



Childhood Exposure to Family Violence and Attrition in the Navy

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In a prospective study of U.S. Navy recruits ($n = 5,491$), we examined the relationship between childhood exposure to family violence (child physical abuse, child sexual abuse [CSA], and domestic violence) and attrition. Overall, 55% of recruits experienced one or more forms of childhood family violence and 34% of recruits attrited within 4 years after enlistment. Considered separately, each form of childhood violence was significantly associated with attrition. When considered simultaneously, all three types of childhood violence were associated with attrition in men, but only CSA was associated with attrition in women. Men and women who experienced all three types of childhood violence were 303% and 139%, respectively, more likely to attrite than recruits who reported no childhood violence. In analyses examining the timing of attrition, CSA was associated with early attrition, whereas child physical abuse and domestic violence were unrelated to timing of attrition.

Introduction

For decades, investigators have attempted to predict the attrition of recruits from the military. Researchers have typically predicted attrition from demographic variables and recruit assessment data (e.g., screening measures of mental capacity and mental health) obtained during the recruiting process and at the beginning of basic military training (BMT).¹⁻⁴ Although studies have occasionally examined the relationship between social factors and attrition,^{3, 4} seldom have researchers examined the relationship between childhood experiences of violence and recruit attrition. This is surprising because theory (e.g., social learning, developmental, and trauma models) and research suggest that childhood violence negatively impacts adolescent and adult socioemotional functioning.⁵⁻¹⁴ Children exposed to family violence are at risk for a range of problems across the life span, including cognitive deficits, poor academic performance, low self-esteem, depression, anxiety, anger, and relationship problems. The range of problems that often result from childhood experiences of violence would theoretically be expected to reduce performance or to increase problems in adapting to the military, thereby increasing the likelihood of attrition.

To our knowledge, only two published studies have examined the association between experiencing childhood violence and military attrition.^{15,16} Both studies were conducted with U.S. Air Force recruits. The first study compared 25 recruits who attrited

during BMT for mental health reasons with 25 recruits who completed BMT.¹⁵ Attriters were 10 times more likely to report a history of child sexual abuse (CSA) or child physical abuse (CPA) than were nonattriters (40 vs. 4%, respectively). The second study examined the relationship between self-reported sexual abuse (in childhood or adulthood) and attrition in a large sample of recruits.¹⁶ This study found that sexual abuse victims were 2.6 times more likely than nonvictims to attrite during BMT. This effect was significantly stronger for men (odds ratio [OR], 3.7) than for women (OR, 1.6). However, sexual abuse was unrelated to measures of later military performance among recruits who completed BMT.

One limitation of these previous studies is that they did not address the independent contributions of exposure to different types of childhood violence to the prediction of attrition; the first study combined CSA and CPA, whereas the second study combined CSA and adult sexual assault. The present study was conducted to examine the relationship between three distinct forms of childhood violence experiences—CSA, CPA, and domestic violence (DV)—and attrition in Navy recruits. The effect of each form of violence was examined independently and simultaneously. The latter analysis is important because different types of childhood violence often co-occur; thus, examining the impact of a single form of abuse without controlling for other forms of abuse may result in overestimation of the impact of that type of violence on attrition.

Another issue that deserves further empirical attention is the possibility that the association between childhood violence and military attrition differs for men and women. Although one previous study¹⁶ found that the effects of sexual abuse on attrition were stronger for men than for women, in that study, sexual abuse included child and adult sexual assault experiences. In the present study, we compared the effects of CSA and other types of childhood violence on attrition separately for male and female recruits.

Finally, we examined whether each type of childhood violence is associated with the timing of attrition. One previous study¹⁶ found that sexual abuse (childhood or adult) predicted attrition during BMT but was unrelated to performance thereafter. Based on this finding, we tentatively predicted that CSA would be particularly associated with early attrition in the present study, and we examined whether CPA and DV were also associated with the timing of attrition.

Methods

Participants

Incoming male ($n = 2,922$) and female ($n = 2,569$) Navy recruits at the Recruit Training Center at Great Lakes, Illinois, voluntarily completed a set of self-report survey instruments. Overall, 94% of men and 93% of women invited to participate did

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so. Variations in sample size because of missing and/or invalid data on specific measures are reflected in the *n* reported for individual analyses. Participants ranged in age from 17 to 35 years, with 71% being between 18 and 20 years of age (mean, 19.69; SD, 2.55). Most participants had completed high school or the equivalent (88%), with smaller numbers reporting no high school degree (4%) or some college (8%). The majority of recruits (90%) were single, with 6% married, 3% cohabiting, and 1% other. Participants were diverse in ethnicity, with 61% Caucasian, 20% African American, 11% Hispanic, and 8% other.

Measures

The survey instruments included measures of CSA, CPA, and DV. CSA was assessed using a modified version of the Sexual Events Questionnaire.¹⁷ Participants were classified as having experienced CSA if they reported one or more contact sexual experiences before the age of 14 with someone at least 5 years older. CPA was assessed using the 19-item Parent-Child version of the Conflict Tactics Scale, Form R.¹⁸ Seven Conflict Tactics Scale items assessed how often parents used severe or very severe physical violence (e.g., hitting, choking, and/or burning) against the participant. Respondents were classified as having experienced CPA if they indicated that they had experienced any severe or very severe forms of violence by their parents or stepparents. Childhood exposure to DV was assessed using six items adapted from a previously used study measure.¹⁹ Respondents rated how many times "things like hitting, kicking, throwing someone down, biting, or choking" occurred between their parents or stepparents, or between a parent and his or her romantic partner. Respondents were classified as having been exposed to DV if they reported that any such event had occurred while they were growing up.

Procedure

The questionnaires used in the present study were part of a more extensive survey package that was offered to Navy recruits during their first week at the Recruit Training Center between June 1996 and June 1997. Nonmilitary personnel of the same gender as participants administered the survey package in a classroom setting. Participation was voluntary. Before agreeing

to participate, recruits were provided with a description of the study, a Privacy Act statement, and an informed consent form describing their rights as participants. 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 on the survey. Attrition data for participants in the survey were obtained from the Career History Archival Medical and Personnel System database of the Naval Health Research Center (San Diego, CA).

Results

Overall, approximately one-third of recruits (34%) failed to complete 4 years of military service. This rate of attrition is similar to previous estimates.²⁰ Men (33%) and women (34%) did not differ in overall attrition rates, $\chi^2 (1, n = 5,491) = 1.19$, not significant.

In the sample as a whole, 18% of the respondents reported CSA, 36% reported CPA, and 32% reported DV. The occurrence of different types of childhood violence was positively associated (for CPA and DV, $\phi = 0.26$ for CPA and CSA, $\phi = 0.15$ for CSA, and $\phi = 0.18$ for DV, $p < 0.001$). Slightly less than one-half (45%) of the respondents reported none of these forms of childhood violence, with 31% reporting exposure to one type of violence, 19% reporting exposure to two types, and 5% reporting exposure to all three types. Men and women were equally likely to report CPA, $\chi^2 (1, n = 5,082) = 0.44$, $p > 0.05$. However, women were more likely than men to report experiencing CSA (26 vs. 10%) and DV (38 vs. 28%), $\chi^2 (1, n = 4,789) = 208.50$ and $\chi^2 (1, n = 5,144) = 59.10$, respectively, $p < 0.001$. Consistent with this, women were also more likely than men to report exposure to multiple types of childhood violence (30 vs. 19%) and less likely than men to report exposure to no form of childhood violence (39 vs. 49%), $\chi^2 (3, n = 4,252) = 106.18$, $p < 0.001$.

We used separate and simultaneous logistic regression analysis to examine the associations between each form of childhood violence and overall attrition. ORs and associated 95% confidence intervals (CIs) from these analyses are provided in Table I. ORs may be interpreted as how much more likely attrition is

TABLE I
ASSOCIATIONS BETWEEN EXPOSURE TO CHILDHOOD VIOLENCE AND ATTRITION

Experienced Violence	Total Sample		Men		Women	
	Simple	Partial	Simple	Partial	Simple	Partial
CSA						
OR	1.44 ^a	1.42 ^a	1.67 ^a	1.66 ^b	1.29 ^b	1.29 ^c
CI (95%)	1.23–1.67	1.20–1.67	1.28–2.18	1.24–2.21	1.06–1.56	1.05–1.59
CPA						
OR	1.22 ^b	1.13	1.30 ^b	1.21 ^c	1.14	1.05
CI (95%)	1.08–1.38	0.98–1.29	1.10–1.53	1.00–1.47	0.95–1.35	0.86–1.28
DV						
OR	1.24 ^b	1.12	1.36 ^b	1.19 ^d	1.13	1.04
CI (95% CI)	1.10–1.40	0.97–1.29	1.14–1.62	0.97–1.47	0.96–1.34	0.85–1.26

Partial ORs control for the other forms of childhood violence, simple ORs do not.

^a $p < 0.001$.

^b $p < 0.01$.

^c $p < 0.05$.

^d $p < 0.10$.

among individuals exposed to a particular form of violence versus those not exposed to that form of violence; CIs that do not include the value of 1.0 indicate statistically significant associations. Simple ORs differ from partial ORs in that the latter estimate the specific impact of one form of childhood violence after controlling for the impact of other forms of violence.

Considered separately (see Table I), each form of childhood violence was significantly associated with increased overall likelihood of attrition (for CSA $\chi^2 [1, n = 4,789] = 21.93, p < 0.001$; for CPA, $\chi^2 [1, n = 5,082] = 10.42, p < 0.01$; for DV, Chi-square $[1, n = 5,144] = 12.04, p < 0.01$). However, when the three forms of childhood violence were considered simultaneously, only CSA emerged as a significant predictor of attrition, $B (SE) = 0.35 (0.08), n = 4,252, p < 0.001$, although CPA approached significance, $B (SE) = 0.12 (0.07), p < 0.10$.

Table I also presents ORs and CIs separately for men and women. For men, when considered independently, all three forms of childhood violence were significantly associated with increased likelihood of attrition (for CSA, $\chi^2 [1, n = 2,488] = 14.68, p < 0.001$; for CPA, $\chi^2 [1, n = 2,708] = 9.44, p < 0.01$; for DV, $\chi^2 [1, n = 2,692] = 11.77, p < 0.01$). When the effects of all three forms of violence were considered simultaneously, results were similar. The effects of CSA and CPA remained statistically significant, $B (SE) = 0.50 (0.15), p < 0.01$ and $0.19 (0.10), p < 0.05$, respectively, and the effect of DV approached significance, $B (SE) = 0.18 (0.11), p < 0.10 (n = 2,195)$. For women, in contrast, only CSA was significantly associated with attrition, whether the childhood violence variables were examined independently, $\chi^2 (1, n = 2,301) = 6.79, p < 0.01$, or simultaneously, $B (SE) = 0.26 (0.11), n = 2,057, p < 0.05$ (see Table I). Despite differences in the pattern of significant effects for men and women, it is important to note that the associations between each form of childhood violence and attrition did not significantly differ as a function of sex. This is evident from the fact that the ORs for men and women overlap for each type of childhood violence considered.

To better illustrate the effects of exposure to multiple forms of

childhood violence on attrition, Figure 1 displays the likelihood of attrition as a function of the number of forms of violence to which individuals had been exposed. As can be seen in Figure 1, the overall likelihood of attrition increased as the individual experienced multiple forms of childhood violence. However, consistent with previous analyses, this effect was stronger for men than for women. Among men, those who experienced all three forms of childhood violence were 303% (OR, 3.03) more likely to attrite than were those who experienced no childhood violence. For women, those who experienced all three forms of violence were 139% (OR, 1.39) more likely to attrite than those who experienced no childhood violence.

The final set of analyses considered patterns of attrition over time. Attrition was most likely to occur soon after entry into the service; rates of attrition were 15% during the first year and 9%, 6%, and 3% for the 3 succeeding years. Of all attrition during the first year, 40% occurred during BMT and 60% occurred thereafter. Among those who attrited, men and women differed in the timing of attrition, $\chi^2 (3, n = 1,853) = 19.32, p < 0.001$. Men were more likely than women to attrite during the first year of service (49 vs. 39%), whereas women were more likely than men to attrite during the second (31 vs. 25%) or third (20 vs. 16%) year of service. Rates of attrition for the fourth year of service did not differ as a function of sex.

We examined the association between childhood violence and the timing of attrition in two ways. First, we classified respondents who attrited based on whether they left during the first, second, third, or fourth year of service, and we conducted regression analyses attempting to predict time of attrition from each of the childhood violence variables. Using this approach, neither regressions on the entire sample nor separate regressions conducted for men and women yielded any significant effects of childhood violence on timing of attrition ($p > 0.10$). In addition, we conducted logistic regression analyses predicting a dichotomous timing of attrition variable (during BMT vs. post-BMT) from each form of childhood violence. These analyses revealed only a significant effect of CSA (for the entire sample, B

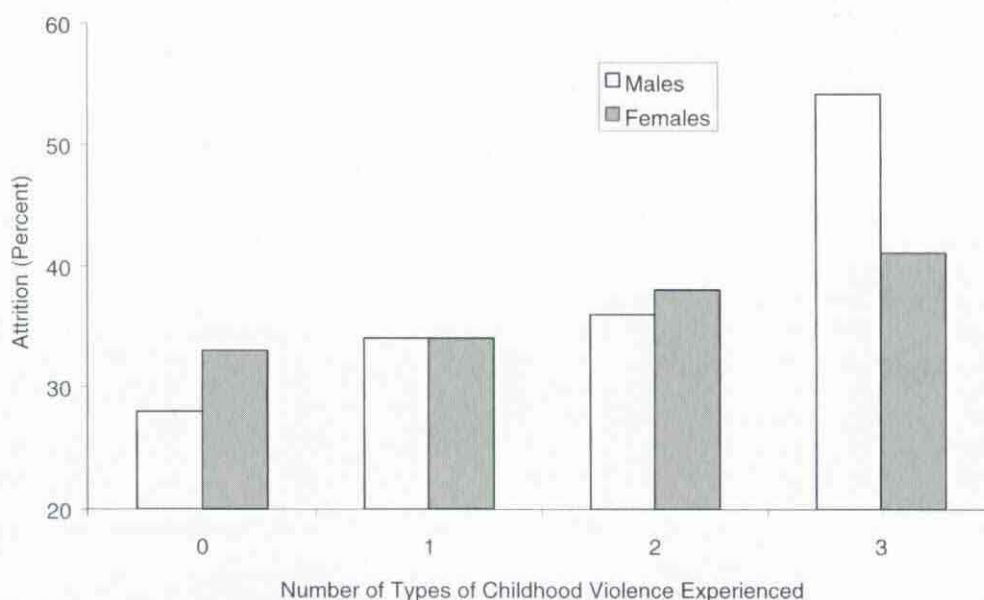


Fig. 1. Attrition (percentage) as a function of number of types of childhood violence experienced.

(SE) = -0.36 (0.16), $p < 0.05$; for men, B (SE) = -0.52 (0.24), $p < 0.05$; for women, B (SE) = -0.41 (0.21), $p = 0.052$). This effect indicates that CSA victims were disproportionately likely to attrite during BMT rather than during some later point in their service. Neither CPA nor DV was significantly related to the timing of attrition in the sample as a whole, for men or women ($p > 0.10$).

Discussion

The present study, like other research,²⁰ indicated that approximately one-third of recruits attrite during the first 4 years of service. These data indicate that attrition remains a significant problem for the military and costs U.S. taxpayers millions of dollars each year.²⁰ Although it is necessary to consider many different factors to predict accurately which military personnel will attrite, our results indicate that childhood violence is one such factor. When considered separately, each of the three forms of childhood violence considered here was found to contribute to the prediction of Navy recruit attrition. However, when they were considered simultaneously, CSA emerged as the strongest and most consistent predictor of attrition.

Separate analyses conducted for men and women revealed different patterns of effects. For men, all three types of violence were significantly predictive of attrition. For women, in contrast, only CSA was predictive of attrition. One previous study of the impact of sexual assault on attrition¹⁶ found a significantly stronger association for men than for women. In the present study, although each form of childhood violence was more strongly associated with attrition for men than for women, in no case was this difference statistically significant. Thus, we have no basis for concluding that any specific type of childhood violence is more predictive of military attrition for men than for women. Nonetheless, the combined effect of having experienced all three forms of childhood violence does result in higher likelihood of attrition for men (303%) than for women (139%).

One previous study found that sexual abuse predicted attrition during BMT but did not predict post-BMT performance indicators. We attempted to replicate and extend this finding by examining the effects of three different types of childhood violence on the timing of attrition. The only significant finding in this regard, consistent with previous research, was that CSA was particularly associated with attrition during BMT. Neither CPA nor DV was significantly associated with the timing of attrition.

Why was CSA the strongest predictor of attrition for men and women? Why were CPA and DV significant predictors of attrition for men but not for women? The present study was not designed to answer these questions. However, these issues may be clarified in future studies investigating possible mediating processes (e.g., trauma experiences and coping styles) that are responsible for the association between childhood exposure to family violence and later military attrition. An important advantage of studying mediators of this association is that findings may increase the potential for effective interventions to reduce the association between family violence and attrition. If, for example, trauma and ineffective coping are found to mediate the relationship between childhood violence and military attrition, intervening in these areas may reduce attrition among victims of childhood violence. However, it is important to note that this

logic assumes a causal connection between childhood violence and the mediator (e.g., trauma), and between the mediator and attrition. Alternatively, it may be that an apparent mediator is not part of a causal chain linking childhood violence and attrition, but merely correlated with a third variable (or variables) that is associated with both. Efforts at establishing causation will ultimately require longitudinal research accompanied by measurement and control of other variables that constitute plausible causes of attrition.

Finally, the present research may suggest practical implications for the recruitment, screening, and retention of military personnel. For example, it may be useful to include questions about abuse history in clinical interviews with basic trainees. This would allow the identification of recruits for whom more extensive screening might be desirable, or of those who might benefit from services that provide increased support to those at high risk of attrition.

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