Premilitary Sexual Assault and Attrition in the U.S. Navy

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A prospective study examined whether adult premilitary sexual victimization predicted women's military attrition. In a survey of female Navy recruits (N = 2,431), 56% reported some form of adult unwanted sexual contact before entering the military, with 25% reporting completed rape. Approximately one-third of respondents left the Navy before completing their 4-year term of service. When rape, attempted rape, and lower-level unwanted sexual contact were considered simultaneously, only rape predicted attrition. Women who reported premilitary rape, compared with those who did not, were 1.69 times more likely to leave the military. The pattern of results held across the 4-year period examined and after controlling for demographic predictors.

Introduction

According to the U.S. Government Accountability Office, across time and across the services, approximately one-third of military recruits fail to complete their initial terms of service (i.e., attrite from service).[1] Training recruits is expensive; on average, it costs between $15,500 and $29,800 to train a single recruit.[1] Training recruits who do not complete their terms of military service thus costs U.S. taxpayers millions of dollars each year. Recent research has documented associations between premilitary exposure to several types of interpersonal violence and increased risk of military attrition. Specifically, researchers have shown greater risk of attrition among individuals who experienced childhood physical or sexual abuse, among those who witnessed intimate partner violence as children, and among those who were the victims or perpetrators of intimate partner violence before entering the military.[2–4]

We could not locate any previous study that directly examined the effect of premilitary adult sexual assault on attrition. However, one previous study examined the association between premilitary sexual abuse (combining child and adult abuse) and attrition.[5] In a large sample of U.S. Air Force recruits, respondents who agreed with the statement, "I believe I have been sexually abused," compared with those who did not, were more likely to attrite during basic military training (BMT). Specifically, women who reported that they had been sexually abused before entering the Air Force were 1.64 times more likely than those who did not to attrite during BMT; for men, attrition was 3.70 times more likely among those who reported premilitary sexual abuse. However, because "sexual abuse" in that study included both child and adult abuse experiences, it remained unclear whether the finding would hold for adult sexual assault only.

In the present study, we specifically examined the impact of premilitary adult sexual assault on attrition in a sample of female U.S. Navy recruits. Because direct questions about sexual assault are likely to yield lower estimates of sexual assault rates than do behaviorally based measures, we assessed adult sexual assault by using a well-validated, behaviorally based measure, the Sexual Experiences Survey (SES).[6–8] An additional advantage of the SES is that it assesses different types or levels of unwanted sexual contact (USC). This enabled us to examine the individual and joint contributions of adult premilitary rape, attempted rape, and lower-level USC in predicting attrition. Based on previous research showing associations between interpersonal traumas and attrition, we predicted that women who experienced premilitary adult sexual assault, compared with those who did not, would be more likely to attrite. We did not make specific predictions about the differential effects of different levels of sexual assault (i.e., rape, attempted rape, and lower-level USC) on attrition.

The second goal of the present study was to examine whether premilitary adult USC is selectively predictive of early attrition (i.e., attrition during BMT). In the previous study of the association between self-reported sexual abuse (child or adult) and attrition, sexual abuse predicted attrition during BMT but was unrelated to subsequent attrition or military performance.[5] Similarly, in a study of Navy recruits, child sexual abuse predicted the timing of attrition, with victims being more likely than nonvictims to leave the military during BMT.[3] However, that study found no significant associations between child physical abuse or observed domestic violence and the timing of attrition. In sum, there is some suggestion in previous research that women who have experienced sexual abuse are likely to leave the military early in military service, but it is unclear whether this is true for both child sexual abuse and adult sexual assault. We sought to answer this question.

Methods

Participants

Incoming female Navy recruits (N = 2,573) at the Recruit Training Command at Great Lakes, Illinois, voluntarily completed a set of self-report survey instruments. Of those invited to participate, 93.4% did so. After exclusion of women who failed to complete the SES (n = 135) and those for whom attrition data across the 4-year study period were not available (n = 7), the final sample consisted of 2,431 women. Variation in sample size because of missing data for demographic variables is reflected in the sample sizes associated with specific analyses.

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Participants ranged in age from 17 to 35 years, with 76.7% being ≤20 years of age (mean, 19.7 years; SD, 2.6 years). Most participants (88.1%) had completed high school or the equivalent, and 8.2% reported at least some college. The majority of the sample (57.4%) was Caucasian, with 23.7% African American, 11.1% Hispanic, 3.6% Asian American, 2.3% Native American, and 1.9% "other." Most participants were single (88.6%); the others were married (5.9%), cohabiting (3.3%), or divorced, separated, or widowed (2.2%). In terms of income in the family of origin, 39.6% reported incomes of less than $25,000, 38.3% reported incomes between $25,000 and $50,000, and 22.1% reported incomes of more than $50,000 per year.

Materials

Sexual assault history was assessed by using the SES, which assesses experiences with rape (three items), attempted rape (two items), and lesser forms of USC (five items) that occurred since the age of 14 years.[6,7] Women were classified in terms of whether they had experienced each type of USC. In addition, they were classified in terms of the highest level of USC experienced (rape vs. attempted rape vs. lower-level USC vs. none).

Procedure

The SES was completed as part of a more extensive survey package offered to Navy recruits during their first week at the Recruit Training Command, between June 1996 and June 1997. Female civilians administered the survey package to groups of recruits in a classroom setting. Participation was voluntary. Before they were asked to participate, recruits were given a description of the study, a Privacy Act statement, and an informed consent form describing their rights, including the right to "leave blank any section or questions" and to "stop at any time before completing the survey." Participants provided their names and other identifying information to allow for tracking in a longitudinal study. Participants also granted permission to the researchers to obtain additional information about their military records and to analyze these data in conjunction with information provided in the survey. Attrition data for participants in the study (across the 4-year period following the survey, from 1996/1997 to 2000/2001) were obtained from the Career History Archival Medical and Personnel System database, created and maintained by researchers at the Naval Health Research Center (San Diego, California).[9]

Analysis

The primary analytic technique used to examine our research questions was logistic regression. Results are presented in terms of odds ratios (ORs) and associated 95% confidence intervals (CIs). ORs indicate the magnitude by which an outcome is more likely for members of one group vs. members of another group. CIs that do not include the value of 1.0 are statistically significant ($p < 0.05$), and nonoverlapping CIs indicate that the magnitudes of relationships between variables differ significantly for different groups.

Results

Approximately one-third of respondents (34.6%) left the service before completing their 4-year term of service. Women were most likely to drop out of the Navy during their first year of service (13.5%), with 4.7% of respondents dropping out during boot camp and 8.8% dropping out thereafter. Attrition was less likely during each subsequent year of service, with 10.6%, 7.0%, and 3.5% of participants dropping out during the second, third, and fourth years, respectively.

A majority of respondents (56.3%) reported that they had experienced some form of premilitary adult USC, with only 43.7% reporting no USC since the age of 14 years. Approximately one in four women surveyed reported premilitary rape (25.6%) or attempted rape (25.5%), and nearly one in two women reported lower-level USC (49.3%). Experiencing one form of adult sexual assault was strongly associated with experiencing the others. Women who reported lower levels of USC, compared with those who did not, were 6.40 times more likely to report attempted rape (95% CI, 5.13–7.98) and 11.52 times more likely to report completed rape (95% CI, 8.95–14.84). Similarly, women who reported attempted rape, compared with those who did not, were 7.61 times more likely to report completed rape (95% CI, 6.19–9.36). When women were classified in terms of the highest level of USC experienced, 25.6% reported rape, 11.0% reported attempted rape, 19.7% reported lower levels of USC, and 43.7% reported no USC.

Women who had experienced some form of premilitary adult USC, compared with those who had not, were significantly more likely to attrite (OR, 1.22; 95% CI, 1.03–1.45). When the three forms of adult sexual assault were considered individually, rape (OR, 1.69; 95% CI, 1.40–2.04) and attempted rape (OR, 1.34; 95% CI, 1.11–1.62) were significant predictors of attrition, whereas lower levels of USC were not (OR, 1.16; 95% CI, 0.99–1.37). When the three forms of adult USC were considered simultaneously, allowing for an examination of the association between each type of USC and attrition while controlling for the occurrence of other types of USC, only rape remained a significant predictor of attrition; women who reported premilitary rape, compared with those who did not, were 1.65 times more likely to attrite during their 4-year terms of service (95% CI, 1.32–2.06). The unique role of premilitary rape in predicting attrition also was evident when women were classified in terms of the highest level of USC experienced. When thus classified, 43.8% of women who reported premilitary rape attrited compared with 33.2% of women for whom the highest level of USC was attempted rape, 29.3% of women who reported only lower-level USC, and 32.1% of women who reported no USC experiences.

To examine whether the observed association between rape and attrition might be attributable to confounding demographic factors, we conducted an additional logistic regression analysis in which demographic factors (age, years of education, race, marital status, and income in the family of origin) were entered in the first step and the three dichotomous USC variables (rape, attempted rape, and lower-level USC) were entered in the second step. Together, the demographic variables accounted for a statistically significant proportion of the variance in attrition [Nagelkerke $R^2 = 0.02$; χ^2 (6, $N = 2{,}101$) = 32.73; $p < 0.001$]. African American women were less likely than Caucasian women to attrite (coefficient [b] = −0.47; SE, 0.12; $p < 0.001$), and women with higher education were less likely to leave the military ($b = -0.12$; SE, 0.05; $p < 0.05$). Most important for the

present purposes, premilitary rape remained a significant predictor of attrition after controlling for demographic factors (b = 0.42; SE, 0.12; $p < 0.01$; OR, 1.53; 95% CI, 1.20–1.94). In addition, as in the analysis that did not include demographic covariates, when the three forms of USC were considered simultaneously, neither attempted rape nor lower-level USC approached significance as a predictor of attrition (p values >0.27). Similarly, when child sexual abuse (sexual contact with someone ≥5 years older than the respondent before the age of 14 years) was included as a control variable, the only adult USC variable that remained a significant predictor of attrition was rape (b = 0.46; SE, 0.13; $p < 0.001$; OR, 1.59; 95% CI, 1.23–2.04).

The final set of analyses examined whether USC was related to the timing of attrition. Considering only women who dropped out of the service before completing their 4-year terms of service, the timing of attrition was not significantly related to the level of adult USC or to having experienced any specific form of adult USC before entering the military (p values >0.16). After controlling for the other forms of USC, rape was a significant predictor of attrition both during BMT (b = 0.61; SE, 0.25; $p < 0.05$; OR, 1.84; 95% CI, 1.13–2.98) and during the remainder of the 4-year term of service (b = 0.49; SE, 0.12; $p < 0.001$; OR, 1.64; 95% CI, 1.30–2.07). The fact that the CIs for these ORs overlapped indicates that the associations between rape and attrition were not significantly different across the two time periods. Figure 1 illustrates the percentage of women attrite during each year of service as a function of whether they reported premilitary rape.

Discussion

Across the 4-year follow-up period, approximately one-third of Navy recruits attrited, and attrition was disproportionately likely to occur early in service. These findings mirror the patterns of attrition reported by the U.S. General Accounting Office across male and female recruits and across all branches of the service.[1]

In the present study, female Navy recruits reported substantial rates of premilitary adult USC. More than one-half (56.3%) of respondents reported some form of USC since the age of 14 years, and one-fourth (25.6%) reported completed rape. In contrast, previous research found a rate of 15.1% for self-reported "sexual abuse" in a sample of female Air Force recruits.[5] It is difficult to compare the results of these two studies, given differences in how USC was defined and assessed. However, it is likely that the single direct question used to assess sexual abuse in the previous study would yield a lower estimated rate of sexual abuse than the multiple-item, behaviorally based measure used in the current study.[6,8]

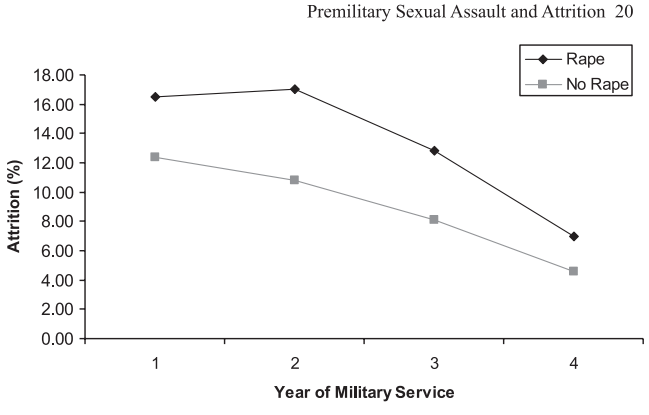

Fig. 1. Military attrition as a function of year of service and premilitary rape.

The rate of premilitary rape found in the present study was similar to, although somewhat lower than, those reported for two previous samples of female Navy recruits (36.1% and 29.2%).[10,11] Previously reported rates may be somewhat higher than those obtained in the present study because responses to previous surveys were anonymous, whereas responses in the present study were not. The lack of anonymity may exacerbate social desirability and other self-presentational concerns, especially when dealing with highly sensitive issues such as USC. Therefore, it is likely that the present study, if anything, underestimates the prevalence of premilitary adult USC among incoming female Navy recruits.

Nonetheless, as reported previously, female recruits in the Navy are more likely to report adult rape than are college women of similar age.[10,12] In a study of a national sample of 3,187 college women that used the same measures as the present study, 15.4% reported rape (compared with 25.6% in the present study).[7] Interestingly, however, the overall percentages of women who reported USC were similar in the two samples (56.3% in the present study and 53.7% in the college student study). Therefore, rates of USC were similar for female Navy recruits and college women. However, Navy women were more likely than college women to report rape and less likely than college women to report only lower-level USC (19.8% vs. 26.2%).

The main finding of the present study was that premilitary adult USC predicts military attrition among female Navy recruits. Women who had been sexually victimized, compared with those who had not, were significantly more likely to attrite. Comparisons of the independent and combined effects of different forms of USC (rape, attempted rape, and lower-level contact) revealed that only rape was a consistent predictor of attrition. Specifically, women who reported premilitary rape were 1.69 times more likely to attrite during their initial 4-year term of service. This effect was not attributable to demographic confounds or previous experiences of childhood sexual abuse before age 14, because statistically controlling for these variables did not alter the pattern of associations between the USC variables and attrition. Moreover, in contrast to previous research in which sexual abuse (child or adult) and child sexual abuse were found to be particularly predictive of attrition during BMT, the present results indicated that rape was consistently associated with attrition across the 4-year period examined.[3,5] This suggests that selective attrition during BMT may be particularly characteristic of women who have experienced child sexual abuse rather than adult USC, although verification of this conclusion requires additional research.

Previous research has identified a number of psychological and physical problems that are associated with rape, several of which are promising candidates that may mediate the association between rape victimization and military attrition. Psychological consequences of sexual assault, which can last for many years, include fear, anxiety, depression, poor self-esteem, poor social adjustment, and post-traumatic stress disorder.[12–14] In turn, research has shown that psychological problems such as depression and post-traumatic stress disorder negatively affect

job performance, and one report has documented an association between depression and attrition in a U.S. Army sample.[15–18] Therefore, psychological problems may explain the association between rape victimization and military attrition. Rape also has been associated with physical consequences (beyond the possibility of physical injury during the assault), including an increase in the long-term frequency of physical health problems and an attendant increase in the use of medical services.[12,19–22] Like psychological problems, physical problems are among the common reasons for attrition from the military and could explain the association between rape and attrition.[1] Future research should address this issue by examining whether specific reasons for discharge are likely to characterize attrition among rape victims. A difficulty with this approach, however, is that only a single reason for attrition is recorded under the Department of Defense system, despite the fact that there are often several factors that contribute to attrition.[1]

The present results suggest interesting and important directions for future research. Many other risk factors for attrition from military service have been identified in past research. In addition to mental health issues and physical problems, these include a history of criminal behavior, frequent alcohol use, smoking, participation in the Navy's delayed entry program, poor physical fitness and injury, occupational assignment, and low job satisfaction.[23–31] Sexual assault may predict unique variability in attrition rates that cannot be explained by other factors. However, the effects of sexual assault on the likelihood that recruits will complete their military obligations may also be mediated or moderated by some of these other factors.

The present study contributes to a growing body of research showing that a history of exposure to interpersonal violence is associated with increased likelihood that recruits will leave the military before completing their terms of military service. Previous research has documented this association for child sexual or physical abuse and intimate partner violence.[2–4] The present study adds adult sexual assault to the list of premilitary traumatic experiences that predispose individuals to greater likelihood of military attrition. However, it should be noted that individuals exposed to one form of interpersonal violence are likely to have been exposed to other traumas as well.[3] Moreover, victims of interpersonal violence may differ from nonvictims in other respects (e.g., family structure and socioeconomic status). Although we obtained a significant relationship between premilitary rape and attrition even after controlling for demographic factors and the occurrence of child sexual abuse, it remains possible that factors beyond those examined in the present study differentiate victims of premilitary rape from nonvictims. Because of this, it is not possible to conclude that exposure to interpersonal violence is causally related to attrition. However, studies like the present one that identify specific predictors of attrition are important initial steps toward creating multivariate models that provide a more-complete picture of military attrition.

The U.S. Navy invests extraordinary time and effort in recruiting new personnel, with nearly 8,000 active duty, reserve, civilian, and contract employees under the direction of the Recruit Training Command.[32] In light of this investment, reducing attrition is an important goal. The present results suggest that it may be useful to ask individuals about their history of interpersonal violence during the course of preliminary evaluations. However, the utility of such questioning is likely to be limited, because research suggests that recruits are unlikely to admit past interpersonal victimization when the information is to be part of their military records.[8] Moreover, even if information about histories of violence could be obtained from incoming military recruits, it would be inappropriate to exclude from military service individuals who have been exposed to violence through no fault of their own. It may be impractical as well. Not all individuals who experience violence attrite; in fact, the majority of them do not.

However, it might be practical to develop interventions designed to make recruits aware of the possibility that previous exposure to USC, and to interpersonal violence more generally, can create difficulties in adapting to military life. These interventions could identify healthy ways of dealing with stress and make recruits aware of resources available to assist them in the case of psychological or physical difficulties. Importantly, such interventions could be delivered to all incoming recruits, regardless of whether they had a history of interpersonal violence, thereby eliminating the need for additional costly and potentially ineffective evaluations. Public health programming like this might also help Navy personnel make better use of existing support services. Reducing perceived barriers to help-seeking has been indicated as a means to many ends, including reducing the impact of deployment stress and lowering risk factors for suicide.[33,34] Strategies such as this, targeting the entire Navy population, could potentially improve not only retention but also general well-being among Navy personnel.

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A prospective study examined whether premilitary sexual victimization predicted women's military attrition. In a survey of female Navy recruits (*N* = 2,431), 56% reported some form of unwanted sexual contact (USC) before entering the military, with 25% reporting completed rape. Approximately one third of respondents left the Navy prior to completing their 4-year term of service. When rape, attempted rape, and lower-level USC were considered simultaneously, only rape predicted attrition. Women who reported premilitary rape, compared with those who did not, were 1.65 times more likely to attrite. The pattern of results held across the 4-year period examined and after controlling for demographic predictors.

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