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Caring for Sexual Assault Victims within the Military Healthcare System: Prevalence, Demographics, and Healthcare Service Utilization

by

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ABSTRACT

Caring for Sexual Assault Victims within the Military Healthcare System: Prevalence, Demographics, and Healthcare Service Utilization

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Abstract: Sexual assault remains a major concern in the military; however, despite increasing reports made, there has not been coordinated information on the healthcare usage of these service members. The present study examined healthcare utilization within the Military Healthcare System (MHS) to determine the prevalence of sexual assault-related health care provided, demographic patterns among service members receiving said care, and the type of provider seen during the initial sexual assault-related health encounter. Utilizing the MHS Data Repository, all active-duty service members during fiscal years (FY) 2016-2019 were identified and those with a sexual assault diagnostic code recorded on a healthcare encounter were isolated. From a total of 1,728,433 active-duty service members identified, 4,113 (0.24%) had a sexual assault-related health encounter. In contrast to previous research and DoD reports indicating those who are younger aged are at the highest risk for sexual assault, MHS health encounter data indicated lower rates of sexual assault-related health care compared to peers aged 26 – 40. Females, those in the Army, and enlisted personnel were the most likely to obtain sexual assault-related health care. Overall, initial sexual assault-related encounters were more likely to occur with medical providers versus behavioral health indicating medical providers are in a unique position to provide relevant mental health care referrals to survivors. Additional research is warranted to clarify the discrepancies between DoD reports of sexual assaults and these data highlighting

decreasing reports of sexual assaults within the medical system and to assess whether there are barriers that inhibit help-seeking.

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CHAPTER 1: INTRODUCTION

According to the Veterans' Benefits U.S. Code, Military Sexual Trauma (MST) is a trauma which resulted from sexual assault or harassment during the time of active-duty status, yet can occur in off-duty hours and either on or off base (as cited in Bryan et al., 2015). Whereas other professions do not have their own specific term for sexual assault (e.g., "firefighter sexual trauma" or "teacher sexual trauma"), the military has a distinct set of circumstances and factors which may contribute to a higher likelihood of sexual assault (Bryan et al., 2015; Monteith et al., 2019; Stander & Thomsen, 2016). Roughly 17% of the military population is female and military culture is characterized as being hypermasculine, which can foster assault behavior from perpetrators (Government of Accountability Office, 2020; Locke & Mahalik, 2005; O'Brien et al., 2015; Parrott & Zeichner, 2003). For example, researchers found that college men acted more aggressively towards women who did not adhere to traditional female gender norms (Reidy et al., 2009). Evidence such as this could further elucidate the high prevalence of sexual assault against female service members, given being a woman in the military itself could be viewed as a gender role violation (Weitz, 2015). Additionally, men tend to hold more rigidly to the idea of expected gender roles and there are significantly more men within the military than there are women; therefore, it is possible that the military environment and culture could further exacerbate these ideas, leading to greater risk of sexual violence (Chapleau et al., 2008; Davies et al., 2012; Nicol et al., 2007; Parker et al., 2017).

The military's hierarchical structure is another factor which supports the necessity of a military-specific sexual trauma term. This structure can make it difficult for reports of sexual assault to be made– especially against superiors in one's chain of command– and for appropriate punishments to be administered, further discouraging survivors from filing reports (Dardis et al.,

2018; Ilies et al., 2003). Furthermore, service members must go on deployments in the military which creates a unique environment that is not experienced in other professions. During deployments, service members are away from their home for a prolonged period of time, forced to live in close quarters with other service members, and the hypermasculine military culture becomes intensified- further contributing to the likelihood of sexual assault (Pew Research Center, 2011; Weitz, 2015). Likewise, when in garrison (i.e., stateside), servicemembers may live on base or in close proximity to their respective base. Most bases can provide gyms, grocery stores, restaurants, and even movie theaters or bowling alleys that service members and their families can use. This results in military bases serving as a hub for social connection and fosters increased interactions with other service members outside regular duty hours. This clustering of work, health, and social connection activities is not commonly seen in other professions yet could most closely be equated to students living on college campuses.

It is also important to consider the fact that, unlike civilian rates of sexual assault which are often determined based off lifetime risk, the rates of military sexual assault occur within a brief timeframe (e.g., 6.7 years for enlisted members and 11 years for officers (Allard et al., 2011; Pew Research Center, 2011). However, it is possible service members may choose to wait until they are in a veteran status before they report an MST they experienced while active duty due to concerns about reprisal, their reputation, and distrust of military caregivers (Wolff & Mills, 2016). Finally, given the military has its own criminal justice system including laws (i.e., Uniform Code of Military Justice; UCMJ), courts (i.e., Summary, Special, and General), punishments (e.g., confinement on bread and water, extra duties, reduction of pay grades), and processes (e.g., not required to provide a lawyer), special attention to military sexual assault and its handling is warranted (Powers, 2011).

UNRESTRICTED VS. RESTRICTED MST REPORTS

When reporting an incident, MST survivors can either elect to have their report become Unrestricted or Restricted (Department of Defense, 2018a; DoD). Unrestricted Reports allow official investigations to be launched and appropriate commands to be notified so that protective measures might be enacted, such as the transfer of party members involved to alternate units. Given the more transparent nature of Unrestricted Reports, a greater amount of information can be documented, tracked, and shared. Restricted Reports, conversely, remain confidential and no actions can be taken against the assailant, or to protect the victim; however, the individual does maintain the right to later change the status of their report from Restricted to Unrestricted. According to the DoD Annual Report on Sexual Assault in the Military (Department of Defense, 2019), in 2018 alone, there were 6,503 reported incidents (total Restricted and Unrestricted) of MST by service members and veterans. Of the Unrestricted Reports made, 59% of the survivors indicated their attacker was another service member, and another 19% did not disclose whether or not their attacker was a service member or civilian. Furthermore, 69% of the attackers who were service members were superiors in the victims' chain of command, and another 3% were superiors outside of their chain of command. These reported DoD rates have been fairly consistent over the last 10 years (Department of Defense, 2010, 2016, 2017, 2018, 2019, 2020).

MST RATES

The annual report made by the DoD indicates the number of new reports made each year to the DoD, whereas research outside the DoD setting (e.g., Veteran Affairs, university studies) helps elucidate the overall prevalence of MST as these studies may include veterans who previously experienced MST. To date, a majority of MST research has either been conducted out of the Department of Veterans Affairs clinics (Veterans Health Administration; VHA), or via

recruitment of a veteran, as opposed to active-duty, sample. The Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS) is perhaps the largest scale study with active-duty members thus far which has examined sexual assault prevalence and outcomes (Rosellini et al., 2017). The study was originally designed to explore suicide risks and resiliency factors to implement changes within the Army; yet, others have utilized the administrative data records and ancillary data to explore the impact of sexual assault (Rosellini et al., 2017; Ursano et al., 2014). Unfortunately, these data are limited to the Army branch specifically.

Within the VHA, it is a required practice to universally screen all patients for MST by asking two questions: "While you were in the military: (1) Did you receive uninvited and unwanted sexual attention, such as touching, cornering, pressure for sexual favors, or verbal remarks? (2) Did someone ever use force or threat of force to have sexual contact with you against your will?" (as cited in Kimerling et al., 2007).

According to VA estimates, one in three women and one in 50 men will experience MST (Veteran Health Administration, 2021). Other studies indicate that between 15% to 21% of women, and 0.7% to 1.2% of men experience MST (Kimerling et al., 2008, 2010, 2016). In a study of 33,259 women and 540,381 men who were screened for MST through the VA healthcare system in 2005, 19.5% of women (n = 6,469) and 1.2% men (n = 6,227) screened positive (Kimerling et al., 2008). A follow-up study by the researchers included all Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans who received VHA care between 2001 to 2007, for a total sample of 17,850 female and 108,149 male veterans screened (Kimerling et al., 2010). Of this sample, 15.1% of women (n = 2,648) and 0.7% of men (n = 732) reported MST. Similarly, of the 360,774 female and 5,991,080 male VA users who were screened for MST during fiscal years 2007 to 2011, a respective 21.2% (n = 76,360) and 1.1% (n

= 65,792) indicated a history of MST (Kimerling et al., 2016). A meta-analysis of revealed MST rates can fluctuate substantially between research studies depending on the definition of MST used (Wilson, 2018). The meta-analysis revealed 38.4% of female service members or veterans and 3.9% of males reported MST in studies if the definition included both sexual assault and harassment. Studies that only defined MST as sexual assault, without the inclusion of harassment, produced rates of 23.6% for and 1.9% for men. Although studies consistently exemplify the prevalence rate of MST is lower for men than it is for women (roughly 1% - 3% men vs 25% - 33% women), the overall number of MST survivors is fairly comparable for men and women, given men have comprised approximately 84% of the total military force since 2004 (Government of Accountability Office, 2020). In addition to gender, other sociodemographic and military-specific attributes have also been linked with greater risk for MST.

Although previous research has indicated alcohol and substance use is a risk factor for sexual assault, there are other studies who describe the relationship as cyclical with revictimization such that after experiencing an assault some individuals might turn to substances as a way to cope (Gidycz et al., 2007; Krebs et al., 2009; Monk & Jones, 2014). Another consideration that should be made, is although alcohol consumption by survivors has been linked to sexual assault, it can be in settings where the perpetrator and bystanders have likewise consumed alcohol. As such, the risk should be focused on perpetrator's use, instead of focusing blame on survivors (Abbey, 2002; Haikalis et al., 2018; Ullman, 2003). For the purpose of this paper, alcohol use will be discussed as a potential outcome effect of experiencing sexual assault, not a risk factor.

POTENTIAL RISK FACTORS

Age

In civilian studies of sexual assault, being a college-aged student, roughly between 17 and 24, has been linked to higher prevalence rates, especially for women (Elliott et al., 2004; Graham et al., 2017; Mellins et al., 2017; Rennison & Addington, 2014; Saltzman et al., 2007). This same trend is observed with MST cases, indicating that those service members who are younger aged are at a greater risk of experiencing MST (Department of Defense, 2018, 2019; Kimerling et al., 2007, 2016; Klingensmith et al., 2014).

Sexual Assault History

In the civilian sector, childhood sexual assault has also been identified as a risk factor for experiencing sexual assault as an adult; not only is this same trend observed for MST, but service members further report higher prevalence rates of childhood sexual assault as compared to their civilian counterparts (Klingensmith et al., 2014; Monteith et al., 2019; Schultz et al., 2006; Scott et al., 2014; Wilson et al., 2015; Wolfe-Clark et al., 2017). Childhood sexual assault is correlated with MST for both male and female service members, yet, for men, there has also been a relationship observed between childhood physical abuse and MST (Desai et al., 2002; Lapp et al., 2005; Murdoch et al., 2014). While younger age and history of childhood sexual assault have consistently been shown to be related to MST, other sociodemographic factors have had more complicated findings.

Race

In a study examining health data records of 185,880 female and 4,139,888 male VHA users, researchers found that both males and females who screened positive for MST were more likely to identify as white overall and in odds-based comparisons to other races (Kimerling et al., 2007). A phone interview study similarly found female MST survivors were more likely to be white, however males with and without reported MST did not significantly differ based on race

(Street et al., 2008). By contrast, an anonymous internet-based study with a nationally representative sample of veterans (n = 1,484) found only men with a history of MST were more likely to be white, while women with MST did not have a higher likelihood of being white (Klingensmith et al., 2014). Other researchers have observed no statistical difference in race for both male and female MST survivors (Sadler et al., 2003; Skinner et al., 2000). However, a review of DoD Gender Issues Surveys completed by 22,372 female service members researchers found those in low sociocultural power status (i.e., younger age, lower education, minority racial group membership, and nonmarried) had a higher likelihood of experiencing sexual assault and harassment, such that non-white service members were at a greater risk (Harned et al., 2002). Similarly, a study which utilized VHA ambulatory-care experience surveys found MST was significantly associated with Hispanic ethnicity for women (Kimerling et al., 2011). The varied results from the aforementioned studies demonstrates the complexity of distinguishing racial risk factors for MST and suggests that there may be a compounding interaction between several sociodemographic factors instead, echoing Harned et al.'s (2002) finding that low sociocultural power was a risk factor.

Marital Status

Another factor contributing to sociocultural power may be marital status. Specifically, the status of being single may be viewed as a power disadvantage, especially for women, perhaps due to the patriarchal structure of our society (Harned et al., 2002). However, another possible explanation is that after someone has suffered from MST it creates subsequent problems in their social functioning (e.g., more distrustful, withdrawn, etc.) which may then decrease their likelihood of being partnered or married. Indeed, sexual assault has been linked to increased emotional distancing from partners and in a study with college women, those who were sexually

assaulted had fewer romantic relationships and, nine years later, likewise had lower sexual intimacy (Georgia et al., 2018; Rothman et al., 2019).

In the previously discussed VHA health data study, it was found that women who suffered from MST were more likely to have never been married, whereas men were more likely to be separated, divorced, or never prior married (Kimerling et al., 2007). Similarly, a study on a community-based sample of male (n = 2,208) and female (n = 327) veterans found that both men and women who had experienced MST were more likely to be unmarried and between the ages of 18 and 60 (Schuyler et al., 2017). It is also important to consider the relationship between age and marital status, such that there is a greater likelihood of being single at a younger age.

Other studies of veterans who suffered from MST have found the greater likelihood of being single or never married only for the male participants, with no differences in marital status for the women (Kimerling et al., 2011; Klingensmith et al., 2014). Further, other VHA and community sample veteran studies found no difference for either men or women in marital status relative to MST (Sadler et al., 2003; Skinner et al., 2000; Street et al., 2008).

Education

Examining the relationship between education level and sexual assault presents interesting counterevidence to the argument that lower sociocultural power is a risk factor. Both civilian and military studies have found mixed results on how higher education levels— a position of greater social power— is associated with sexual assault (Eisenberg et al., 2017, 2021; Kimerling et al., 2011; Mellins et al., 2017; Skinner et al., 2000). Within the civilian population, this finding is sometimes explained by the fact that higher education is attained by attending college and the culture of college campuses, some argue, promotes sexual violence and harassment (Bridges, 1991; Eisenberg et al., 2021; Mellins et al., 2017).

Another argument regarding the relationship between higher education and sexual assault is that it is a risk factor particularly for women because achieving higher education is a violation of their expected gender-role and is thus may be met with violence by others (Chapleau et al., 2008; Elliott et al., 2004; Hunter, 2007). Indeed, a telephone survey of former military reservists (n = 3,946) found higher education to be associated with MST for female, but not male participants (Street et al., 2008). However, other researchers have found the opposite to be true, with MST being more strongly associated with lower levels of education as opposed to higher education (Harned et al., 2002; Klingensmith et al., 2014; Sadler et al., 2003). Given the unique aspects of education access and attainability within the military, the relationship between MST and education level should continue to be explored. A majority of service members have completed some college education and military officers are four times as likely as the average adult to have a postgraduate degree (Department of Defense, 2015). While enlisted members of the military are more likely to have completed high school and some college, compared to U.S. adults (92% versus 60%), they do still hold bachelor's degrees at lower rates than all adults (7% versus 19%; (Department of Defense, 2015)

Military Specific Factors

In addition to the sociodemographic factors that are typically examined in the civilian population with sexual assault, the military context presents unique factors of its own; for instance, the military has unique career requirements (e.g., deployments) and is hierarchically structured.

Branch of Service

The military branches are not equal in size and therefore it is important to not simply look at prevalence rates when trying to determine risk of MST. The Army remains the largest branch

of the military at 36% of total force in 2015 (Department of Defense, 2015). The Air Force and Navy each make up roughly 25% of all service members, 14% for the Marine Corps, and 3% by the Coast Guard (Parker et al., 2017). To standardize comparisons across branches, the DoD publishes rates of sexual assault as per thousand service members (Department of Defense, 2019). The 2019 DoD sexual assault reporting rates, per thousand, were as follows: Army = 5.5, Marine Corps = 5.4, Navy = 5, Air Force = 4.6. However, these rates are calculated from the number of official reports of sexual assault (Restricted and Unrestricted) that are made to the DoD, and it is possible that rates of reporting MST versus rates of experiencing MST may not be the same across branches (Turchik & Wilson, 2010). Skinner et al.'s (2000) sample of VA female veterans who used ambulatory services determined those who were in the Army were more likely to experience MST, yet other studies have found being in the Navy or Marines is more strongly associated with risk for MST, or that there is no difference in risk across the branches (Klingensmith et al., 2014; Sadler et al., 2003; Suris et al., 2011).

An important consideration to be made here is that the Marine Corps does not have its own medical officers and therefore Marines receive medical and mental health care through the Navy. It is therefore possible that Marines may be inconsistently included in Navy data— especially healthcare data— as opposed to separated into their own branch. In the previously discussed study with a nationally representative sample of veterans, participants were stratified based on demographic factors. Findings indicated that Navy veterans were more likely to have experienced MST (Klingensmith et al., 2014). Similarly, a study with odds ratios comparisons of 60,000 veterans across branches (i.e., Army, Airforce, Navy, Marine Corps) found male Navy veterans were at the highest risk of experiencing MST, whereas for females, Marine and Navy veterans were at the greatest risk (Barth et al., 2016). Specifically, 52% of female Marines

reported experiencing MST, more than any other branch of service (Barth et al., 2016). Similarly, a review of DoD surveys on sexual harassment also determined Marines were at greatest risk of MST, while those in the Air Force were at the lowest risk (Hay & Elig, 1999).

According to a Government Accountability Report (2020), in Fiscal Year (FY) 2018 the Air Force was the branch with the largest percentage of female service members at 20.2% of the force, while the Marine Corps had the least number of women at 8.6% of their force. The difference in representation of women across the branches may also contribute to the variances in specific branch cultures and heightened hypermasculinity. Indeed, a qualitative study noted the Marine Corps has been described as "designed for combat" and male Marines who participated in the study described female Marines as "easy," and "sexually coercive" (Archer, 2013). The objectification of women through perceptions such as these may lead to an increased risk for sexual violence and has been found mediate the association between heavy drinking in men and sexually assaulting women (Gervais et al., 2014). Moreover, after experiencing objectification by others, women are more likely to self-objectify which is associated with decreased sexual assertiveness (Franz et al., 2016). Decreased sexual assertiveness in women is concerning as others may view them as easier targets, thereby increasing risk for sexual assault to occur. Similarly, in a prospective study with female college students, lower sexual assertiveness in relationships was linked to increased risk for revictimization (Kelley et al., 2016). Therefore, the military's culture of hypermasculinity and brotherhood might both put servicemembers at greater risk for sexual assault and revictimization.

Rank

The military's rank structure is separated by officer and enlisted status. Officers are of higher ranking than enlisted service members and therefore hold more organizational power

within the military system; however, there are far more enlisted members (roughly 84% of total force) than there are officers (Department of Defense, 2015). Ratios of female enlisted vs female officers are fairly consistent within branches (females account for approximately 15% of the enlisted force and 17% of the officer corps), with higher rates in the Air Force (18.8% of the enlisted, 20.3% of officers) and lowest in the Marine Corps (7.8% of the enlisted, 7.1% of officers) (Department of Defense, 2015). As aforementioned, Harned et al. (2002) posited those in lower status positions are at greater risk of experiencing MST and indeed found this to be supported. In this study, organizational power was comprised of rank pay grade (i.e., Officer vs. Enlisted status) and years of active-duty service, while sociocultural power was comprised of age, education, race/ethnicity, and marital status. In a path analysis conducted, the researchers found organizational power and sociocultural power were both inversely associated with MST risk. Given organizational power was comprised of rank pay grade and years of active-duty service while age was included in sociocultural power, these findings suggest that rank and time in service independently influence servicemembers' degree of risk, and with age, this collective risk is increased. Other nationally conducted surveys adjusting for age similarly found enlisted women had double the odds of MST compared to officers or those who were drafted into the military (Klingensmith et al., 2014; Sadler et al., 2003). Although rank is a factor specific to the military, it can also be used as a proxy indicator of economic status; in a study on female veterans' perceptions of care, MST was significantly associated with middle income level (i.e., presumably enlisted status) (Kimerling et al., 2011). Specific careers within the military could likewise increase risk due to differences in culture or stronger emphasized rank differences. Indeed, a study of sexual assault and harassment in the Army likewise indicates there is

increased risk for assault to occur in specific career fields (i.e., field artillery and engineers)(Matthews et al., 2021).

Deployments

Military deployments are an important factor to consider for MST risk as they present a unique context and environment with higher operational tempo. According to the Army RAND study, more days deployed on a Global War on Terrorism Mission is associated with higher adjusted sexual assault risk for women and sexual harassment risk for women and men (Matthews et al., 2021). Deployments and combat exposure have also been linked to increased risk behaviors among service members, such as increased likelihood of substance abuse, speeding, and risky sexual behavior (e.g., having unprotected sex; (Calhoun et al., 2008; Fear et al., 2008; Koenen et al., 2003; Thomsen et al., 2011). In a 2009-2011 National Health Study comparing veterans who did not have combat exposure, female veterans with combat exposure were 42% more likely to have experienced MST, and male veterans were 57% more likely (Barth et al., 2016). Although it may be that deployments create a greater risk of MST due to service members being confined to small quarters with one another, research would suggest otherwise. In a sample of female Navy MST survivors, only 27% of the sexual assaults occurred while on ship where sailors would be sharing small spaces and, instead, most (73%) occurred on a shore location (Parnell et al., 2018). Shore locations could have either been in a deployed environment or while in garrison (i.e., stateside). Although the amount of time spent at sea can vary depending on position, on average, Sailors can expect to spend 10-14 days each month at sea for training, and six to nine month long deployments every 18-24 months (Navy Recruiting Command, 2021). This indicates confined proximities may not necessarily be the root cause of

increased MST risk but perhaps another driving factor contributing to risky behaviors associated with deployments.

IMPACTS OF MST

Studies with MST survivors has demonstrated there are both significant mental and physical health impacts. Indeed, MST has been linked to more severe depression symptoms, including higher suicidality, and an increased likelihood for intensive outpatient treatment (Kelly et al., 2008; Schry et al., 2015; Schuyler et al., 2017; Wolfe-Clark et al., 2017). Furthermore, MST has been linked to other behavioral health disorders in cross-sectional studies, such as eating disorders and substance use disorders (Arditte Hall et al., 2017; Blais et al., 2017; Cucciare et al., 2011).

Service-connected disabilities have also been consistently linked to MST (Kelly et al., 2008; Kimerling et al., 2007, 2011; Schry et al., 2015; Street et al., 2008). Service-connected disabilities could result from injuries during deployments or trainings; however, they can also result from daily work environment exposures (e.g., loud noises). Additionally, a diagnosis of PTSD could also qualify as a service-connected disability, as long as the index trauma event was somehow connected to their time in service. In a retrospective VHA data study, researchers found MST index events were associated with a four times greater odds of receiving a PTSD diagnosis for women and a three times higher odds for men, compared to those who denied experiencing MST in the VA screener questions (Maguen et al., 2012). Furthermore, those with PTSD due to MST had more comorbid physical health problems than veterans with combat PTSD. A similar study found active-duty women who had a PTSD diagnosis as a result of an MST index event were more likely to require a disability evaluation than those service members with PTSD from a non-MST event (Parnell et al., 2018). This could potentially be because,

following MST, survivors may remain in the same work or living environment as their perpetrator, coupled with the betrayal resulting from an attack by someone else in the military.

Similarly, in a study of veterans applying for service-connected PTSD disability benefits, 71% of the women and 4% of the men with PTSD had experienced MST. This again illustrates that MST has a greater propensity to result in PTSD compared to other index trauma events and perhaps is why a strong relationship is observed between MST and service-connected disabilities (Murdoch et al., 2014). However, there may still be a relationship between physical service-connected disabilities and MST, as researchers found female veterans who had experienced MST were often not working due to physical limitations (Skinner et al., 2000). Participants in the study who experienced MST had more problems adjusting to civilian life and likewise reported poorer physical health, increased sleep disturbances and depression, dissatisfaction with their sex life, and body image dissatisfaction. Similar studies have likewise found low sexual satisfaction and increased sexual dysfunction issues for women who have experienced MST (Elliott et al., 2004; Pulverman et al., 2019; Turchik et al., 2012). In a sample of male and female veterans who experienced MST, researchers found roughly 75% of women and 80% of men had a least one sexual dysfunction issue reported (e.g., low libido, orgasm dysfunction, pain during sex) (Garneau-Fournier et al., 2018).

HEALTHCARE UTILIZATION

A VHA study evaluating the impacts of the universal MST screening question implementation found mental health care usage was nearly twice as high for those with positive MST screens compared to those with negative screens (Kimerling et al., 2008). Conversely, in another study of female VA healthcare usage, researchers found the higher rates of healthcare usage for women with a history of MST was no longer significant after adjusting for PTSD and

depression symptoms (Calhoun et al., 2018). Furthermore, more than half of the women with MST history were not utilizing any VA care.

Demographics of Health Care Users

Researchers have found making an official DoD report of the assault is associated with a greater likelihood of utilizing both medical and mental health services (Calhoun et al., 2018). Active-duty status, substance use prior to the assault, and having physical injuries were also linked to greater medical care usage, whereas being white and the MST occurring while on duty were associated with higher likelihood of mental health care use. In a VHA evaluation study, researchers similarly found being white and prior active-duty status — as opposed to being in the National Guard or Reserve— were associated with a greater likelihood of both mental and medical healthcare usage, even after controlling for total number of healthcare visits (Turchik et al., 2012). Conversely, factors that were linked to a lower likelihood of utilizing MST-related services included being an officer, male, and in the Air Force or Marines as opposed to the Army (Turchik et al., 2012). Considering these studies, active-duty service members within the Military Healthcare System (MHS) might likewise utilize MST related medical care at rates similar to mental health care.

Type of Care Sought

Studies with civilians have found varying rates at which survivors seek out sexual assault-related healthcare. Rates of disclosure to medical providers range from 18 to 72%, whereas disclosure to mental health providers is between 19 and 27% (Beebe et al., 1994; Feldhaus et al., 2000; Kimerling & Calhoun, 1994; Strike & Ferris, 2001). In a prospective study following civilian women's healthcare usage prior and subsequent to experiencing a sexual assault, women survivors had more frequent use of medical services compared to age- and

gender-matched controls (Strike & Ferris, 2001). Interestingly, in a different study with civilian female participants, 70% of those who were assaulted by a stranger sought out medical care whereas only 32% of those who were assaulted by someone they knew received medical care (Feldhaus et al., 2000). Mental health service utilization had more similar rates of 30 and 22% for stranger and known individual assaults respectively (Feldhaus et al., 2000). Given MST assailants are often known to the survivors, this could likewise mean servicemembers are seeking out medical care at lower rates than may be needed.

A study with active duty service members who had reported MST and received sexual assault services found high rates of medical care usage (50% utilized an emergency department and 44% saw an outpatient provider) and high utilization of mental health services, 89% (Smalley et al., 2017). Medical services that were most frequently utilized included psychotropic medications for mood management and sleep, as well as sexually-transmitted infections screenings. However, it is important to note that of the 225 service members who had reported MST during the study period, only 22 completed study surveys were returned. As such, the data collected on healthcare usage type might not be an accurate representation of service usage for the survivors not represented. In a telephone-based survey with a Midwestern community sample of female active-duty, reservists, and veterans, 25% of those who experienced MST utilized mental health care and 16% utilized medical care (Mengeling et al., 2015). The use of medical care tended to occur within the first month of the assault, whereas mental health care was on average accessed six months to a year later.

Within the VA setting, through semi-structured interviews and medical chart reviews, researchers found over 33% of women and roughly 25% of men with a history of MST utilized some type of mental health care (Zinzow et al., 2008). Compared to same-gender controls

without MST, men with a history utilized the emergency department at twice the rate whereas women received mental health services at twice the rate of those with no MST history. Another research team similarly evaluated mental health and medical care utilization within the VA through a cohort design study of Iraq and Afghanistan veterans (Brignone et al., 2017). These researchers found that veterans who screened positive for MST had significantly higher odds of health care utilization in multiple health categories (i.e., mental health, substance use, emergency department, social work, outpatient) except for primary care usage, compared to those with negative MST screens. Furthermore, those with a positive screen had a 40% higher rate of encounters (i.e., healthcare visits). Interestingly, these researchers also found that men with a positive MST screen had twice the amount of non-MST related health care usage compared to women with a positive screen (Brignone et al., 2017). Moreover, male MST survivors have been found to seek out care later than female survivors do (O'Brien et al., 2015). One possibility to explain this is that men face more mental health stigma and have the added stigma of being a male sexual assault survivor that prevents them from seeking out care (Bullock & Beckson, 2011). Indeed, in a VHA qualitative study, a majority of the male veterans who experienced MST but had not received related care noted gender stigma, including being perceived as weak or others potentially questioning their sexuality, as barriers to care (Turchik et al., 2013).

Irrespective of sexual assault experiences, men are less likely to seek out care, therefore the added stress from sexual trauma could be endured for longer (Galdas et al., 2005). When the body is under stress for a prolonged amount of time the immune system becomes weakened (Sapolsky, 2004) and therefore could leave survivors more susceptible to subsequent health problems. Indeed, a study with civilian women found medical care utilization increased in a year's time for those participants who had experienced sexual assault, and their physiological

symptoms were consistent with an impaired immune system (Kimerling & Calhoun, 1994). Additionally, increased negative cognitions following sexual assault has been linked to higher rates of somatization (Koo et al., 2014). Conversely, it might also be that the physical symptoms (e.g., racing heart, changes in weight, increased tension, headaches, etc.) associated with mental health disorders commonly associated with sexual assault (e.g., anxiety, depression, PTSD) are more salient and easily communicative for men to seek medical care as opposed to linking it to mental health.

It also remains unclear if differences in accessing regular healthcare vs emergency department care is the result of insufficient access to primary care. For example, a telephone-based survey with female VA users found that those with a history of MST who were receiving mental health care had twice the odds of emergency department visits compared to users who were receiving mental health care with no MST history (Vander Weg et al., 2020). These researchers likewise found Officer status was associated with lower emergency department use; however, Reserves and National Guard status was associated with greater odds of emergency department use. Those who only received some of their care through the VA had greater odds of emergency department use, as compared to those who received all care through the VA. However, women in the lower priority status for the VA, meaning those with higher co-pays and a longer time for enrollment, had lower odds of emergency department use.

Although the VA utilizes universal screening for MST, the DoD has yet to implement a similar measure. This lack of universal screening efforts could likewise impact sexual assault-related healthcare utilization for servicemembers. In a study with female civilians, it was found that 52% had never before been screened for sexual assault by a healthcare provider, nor provided with any information about sexual violence (i.e., the emotional and physical effects of

unwanted sex) (Littleton et al., 2007). Furthermore, those who were Latina or had completed less than a high school degree were the least likely to have been screened or provided relevant information. Within the military context, based on current demographics of officers and enlisted, individuals with those identities (i.e., Latina or less than high school education) would more than likely be an enlisted member (Congressional Research Services, 2019). As such, this could potentially mean that not only is a large portion of service members not being screened for sexual assault but also that more vulnerable populations (i.e., enlisted members) may be less likely.

Satisfaction with Care

A study which utilized data from a female veteran tracking system (i.e., National Registry of Women Veterans) found women who reported MST likewise reported more use of VHA services overall (Kelly et al., 2008). Unfortunately, MST reporters also indicated they had more problems with VHA services, including accessing women-specific services, and generally had less satisfaction with the care they received compared to women who had not reported an experience of MST. A study with a nationally representative sample of VHA outpatients likewise found both men and women with a history of MST reported lower satisfaction with VHA care. This dissatisfaction was largely the result of participants being seen by multiple providers who did not appropriately communicate amongst one another and were, therefore, unaware of their trauma history (Kimerling et al., 2011). This highlights an issue that active-duty service members might also experience as they are assigned changing providers, either due to availability at the given time and/or movements (e.g., deployments) which could serve as a barrier to care. Aside from changing providers, there are other barriers which might prevent service members from seeking care or disclosing their experiences.

BARRIERS TO SEEKING CARE

Stigma and Military Culture

Military culture is collectivistic and numerous studies have examined the effects of unit cohesion on service members' health. For example, greater unit cohesion has been linked to increased resilience, as well as decreased psychological distress and suicidal ideation in studies with Army soldiers (Mitchell et al., 2012; Williams et al., 2016). However, the military's collectivistic culture demands an extent of deindividuation from its members and reliance on others, which can lead to negative effects. Through qualitative interviews with Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) veterans, researchers found these veterans had trouble transitioning back into the civilian culture of individualism and autonomy, resulting in psychological distress after leaving the military (Smith & True, 2014).

Warrior Ethos and Sacrifice

A central theme of military culture is that of warrior ethos, which emphasizes virtue through selfless sacrifice, strength, placing the mission first, and never leaving a comrade behind (Hall-Clark et al., 2018; McGurk et al., 2006). These ideals can quite plainly be seen in each respective branch of service's creed (i.e., Air Force, Army, Navy, Marine Corps), which members are expected to memorize, embody, and uphold (McGurk et al., 2006). Although there is some variant in phrasing for each, each branch commonly affirms its members are committed to the mission, will defend others, obey orders, and achieve mission success. Exemplifying these types of ideals aids in good order and unit effectiveness; however, it could lead service members to have an inflated sense of responsibility and therefore increased guilt and self-blame when they impede the mission or have any failures (Hall-Clark et al., 2018). In fact, researchers found that veterans who reported greater guilt and shame for who they were due to their combat experience,

correspondingly exhibited higher rates of suicidal ideation (Bryan et al., 2013). Moreover, in a different study with 78 active-duty service members, one common reported barrier to mental health care-seeking included the perceived burden to members of one's unit for time spent away from the job to receive mental healthcare (Zinzow et al., 2013). Studies such as these, illustrate that service members' embodiment of military culture can result in their putting the mission first, even before their own health and well-being.

Stoicism and Withholding Emotions

The maintenance of military bearing (composure) and stoicism is expected of service members and contributes to society's belief that our military is strong and reliable, yet this entails a great amount of pressure placed on service members and also creates other potential drawbacks (Hall-Clark et al., 2018). For example, beginning in basic training, military members are repeatedly placed in highly stressful environments and situations where they are expected not to show signs of stress or fear but instead exhibit emotional control (Braswell & Kushner, 2012). The service creeds, as previously discussed, likewise have statements such as, "I am disciplined, physically, and mentally tough," which service members are meant to uphold (Soldier's Creed, n.d.). However, research such as that with a focus group of Army soldiers identified a frequently reported barrier to seeking out mental health care is not wanting to be perceived as weak (Zinzow et al., 2013). Similarly, a study with 2,678 deploying soldiers further revealed that service members have fears about being perceived as weak by members of their unit, as well as leadership, suggesting that the pressure to maintain military bearing is not only enforced by higher ranking members but by colleagues of the same or lower rank as well (Warner et al., 2008). Notably, a study with OIF and OEF veterans showed those who reported fear of

embarrassment and perceptions of being weak as their most significant barriers to care tended to likewise be those individuals suffering from psychopathology (Pietrzak et al., 2009). Fortunately, research has indicated that this barrier to care can be mitigated by encouragement from family and friends to receive treatment, highlighting the importance of social connections and relationships (Warner et al., 2008).

As aforementioned, civilian studies have found higher rates of medical care usage versus mental health care utilization by sexual assault survivors. It is likely that stigma has an impact on these differences observed, as seeking out medical care is less stigmatizing than mental health (Britt, 2000). Although service members may be averse to seeking out care due to the warrior ethos and culture of sacrifice, similar to civilians, they may be more easily accepting of medical care versus mental health.

Institutional Betrayal and Structural Barriers

Institutional betrayal is conceptualized as feeling as though the institution to which you belong created an environment for sexual assaults to occur, failed to prevent them, or did not appropriately respond to reports made (Smith & Freyd, 2013). In research utilizing civilian college students, reported feelings of institutional betrayal related to sexual assault have been associated with more severe psychopathology symptoms such as anxiety, trauma, sexual dysfunction, and dissociation (Smith & Freyd, 2013).

Given the great extent of familial sense within military culture and obedience to chain of command, it is likely that those MST survivors who were attacked by another service member may experience feelings of institutional betrayal (Bryan et al., 2015). This would especially be true for those who were attacked by their own chain of command superiors. Indeed, in a study

with female MST survivor service members who reported feelings of institutional betrayal it was found that they had more severe depression and PTSD symptoms, as compared to those who had experienced sexual assault but did not report feelings of institutional betrayal (Andresen et al., 2019). Furthermore, these women were more likely to have been discharged from the military subsequent to their report of MST. In a similar study with veterans exploring institutional betrayal and psychological outcomes, it was found that feelings of sexual assaulted related institutional betrayal were linked to increased PTSD and depression symptomatology, as well as an increased risk of attempting suicide (Monteith et al., 2016). Additionally, two thirds of these survivors indicated they felt that, after their assault, the military created an environment in which it was difficult for them to be a member of and they no longer felt valued. Feelings of institutional betrayal and a lack of trust in the military system could collectively serve as a major barrier to service members disclosing their assault to military medical providers.

CHAPTER 2: SPECIFIC AIMS

STUDY RATIONALE

A majority of the current public research on MST has been retrospective studies conducted utilizing veteran samples through the VHA, or relying on self-report surveys (Kimerling et al., 2007, 2010; Maguen et al., 2012; Turchik & Wilson, 2010). Although the data provided from VHA studies have been rich and meaningful, several of these studies have utilized similar or overlapping samples (Forkus et al., 2020; Wilson, 2018). Additionally, VHA studies only include those veterans who receive care through the VA and, according to a 2017 VA report, there are nearly 20 million veterans in the U.S., with only six million registered as VHA patients (Veteran Affairs, 2017).

Furthermore, when sexual assault studies have been conducted with active-duty service members, the samples tend to be smaller, or are not representative of the overall military force (Murdoch et al., 2007; Parnell et al., 2018; Rosellini et al., 2017). Additionally, there has been no public MST research that has been conducted DoD wide for all active-duty service members. As aforementioned, the Army STARRS is one of the largest scale study with active duty service members that includes data on sexual assault and has provided rich information; however, it is limited to the Army branch and only included information provided from Unrestricted reports of sexual assault (Rosellini et al., 2017; Turchik & Wilson, 2010).

Although the annual DoD Sexual Assault reports reveal a substantial amount of the sociodemographic information of the MST reporters, they do not include information related to the healthcare accessed by these reporters. Therefore, the data provided by the proposed study are essential as these data (1) include active-duty service members as opposed to veterans, (2) are DoD wide, and (3) provide wide scale insights on the servicemembers receiving health care related to a sexual assault experience.

AIMS AND HYPOTHESES

The proposed study seeks to determine the prevalence of sexual assault related health encounters in the Military Health System (MHS) within fiscal years 2016 to 2018 for active-duty service members.

Aim 1a: Determine prevalence of sexual assault related health encounters for active-duty military personnel documented in the MHS.

Aim 1b: Examine sociodemographic (e.g., age, gender, race) correlates of sexual assault related health encounters among active-duty service members.

Hypothesis 1 b1: There will be greater odds of a sexual assault-related encounter for younger individuals versus older.

Hypothesis 1 b2: There will be greater odds of a sexual assault related encounter for females than males.

Hypothesis 1 b3: There will be greater odds of a sexual assault related encounter for enlisted service members as compared to officers.

Hypothesis 1 b4: There will be greater odds of a sexual assault related encounter for service members in the Marines, compared to other branches.

Aim 1c: Examine type of provider seen during initial documentation of sexual assault related health encounter.

Hypothesis 1 c: There will be a greater proportion of initial sexual assault related encounters with medical providers as opposed to behavioral health providers.

CHAPTER 3: METHODS

RESEARCH DESIGN

The Military Health System Data Repository (MDR) captures healthcare claims data for individuals utilizing the Military Healthcare System (MHS) in facilities owned and operated by the DoD, and care paid for under the TRICARE benefit at non-DoD operated sources. TRICARE Prime is the health insurance program for uniformed service personnel, retirees, and their dependents, who can receive medical coverage at Military Treatment Facilities (MTF). This was a cross-sectional study conducted under the scope of the larger Comparative Effectiveness and Provider Induced Demand Collaboration (EPIC) study. Fiscal years (FY) 2016 to 2018 from the MDR, in particular, were examined for this study.

PARTICIPANTS

Utilizing the MHS Data Repository and Defense Enrollment Eligibility Reporting System, all active-duty service members aged 18 and older from the Air Force, Army, Navy, and Marine Corps were identified during FY 2016-2018. Active National Guard and Reserves members were excluded due to their inconsistent access to the MHS, resulting in a study population of 1,728,433 active duty service members.

MEASURES

Sexual Assault Codes

Internal Classification of Diseases (ICD) codes related to sexual assault were utilized to identify participants who had sexual assault related health encounters; the codes can be found in Table 1. Encounter for examination and observation of victim following forced sexual exploitation. ICD codes related to child sexual assault were not assessed, as the focus of the present study is adult experiences of sexual assault, as a proxy to gauge MST-related health encounters in the MHS.

Demographics

Demographic and clinical variables examined included age, gender, race, service branch (Army, Navy, Air Force, Marine Corps), and military rank (Enlisted, Officer, and Other). Age was stratified into three groups: Young Adult (18 to 25 year old), Middle Aged Adult (26 to 40 year old), and Older adult (41 years old and above). Race information in the MDR is reported as White, Black, Asian/Pacific Islander, American Indian/Alaskan Native, and Other.

Provider Codes

Provider types were categorized using taxonomy codes established by the Health Insurance Portability and Accountability Act (HIPAA). Provider codes were then grouped into

four categories: Physicians (i.e., Doctor of Medicine, Doctor of Osteopathic Medicine); Behavioral health and social service providers (i.e., psychologists, social workers, counselors); Physician Assistants and nursing providers (i.e.., registered nurse, certified nurse midwife, nurse practitioner); and a remaining "Other" group for those that did not fit the previous categories (e.g., occupational therapist, clinical medical laboratory, Independent Duty Corpsman).

PROCEDURES

TRICARE claims data from FY 2016 to 2018 of the MDR were utilized. Race and branch of service were obtained from the DEERS records using a unique identifier to match with patients found in the military's direct care, outpatient claims data. Subsequent to identifying all active-duty members from FY 2016 to 2018 for their inclusion in the study, participants with a sexual assault related ICD code reported on a healthcare encounter's claims at either a military (direct care) or civilian (purchased care, using TRICARE insurance outside of military treatment facilities) treatment facility during the study period were identified. If a service member had multiple encounters or claims with a diagnostic code for sexual assault, the first record during the study period was retained. From those initial sexual assault related encounters in the MDR that were identified, HIPAA taxonomy codes for provider type and clinical settings were examined.

DATA ANALYTIC APPROACH

The Statistical Analysis System (SAS) software, SAS version 9.4, 2013 (SAS Institute, Cary, NC) was used to conduct all analyses. Sexual assault per 1,000 active-duty service members was calculated from 2016-2018 for trend analysis. Descriptive statistics by a cross-tabulation of demographics were calculated. Age group, gender, race, service, and rank were dummy coded to be included as categorical predictor variables and covariates in the logistic regression analysis. Frequency of patients with sexual assault ICD coded care were categorized

by type of provider seen and clinical setting to determine where reporting is most likely to occur. Service members with missing data were removed from the logistic regression analyses.

HUMAN SUBJECTS PROTECTION

Data were stored as per protocol for the EPIC study (e.g., Madsen et al., 2018). The data that support the findings of this study are available from the United States Defense Health Agency (DHA). Restrictions apply to the availability of these data, which were used under federal Data User Agreements for the current study, and so are not publicly available. Due to the secondary analysis of existing, de-identified data, this study was deemed exempt from human subjects review by the Institutional Review Board of the Uniformed Services University of the Health Sciences. Because of these conditions, written consent to participate is not applicable. All data are kept anonymous, and any case counts of less than 11 for a particular factor were not included, to maintain service member anonymity and guard against the possibility of re-identification.

CHAPTER 4: RESULTS

RESULTS FOR AIM 1A: PREVALENCE

A total of 1,728,433 active-duty service members were identified during FY 2016-2018; of these, 2.6% were excluded from analysis due to incomplete data. This resulted in a total of 1,683,727 active duty service members, of whom 4,113 (0.24%) had a sexual assault related health encounter during the study period. From this total, 3,655 service members received their sexual assault related encounter via direct care and 458 through purchased care. Rates of sexual assault-related care in the MHS declined throughout the three-year period from 1.12 per 1,000 reports in 2016, 0.95 per 1000 in 2017, and 0.92 per 1000 in 2018 (Figure 1).

RESULTS FOR AIM 1B: SOCIODEMOGRAPHIC CHARACTERISTICS

Sociodemographic characteristics of service members with sexual assault-related healthcare encounters can be found in Table 2. Of the 4,113 with a sexual assault-related health encounter, 71.3% were female (*n*= 2,932) and 28.7% (*n*= 1,181) were male. Females were 12 times more likely to have sought care related to sexual assault than males (*OR* = 12.02, 95% *CI* = 11.21– 12.89, $p < .0001$; Table 3). In addition, individuals identifying as American Indian/Alaskan Native (*n* = 56, *OR* = 1.37, 95% *CI* = 1.04 – 1.80, *p* = .02) or "Other" (e.g., multiracial) (*n* = 423, *OR* = 4.60, 95% *CI* = 4.10 – 5.17, $p < .0001$) had significantly greater odds of a sexual assault related encounter compared to White service members (*n* = 2,428). Asian/Pacific Islander service members (*n* = 168) had significantly lower odds of sexual assault related health encounters compared to White service members (*OR* = .64, 95% *CI* = .54 – .75, $p < .0001$). There was no significant difference in the odds of sexual assault related encounters for Black service members *(n* = 1,002) compared to White counterparts (*n* = 2,428, *OR* = .98, 95% *CI* = 0.90 – 1.05, *p* = .53).

Although service members aged 18 to 25 had the highest rates of sexual assault related health encounters overall (*n* = 2,973, 72.3%), proportionally, they had significantly lower odds of an encounter compared to those aged 26 to 40 (*n* = 1,067, 25.9%, *OR* = 0.695, 95% *CI* = 0.65 – 0.75, $p < .0001$). There was a total of 73 (1.8%) health encounters for service members 41 years old and older.

There was a total of 3,856 enlisted service members and 208 officers with a sexual assault related health encounter in FY 2016 – 2018, indicating significantly greater odds of encounters for enlisted members compared to officers (*OR* = 2.65, 95% *CI* =2.28 – 3.08, $p < .0001$). An additional 49 individuals were categorized as "Other" for their rank if they were in

Cadet status (i.e., a student at military service academy). These individuals likewise had greater odds of sexual assault-related encounters compared to officers (*OR* = 2.04, 95% *CI* = 1.40 – 2.97, $p < .0001$). Rates of encounters for service members by branch were as follows: 2,231 Soldiers (Army), 951 Airmen (Air Force), 617 Sailors (Navy), and 314 Marines (Marine Corps). In comparison to active-duty service members in the Army, those in the Navy had the lowest likelihood of sexual assault related health encounters (*OR* = 0.31, 95% *CI* = 0.28 – 0.34, $p < .0001$), followed by the Marine Corps (*OR* = 0.40, 95% *CI* = 0.36 – 0.45, $p < .0001$), and the Air Force (*OR* = 0.44, 95% *CI* = 0.40 – 0.47, $p < .0001$). The Army likewise had the highest percentage of its sexual assault related health encounters as direct care (*n* = 2,081, 93.28%) versus purchased care (*n* = 150, 6.72%). The Air Force had the highest rate and percentage of its sexual assault related health encounters from purchased care (*n* = 186, 19.56%).

Results for Aim 1c: Initial Provider Seen

Consistent with the hypothesis, service members were more likely to have their initial sexual assault-related health encounter with a medical provider. Results revealed 58.6% of the initial encounters were with medical providers (*n* = 2,412), versus 41.4% with behavioral health and social workers (*n* = 1,701; Figure 2). More specifically, health encounters were as follows: 34.2% by physicians (*n* = 1,406), 15.6% by physician assistants, nurse practitioners, and nurses (*n* = 642), and the remaining 8.8% (*n* = 364) from the "other" category of providers (e.g., "hospital," transportation service; Table 4).

CHAPTER 5: DISCUSSION

Summary and Interpretation of Study Findings

In contrast to DoD published data of increasing sexual assault reports in recent years, MHS recorded sexual assault-related health encounters decreased each FY from 2016 – 2018

(Department of Defense, 2016, 2017, 2018). The discrepancy between these data and DoD published data suggest that barriers to seeking medical care for sexual assault may be increasing. When examining the sociodemographic characteristics, the current data largely reflect previous research, such that women, those in the Army, and enlisted service members were the most likely to obtain sexual assault-related care (Department of Defense, 2019; Kimerling et al., 2008, 2010, 2016; Klingensmith et al., 2014; Sadler et al., 2003; Skinner et al., 2000). The Army is the largest military branch and Soldiers are often overrepresented in studies compared to servicemembers from other branches; however, the present study utilized odds ratio comparisons while controlling for the other sociodemographic factors, indicating the prevalence is not due to branch size alone. Branch outreach programs and procedures should be examined for differences that might encourage greater healthcare seeking. Additionally, further delineation of the type of healthcare service sought could potentially reveal if service members from different branches have a greater likelihood of engaging in medical care versus behavioral health care.

Despite previous research and DoD reports indicating those who are younger are at the highest risk for sexual assault, MHS health encounter data indicated lower rates of sexual assault-related health care among those aged 18 - 25 compared to service members aged 26 – 40, who had the highest odds of sexual assault-related health encounters (Department of Defense, 2019). Furthermore, those who identified as American Indian/Alaskan Native, or as part of an "Other" category of race (e.g., multiracial) were the most likely to have a sexual assault-related health encounter, compared to those identifying as white. Additional research is warranted to clarify the discrepancies in the data and to assess whether there are barriers in place that inhibit help-seeking in these service members.

Lastly, behavioral health and social service providers were the category of providers most likely to be engaged in the initial sexual assault-related health encounter, suggesting they are in a unique position to provide support and referrals for sexual assault survivors. Implications for clinical practice, policy, and future research are discussed, as well as the limitations for this study.

STUDY STRENGTHS

As aforementioned, the Army STARRS study elucidates health impacts of MST soldiers have experienced, but is limited to Army only (Ursano et al., 2014). To our knowledge, this is the first large scale study examining health care usage for sexual assault survivors within the MHS setting. Additionally, many may be apprehensive to discuss their sexual assault and might not participate in research studies related to it. In the present study, given the utilization of TRICARE claim data and the de-identification of protected health information, service members' identities are protected; as a result, all were able to be included in analyses without the need for informed consent processes which enabled a larger data set. A major strength of this study is that it is informative DoD wide, across multiple branches. By collecting data across multiple branches, with all active duty service members, the study lends itself to considerations across the total force, such as potential DoD policies.

STUDY LIMITATIONS

Despite the use of all TRICARE claim data from FY 2016 to 2018, the Coast Guard and Public Health Service Commissioned Corps branches were not isolated for this study and analyses due to their smaller sizes. Additionally, reservists and those in the National Guard were excluded due to their inconsistent use of the MHS and TRICARE. These service members are

often underrepresented in studies and might experience unique challenges related to sexual assault and seeking out related care (Street et al., 2008).

Furthermore, the use of general sexual assault ICD codes as a proxy MST indicator is a major limitation of this study; however, it is also an unavoidable limitation given there is no current MST code in place for healthcare encounters. In this same vein, determining prevalence rates based on medical records is a limiting proxy indicator as well, as there is the tendency of patients to underreport their experience of sexual assault in healthcare settings (Pulverman et al., 2019). This introduces the possibility of a bias as only those servicemembers who disclosed their sexual assault in the healthcare setting are included, whereas there could be many others who were sexually assaulted but refrained from disclosing it to their healthcare providers, or it was not considered relevant for their care.

Additionally, although the documentation of a sexual assault ICD code indicates an assault has potentially occurred, it does not provide information as to when the assault may have occurred. Therefore, it is possible a servicemember sought out healthcare for a sexual assault that occurred several years prior or the day before. Ideally, time since sexual assault occurrence should be further investigated and adjusted for as this was not possible in present analysis. The experience of childhood sexual abuse was similarly not assessed and could be an important consideration for future research (Cabrera et al., 2007).

Furthermore, the MHS only includes information on racial, but not ethnic identity; therefore, it was not possible to isolate data for those identifying as Hispanic. This is a major limitation as Hispanic service members are included within the White classification but may have different experiences and outcomes, given their minority status.

CLINICAL IMPLICATIONS

The study revealed the prevalence of active duty service members who have had sexual assault related health encounters in the MHS, and the type of providers seen for such care. Although the DoD saw increasing rates of reported sexual assault throughout FY 2016 – 2018, our study results revealed a decrease in sexual assault-related healthcare initiated by service members (Department of Defense, 2016, 2017, 2018). This discrepancy indicates there is a potential gap in care or barriers preventing service members from disclosing their sexual assault to healthcare providers. If service members are not receiving relevant medical and mental health care, this could impact their overall well-being and likewise potentially jeopardize the mission.

Furthermore, the current research elucidates the sociodemographic factors associated with sexual assault-related care for active duty servicemembers. This information is of clinical relevance as it can bring a greater awareness to providers about the importance of sensitively screening for sexual assault, as survivors may not spontaneously disclose their assault (Friedman et al., 1992). Indeed, a study with civilian women found 82.5% reported they would disclose their sexual assault if asked by a provider, whereas only 24.6% would voluntarily disclose without being asked (Berry & Rutledge, 2016).

Previous work has revealed that those who experience MST will seek out medical care more immediately (i.e., within the first month) whereas mental health care tends to be sought out six months or later (Mengeling et al., 2015). This seems consistent with our supported hypothesis that the initial encounter had a greater likelihood of being with a medical provider. Therefore, the demographic information can be useful for medical providers to maintain an awareness of, as they have the potential for outreach to survivors and connection with additional resources. For example, if a service member reports physiological symptoms which may be consistent with

mental health somatization, the provider can briefly inform the service member about common emotional and physical effects associated with sexual assault and the resources that are available. Studies have shown that when providers cover this type of information with patients and prompt for disclosure, survivors are more likely to both disclose the assault and report higher satisfaction with care (Lanthier et al., 2018; McCaw et al., 2001). As such, the results from the current study suggest that medical providers are in the critical position to connect survivors with mental health services and can do so through education and referrals, as they have a greater chance of being the service member's first health encounter point.

In addition, the current study suggests the importance of education and training opportunities for MHS providers so servicemembers receive timely care and referrals. In a study with community clinic medical providers who went through a systems model approach training that included a review of identifiers, training on how to recognize comorbidities, as well as how to incorporate routine screening practices, a 260% increase in care referrals provided was observed (McCaw et al., 2001). MHS providers might likewise benefit from the offering of similar specialized training opportunities.

However, the present data only capture those service members who have disclosed their sexual assault to a provider, and the health encounter coded as such; therefore, it is likely there are other service members receiving related care but are not represented in the data because their provider did not code the encounter as related to sexual assault.

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VA studies revealed mental health treatment increased by more than double for a sample of women following the VA's implementation of the universal MST screening questions (Foynes et al., 2018; Kimerling et al., 2008). As previously discussed, MST survivors encounter

numerous barriers to reporting their sexual assault to authorities which might likewise prevent them from seeking care (Foynes et al., 2018; Kimerling et al., 2008). Implementing outreach mechanisms into the MHS, such universal screening, could help facilitate greater responsiveness from survivors. Lastly, although this study provides rich information about sexual assault care provided in the MHS, the ICD codes for sexual assault were used as a proxy MST indicator. For more accurate and consistent analyzing and tracking of the impact of MST on servicemembers' health and wellbeing, the MHS would benefit from the creation of an MST specific coding.

FUTURE DIRECTIONS

Future research utilizing MHS data, under the scope of EPIC, should examine mental health outcomes following the documentation of sexual assault in patients' medical records. Similar to the analyses in this current study, sociodemographic differences in mental health outcomes should be explored. Additionally, examining the type and length of healthcare usage subsequent to documentation of the assault may prove to be valuable information, in regard to the most needed services as well as those services that may be lacking. Continuing to follow service member healthcare usage prospectively might also reveal differences in discharges and separations for those receiving sexual assault related care. In this same vein, service members' perception of the helpfulness or harmfulness of these resources could be examined to identify barriers and approaches that would benefit from improvement. Another possible direction for future studies would be to analyze sexual assaults coded in the MHS for TRICARE dependents. From here, comparisons can be made between mental health outcomes and health care usage for active-duty members and that of dependents. Although the assessment of cultural and structural barriers to reporting are outside the scope of this study, additional data related to these factors

would allow further insight on the prevalence of MST in the MHS and its associated care, which could serve as a foundation for future research.

CONCLUSION

In conclusion, although sexual assault in the military remains a leading concern for current service members and veterans, to date, a majority of the public MST research has been conducted utilizing veterans' samples and/or out of the VA. Furthermore, there has yet to be a large-scale study of healthcare usage for active-duty service members who have experienced sexual assault, across multiple branches. Therefore, the present study provides key insights about the prevalence of sexual assault related care within the MHS, not yet observed by previous literature. This information on the prevalence and sociodemographic factors of the active-duty members who have received care related to sexual trauma can perhaps better inform outreach and strategies to increase health care utilization within the military. Not only could this lead to a better quality of life for the active duty survivors of sexual assault, but it could likewise increase mission readiness and effectiveness.

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Table 1Table 1.

ICD Codes Used to Identify Sexual Assault Related Health Encounters

ICD Code	Diagnosis
T74.21	Adult sexual abuse, confirmed
T76.2	Sexual abuse, suspected
T74.51XA	Adult forced sexual exploitation, confirmed, initial
Z04.4	Encounter for examination and observation following alleged rape
Z04.41	Encounter for examination and observation following alleged adult rape
Z04.81	Encounter for examination and observation of victim following forced sexual exploitation

Table 2.

Sociodemographic Characteristics of Service Members with Sexual Assault-Related Healthcare Encounters

	Initial Sexual Assault-Related Encounters Total (n=4,113)	**Direct Care (n=3,655)**	**Purchased Care (n=458)**
Age Group	**n (%)**	**n (%)**	**n (%)**
18-25	2973 (72.3)	2623 (71.8)	350 (76.4)
26-40	1067 (25.9)	963 (26.4)	104 (22.7)
41+	73 (1.8)	69 (1.9)	---
Gender			
Female	2932 (71.3)	2582 (70.6)	350 (76.4)
Male	1181 (28.7)	1073 (29.4)	108 (23.6)
Race			
White	2428 (59.0)	2147 (58.7)	281 (61.4)
Black	1002 (24.4)	887 (24.3)	115 (25.1)
Asian/Pacific Islander	168 (4.1)	152 (4.2)	16 (3.5)
American Indian/Alaska Native	56 (1.4)	50 (1.4)	---
Other	423 (10.3)	393 (10.8)	30 (6.6)
Unknown/Missing	36 (0.9)	26 (0.7)	---
Rank			
Enlisted	3856 (93.8)	3441 (94.2)	415 (90.6)
Officer	208 (5.1)	176 (4.8)	32 (7.0)
Other	49 (1.2)	38 (1.0)	11 (2.4)
Service			
Army	2231 (54.2)	2081 (56.9)	150 (32.8)
Air Force	951 (23.1)	765 (20.9)	186 (40.6)
Navy	617 (15.0)	533 (14.6)	84 (18.3)
Marines	314 (7.6)	276 (7.6)	38 (8.3)

Note: Cells with *n* values of less than 10 are not reported for confidentiality purposes

Table 3.

Odds of Sexual-Assault Related Healthcare Encounter in FY 2016 – 2018

	Odds Ratio	95% Confidence Interval		p-value
Age Group				
18-25	0.695	0.645	0.749	<.0001
26-40 (ref)	1	1	1	
41+	0.652	0.51	0.833	<.0001
Gender				
Male (ref)	1	1	1	
Female	12.023	11.212	12.893	<.0001
Race				
White (ref)	1	1	1	
Asian/Pacific Islander	0.637	0.543	0.747	<.0001
Black	0.976	0.903	1.054	0.5305
American Indian/Alaskan Native	1.37	1.043	1.8	0.0238
Other	4.603	4.102	5.166	<.0001
Service				
Army (ref)	1	1	1	
Air Force	0.437	0.403	0.474	<.0001
Marines	0.402	0.356	0.454	<.0001
Navy	0.31	0.281	0.341	<.0001
Rank				
Enlisted	2.651	2.284	3.077	<.0001
Officer (ref)	1	1	1	
Other	2.038	1.399	2.968	0.0002

Table 4.

Type of Provider Seen at Initial Sexual-Assault Related Healthcare Encounter

Provider Type	**Initial Sexual Assault-Related Encounters Total (n=4,113)**	**Direct Care (n=3,655)**	**Purchased Care (n=458)**
Doctor of Medicine (MD)/ Doctor of Osteopathic Medicine (DO)	1406 (34.2)	1304 (35.7)	102 (22.3)
Behavioral Health & Social Service Provider	1701 (41.4)	1692 (46.3)	9 (2.0)
Physician's Assistant/Nurse Practitioner/Nursing	642 (15.6)	624 (17.1)	18 (3.9)
Other	364 (8.8)	35 (1.0)	329 (71.8)

Figure 1.

Trend of Sexual Assault-Related Healthcare During FY 2016 - 2018

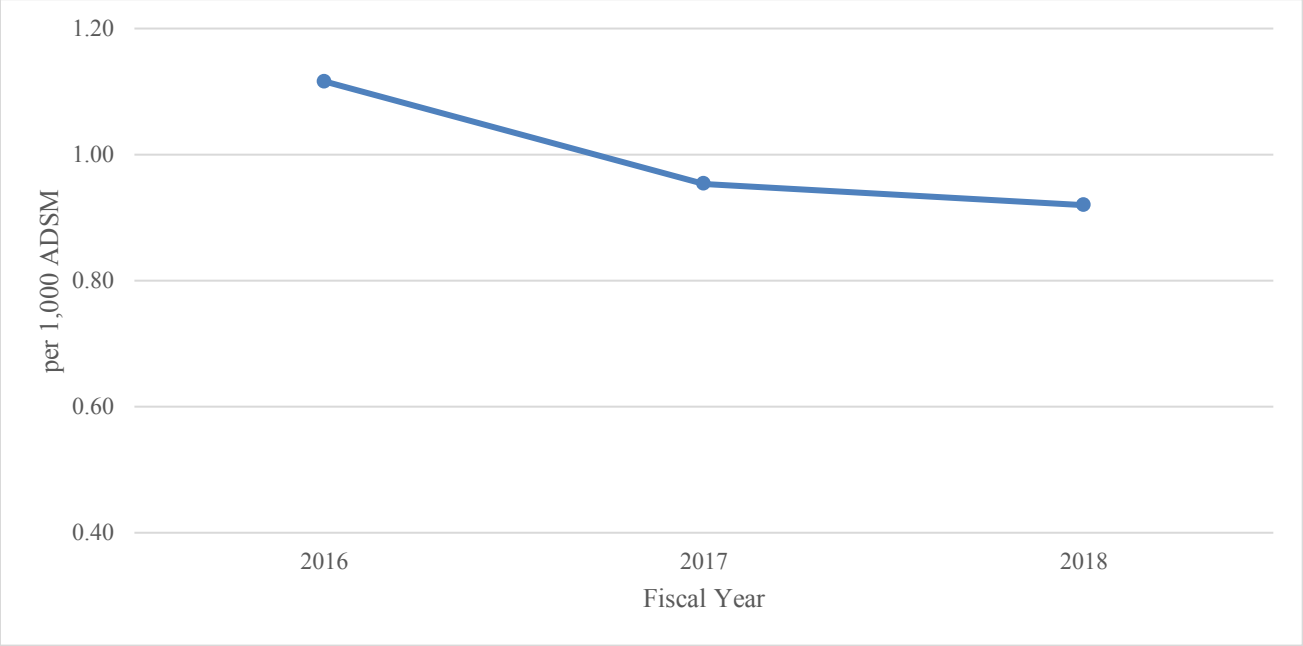

Figure 2.

Total Percentage of Provider Type Seen at Initial Sexual Assault-Related Healthcare Encounter