 12.05) than those without (M = 37.85, SD = 10.51; F (1, 689) = 12.29). Differences were also found among those with varying endorsements of trauma. Higher PTSD scores were found for those who reported interpersonal traumas happening to them (M = 42.00, SD = 13.54; F (1, 689) = 22.928), non-interpersonal traumas happening to them (M = 39.51, SD = 11.18; F (1, 689) = 13.23), adverse sexual experiences (M = 39.50, SD = 11.23; F (1, 689) = 12.18), and military sexual assault (M = 44.04, SD = 13.46; F (1, 689) = 49.32), compared to those who did not. No other statistically significant differences were found.

Table 2 contains the results of an analysis using chi-squared tests of independence to examine associations between screening positive for probable PTSD and a number of variables. Household income was once again statistically significant, and has a weak, positive association with a person having screened likely for PTSD, $X^2(8, 691) = 17.51$, p = .025. SCD is also weakly associated with a probable PTSD determination, $X^2(1, 691) = 4.46$, p = .035, with those reporting a SCD being more likely to score 33 or higher on the PCL-5. Finally, screening likely for PTSD was weakly associated with increased endorsement of interpersonal trauma, $X^2(8, 691) = 17.51$, p = .025, and moderately associated with having an increased likelihood of having experienced a military sexual assault, $X^2(8, 691) = 17.51$, p = .025. All other variables tested were found to not have a statistically significant association with a probable PTSD status.

**Table 1: ANOVA Results Examining PTSD Symptom Severity and Selected Demographic Traits**

| | PCL-5 Sum Score | | | | | |
|---|---|---|---|---|---|---|
| Demographic Characteristics | n | % | M | SD | F | Post Hoc |
| | | | Age | | | |
| 25 and under | 361 | 52.24% | 37.9501 | 11.0799 | | |
| 26 – 30 | 235 | 34.01% | 38.7277 | 10.60087 | | |
| 31 – 35 | 59 | 8.54% | 41.2542 | 12.00085 | | |
| 36 – 40 | 24 | 3.47% | 42.625 | 12.04994 | | |
| 41+ | 12 | 1.74% | 40.4167 | 7.51312 | 2.057(4,686) | |
| | | | Gender | | | |
| Male | 358 | 51.88% | 37.6955 | 11.43231 | | |
| Female | 323 | 46.81% | 39.2632 | 10.00753 | | |
| Transgender | 9 | 1.30% | 57.5556 | 16.62161 | 15.72(2,687)*** | Trans > M, F |
| | | | Race | | | |
| White | 544 | 78.73% | 38.4173 | 10.93277 | | |
| Black/African American | 106 | 15.34% | 40.0094 | 12.0495 | | |
| American Indian | 26 | 3.76% | 39.8077 | 9.34674 | | |
| Asian | 7 | 1.01% | 35.1429 | 12.15769 | | |
| Pacific Islander | 2 | 0.29% | 43 | 5.65685 | | |
| Alaskan Native | 5 | 0.72% | 39.2 | 6.37966 | .630(5,684) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Hispanic, Latino, or Spanish origin? | | | | | | |
| Yes | 256 | 37.05% | 39.1289 | 12.23443 | | |
| No | 435 | 62.95% | 38.4506 | 10.24534 | .610(1,689) | |
| Sexual Orientation | | | | | | |
| Heterosexual | 619 | 89.58% | 38.6171 | 10.79121 | | |
| Homosexual | 43 | 6.22% | 38 | 11.1398 | | |
| Bisexual | 29 | 4.20% | 41.5517 | 15.07028 | 1.075(2,688) | |
| Household Income | | | | | | |
| Under $15,000 | 15 | 2.17% | 37.6 | 9.66437 | | |
| $15,000 - $24,999 | 51 | 7.38% | 40.5882 | 13.19421 | | |
| $25,000 - $34,999 | 140 | 20.26% | 36.1357 | 10.37166 | | |
| $35,000 - $49,999 | 149 | 21.56% | 38.7718 | 10.8036 | | |
| $50,000 - $74,999 | 157 | 22.72% | 38.879 | 11.04382 | | |
| $75,000 - $99,999 | 96 | 13.89% | 39.06625 | 10.63936 | | |
| $100,000 - $149,999 | 59 | 8.54% | 41.0847 | 10.75317 | | |
| $150,000 - $199,999 | 18 | 2.60% | 39.7222 | 11.3127 | | |
| $200,000 and over | 6 | 0.87% | 46.6667 | 14.30618 | 1.950 (8,682)* | No differences |
| Branch of Service | | | | | | |
| Army | 311 | 45.01% | 38.2122 | 10.63166 | | |
| Navy | 144 | 20.84% | 23.61 | 11.25358 | | |
| Air Force | 74 | 10.71% | 38.4054 | 10.93182 | | |
| Marine Corps | 128 | 18.52% | 40.4375 | 11.60488 | | |
| Coast Guard | 17 | 2.46% | 38.7059 | 9.26529 | | |
| National Guard/Guard | 17 | 2.46% | 39.8235 | 13.52884 | .854 (5,685) | |
| Number of Deployments | | | | | | |
| None | 267 | 38.64% | 38.5281 | 11.02808 | | |
| 1 – 2 | 144 | 20.84% | 39.1319 | 10.09344 | | |
| 3+ | 280 | 40.52% | 38.6464 | 11.49162 | .146(2,688) | |
| Service-Connected Disability | | | | | | |
| Yes | 177 | 25.62% | 41.1864 | 12.08607 | | |
| No | 514 | 74.38% | 37.8463 | 10.50581 | 12.29 (1,689)*** | Yes > No |
| Learning Disabilities | | | | | | |
| Yes | 37 | 5.35% | 41.6216 | 12.05393 | | |
| No | 644 | 93.20% | 38.5 | 10.96758 | .473 (1,680) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Financial Aid through VA | | | | | | |
| Yes | 399 | 57.74% | 38.198 | 11.25151 | | |
| No | 292 | 42.26% | 39.3904 | 10.677 | 1.977(1,689) | |
| Non-interpersonal Trauma | | | | | | |
| Yes | 183 | 26.48% | 39.5046 | 11.17757 | | |
| No | 508 | 73.52% | 35.8553 | 9.96777 | 13.232 (1,689)*** | Yes > No |
| Interpersonal Trauma | | | | | | |
| Yes | 539 | 78.00% | 41.9945 | 13.53972 | | |
| No | 152 | 22.00% | 37.5157 | 9.70318 | 22.928 (1,689)*** | Yes > No |
| Adverse Sexual Experience | | | | | | |
| Yes | 530 | 76.70% | 39.5019 | 11.22552 | | |
| No | 161 | 23.30% | 36.0683 | 9.9002 | 12.182 (1,689)*** | Yes > No |
| Military Sexual Assault | | | | | | |
| Yes | 153 | 22.14% | 44.0392 | 13.45699 | | |
| No | 538 | 77.86% | 37.184 | 9.71424 | 49.323 (1,689)*** | Yes > No |

**Table 2: Chi-square associations between PTSD and Selected Demographic Characteristics**

| | Screened Likely for PTSD | | | | | |
|---|---|---|---|---|---|---|
| | No | | Yes | | | |
| | n = 199 (28.80%) | | n = 491 (71.20%) | | | |
| Demographic Characteristics | n | % | n | % | $X^2$ (df) | Cramer's V |
| Age | | | | | 5.75 (4) | |
| 25 and under | 117 | 32.41% | 244 | 67.59% | | |
| 26 – 30 | 59 | 25.11% | 176 | 74.89% | | |
| 31 – 35 | 16 | 27.12% | 43 | 72.88% | | |
| 36 – 40 | 4 | 16.67% | 20 | 83.33% | | |
| 41+ | 3 | 25.00% | 9 | 75.00% | | |
| Gender | | | | | 2.4 (2) | |
| Male | 110 | 30.73% | 248 | 69.27% | | |
| Female | 88 | 27.24% | 235 | 72.76% | | |
| Transgender | 1 | 11.11% | 8 | 88.89% | | |
| Race | | | | | 3.48 (5) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| White | 160 | 29.41% | 384 | 70.59% | | |
| Black/African American | 32 | 30.19% | 74 | 69.81% | | |
| American Indian | 4 | 15.38% | 22 | 84.62% | | |
| Asian | 2 | 28.57% | 5 | 71.43% | | |
| Pacific Islander | 0 | 0.00% | 2 | 100.00% | | |
| Alaskan Native | 1 | 20.00% | 4 | 80.00% | | |
| Hispanic, Latino, or Spanish origin? | | | | | 1.19 (1) | |
| Yes | 80 | 31.25% | 176 | 68.75% | | |
| No | 119 | 27.36% | 316 | 72.64% | | |
| Sexual Orientation | | | | | .064 (2) | |
| Heterosexual | 178 | 28.76% | 441 | 71.24% | | |
| Homosexual | 13 | 30.23% | 30 | 69.77% | | |
| Bisexual | 8 | 27.59% | 21 | 72.41% | | |
| Household Income | | | | | 17.51 (8)* | 0.159 |
| Under $15,000 | 5 | 33.33% | 10 | 66.67% | | |
| $15,000 - $24,999 | 18 | 35.29% | 33 | 64.71% | | |
| $25,000 - $34,999 | 57 | 40.71% | 83 | 59.29% | | |
| $35,000 - $49,999 | 37 | 24.83% | 112 | 75.17% | | |
| $50,000 - $74,999 | 40 | 25.48% | 117 | 74.52% | | |
| $75,000 - $99,999 | 26 | 27.08% | 70 | 72.92% | | |
| $100,000 - $149,999 | 13 | 22.03% | 46 | 77.97% | | |
| $150,000 - $199,999 | 2 | 11.11% | 16 | 88.89% | | |
| $200,000 and over | 1 | 16.67% | 5 | 83.33% | | |
| Non-interpersonal Trauma | | | | | 1.179 (1) | |
| Yes | 47 | 25.68% | 136 | 74.32% | | |
| No | 152 | 29.92% | 356 | 70.08% | | |
| Interpersonal Trauma | | | | | 4.30 (1)* | |
| Yes | 145 | 26.90% | 394 | 73.10% | | |
| No | 54 | 35.53% | 98 | 64.47% | | 0.079 |
| Adverse Sexual Experience | | | | | 2.94 (1) | |
| Yes | 144 | 27.17% | 386 | 72.83% | | |
| No | 55 | 34.16% | 106 | 65.84% | | |
| Military Sexual Assault | | | | | 13.36 (1)*** | |
| Yes | 26 | 16.99% | 127 | 83.01% | | |

| | | | | | |
|---|---|---|---|---|---|
| No | 173 | 32.16% | 365 | 67.84% | 0.139 |

## 4. Discussion

The goal of this study was to conduct an analysis of student veterans and examine demographic characteristics and diverse identities in an effort to understand why this group screens positive for probable PTSD at higher rates than what is typically found in the literature. As previously noted, early psychometric studies examining tools and methods used to measure trauma-related distress in the student veteran population (Drake-Brooks et al., 2020) have only recently established that student veterans are in some way different from other populations; however, it remains largely unknown what causes or contributes to the differences.

The results of the present study demonstrate that five factors are associated most strongly with increased risk and severity of PTSD: Service-connected disability, military sexual assault, non-interpersonal trauma, interpersonal trauma, and adverse sexual experience. The first two (service-connected disability and military sexual assault) are factors that are not typically found within the general student population as they are specific to those who served in the military (i.e., military members and veterans, both in and out of academia). While the rates of endorsement of a service-connected disability in this study are substantially lower than previously found (the current study found 25.6% vs up to 75% reported in Bryan et al., 2014), it is similar to the rate found among military veterans as a whole (27% as of 2021; U.S. Bureau of Labor Statistics, 2022). Likewise, rates of military sexual assault in this student veteran sample (22.14%) fall within the range found in other studies (0.2% to 54%; Lucas et al., 2022) for general service members and veterans, and 83.01% of those who endorsed a military sexual assault met criteria for probable PTSD in this study.

PTSD is the most prevalent service-connected mental disorder and the third most prevalent service-connected disability for veterans receiving pension benefits—including VA educational benefits (Matto et al., 2019; U. S. Bureau of Labor Statistics, 2022). Relative to those who do not report having a rating for a service-connected disability, participants who did endorse having a service-connected disability screened positive for PTSD more often and at a higher severity. Service-connected disabilities are medical or mental conditions that are directly caused by military service, so it is unsurprising that individuals who acquired a disability while serving in the military would have higher rates of PTSD and severity of symptoms. Another possible explanation as to why prevalence and severity are higher in this group is because acquired disabilities are more stigmatizing as compared to congenital or genetic disabilities (Bogart et al., 2019). It is possible that in addition to capturing general distress of student veterans, the PCL-5 is also capturing the distress student veterans experience being in a university environment; Being in a university setting surrounded by others who do not understand the complexities of military service and acquired disability—all while having to deal with the stress and rigors of the academic environment.

Rates of exposure to traumatic events among civilian college students are around 70% (Cusack et al, 2016), while general endorsement rates in this study are similar (26.48% of respondents endorse at least one non-interpersonal trauma and 78% at least one interpersonal trauma). However, 71.2% of student veterans in this study screened positive for probable PTSD while only 34% met the same criteria among civilian students (Cusack et al., 2018). Further, with 76.70% of this study endorsing one or more adverse sexual encounters, student veterans appear to be experiencing sexual assaults at substantially higher rates than both civilian students (13%; Association of American Universities, 2020) and the general population as a whole (20-24.8%; Smith et al., 2018).

The risk factor literature shows that not everyone who experiences a traumatic event will develop PTSD. In the past several decades, a number of studies have focused on combat-related PTSD, and identified risk factors. Some of these individual and social risk factors include being younger at the time of the trauma, identifying as female, identifying as a racial minority, reporting a lower socioeconomic status (SES), and lack of social support (Tiet et al., 2024). Therefore, it is increasingly accepted that individual vulnerability factors contribute to the development of PTSD beyond the traumatic event itself (Adams et al., 2021; Obuobi-Donkor et al., 2022). However, the findings from the present study fail to find significant support for these individual and social risk factors having a substantial influence among student veterans, who appear to be more homogenous in their higher rates of PTE's and PTSD severity. This lack of more individualized risk factors is supported by a meta-analysis of 32 different studies examining 27 individual and social risk factors for military PTSD which found inconsistencies regarding race, marital status, length of deployments, smoking status, low SES, prior trauma, and prior psychological problems (Xue et al., 2015). Of note, identifying as transgender was strongly associated with higher rates of PTSD in this study.

While rates of transgender respondents in this study (1.3%) appear to be similar to that found in 2018 by the Association of American Universities among general college students (1.7% identified as transgender, nonbinary, or questioning; 2018), nonetheless this association should be carefully weighed against the small representation in the sample (n = 9). Given the small sample size, qualitative interpretations may be important for future research. Additional considerations regarding diversity and marginalized identities literature could be more informative if larger studies would report on the presence or absence of racial/ethnic differences and provide details on such examples (Asnaani & Hall-Clark, 2017). Overall, the field would benefit from consensus in the categorization of traumatic events and racial/ethnic reporting conventions consonant with how participants identify racially and ethnically. In addition, attending to cultural differences within racial/ethnic groups may also disentangle these inconsistent findings (Asnaani & Hall-Clark, 2017).

It is important to note that there are several limitations associated with this study. First, it is possible that self-reported screening to assess symptom endorsement, as opposed to a structured clinical interview, may result in an overestimation of prevalence rates. All data were based on self-report measures, and chronicity measures are especially subjective. However, these same self-report screenings were used to gather data in comparison with other populations and thus any limitations would apply to the same studies in which they are compared. Next, this study utilized secondary data which, in and of itself, is not inherently a limitation. However, the original study heavily targeted recruitment for participants who had endorsed an unwanted sexual experience as a criterion for inclusion. Therefore, generalizing the findings of this study to other groups (student veterans or civilians) and/or the general population should be done carefully.

Future directions should include the comparison populations (e.g., civilian students, non-student military veterans) to allow for a more direct examination of differences. Another study could also include a group of student veterans that do not endorse any PTEs, followed by a comparison of PCL-5 scores to investigate the possibility that all student veterans, not specifically those who have experienced trauma exposure, are experiencing significant amounts of distress. If rates of probable PTSD are approximately equal between the trauma exposed and non-trauma exposed group, that would suggest that the PCL-5 is capturing general distress in this population that is not necessarily trauma-related. Another direction to explore would include hours worked (e.g., occupation, family support, schoolwork) for student veterans compared to traditional students to examine the impact this type of stress may have on levels of mental health functioning. Additionally, future studies should consider longitudinal designs to better clarify a possible causal relationship between trauma exposure and mental health outcomes among student veterans. Although the current findings point to elevated rates of probable PTSD in this population, the modest effect sizes suggest that additional factors (e.g., social support, academic stress, coping styles) may contribute meaningfully to symptom severity and overall adjustment. Longitudinal studies would enable researchers to track how these variables evolve over time and interact with trauma exposure, ultimately providing a more nuanced understanding of PTSD development and maintenance in student veterans. Such work could inform more effectively tailored interventions to support this high-risk group. Finally, as student veterans are older than the typical civilian student and experiencing things like marriage and parenthood that civilian students typically are not, future research should seek to explore potential stigmas that contribute to student veterans' feelings of isolation and distress while attending college (Benbow & Lee, 2022; Dean et al., 2020).

Overall, these findings contribute to and expand upon, a growing body of evidence demonstrating differences in student veterans, a subpopulation of college students that continue to have higher rates of probable PTSD. This study has identified several key factors among student veterans as it relates to rates of probable PTSD. Student veterans screening likely for PTSD is slightly higher among those who are older and report an exposure to an interpersonal trauma. It also appears that student veterans at higher levels of income tend to have higher PTSD symptom severity, possibly due to having to manage schoolwork and working full time due to the need to support a family (Moghul, 2021). This may further be supported by the finding that trauma and PTSD risk factors are distributed differently in lower-income settings compared with higher-income settings (Atwoli et al., 2015). This finding deviates from previous research that shows PTSD in veterans is typically associated with lower levels of income (Fischer et al., 2023). The results from this study demonstrate a much stronger association between having a positive screen for probable PTSD and having a rating for a service-connected disability and/or sexual assault while in the military, which could result in higher income from service-connected disability (U.S. Department of Veterans Affairs, 2025). Finally, and surprisingly contrary to the posited hypotheses, major diverse identities and demographic traits were generally not significantly associated with probable PTSD in this sample of student veterans. Additional research

may seek to expand on these mixed findings surrounding why ethnic/racial differences are more influential in some samples than others, as well as the association of PTSD and income in this unique population.

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## Author Biography

***Dr. Malisa Brooks*** is a licensed clinical social worker and an Assistant Professor in the Department of Behavioral Science at Utah Valley University, where she also serves as the founding Director of Research for the Suicide & Trauma Research Collaborative (STRC). She earned both her Master's and Ph.D. in Social Work and brings over a decade of experience in trauma-focused clinical practice and applied research.
At Utah Valley University, Dr. Brooks teaches upper-division and graduate courses in DSM-based assessment and diagnosis, research methods, and senior capstone. Her teaching emphasizes the integration of scientific literacy with clinical application, preparing students for evidence-based practice in social work and behavioral health settings. She is deeply invested in mentoring students and fostering interdisciplinary collaboration through STRC's training and research initiatives.

Dr. Brooks's research focuses on trauma, suicide prevention, and the mental health of veterans, first responders, and postsecondary students. Her work emphasizes psychometric evaluation of behavioral health instruments, the development of trauma-informed interventions, and the refinement of suicide risk assessment strategies. Alongside her academic role, Dr. Brooks maintains a small private practice specializing in the treatment of trauma and trauma-related disorders, continuing her commitment to bridging research and practice in mental health care.

***Dr. Kent D. Hinkson*** is a clinical psychologist, an Assistant Professor in the Department of Psychology & Counseling at Utah Valley University, and the founding Executive Director of the Suicide & Trauma Research Collaborative (STRC). He completed his predoctoral internship through the Charleston Consortium—a dual program with the Medical University of South Carolina and the Ralph H. Johnson VA Medical Center—and a three-year postdoctoral research fellowship with the South Central Mental Illness Research, Education, and Clinical Center (MIRECC) at the Central Arkansas Veterans Healthcare System, where he continues to serve as a research consultant. At Utah Valley University, Dr. Hinkson teaches courses in statistics, research methods, and psychopathology while mentoring undergraduate and graduate researchers. Through STRC, he leads multidisciplinary collaborations that bridge academic and community systems to advance evidence-based strategies that promote resilience, recovery, and belonging among individuals affected by trauma.

Dr. Hinkson's has a clinical and research focus on trauma, suicide assessment and prevention, and behavioral health integration among veterans and postsecondary student populations. His work emphasizes improving suicide risk detection in primary care, developing and adapting interventions for PTSD and suicidal behavior, and supporting veterans in their transition from military service to civilian and academic life.

***Ayleen Lara*** is a Research Associate in the Suicide and Trauma Research Collaborative (STRC). She earned her B.S. in Psychology from Utah Valley University. Her research examines trauma recovery, risk factors for posttraumatic stress disorder (PTSD), and gender and ethnic minority identity development following sexual assault. In addition to her research, she works with adolescent populations in residential treatment settings, supporting individuals with complex trauma histories. Ayleen intends to pursue a Ph.D. in Clinical Psychology to contribute to the development of evidence-based interventions for trauma-exposed and underserved populations.

***Emily Covarrubias*** holds a Bachelor of Science in Psychology from Utah Valley University and currently serves as a case manager for individuals with serious mental illnesses. She previously worked with veterans experiencing homelessness, an experience that deeply informs her academic and professional interests. A former firefighter, Emily brings a unique firsthand perspective to her research interests, which include trauma, suicide, and the mental health of first responders and military-affiliated populations. She is a Research Associate at the Suicide and Trauma Research Collaborative (STRC) at Utah Valley University, where she supports research focused on populations who have experienced trauma, suicidality, and traumatic brain injuries. Emily intends to pursue a Master's, and eventually Ph.D., in Social Work, with the goal of providing high quality evidence-based care to the populations she serves.

***Sara Gilliam*** is a recent graduate of Texas A&M University – Texarkana's Master of Social Work program. She recently obtained licensure as a Licensed Master Social Worker (LMSW), and currently works in behavioral health.

***Dr. Philip Osteen*** is a professor and dean of the College of Social Work at the University of Utah. Dr. Osteen has been working in a variety of positions in the mental health field since 1990, including case management, community-based residential treatment, and clinical research. His work in suicide intervention and prevention began after the loss of a

client to suicide early in his career. Following that, he began studying the training of mental health professionals and non-professional gatekeepers. His recent work has shifted to evaluating interventions for high-risk groups such as middle-aged men, men of color, and queer men. Additionally, he is actively engaged in initiatives to expand access to higher education to minority and marginalized communities, such as the Indigenous Social Work Scholars program in the BSW Program, and the development of an online, bilingual Spanish language online MSW Program.
Dr. Osteen earned master's degrees in social work and quantitative research methods, as well as doctoral degrees in social work and quantitative research methods from the University of Denver. Before joining the University of Utah, he held faculty positions at Florida State University, the University of Maryland, Baltimore, and the University of Denver.

***Dr. Craig J. Bryan*, PsyD, ABPP**, is a board-certified clinical psychologist in cognitive behavioral psychology, and is the Director of the Suicide Care Clinic at the University of Vermont Medical Center and Professor of Psychiatry at The University of Vermont Robert Larner, MD, College of Medicine. Dr. Bryan received his PsyD in clinical psychology in 2006 from Baylor University, and completed his clinical psychology residency at the Wilford Hall Medical Center, Lackland Air Force Base, TX. He was retained as faculty in the Department of Psychology at Wilford Hall Medical Center, where he was Chief of the Primary Care Psychology Service and the Suicide Prevention Program Manager for Lackland AFB. Dr. Bryan deployed to Iraq in 2009, where he served as the Director of the Traumatic Brain Injury Clinic at the Air Force Theater Hospital. Dr. Bryan separated from active-duty service shortly after his deployment, and currently researches suicidal behaviors, suicide prevention, and psychological resiliency. He has overseen dozens of federally-funded treatment studies and research studies testing assessment tools and treatments to prevent suicide. He regularly provides training to health care professionals about managing suicidal patients, and has over 350 publications in the areas of suicide, trauma, and military mental health, including multiple books and treatment manuals. Dr. Bryan has received numerous awards and recognitions from organizations including the American Psychological Association, the American Association of Suicidology, and the U.S. Department of Defense. He is considered one of world's leading experts in the treatment of suicidal patients.