Adverse childhood experiences, military adversities, and adult health outcomes among female Veterans in the UK

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ABSTRACT

Introduction: Adverse childhood experiences (ACEs) are well-documented risk factors for poor outcomes in adulthood, including worse physical and mental health. A higher prevalence of ACEs has been reported in military populations compared with the general population. Although there is a body of literature exploring childhood adversities in military populations, research focusing on the female Veteran population in the United Kingdom is limited. **Methods:** Data were collected through a cross-sectional, self-report survey. The survey was completed by female army Veterans recruited via a female military association. The response rate was approximately 45%, and the effective sample for this study consisted of 750 female UK army Veterans. Participant histories of ACEs, military adversities, and current mental and physical health difficulties were assessed. **Results:** A sizable percentage (55%) of participants reported experiencing one or more childhood adversities. The most frequently reported ACEs were emotional abuse, physical abuse, and feeling unloved by family. Experiencing childhood adversities was most strongly associated with mental health difficulties such as posttraumatic stress disorder and military adversities such as emotional bullying, sexual harassment, and sexual assault during military service. **Discussion:** This study provides insight into the prevalence rates of ACEs in a largely under-researched population and into the relationship between military adversities and adult health outcomes. Further research is needed to better understand the unique needs of female Veterans in the United Kingdom and how they compare with those of their male counterparts and women in the UK general population.

Key words: adverse childhood experiences, army, childhood adversity, female, mental health, military, UK Armed Forces, Veterans

RÉSUMÉ

Introduction : Les expériences négatives de l'enfance sont des facteurs de risque bien attestés de problèmes cliniques à l'âge adulte, tant sur le plan de la santé physique que mentale. La prévalence de telles expériences est plus élevée dans les populations de militaires que dans la population générale. Même si le corpus de publications traite des adversités de l'enfance dans les populations de militaires, les recherches sur la population de vétéranes britanniques sont limitées. **Méthodologie :** Les chercheurs ont colligé les données par un sondage transversal autonome auprès de vétéranes recrutées au sein de l'association des femmes militaires. Le taux de réponse s'est élevé à environ 45 %, et l'échantillon effectif de cette étude était composé de 750 vétéranes britanniques. Les chercheurs ont évalué l'histoire d'expériences négatives de l'enfance, d'adversité pendant le service militaire et de troubles de santé physique et mentale à ce jour. **Résultats :** Un pourcentage appréciable (55 %) de participantes ont déclaré avoir éprouvé au moins une adversité de l'enfance. La violence physique et le sentiment de ne pas être aimée par sa famille étaient les expériences les plus signalées. Elles étaient fortement associées à des problèmes de santé mentale, comme le trouble de stress post-traumatique, et à l'adversité pendant le service militaire, telle que l'intimidation émotionnelle, le harcèlement sexuel et l'agression sexuelle pendant le service militaire. **Discussion :** La présente étude donne un aperçu de la prévalence d'expériences négatives de l'enfance auprès d'une population qui fait l'objet de beaucoup trop peu de recherches ainsi que de la relation entre l'adversité pendant le service militaire et l'état de santé à l'âge adulte. D'autres recherches s'imposent pour mieux comprendre les besoins particuliers des vétéranes britanniques et en quoi ces besoins se comparent à ceux de leurs homologues de sexe masculin et de l'ensemble des femmes de la population britannique.

Mots-clés : adversité de l'enfance, armée, expériences négatives de l'enfance, femme, forces armées britanniques, militaire, santé mentale, vétéran(e)s

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LAY SUMMARY

Adverse childhood experiences (ACEs) are highly stressful events or situations that occur in childhood and adolescence. Childhood adversities can lead to several negative outcomes in adulthood, including poor physical and mental health. Military populations often report a high number of childhood adversities. Research on ACEs that focuses specifically on female Veterans is lacking. The current study explored the relationships among ACEs, military adversities, and adult health outcomes in female army Veterans in the United Kingdom. In total, 750 female army Veterans completed an online survey containing questions about childhood experiences and military adversities, as well as physical and mental health in adulthood. A large percentage of female army Veterans reported at least one ACE, including emotional and physical abuse. Experience of childhood adversities was most strongly linked to experiencing symptoms of posttraumatic stress disorder in adulthood and experiences of emotional bullying, sexual harassment, and assault during military service.

INTRODUCTION

Adverse childhood experiences (ACEs) are highly stressful events or situations that occur during childhood and adolescence. They can be single or prolonged events, and they include exposure to domestic violence; parental substance abuse and mental illness; and physical, emotional, or sexual abuse.[1] ACEs are well-known risk factors for poor adult health outcomes, including a greater likelihood of poor mental health, such as depression and suicidal ideation, and poor physical health, such as obesity.[2-5]

The likelihood of experiencing childhood abuse, especially physical and sexual abuse, is higher for individuals with military service compared with the general population.[6-8] When combined with deployment-related traumas, a history of ACEs among military Veterans can lead to high levels of psychopathology.[9] The experience of higher rates of childhood abuse in this population, alongside traumatic experiences during military deployment, may contribute to increased risk of suicidal behaviour.[10,11] However, research has shown that non-deployed Veterans are also at increased risk of suicide.[12] This finding indicates that deployment-related trauma may not fully explain the occurrence of suicide among service members. Instead, this risk may be heightened by having experienced childhood adversities.

Military adversities, particularly sexual assault and harassment, remain a serious problem for the armed forces. Of women who responded to the UK Army's 2018 Sexual Harassment Survey,[13] 12% perceived themselves as victims of intentional sexual touching; 7%, of attempted sexual assault; 5%, of serious sexual assault; and 3%, of rape.[13] In a recent survey by the Defence Sub-Committee on women in the UK Armed Forces, 64% of female Veterans, and 58% of female serving personnel, reported experiences of bullying, harassment, and discrimination while serving.[14] These experiences are gendered, with servicewomen almost twice as likely as servicemen to experience bullying, harassment, and discrimination (20% of female Regulars vs. 11% of male Regulars) and servicewomen being more at risk of experiencing sexual harassment than servicemen (11% of female Regulars vs. 1% of male Regulars).[15,16] Experiencing military adversities, such as sexual trauma, has been documented as a risk for deterioration in mental health, in particular the development of posttraumatic stress disorder (PTSD).[17] In addition, an association between childhood and military adversities was reported,[18] and exposure to repeated violence was found to be a relatively common experience for military women and had negative impacts on their health.[7]

Elevated levels of ACEs have been reported among men and women who served in the military. In a recent UK study of a sample of Veterans seeking help for mental health difficulties, almost 50% reported six or more ACEs — more than double the number experienced in the wider military community.[18,19] Another recent UK study reported that 97% of Veterans in the sample experienced at least one ACE.[20] The total number of ACEs experienced by this group was related to an increased risk of poorer mental health outcomes, including aggression, common mental health disorders (CMDs), and PTSD.[20] It is therefore important to consider history of childhood adversities among treatment-seeking Veterans because ACEs may need to be addressed in treatment.

A high prevalence of ACEs has also been reported among military servicewomen, although literature on female UK Veterans is lacking. A U.S. study found that women with a history of military service reported higher rates of household physical abuse, emotional abuse, and exposure to domestic violence than women who had not served in the military.[21] In another U.S. study examining ACEs and adult health outcomes among Veteran and non-Veteran women, Veteran women reported higher rates of ACEs than non-Veteran

women (2.3 vs. 1.7 ACEs, respectively), in particular experiences of household dysfunction and abuse.[22] The differences could be due to some individuals using military service as an escape from adversity.[7] Another U.S. study reported a higher number of total ACEs among women with military service (2.2 ACEs) than among their male peers (1.6 ACEs), with the most commonly reported ACEs being household substance misuse, household mental illness, and physical abuse.[6] This finding highlights the need to explore gender differences in experiences of ACEs for individuals with military service history.

Although the impact of ACEs on later life health has been explored in a military context, this research often uses male cohorts and U.S. Armed Forces personnel, limiting the generalizability of findings. The structure and processes of the U.S. and UK Armed Forces have significant differences, making it difficult to compare findings cross-culturally. One of the difficulties with exploring female UK Veterans is the small proportion of women in the UK military (11%).[23] Serving in a male-dominated occupation means women in the military experience several unique challenges. Recent research in the United Kingdom highlighted the fact that female military personnel experience several gender-based challenges during service and as Veterans, including sexism and discrimination.[24] Experiencing these challenges was linked to poorer mental and physical health outcomes.[24] This study therefore aimed to explore the relationship between ACEs, military adversities, and adult health outcomes in female UK army Veterans — a largely under-researched population.

METHODS

Setting

A cross-sectional design was adopted. Recruitment took place through the Women's Royal Army Corps (WRAC) Association, a UK charity that supports women who serve, and who have served, in the British Army through grant giving, campaigning for the needs of female Veterans, and providing peer support. Data for this study were collected as part of a wider study exploring the unique needs of female Veterans.[25] Ethical approval was granted by the Combat Stress Research Committee (ref. femalevet2020).

Participants

Inclusion criteria were as follows: 1) being a female UK Veteran, 2) providing a contact email address, and 3) providing consent to be contacted by the WRAC Association. Individuals were defined as UK Veterans if they had completed a minimum of one day paid employment in the UK Armed Forces, including those who were deployed and non-deployed. The WRAC Association database was searched for all members who met these criteria. No exclusions were made on the basis of age, years of service, or generation of conflict. A total of 1,911 female army Veterans were identified, 231 of whom were excluded because of an invalid email address, leaving a final sample of 1,680 female army Veterans who received an email invitation. Of these, 750 (44.6%) took part in the study.

Materials

Data were collected through SurveyMonkey (www.surveymonkey.co.uk), an online survey creator and distributor. All participants were informed of the study aims, reminded that participation was voluntary, and provided with instructions on how to opt out or withdraw. Questionnaire topics included demographics, military characteristics, physical health, mental health, and well-being.

Primary outcome measure

To explore childhood experiences, the Adverse Childhood Experiences 10-Item (ACEs-10) questionnaire that evaluates both adults and children for experience of ACEs by age 18 years was used.[1] The measure is divided into two domains: 1) childhood maltreatment (referred to hereinafter as person ACEs), including experience of emotional or physical abuse, and 2) household challenges (referred to hereinafter as family ACEs), including experience of parental mental illness or substance misuse.[1]

Demographic data included age, gender, relationship status, employment status, and military characteristics. To explore military adversities, participants were asked, "Some people experience difficulties during their military career; did you experience any of the following: 1) emotional bullying, 2) physical assault, 3) sexual harassment, and/or 4) sexual assault?"

Several measures were used to explore adult health and well-being outcomes. The 15-item Patient Health Questionnaire (PHQ-15) was used to measure physical health.[26] A score of 15-30 on the PHQ-15 represents high somatic symptom severity. The 3-item Oslo Social Support Scale (OSSS-3) and the UCLA Loneliness Scale (version 3) were used to measure perceived social support and loneliness, respectively.[27,28] A score of 3-8

on the OSSS-3 represents poor perceived social support, and a score of 6-9 on the UCLA Loneliness Scale indicates loneliness. Alcohol use data were collected using the 10-item Alcohol Use Disorder Identification Test (AUDIT).[29] A score of 8 or more suggests hazardous or harmful alcohol use. The 5-item Dimensions of Anger Reactions (DAR-5) was used to assess difficulties with anger.[30] A score of 12 or more was used as the cut-off. The 12-item General Health Questionnaire (GHQ-12) was used to measure CMDs, such as anxiety and depression.[31] A score of 4 or more indicates the potential presence of CMDs. PTSD was assessed using the 20-item PTSD Checklist for DSM-5 (PCL-5).[32] Analysis of the psychometric properties of the PCL-5 among UK Veterans suggests a cut-off score of 34, which indicates the presence of probable PTSD.[33]

Procedure

Data were collected between August and October 2020. All participants were contacted by the WRAC Association via email and were provided with a direct survey link. Four email invitations were sent over six weeks.

Analysis

The first stage of the analysis used descriptive statistics to describe the socio-demographic and military characteristics of the sample. Next, the proportion of participants endorsing experience of each item on the ACE-10 was calculated. The total number of ACEs, person ACEs, and family ACEs was calculated and reported as means and standard deviations. The total ACEs score was then divided into tertiles, where the top tertile represented the high ACEs group and the bottom tertile represented the low ACEs group. The proportion of participants endorsing one or more ACE, one or more family ACE, and one or more person ACE was calculated, along with the mean number of ACEs for each of these groups. The next stage of the analysis was to fit multivariate regression models to explore the associations between reporting ACEs, family ACEs, and person ACEs and a range of demographic and military factors. Logistic regression models were then fitted to explore associations between being in the high ACEs group and reporting military adversities. Adjustments were made for significant demographic characteristics: rank, employment status, and sexual orientation. The final stage of the analysis was to repeat these analyses but to look at relationships between the high ACEs group and current health outcomes. All analyses were conducted using STATA version 13.0 (StataCorp, College Station, TX).

RESULTS

In total, 750 of 1,680 (44.6%) participants completed the survey. The majority of the participants in the sample were aged older than 50 years (20-50 years, 6.2%; ≥51 years, 93.8%), working or retired (90.6%, vs. 9.4% not working), in a relationship (63.5%, vs. 36.5% not in a relationship), and heterosexual (75.6%, vs. 24.4% lesbian, gay, bisexual, transgender, queer or questioning, intersex, asexual, Two-Spirit, and others [LGBTQIA2S+]). In addition, 73.7% of respondents reported leaving the military voluntarily, versus 26.3% who reported non-voluntary reasons for leaving the military. For 19.1% of participants, their last rank before leaving the military was officer level, compared with 80.9% who were of other ranks. Of the sample, 24.1% were early service leavers, defined as those who left after completing less than four years of continuous service. Of the female army Veterans who had children, 85.5% had their first child after military service, versus 14.5% who had their first child during military service.

The percentage of participants meeting case criteria for a range of ACEs is reported in Table 1. The most frequently endorsed ACEs were emotional abuse from an adult in the household (26.7%), physical abuse from an adult in the household (23.8%), and feeling unloved by family (23.1%). Overall, 55% of the sample reported experiencing one or more ACEs, with 28.2% falling into the high ACEs group. The percentage of participants reporting one or more person ACEs was similar to those reporting one or more family ACEs (41.9% and 40.0%, respectively).

Associations between demographic characteristics and the total number of ACEs, family ACEs, and person ACEs are reported in Table 2. Neither non-voluntary discharge from the military nor having a first child during military service were associated with the number of ACEs. However, those who experienced ACEs appeared to have poorer longer-term outcomes. There was a significant association between total ACEs, person ACEs, and family ACEs for those who served in lower ranks and those who were not currently working, therefore potentially indicating poorer career progression in the military and poorer employment outcomes in civilian life.

An interesting finding was that being an early service leaver was significantly associated with person ACEs, but not family ACEs. LGBTQIA2S+ participants reported a significant association between sexual orientation and total ACEs and family ACEs, but not person ACEs.

Table 1. Prevalence of ACEs

ACEs	n/N (%)*
Individual items	
Emotional abuse from an adult in household	167/625 (26.7)
Physical abuse from an adult in household	148/622 (23.8)
Sexual abuse from an adult (or someone aged at least five years older)	141/625 (22.6)
Felt unloved by family	143/620 (23.1)
Neglect and felt you did not have someone to protect you	50/622 (8.0)
Parents separated or divorced	137/612 (22.4)
Witnessed domestic violence	72/621 (11.6)
Household drug or alcohol abuse	93/623 (14.9)
Household mental illness	102/624 (16.4)
Incarcerated household member	20/624 (3.2)
Total ACEs	
Reported ≥1	344/625 (55.0)
High ACES group	176/625 (28.2)
Mean no. (SD)	1.7 (2.2)
Person ACEs	
Reported ≥1	262/625 (41.9)
Mean no. (SD)	1.04 (1.5)
Family ACEs	
Reported ≥1	248/625 (40.0)
Mean no. (SD)	0.68 (1.04)

Notes: Frequencies may not total 750 because of missing values. Descriptor for each ACE is shortened. Person ACEs refer to childhood maltreatment, such as emotional or physical abuse; family ACEs refer to household challenges, such as parental mental illness or substance misuse.
* Unless otherwise indicated.
ACE = adverse childhood experience.

Table 3 reports the prevalence of military adversities and their associations with ACEs. Participants who reported high ACEs were more likely to experience emotional bullying (odds ratio [OR] = 2.87, 95% confidence interval [CI] 1.83-4.48), sexual harassment (OR = 2.88, 95% CI 1.82-4.55), and sexual assault (OR = 3.30, 95% CI 1.51-7.21) during their military careers than those who reported low ACEs. However, no significant association was found with experiencing physical assault during their military careers.

Associations between ACEs and health outcomes are reported in Table 4. PTSD was the health outcome most strongly associated with high ACEs — it was 3.71 times more likely for this group than for those with low ACEs (OR = 3.71, 95% CI 1.93-7.12). Those who reported high ACEs were also more likely to experience symptoms of CMD (OR = 2.38, 95% CI 1.53-3.70), anger (OR = 2.53, 95% CI 1.38-4.67), physical health issues (OR = 2.66, 95% CI 1.33-5.31), loneliness (OR = 2.42, 95% CI 1.58-3.70), and low social support (OR = 2.69, 95% CI 1.40-5.15) than those who reported low ACEs.

DISCUSSION

This article reports the rate of ACEs among female UK army Veterans and the associations with military adversities and several health outcomes in adulthood. Data presented suggest that a sizable percentage (55.0%) of female army Veterans experience one or more ACEs. This figure appears to be higher than what might be expected in the UK general population (45%).[34] Similar findings on the higher prevalence of ACEs among women who

Table 2. Associations between demographic characteristics and total ACEs, family ACEs, and person ACEs scores

	ß (95% CI)		
Demographic characteristic	Total ACEs	Person ACEs	Family ACEs
Non-voluntary discharge from military	–0.18 (–0.79 to 0.42)	–0.08 (–0.48 to 0.33)	–0.11 (–0.40 to 0.18)
Had 1st child during military service	0.36 (–0.45 to 1.16)	–0.01 (–0.54 to 0.54)	0.36 (–0.03 to 0.74)
Early service leaver	0.41 (–0.17 to 0.99)	0.45 (0.06 to 0.84)*	–0.04 (–0.32 to 0.23)
Lower ranks	1.25 (0.55 to 1.95)*	0.76 (0.29 to 1.23)*	0.48 (0.15 to 0.81)*
Not currently working†	1.61 (0.68 to 2.53)*	0.89 (2.27 to 1.51)*	0.71 (0.28 to 1.15)*
Not currently in relationship	–0.48 (–1.05 to 0.09)	–0.36 (–0.74 to 0.05)	–0.12 (–0.39 to 0.14)
LGBTQIA2S+	1.17 (0.12 to 2.21)*	0.61 (–0.10 to 1.31)	0.56 (0.07 to 1.05)*

Note: ß coefficients adjusted for all variables in table. Person ACEs refer to childhood maltreatment, such as emotional or physical abuse; family ACEs refer to household challenges, such as parental mental illness or substance misuse.
* $p < 0.05$.
† Not including participants who had retired.
ACE = adverse childhood experiences; LGBT+ = lesbian, gay, bisexual, transgender, queer or questioning, intersex, asexual, Two-Spirit, and others.

Table 3. Prevalence of military adversities and associations between ACEs and military adversities

	Cases, n/N (%)		
Adversities	Low ACEs	High ACEs	OR (95% CI)*
Emotional bullying	20/449 (4.5)	70/176 (39.8)	2.87 (1.83 to 4.48)†
Physical assault	13/449 (2.9)	11/176 (6.3)	1.39 (0.53 to 3.67)
Sexual harassment	94/449 (20.9)	63/176 (35.8)	2.88 (1.82 to 4.55)†
Sexual assault	15/449 (3.3)	21/176 (11.9)	3.30 (1.51 to 7.21)†

* Adjusted for rank, employment status, and sexual orientation.
† $p < 0.05$.
ACEs = adverse childhood experiences; OR = odds ratios; CI = confidence interval.

Table 4. Associations between ACEs and health outcomes

	Cases, n/N (%)		
Outcome and measure	Low ACEs	High ACEs	OR (95% CI)*
PTSD (PCL-5)	20/409 (4.9)	41/164 (25.0)	3.71 (1.93-7.12)†
CMD (GHQ-12)	89/428 (20.8)	83/171 (48.5)	2.38 (1.53-3.70)†
Anger (DAR-5)	40/357 (11.2)	23/138 (16.7)	2.53 (1.38-4.67)†
Alcohol misuse (AUDIT)	27/440 (6.1)	41/171 (24.0)	1.21 (0.65-2.28)
Physical health (PHQ-15)	22/371 (5.9)	32/152 (21.1)	2.66 (1.33-5.31)†
Loneliness (UCLA)	137/443 (30.9)	105/174 (60.3)	2.42 (1.58-3.70)†
Low social support (OSSS3)	25/443 (5.6)	34/174 (19.5)	2.69 (1.40-5.15)†

* Adjusted for rank, employment, and sexual orientation. Prevalence of outcomes is as follows: PTSD, 10.8%; CMD, 28.6%; alcohol misuse, 12.8%; physical symptoms, 10.3%; and loneliness, 39.3%.
† $p < 0.001$.
ACEs = adverse childhood experiences; OR = odds ratio; CI = confidence interval; PTSD = posttraumatic stress disorder; PCL-5 = PTSD Checklist for DSM-5; CMD = common mental health difficulties; GHQ-12 = 12-item General Health Questionnaire; DAR-R = 5-item Dimensions of Anger Reactions-Revised; AUDIT = 10-item Alcohol Use Disorder Identification Test; PHQ-15 = Patient Health Questionnaire-15; UCLA = UCLA Loneliness Scale; OSSS = 3-item Oslo Social Support Scale.

served in the military were also reported in a number of U.S. studies.[6,22,35] For instance, McCauley et al. found that female Veterans of the U.S. Armed Forces reported a higher number of total ACEs (2.3 ACEs) than female non-Veterans (1.7 ACEs).[22] These female Veterans reported a higher prevalence of household substance abuse, exposure to domestic violence, and emotional, physical, and sexual abuse than female non-Veterans.

A higher number of total ACEs has also been reported among women with U.S. military service compared with their male counterparts (2.2 vs. 1.6 ACEs, respectively), in particular, household substance misuse, household mental illness, and physical abuse.[6] A similar rate of physical abuse was found in this study; however, much lower rates of household substance abuse and household mental illness were found. It is important to recognize that the U.S. and UK Armed Forces have significant differences in structure and processes, which makes it difficult to compare findings cross-culturally. This should be considered when interpreting the results of this study.

Study findings revealed strong associations between childhood and military adversities, namely emotional bullying, sexual harassment, and sexual assault. Previous research suggested that ACEs may increase the likelihood of exposure to trauma related to a military career, including military sexual abuse.[18,36] One potential explanation for this is pre-enlistment vulnerability, which is common in the UK Armed Forces.[18] The decision to join the armed forces may be to escape adversity at home, such as abuse.[7] The literature suggests that a history of childhood trauma may increase the likelihood and severity of adult victimization, especially for women who experienced multiple childhood abuses.[37,38] For instance, experiencing childhood sexual abuse is associated with domestic violence, rape, and other trauma in adulthood.[37]

Military adversities, such as bullying, abuse, sexual harassment, and assault, remain a pervasive problem in

the UK Armed Forces. Serving in a male-dominated profession means that women in the military experience several unique, gender-specific challenges.[24] Experiencing these gender-based adversities may affect Veteran-specific service utilization by female Veterans. Although female military personnel and Veterans are more likely to seek treatment and support for mental health difficulties than their male counterparts,[39] research has highlighted that female Veterans feel less welcome at Veteran-specific mental health organizations.[24,40] However, because of the high proportion of men in the military, support and services may cater to male Veterans. Understanding the associations among ACEs, military adversities, and adult health outcomes could therefore help to inform services and supports provided to female Veterans, as well as allow female Veterans to feel more included when accessing services.

ACEs have also been shown to affect adult health outcomes both directly and indirectly. This study's findings suggest that the most prevalent health outcomes for female Veterans with a history of childhood adversities are PTSD, CMDs, anger, physical health issues, loneliness, and perceived low social support. Similarly, previous literature on male UK Veterans with exposure to ACEs reported elevated rates of aggression, CMDs, PTSD, and poorer physical health.[20] However, they also reported elevated rates of alcohol misuse.[20] This differs from the current study findings among female UK army Veterans, in which no significant association between ACEs and alcohol misuse was found. This suggests potential gender differences in health outcomes associated with a history of ACEs. Generally, female Veterans are at a lower risk of alcohol misuse.[41]

The current study found that the strongest association was between ACEs and PTSD. The association between childhood adversity and PTSD is well reported across the literature, including two large meta-analyses of PTSD.[42,43] This study's findings suggest that ACEs may help explain the higher rate of PTSD among female army Veterans. This is described in both UK and U.S. military populations.[18,44] For instance, one study examining risk factors for PTSD among UK Armed Forces personnel reported a higher number of PTSD cases among those with a history of childhood adversity. PTSD was prevalent in 2.2% of individuals with a childhood adversity score of zero or one, versus 7.3% of individuals with a childhood adversity score of 6 or more.[45] In a U.S. military sample, reporting two or more categories of childhood adversities was shown to significantly increase the likelihood of experiencing depression and PTSD.[45] One potential explanation for these findings is that a history of childhood adversity may predispose an individual to PTSD after traumatic experiences.[36] This could potentially be explained by new traumatic experiences reactivating traumatic memories from childhood.

Limitations

Several limitations of this study should be acknowledged. Despite using a large community sample, the study population was older and made up of only female army Veterans engaged with the WRAC Association. Therefore, the results are not necessarily representative of the wider female Veteran community. In addition, all female Veterans in the sample previously served in the British Army, so the results cannot be generalized to female Veterans of other services in the UK military, such as the Royal Navy or Royal Air Force.

The use of self-report measures for ACEs, military adversities, and health outcomes means the results may have been subject to recall bias. Another key issue increasing the likelihood of recall bias is that measures of ACEs and military adversities relied on retrospective reporting of experiences. Previous research has shown that experiences of childhood adversity are often underestimated in retrospective reports.[46]

Implications

This study contributes to the development of a greater understanding of how ACEs, military adversities, and resulting vulnerabilities affect current health outcomes among female UK army Veterans. One key finding is that ACEs are common among female UK army Veterans, with 55% reporting one or more ACE. Significant associations between total ACEs and current levels of PTSD, CMDs, physical health symptoms, anger, loneliness, and low social support were found. The significant link between military adversities and ACEs reported in this study is an important consideration when providing support to female Veterans after service, for instance for mental health difficulties. The armed forces is a male-dominated environment, so it is important that care provided to female Veterans targets their unique needs and makes them feel welcome at Veteran-specific services. It is important to consider a history of ACEs when providing support and services to female military Veterans. Targeting childhood adversities as part of the treatment pathway for mental health difficulties among Veterans is important because some difficulties may be

related to childhood adversities. Future research should investigate the prevalence of ACEs in other UK military branches, such as the Royal Navy and Royal Air Force.

Conclusion

This study is one of the first to assess the prevalence of ACEs in the female UK army Veteran population. It begins to explore the relationship among childhood adversities, military adversities, and adult health outcomes. Findings highlight the importance of recognizing the potential impacts of childhood adversities during the treatment of military traumas. Future research should seek to expand on these findings and explore how the prevalence of ACEs among female UK Veterans compares with that of their male peers, as well as that of the general female population.

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COMPETING INTERESTS

The authors have nothing to disclose.

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