

## Original Investigation

# Disparities in Adverse Childhood Experiences Among Individuals With a History of Military Service

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**IMPORTANCE** Adverse childhood experiences (ACEs) are associated with several adulthood health problems, such as self-directed violence. For some individuals, enlistment in the military may be an instrumental act to escape adverse household environments; however, to our knowledge prevalence of ACEs among persons with a history of military service has not been documented in the United States using population-based data.

**OBJECTIVE** To compare the prevalence of ACEs among individuals with and without a history of military service.

**DESIGN, SETTING, AND PARTICIPANTS** Data are from the 2010 Behavioral Risk Factor Surveillance System. Computer-assisted telephone interviews were conducted with population-based samples of noninstitutionalized US adults from January 1 through December 31, 2010. Analyses were limited to respondents who received the ACE module (n = 60 598). Participants were categorized by history of military service and whether a respondent was 18 years of age in 1973.

**MAIN OUTCOMES AND MEASURES** History of military service was defined by active duty service, veteran status, or training for the Reserves or National Guard. The ACE inventory assessed 11 negative experiences before the age of 18 years. Weighted  $\chi^2$  tests and multiple logistic regression analyses were used to examine differences in ACEs by history of military service, era of service, and sex.

**RESULTS** Those with military experience had greater odds of any difference in prevalence of ACEs. In the all-volunteer era, men with military service had a higher prevalence of ACEs in all 11 categories than men without military service. Notably, in the all-volunteer era, men with military service had twice the odds of reporting forced sex before the age of 18 years (odds ratio, 2.19; 95% CI, 1.34-3.57) compared with men without military service. In the draft era, the only difference among men was household drug use, in which men with a history of military service had a significantly lower prevalence than men without a history of military service (2.1% vs 3.3%;  $P = .003$ ). Fewer differences were observed among women in the all-volunteer and draft eras.

**CONCLUSIONS AND RELEVANCE** Differences in ACEs by era and sex lend preliminary support that enlistment may serve as an escape from adversity for some individuals, at least among men. Further research is needed to understand how best to support service members and veterans who may have experienced ACEs.

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Previous research about adverse childhood experiences (ACEs) clarifies the serious public health ramifications of early-life stressors, such as divorce, household substance abuse, and sexual abuse, on future health and wellness as children transition into adolescence and adulthood.<sup>1,2</sup> Examples of such adulthood health consequences include posttraumatic stress disorder,<sup>3</sup> substance use,<sup>4-6</sup> attempted suicide,<sup>7-10</sup> physical health conditions (such as lung cancer<sup>11</sup> and liver disease<sup>12</sup>), and decreased life expectancy by up to 20 years.<sup>13</sup> Persons with a history of military service may be a specific subpopulation of interest regarding ACEs because some may enlist to escape personal problems, such as household dysfunction or abuse,<sup>14-16</sup> thereby potentially elevating the prevalence of ACEs among military populations. Perhaps more important, military service may expose persons with a history of trauma to additional trauma (eg, combat and military sexual trauma), which may additively elevate risks of poor mental health and suicide.<sup>17-19</sup> However, the prevalence of childhood adversity among US military and veteran populations is largely unknown.

Active duty and veteran populations have experienced unprecedented burdens of poor mental health and suicide.<sup>20-23</sup> Although evidence links combat exposure and suicidal ideation,<sup>24-26</sup> nearly half of suicides among active duty personnel have been among persons who have never deployed to war zones,<sup>27</sup> leading to further research of suicide risk factors that may be missed by health care professionals and military line leaders. For more than a decade, ACEs have been identified as extremely potent correlates of adulthood suicide risk.<sup>10,28,29</sup> Dube and colleagues<sup>8</sup> noted independent and additive associations of experiences of childhood adversity and suicide attempts in adulthood. Compared with persons who experienced no ACEs, persons with at least 1 ACE were more than twice as likely to report a suicide attempt, and those with ACEs in 4 or more categories were nearly 4 times as likely to report having attempted suicide.

Furthermore, prevalence of ACEs may be higher among military populations because some persons may enlist to escape violent, abusive, or dysfunctional home environments.<sup>14,15,30</sup> For example, Ginexi and colleagues<sup>15</sup> found that to get away or escape from “family problems, a suffocating environment, a poor job market, or a broken relationship”<sup>15(p9)</sup> was 1 of 8 emergent themes of reasons enlistees provided in interviews for joining the military. Among a stratified random sample of 520 veteran women receiving care in the Veterans Health Administration system at 6 women’s health care centers, Sadler et al<sup>16</sup> noted that more than half acknowledged physical or sexual abuse before enlisting in the military; of those, 86% indicated enlisting to escape an abusive or distressing environment. Similarly, in a study<sup>31</sup> that compared 142 veteran women with 81 nonveteran women, among survivors of childhood sexual abuse, 90% of veterans cited parents as perpetrators compared with 10% of nonveterans. Other studies<sup>32,33</sup> note high rates of childhood adversity among current and former military, but the literature remains limited by convenience-based samples, lack of nonmilitary comparison groups, and an overall paucity of research about male ACE survivors.

To address these limitations, we used a large population-based data set to compare the prevalence of ACEs among men and women based on a history of military service. Moreover, we expand the developing literature<sup>19,34</sup> about ACEs among current and former military personnel by taking into account the change in the United States in 1973 from a draft-based to an all-volunteer force. If some persons enlist in the military to escape ACEs, the draft would have masked the escape phenomenon by drafting men from nondysfunctional homes. Consequently, we hypothesized that differences in ACEs between military and nonmilitary groups would be most pronounced during the all-volunteer era (since 1973) vs the draft era (before 1973). We also hypothesized that differences in ACEs between cohorts who served in the all-volunteer and draft eras will be greater for men than for women because women were not subject to the draft.

## Methods

The Syracuse Veterans Affairs Medical Center Institutional Review Board approved this project. This was a secondary analysis of existing, deidentified data, so informed consent was not a part of the study. Data are from the Centers for Disease Control and Prevention’s (CDC’s) Behavioral Risk Factor Surveillance System (BRFSS) surveys from 10 states and the District of Columbia that elected to administer the ACE module from January 1 through December 31, 2010. The BRFSS is the world’s largest and longest ongoing, annual, population-based surveillance project, using computer-assisted telephone interviews with probability-based samples of noninstitutionalized adults 18 years and older.<sup>35</sup> Of the states that administered the ACE module, 4 (Hawaii, Nevada, Vermont, and Wisconsin) and the District of Columbia administered the module to their entire sample, and 6 (Maine, Nebraska, Ohio, Pennsylvania, Utah, and Washington) administered the module to 1 or more splits of their samples. Sample splits maximize collection of diverse information while reducing the risk of survey fatigue by dividing the entire sample into 2 or more equivalent, probability-based samples, requiring implementation of augmented sampling weights. Using the publicly available 2010 BRFSS data files from the CDC website, we merged the sample split data sets with the national BRFSS data sets, which permitted the use of augmented weights for participants from sample splits. Further information about sample split methods and use are available from the CDC.<sup>36</sup> Across the 10 states and the District of Columbia, 60 598 persons received the ACE module. Of that, 220 (0.4%) were missing information about military service history and were omitted from analyses, leaving an analytic sample of 60 378.

Military service history was measured by one item: Have you ever served on active duty in the United States Armed Forces, either in the regular military or in a National Guard or military reserve unit? Active duty does not include training for the Reserves or National Guard, but does include activation, for example, for the Persian Gulf War. Response options were as follows: (1) Yes, now on active duty; (2) Yes, on active duty during the last 12 months, but not now; (3) Yes, on active duty

in the past, but not during the last 12 months; (4) No, training for Reserves or National Guard only; and (5) No, never served in the military. Military service history was defined as yes (responses 1-4) vs no (response 5).

Other demographic characteristics included educational attainment, which was recoded into a dichotomy of high school diploma or lower vs some college or higher, and race/ethnicity, which was recoded into white, non-Hispanic vs racial/ethnic minority. Because the United States moved from the draft to an all-volunteer force in 1973, a dichotomous category by era of military service era was created based on age: draft era persons who were older than 18 years in 1973 (ages  $\geq 56$  years in 2010) and all-volunteer era persons who turned 18 years of age during or after 1973 (ages 18-55 years in 2010).

The ACEs were gauged by an 11-item inventory, which asked respondents whether they had a wide array of negative experiences in childhood before the age of 18 years: (1) living with a person who was depressed, mentally ill, or suicidal; (2) living with a problem drinker or alcoholic; (3) living with a person who used illicit drugs or abused prescription medication; (4) lived with anyone who had been incarcerated; (5) parental separation or divorce; (6) witnessing parental or guardian intimate partner violence; (7) being physically abused (excluding spanking) by a parent or adult in the home; (8) being sworn at, insulted, or put down by a parent or adult in the home; (9) being touched sexually by an adult or anyone who was at least 5 years older than the respondent; (10) made to touch sexually an adult or anyone who was at least 5 years older than the respondent; and/or (11) being forced to have sex with an adult or anyone who was at least 5 years older than the respondent. A count variable of the 8 categories of ACEs (collapsing the 3 sexual abuse items in a single category and the 2 household substance use items into a single category) was also generated for persons who indicated 0, 1, 2, 3, or 4 or more categories.<sup>37</sup>

All analyses were stratified by sex because forms of ACEs, particularly sexual abuse, differ significantly among men and women<sup>37-39</sup> and because military service is overwhelmingly populated with men. We used  $\chi^2$  tests to examine differences in demographic information and ACEs by history of military service and no history of military service in each of the 2 era categories (eg, history of military service vs no history of military service among draft-age men). Logistic regression models, adjusted for age, race/ethnicity, and educational attainment, were used to examine the association between history of military service and each of the ACE outcomes. All analyses were conducted using Stata/SE software, version 12 (StataCorp LP), and weighted to account for the complex sampling design and non-response. We report weighted percentages and weighted adjusted odds ratios with 95% CIs using Taylor linearized SEs. Missing data were handled with listwise deletion.

## Results

### Demographics

Overall, 12.7% of the sample reported a history of military service, which was far more common among men (24.0%) than

among women (2.0%). Men with a history of military service were significantly older and less racially/ethnically diverse than men who did not serve, although the racial/ethnic differences were mainly driven by the draft era group (Table 1). Although there were slight differences in educational attainment in both eras between men based on a history of military service, in the aggregate these differences in educational attainment were not statistically significant. Among women, the groups with and without a history of military service were demographically similar, except women with a history of military service had higher educational attainment (75.5% vs 63.1%).

### ACEs Among Men With and Without a History of Military Service

Differences in the prevalence of ACEs were more pronounced among men by history of military service in the all-volunteer era than among men by history of military service in the draft era (Table 2). In the all-volunteer era, men with a history of military service had a significantly higher prevalence of ACEs in all 11 categories than men without a history of military service. In particular, men with a history of military service from the all-volunteer era had twice the prevalence of all forms of sexual abuse than their nonmilitary male peers: being touched sexually (11.0% vs 4.8%), being forced to touch another sexually (9.6% vs 4.2%), and being forced to have sex (3.7% vs 1.6%). Moreover, men with a history of military service from the all-volunteer era had twice the prevalence of experiencing ACEs in 4 or more categories than men without a history of military service (27.3% vs 12.9%). Conversely, the only difference among men from the draft era was household drug use, in which men with a history of military service had a significantly lower prevalence than men without a history of military service. In models adjusted for demographic characteristics, men with a history of military service in the all-volunteer era were more likely to report all forms of ACE than their male peers without a history of military service, with odds ratios ranging from 1.81 to 2.43 on 11 individual ACEs, including all 3 items related to sexual abuse (Table 3).

### ACEs Among Women With and Without a History of Military Service

Markedly fewer differences in ACEs were found among women with and without a history of military service than among men (Table 4). Among women from the all-volunteer era, those with a history of military service had higher prevalences of physical abuse, exposure to domestic violence, emotional abuse, and being touched sexually than women without a history of military service. The groups did not differ on the prevalence of the other 7 ACE items or on the number of ACEs experienced. Fewer differences were noted among women from the draft era, with larger proportions of women with a history of military service reporting physical abuse, exposure to domestic violence, and emotional abuse than women without a history of military service. After adjusting for demographic information, women with a history of military service in both eras had similar patterns of elevated odds for physical abuse, household alcohol abuse, exposure to domestic violence, and emo-

Table 1. Demographic Characteristics Among Men and Women by Military Service History and Era<sup>a</sup>

Characteristic	Overall (N = 60 378)			All-Volunteer Era <sup>b</sup> (n = 27 076)			Draft Era <sup>c</sup> (n = 33 302)		
	Military Service History (n = 9232)	No Military Service History (n = 51 146)	P Value	Military Service History (n = 2012)	No Military Service History (n = 25 064)	P Value	Military Service History (n = 7220)	No Military Service History (n = 26 082)	P Value
<b>Men</b>									
No. of men	8447	15 404		1586	9355		6861	6049	
Age, mean (SD), y	59.6 (0.44)	42.9 (0.24)	<.001	41.3 (0.39)	36.9 (0.21)	<.001	70.2 (0.18)	64.6 (0.18)	<.001
Race/ethnicity									
White, non-Hispanic	87.5	83.3		78.8	76.6		87.4	84.5	
Racial/ethnic minority	12.5	16.7	<.001	21.2	23.4	.27	12.6	15.5	.009
Educational attainment									
High school diploma or less	37.5	38.2		33.3	38.8		38.8	35.6	
Some college or higher	62.5	61.8	.28	66.7	61.2	.01	61.2	64.4	.03
<b>Women</b>									
No. of women	785	35 742		426	15 709		359	20 033	
Age, mean (SD), y	49.3 (0.97)	49.4 (0.18)	.93	41.3 (0.64)	39.1 (0.15)	.001	70.3 (1.15)	68.9 (0.12)	.21
Race/ethnicity									
White, non-Hispanic	82.2	83.6		80.2	80.9		87.5	88.9	
Racial/ethnic minority	17.8	16.4	.52	19.8	19.1	.81	12.4	11.1	.67
Educational attainment									
High school diploma or less	24.5	36.9		20.3	31.6		35.6	47.1	
Some college or higher	75.5	63.1	<.001	79.7	68.4	.003	64.4	52.9	.02

<sup>a</sup> Data are presented as weighted percentages of study participants unless otherwise indicated.

<sup>b</sup> Persons 18 years old on or after 1973 (ages 18-55 years in 2010).

<sup>c</sup> Persons older than 18 years in 1973 (ages ≥56 years in 2010).

tional abuse when compared with their respective female peers without a history of military service (Table 5). In addition, women with a history of military service during the all-volunteer era were more likely to report being touched sexually than women without a history of military service.

## Discussion

As the largest US study, to our knowledge, to examine the prevalence of ACEs among men and women by history of military service, our study found an elevated prevalence of ACEs among men and women who have served in the military. In particular, we noted pronounced differences in ACEs by military service history among men who served in the all-volunteer era, differences not observed among men who served during the draft era. Thus, it is possible that the influx of men from healthy homes caused by the draft mitigated detectable differences in ACEs between men with and without a history of military service. This patterning of differences lends support to the hypothesis that the military may serve as a route for a subset of persons to escape dysfunctional home environments, at least among men.

The association between history of military service and ACEs among men from the all-volunteer era is further supported by the overall lack in differences among women between these eras. Because women were not drafted, the ability to detect ACEs among women in the military would not be prone to the effects of the draft (ie, influx of persons without exposure to ACEs). In addition, the overall similarity between military and nonmilitary women across eras suggests that the military may not serve as an escape from adverse home environments for some women as it may for some men. One explanation may be that because men tend to be the perpetrators of interpersonal violence against women,<sup>40</sup> women survivors may not view the military, an institution comprised mostly of men, to be a safe option. Furthermore, military service may provide a socioeconomic advantage for some women, resulting in enlistment as an occupational choice rather than an escape from adverse home environments. For instance, our results indicate women with a history of military service had higher educational attainment than women without a history of military service. Alternatively, the sample size of women with a history of military service was relatively small, so it is possible that limited statistical power may have hampered our ability to detect differences as we did among men. Further re-

**Table 2. Prevalence of ACEs Among Men by Military Service History and Era<sup>a</sup>**

ACE	All-Volunteer Era (n = 10 941) <sup>b</sup>			Draft Era (n = 12 910) <sup>c</sup>		
	Military Service History (n = 1586)	No Military Service History (n = 9355)	P Value	Military Service History (n = 6861)	No Military Service History (n = 6049)	P Value
Household mental illness	23.3 <sup>d</sup>	15.2	<.001	6.8	8.4	.07
Parental separation or divorce	38.5 <sup>d</sup>	25.9	<.001	13.9	12.1	.16
Household drug use	18.5 <sup>d</sup>	11.5	<.001	2.1 <sup>d</sup>	3.3	.003
Household alcohol abuse	34.3 <sup>d</sup>	19.4	<.001	17.1	16.1	.45
Household physical abuse	29.1 <sup>d</sup>	15.7	<.001	13.7	14.2	.70
Incarcerated household member	12.3 <sup>d</sup>	8.0	.02	2.3	2.2	.93
Exposure to domestic violence	27.3 <sup>d</sup>	13.8	<.001	12.1	12.0	.90
Emotional abuse	43.0 <sup>d</sup>	30.3	<.001	19.9	22.3	.09
Touched sexually	11.0 <sup>d</sup>	4.8	<.001	4.4	5.2	.32
Made to touch another sexually	9.6 <sup>d</sup>	4.2	<.001	3.1	3.6	.36
Forced to have sex	3.7 <sup>d</sup>	1.6	<.001	1.1	1.5	.24
Total No. of ACE categories						
0	26.6 <sup>d</sup>	42.3		53.5	52.4	
1	22.4	23.8		23.4	24.0	
2	14.4	12.2	<.001	11.3	11.7	.96
3	9.3	8.8		5.5	5.4	
≥4	27.3	12.9		6.3	6.5	

Abbreviation: ACE, adverse childhood experience.

<sup>a</sup> Data are presented as weighted percentages of study participants.

<sup>b</sup> Men 18 years old on or after 1973 (ages 18-55 years in 2010).

<sup>c</sup> Men older than 18 years in 1973 (ages ≥56 years in 2010).

<sup>d</sup> P < .05.

search is needed to understand these differences in ACEs and enlistment motivations.

Greater awareness of ACEs and resulting vulnerabilities may also help in understanding health outcomes among current and former military personnel.<sup>6,10,41</sup> For instance, some studies report elevated suicide rates among active duty servicepersons and subgroups of veterans,<sup>21,22,27</sup> and ACEs have been associated strongly with suicide risk.<sup>10</sup> Using data from the National Comorbidity Study, Molnar et al<sup>42</sup> noted that men who reported childhood rape had 11 times the odds of reporting a serious suicide attempt compared with men who were not raped. Our results indicated that men with a history of military service in the all-volunteer era were more than twice as likely as men without a history of military service to report being forced to have sex before the age of 18. Potentially unmeasured components of suicide risk among military and veteran populations may be childhood trauma<sup>34</sup> and the potential interaction of suicide risk with trauma incurred during military service. Unfortunately, the BRFSS does not measure posttraumatic stress disorder or suicidality. Future research with these outcomes can elucidate potential consequences of ACEs among current and former military personnel.

In addition to types of ACEs, men with a history of military service from the all-volunteer era had more than twice the prevalence of experiencing ACEs in 4 or more categories. This finding is particularly concerning given the strong evidence of a dose-response relationship between ACEs and several health outcomes, including premature mortality.<sup>13</sup> Research about mental health (eg, depression) and possibly physical health among current and former military personnel should con-

**Table 3. Adjusted Odds Ratios (95% CIs) for ACEs Among Men With a History of Military Service by Service Era<sup>a</sup>**

ACE	All-Volunteer Era (n = 10 941) <sup>b</sup>	Draft Era (n = 12 910) <sup>c</sup>
Household mental illness	1.88 (1.38-2.56) <sup>d</sup>	0.94 (0.73-1.21)
Parental separation or divorce	2.00 (1.58-2.55) <sup>d</sup>	1.31 (1.02-1.67) <sup>d</sup>
Household drug use	2.00 (1.46-2.75) <sup>d</sup>	0.86 (0.63-1.18)
Household alcohol abuse	2.24 (1.74-2.88) <sup>d</sup>	1.26 (1.02-1.55) <sup>d</sup>
Household physical abuse	2.28 (1.74-2.99) <sup>d</sup>	1.16 (0.93-1.43)
Incarcerated household member	2.07 (1.37-3.15) <sup>d</sup>	1.24 (0.78-1.97)
Exposure to domestic violence	2.37 (1.78-3.16) <sup>d</sup>	1.28 (1.00-1.65)
Emotional abuse	1.81 (1.43-2.28) <sup>d</sup>	1.09 (0.91-1.30)
Touched sexually	2.43 (1.47-4.02) <sup>d</sup>	0.97 (0.71-1.32)
Made to touch another sexually	2.43 (1.41-4.19) <sup>d</sup>	1.03 (0.73-1.44)
Forced to have sex	2.19 (1.34-3.57) <sup>d</sup>	0.86 (0.55-1.36)

Abbreviation: ACE, adverse childhood experience.

<sup>a</sup> All analyses are weighted and adjusted for age, race/ethnicity, and educational attainment.

<sup>b</sup> Men 18 years old on or after 1973 (ages 18-55 years in 2010).

<sup>c</sup> Men older than 18 years in 1973 (ages ≥56 years in 2010).

<sup>d</sup> P < .05.

sider taking account of ACEs, especially when comparing current and former military with nonmilitary individuals.

Identifying the presence of ACEs among military service members and veterans may aid in better understanding the

Table 4. Prevalence of ACEs Among Women by Military Service History and Era<sup>a</sup>

ACE	All-Volunteer Era (n = 16 135) <sup>b</sup>			Draft Era (n = 20 392) <sup>c</sup>		
	Military Service History (n = 426)	No Military Service History (n = 15 709)	P Value	Military Service History (n = 359)	No Military Service History (n = 20 033)	P Value
Household mental illness	27.5	23.9	.32	16.0	11.9	.27
Parental separation or divorce	27.7	28.9	.76	11.7	13.6	.54
Household drug use	17.0	13.3	.26	2.1	2.9	.60
Household alcohol abuse	33.9	26.8	.06	29.2	21.0	.052
Household physical abuse	29.1 <sup>d</sup>	18.7	.001	23.5 <sup>d</sup>	12.1	<.001
Incarcerated household member	6.0	7.2	.47	1.9	2.2	.78
Exposure to domestic violence	26.5 <sup>d</sup>	18.0	.009	19.2 <sup>d</sup>	11.8	.02
Emotional abuse	43.3 <sup>d</sup>	31.6	.004	30.8 <sup>d</sup>	20.0	.009
Touched sexually	25.9 <sup>d</sup>	16.0	.002	16.4	10.5	.06
Made to touch another sexually	15.8	11.8	.12	10.7	6.0	.08
Forced to have sex	10.2	6.9	.14	6.1	3.4	.19
Total No. of ACE categories						
0	30.7	37.4		41.4	52.3	
1	17.1	20.8		21.1	21.2	
2	12.3	13.0	.09	15.2	11.7	.06
3	11.6	8.5		6.6	6.1	
≥4	28.3	20.2		15.6	8.7	

Abbreviation: ACE, adverse childhood experience.

<sup>a</sup> Data are presented as weighted percentages of study participants.

<sup>b</sup> Women 18 years old on or after 1973 (ages 18-55 years in 2010).

<sup>c</sup> Women older than 18 years in 1973 (ages ≥56 years in 2010).

<sup>d</sup> P < .05.

Table 5. Adjusted Odds Ratios (95% CIs) for ACEs Among Women With a History of Military Service by Service Era<sup>a</sup>

ACE	All-Volunteer Era (n = 16 135) <sup>b</sup>	Draft Era (n = 20 392) <sup>c</sup>
Household mental illness	1.31 (0.89-1.92)	1.47 (0.76-2.83)
Parental separation or divorce	1.08 (0.73-1.31)	0.88 (0.50-1.53)
Household drug use	1.56 (0.93-2.60)	0.72 (0.23-2.30)
Household alcohol abuse	1.47 (1.03-2.10) <sup>d</sup>	1.66 (1.05-2.63) <sup>d</sup>
Household physical abuse	1.95 (1.35-2.81) <sup>d</sup>	2.37 (1.45-3.89) <sup>d</sup>
Incarcerated household member	1.01 (0.56-1.84)	0.93 (0.33-2.60)
Exposure to domestic violence	1.77 (1.21-2.57) <sup>d</sup>	1.91 (1.09-3.35) <sup>d</sup>
Emotional abuse	1.67 (1.19-2.37) <sup>d</sup>	1.94 (1.16-3.23) <sup>d</sup>
Touched sexually	1.80 (1.23-2.64) <sup>d</sup>	1.73 (0.97-3.11)
Made to touch another sexually	1.45 (0.95-2.21)	1.97 (0.88-4.42)
Forced to have sex	1.73 (0.98-3.05)	1.87 (0.70-4.98)

Abbreviation: ACE, adverse childhood experience.

<sup>a</sup> All analyses are weighted and adjusted for age, race/ethnicity, and educational attainment.

<sup>b</sup> Women 18 years old on or after 1973 (ages 18-55 years in 2010).

<sup>c</sup> Women older than 18 years in 1973 (ages ≥56 years in 2010).

<sup>d</sup> P < .05.

causes of trauma-related mental and behavioral health conditions and the cumulative effect of trauma. Furthermore, awareness of the high prevalence of ACEs among some persons with a history of military service and the mental and be-

havioral health risks associated with ACEs<sup>8,38</sup> may prove helpful in the investment in increased community and clinical support services in early adult years for military personnel to mitigate the effects of ACEs.

Several limitations of our study must be noted. First, although the main sample was a large population-based sample, the constituent samples came from individual states and may not be nationally representative. Second, the ACE inventory specifically asks respondents about experiences before the age of 18 and may be prone to recall bias, cohort effects, and social norms (eg, divorce being less common in the 1960s). Third, military service was self-reported and could not be corroborated with official records of service. Fourth, as cross-sectional data, there is no way to demonstrate causation between ACEs and enlistment in military service. Furthermore, the BRFSS does not collect information about motivations to enlist. Although previous reports<sup>14-16</sup> have indicated that some enlistees cited escaping a negative situation as motivation, to our knowledge, we are unaware of studies that specifically have examined ACEs as a motivation. There are several variables not included in the BRFSS that could alternatively explain military enlistment beyond ACEs, such as family history of military service or indicators of childhood socioeconomic status (eg, parental income or educational attainment). Fifth, no data were available to examine whether ACEs were associated with current or past trauma, relegating ACEs in this study to potentially traumatic events. Because awareness of retraumatization increases as a salient determinant of individual and public health,<sup>43</sup> it is important that research about ACEs evolves

to increase the precision of terms used and to examine factors involved in risk and resilience.

## Conclusions

It is paramount to emphasize 2 critical points in appraising the present results. First, most people who survive ACEs can lead healthy lives.<sup>4,7</sup> For instance, Affi et al<sup>7</sup> found that among respondents who experience parental divorce and child abuse, less than 25% had posttraumatic stress disorder and only 34% had any mood disorder. Although these per-

centages are elevated, an untold story is that most people who experienced both these forms of ACEs did not have adulthood mental health problems, and the research community has limited understanding about what fosters this resiliency.<sup>44</sup> Second, most people who enlist in the military do so for positive reasons, including patriotism, altruism, and self-improvement.<sup>14</sup> Balanced messaging that incorporates findings in both directions can ensure that support and resources are available to service members who are ACE survivors, with the goal of supporting their successful military careers rather than inadvertently increasing stigma toward ACE survivors.

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