Prevalence and Correlates of Firearm Access Among Post-9/11 US Women Veterans Using Reproductive Healthcare: a Cross-Sectional Survey

Lindsey L. Monteith, PhD1,2, Ryan Holliday, PhD1,2, Christin N. Miller, MPH1, Alexandra L. Schneider, BA1, Lisa A. Brenner, PhD1,2,3,4, and Claire A. Hoffmire, PhD1,3

1VA Rocky Mountain Mental Illness, Research, Education and Clinical Center (MIRECC) for Suicide Prevention, Rocky Mountain Regional VAMC, 1700 N. Wheeling Street, Aurora, CO, USA; 2Department of Psychiatry, University of Colorado Anschutz Medical Campus, Aurora, CO, USA; 3Department of Physical Medicine and Rehabilitation, University of Colorado Anschutz Medical Campus, Aurora, CO, USA; 4Department of Neurology, University of Colorado Anschutz Medical Campus, Aurora, CO, USA.

BACKGROUND: Suicide rates have increased among women Veterans, with increased use of firearms as the method. Addressing suicide risk in this population requires understanding the prevalence and correlates of firearm access in healthcare settings frequented by women Veterans.

OBJECTIVES: Characterize the prevalence and correlates of firearm ownership and storage practices among women Veterans using Department of Veterans Affairs (VA) reproductive healthcare (RHC) services.

DESIGN: Cross-sectional national survey conducted in 2018–2019 (17.9% response rate).

PARTICIPANTS: Post-9/11 women Veterans using RHC (n=350).

MAIN MEASURES: VA Military Sexual Trauma Screen, PTSD Checklist for DSM-5, Hurt/Insult/Threaten/Scream, Columbia-Suicide Severity Rating Scale screen-er, self-reported firearm access.

KEY RESULTS: 38.0% (95% confidence interval [95% CI]: 32.9, 43.3) of participants reported personally owning firearms, and 38.9% (95% CI: 33.7, 44.2) reported other household members owned firearms. Among those with firearms in or around their homes, 17.8% (95% CI: 12.3, 24.4) and 21.9% (95% CI: 15.9, 28.9) reported all were unsafely stored (loaded or unlocked, respectively). Women who experienced recent intimate partner violence were less likely to report personally owning firearms (adjusted prevalence ratio [APR]=0.75; 95% CI: 0.57, 0.996). Those who experienced military sexual harassment (APR=1.46; 95% CI=1.09, 1.96), were married (APR=1.74; 95% CI: 1.33, 2.27), or lived with other adult(s) (APR=6.26; 95% CI: 2.87, 13.63) were more likely to report having household firearms owned by someone else. Storing firearms loaded was more prevalent among women with lifetime (APR=1.47; 95% CI=1.03, 2.08) or past-month (APR=1.69; 95% CI=1.15, 2.48) suicidal ideation and less likely among those with other adult(s) in the home (unadjusted PR=0.62; 95% CI=0.43, 0.91). Those with parenting responsibilities (APR=0.61; 95% CI=0.38, 0.97) were less likely to store firearms unlocked.

CONCLUSIONS: Firearm access is prevalent among post-9/11 women Veterans using VA RHC. Interpersonal factors may be important determinants of firearm access in this population. Safe firearm storage initiatives are needed among women Veterans using RHC, particularly for those with suicidal ideation.

KEY WORDS: women; Veteran; firearms; interpersonal violence; suicide.

INTRODUCTION

From 2005 to 2018, female Veterans experienced an increase in their age-adjusted suicide rate (55.6%) that exceeded that of male Veterans (43.5%) and female non-Veterans (34.5%).1 Consequently, in 2018, the age-adjusted suicide rate was 2.1 times higher for women Veterans than women non-Veterans.2 Within the Veteran population, suicide rates are highest among younger Veterans (ages 18–34),2 many of whom served post-9/11. Thus, there is a particular need to prevent suicide among younger post-9/11 women Veterans.

One promising approach to addressing this is implementing upstream suicide prevention initiatives within settings where women Veterans frequently receive services. While such strategies are effective in reducing suicide, less is known regarding how and where to tailor these approaches. Settings providing reproductive healthcare (RHC) may be applicable given how frequently women Veterans seek RHC from the Veterans Health Administration (VHA)3 and considering that reproductive health conditions are top health concerns reported by women Veterans under age 45.4 In particular, 43% of women Veterans in VHA care have a reproductive health diagnosis.5 Moreover, reproductive health concerns are often comorbid with mental health diagnoses,6 which can exacerbate suicide risk. Finally, given the intimate nature of RHC, women often

Prior Presentations: Preliminary findings were presented as part of the VA Women’s Mental Health Monthly Clinical Training Teleconference Series (March 2020), the VA HSR&D Cyberseminar Series (July 2020), and the VA Suicide Prevention Impact Network Cyberseminar Series (February 2021).
develop sustained relationships with their RHC providers built upon trust, which is paramount to suicide risk assessment and prevention.

An essential component to beginning to integrate suicide prevention initiatives into VHA RHC settings is understanding lethal means access among women Veterans. As firearms are the leading means of suicide among women Veterans, better understanding of firearm access among women Veterans using VHA RHC would ensure upstream prevention services integrated into RHC settings are tailored to the needs of women Veterans reached by such services. Addressing firearm access in RHC settings has precedence; the American College of Obstetricians and Gynecologists recommends “periodic injury prevention evaluation and counseling regarding firearms.” This recommendation stems from the fact that firearm access, which can occur through personal or household ownership or unsafe storage (e.g., unsecured, loaded), is associated with increased risk for suicide, as well as numerous other exposures and negative health outcomes that can and should be addressed in RHC settings (e.g., intimate partner violence, household/child firearm safety).

Interpersonal violence, which is highly prevalent among women Veterans, may influence firearm access in this population. Monteith and colleagues found that military sexual trauma [MST] was a prominent theme driving firearm ownership and unsafe storage among women Veterans. Sexual assault, intimate partner violence (IPV), and post-traumatic stress disorder (PTSD) were also associated with keeping a firearm or other weapon nearby to feel safe in a larger sample of active component and Reserve/National Guard women. Interpersonal factors, such as marital status and parenting responsibilities, are relevant to the healthcare provided in RHC settings and appear salient to women Veterans’ firearm storage practices. For example, individuals with children in the home report safer storage (e.g., locked, unloaded), and this association is particularly strong among women. Women who are the primary caregivers of children have also reported being less likely to keep a weapon nearby to feel safe. RHC providers are well-poised to leverage the importance of safety for all family members, including children, in the home when addressing firearm safety with their patients.

Nonetheless, firearm studies have generally taken a gender-neutral approach, rarely reporting on firearm access by gender or sex. Prior studies reporting on rates of firearm access among women Veterans have yielded informative findings, but have been sparse. For example, in a nationally representative study of US adults, 24.4% of women Veterans (n=38) reported owning firearms and 14.4% reported residing in a household with firearm(s). Additionally, 13.2% of women Veteran firearm owners reported storing firearms both loaded and unlocked, and 45.4% reported either storing firearms loaded and locked or unloaded and unlocked. In other samples that included women Veterans, rates of household firearm access ranged from 30.7 to 39.2%. However, to date, no studies have examined the extent to which women Veterans using RHC own and safely store firearms, which is critical to informing upstream suicide prevention for women Veterans in RHC.

To address this, we sought to characterize the extent to which women Veterans using VHA RHC personally owned firearms, had household firearms that they did not personally own, and engaged in unsafe firearm storage practices (e.g., loaded, unlocked). We also aimed to identify factors associated with women Veterans’ personal and household firearm ownership and storage, examining interpersonal factors (marital status, adult household composition, parenting responsibilities), trauma exposure and sequelae (MST, IPV, provisional PTSD), and suicidal ideation (SI) and attempt.

**METHODS**

**Participants and Procedures**

This analysis was part of a larger mixed-methods study aimed at understanding suicide risk and prevention in VHA RHC settings. We used data from the Department of Veterans Affairs (VA) Corporate Data Warehouse (CDW) and VA-Department of Defense (DoD) Identity Repository to construct a random sample of 2250 post-9/11 women Veterans stratified by age and region. Inclusion criteria included being of reproductive age (18–44 years) when separating from military service and using RHC that VA provided and/or paid for in the Fiscal Year 2018. All participants separated between 10/1/2009 and 9/30/2018; thus, as some women were age 44 when separating from service in 2009, the survey sample included women with ages up to 53. RHC use was defined as having documented gynecology or women’s surgeries encounters, medical encounters outside of these settings associated with ICD-10 code(s) for qualifying reproductive health conditions or procedures and/or CPT codes for common gynecological procedures, or pharmacy fills for medications indicated solely for reproductive health conditions or contraception (more detailed information is available in Supplemental Table 1).

From 12/2018 to 6/2019, women in the identified cohort received three invitation letters, sent 4 weeks apart, to participate in a survey. To facilitate recruitment following an initial recruitment wave, a randomly selected portion also received a study flyer, paper survey, and return envelope in each mailing. Participants consented and received $20 for participating. The local Institutional Review Board approved this study.

Mailings were returned undeliverable for 129 individuals (5.7%). Of 381 who initiated the survey, 10 were ineligible, 1 opted out, and 18 did not complete the survey, resulting in 352 eligible individuals who completed the survey (response rate of 17.9%). After removing two participants (0.6%) with missing firearm data, the final sample included 350 women Veterans.
Measures

A brief overview regarding measures is included below, with more details in Supplemental Table 2.

Firearm Ownership and Storage. The survey assessed current personal and household firearm ownership. Those who endorsed either were asked if firearms were stored in or around their homes. Participants who answered affirmatively were asked if firearms in or around their homes were stored loaded and locked. Response options were dichotomized to reflect having household firearms loaded (0=none; 1=some or all) or unlocked (0=none; 1=some or all). Items were based on questions administered previously, with minor wording modifications.

MST. The standard VA MST screen, used extensively within VA and which has demonstrated construct validity, assessed the most severe MST experienced (none, military sexual harassment, military sexual assault). This approach is consistent with studies finding differential health impacts based on MST severity.

IPV. A Hurt/Insult/Threaten/Scream (HITS) score ≥6 was used to screen for lifetime and past 12-months IPV, which has demonstrated good sensitivity and specificity with women Veterans.

PTSD. The PTSD Checklist for DSM-5 (PCL-5) was administered to determine current provisional PTSD diagnosis and has strong test-retest reliability, internal consistency, and convergent and divergent validity.

Suicidal Ideation and Attempt. The Columbia-Suicide Severity Rating Scale (C-SSRS) self-report screener assessed past-month and lifetime SI and lifetime suicide attempt.

Demographics and Military Service. Additional questions assessed race, ethnicity, age, sexual orientation, branch, deployment, combat zone, pre-9/11 military service, marital status, adult household composition, and parenting responsibilities for children under age 18. Rurality was assessed based on the urban, rural, and highly rural designations attributed to the geocoded CDW address. Region was assessed based on state of mailing address.

Analytic Plan

Analyses were conducted in SAS, v9.4, and R, v3.6.0. For our first aim, we computed frequencies with 95% confidence intervals (CIs) for our four outcomes of interest: personal firearm ownership; household firearm ownership; and, in the subsample with firearms stored in or around their homes, firearm(s) stored loaded or unlocked (excluding responses of “unsure”).

To determine covariates, chi-square or Fisher’s exact tests were used to determine if there were significant differences based on study outcomes regarding age, race, ethnicity, sexual orientation, branch, deployment, combat zone, post-Vietnam/Peacetime service, Desert Storm/Shield service, region, and rurality. Consistent with other studies on firearm access, the following significantly differed between groups (p<.05) and were included as covariates in adjusted models: age and rurality (personal ownership); rurality and sexual orientation (household ownership); age and combat zone service (unlocked firearms). No potential covariates were significant for models examining loaded firearms.

Log-binomial models were fit to examine unadjusted and adjusted associations between correlates of interest and firearm variables. For all models, we present p-values alongside effect estimates, in accordance with guidance by Perneger and Rothman, to allow readers to judge clinical and statistical significance.

Sensitivity analyses were conducted in which household firearm ownership was included as an additional covariate in the model with personal firearm ownership as the outcome, and personal firearm ownership as an additional covariate in adjusted analyses when examining household firearms as the outcome. Furthermore, for firearm storage analyses, a sensitivity analysis was conducted with the subgroup reporting personal firearm ownership.

RESULTS

Participants

Table 1 includes participant characteristics. In our sample, 53.98% (95% CI: [48.61, 59.27]; n=190) of participants reported any firearm access (personal and/or household firearms). Specifically, 38.00% (95% CI: [32.89, 43.32]; n=133) reported personally owning firearm(s), and 38.85% (95% CI: [33.72, 44.18]; n=136) reported that someone else in their household owned firearm(s). Among those reporting firearm access, this most frequently occurred through both personal and household firearms (41.58%; n=79), rather than exclusively through personal (28.42%; n=54) or household (30.00%; n=57) ownership.

Among those with firearm access, 88.95% (95% CI: [83.60, 93.03]; n=169) indicated firearms were stored in or around their homes. Of those, 17.75% (95% CI: [12.31, 24.36]; n=30) reported all firearms were stored loaded, 22.49% (95% CI: [16.43, 29.54]; n=38) reported some were stored loaded, and 52.66% (95% CI: [44.85, 60.38]; n=89) reported none were stored loaded, and 7.10% (95% CI: [3.72, 12.08]; n=12) reported being unsure. Additionally, 21.89% (95% CI: [15.91, 28.89]; n=37) reported all were stored unlocked, 14.79% (95% CI: [9.81, 21.06]; n=25) reported some were stored unlocked, 59.76% (95% CI: [51.96, 67.22]; n=101) reported none were stored unlocked, and 3.55% (95% CI: [1.31, 7.57]; n=6) were unsure.
Table 1 Full Sample Descriptives (n=350)

| Characteristic                          | n (%)         |
|----------------------------------------|---------------|
| **Age**                                |               |
| 18–29                                  | 97 (27.95%)   |
| 30–35                                  | 129 (37.18%)  |
| 36–53                                  | 121 (34.87%)  |
| **Race**                               |               |
| White                                  | 231 (66.19%)  |
| Black                                  | 55 (15.76%)   |
| Native American/Alaskan Native         | 7 (2.01%)     |
| Asian/Pacific Islander                 | 14 (4.01%)    |
| Multi-racial                           | 30 (8.60%)    |
| Other                                  | 12 (3.44%)    |
| **Ethnicity**                          |               |
| Hispanic                               | 53 (15.19%)   |
| Non-Hispanic                           | 296 (84.81%)  |
| **Sexual orientation**                 |               |
| Heterosexual                           | 286 (82.42%)  |
| **Branch of service**                  |               |
| Army                                   | 163 (46.84%)  |
| Air Force                              | 86 (24.71%)   |
| Navy                                   | 63 (18.10%)   |
| Marines/Coast Guard                    | 43 (12.29%)   |
| **Deployment**                         |               |
| None                                   | 112 (32.94%)  |
| Single                                 | 120 (35.29%)  |
| Multiple                               | 108 (31.76%)  |
| **Combat zone**                        |               |
| Yes                                    | 183 (53.82%)  |
| No                                     | 157 (46.18%)  |
| **Post-Vietnam/Peace-time**            |               |
| Yes                                    | 6 (1.72%)     |
| No                                     | 343 (98.28%)  |
| **Desert Storm/Shield**                |               |
| Yes                                    | 44 (12.61%)   |
| No                                     | 305 (87.39%)  |
| **Region**                             |               |
| Northeast                              | 38 (10.89%)   |
| Midwest                                | 70 (20.06%)   |
| South                                  | 174 (49.86%)  |
| West                                   | 67 (19.20%)   |
| **Rurality**                           |               |
| Urban                                  | 271 (77.65%)  |
| Rural/highly rural                     | 78 (22.35%)   |
| **Marital status**                     |               |
| Married/remarried                      | 150 (42.86%)  |
| Other                                  | 200 (57.14%)  |
| **Parenting responsibilities**         |               |
| No                                     | 178 (51.59%)  |
| Yes                                    | 167 (48.41%)  |
| **Military sexual trauma**             |               |
| None                                   | 97 (29.94%)   |
| Sexual harassment                      | 78 (24.07%)   |
| Sexual assault                         | 149 (45.99%)  |
| **IPV – lifetime**                     |               |
| Yes                                    | 288 (82.29%)  |
| No                                     | 62 (17.71%)   |
| **IPV – past-year**                    |               |
| Yes                                    | 134 (38.40%)  |
| No                                     | 215 (61.60%)  |
| **Provisional PTSD**                   |               |
| Yes                                    | 156 (44.70%)  |
| No                                     | 193 (55.30%)  |
| **SI – lifetime**                      |               |
| Yes                                    | 146 (42.07%)  |
| No                                     | 201 (57.93%)  |
| **SI – past-month**                    |               |
| Yes                                    | 38 (10.95%)   |
| No                                     | 309 (89.05%)  |
| **SA – lifetime**                      |               |
| Yes                                    | 81 (23.28%)   |
| No                                     | 267 (76.72%)  |

Table 1. (continued)

| Characteristic                          | n (%)         |
|----------------------------------------|---------------|
| Multiple adult household               |               |
| Yes                                    | 263 (76.01%)  |
| No                                     | 83 (23.99%)   |

Note. †LGBQ+A lesbian, gay, bisexual, questioning + asexual; ‡IPV intimate partner violence; §PTSD post-traumatic stress disorder; †SI suicidal ideation; ††SA suicide attempt

Data missing for the following variables for personal and household firearms: age (n=3), race (n=1), ethnicity (n=1), sexual orientation (n=2), branch of service (n=2), deployment (n=10), combat zone (n=10), service era (n=1), region (n=1), rurality (n=1), parenting responsibilities (n=5), multiple adult household (n=5), military sexual trauma (n=26), IPV past-year (n=1), PTSD (n=1), SI lifetime (n=3), SI past-month (n=3), SA lifetime (n=2)

Between-Group Differences (Table 2)

There were significant between-group differences in personal firearm ownership by age (χ²=10.79, p=0.0045) and rurality (χ²=6.02, p=0.014): those owning firearms tended to be older and live in urban settings. There were significant differences in household firearm ownership by rurality (χ²=9.35, p=0.0022), sexual orientation (χ²=9.93, p=0.016), marital status (χ²=23.15, p<0.0001), adult household composition (χ²=46.70, p<0.001), parenting responsibilities (χ²=7.80, p=0.0052), and MST (χ²=9.41, p=0.0090), with household firearm ownership more common among those who were in urban settings, heterosexual, married, had other adult(s) residing in the home, had parental responsibilities, and had experienced military sexual harassment.

Significant between-group differences occurred in storing firearms loaded based on adult household composition (χ²=4.61, p=0.032) lifetime SI (χ²=4.50, p=0.034), and past-month SI (χ²=4.60, p=0.032); those living in a household with other adult(s) were less likely to store firearms loaded, whereas those experiencing SI were more likely to store firearms loaded. For storing firearms unlocked, there were significant differences in age (χ²=11.61, p=0.0030), combat zone service (χ²=3.97, p=0.046), and parenting responsibilities (χ²=11.62, p=0.0007); those younger, without combat zone service, and without parenting responsibilities were more likely to report storing firearms unlocked.

Personal Firearms (Table 3)

Adjusting for age and rurality, women who experienced recent IPV were 24.86% less likely to report personal firearm ownership: adjusted PR (APR)=0.75 [95% CI=0.57, 0.99]. In the sensitivity analysis adjusting for household firearms, recent IPV was no longer associated with personal ownership: APR=0.83 [95% CI=0.65, 1.07].

Household Firearms (Table 4)

In both unadjusted and adjusted analyses, being married (APR=1.74 [95% CI=1.33, 2.27]) and having other adult(s)
|                          | Personal firearm ownership | Household firearm ownership | Loaded vs unloaded | Unlocked vs locked |
|--------------------------|----------------------------|-----------------------------|--------------------|-------------------|
|                          | Yes (n=133)                | No (n=217)                  |        |                   |
| Age                      |                           |                             |                   |                   |
| 18–29                    | 29 (21.97%)                | 68 (31.63%)                 | 18 (26.47%)       | 23 (37.70%)       |
| 30–35                    | 43 (32.58%)                | 86 (40.00%)                 | 21 (30.88%)       | 17 (27.87%)       |
| 36–53                    | 60 (45.45%)                | 61 (28.37%)                 | 29 (42.65%)       | 21 (34.43%)       |
| Race                     |                           |                             |                   |                   |
| White                    | 94 (71.21%)                | 137 (63.13%)                | 48 (70.59%)       | 47 (77.05%)       |
| Black                    | 17 (12.88%)                | 38 (17.51%)                 | 7 (10.29%)        | 5 (6.56%)         |
| Native American/Alaskan Native | 2 (1.52%)     | 5 (2.30%)                   | 1 (1.47%)         | 2 (2.27%)         |
| Asian/Pacific Islander   | 4 (3.03%)                  | 10 (4.61%)                  | 2 (2.94%)         | 2 (3.28%)         |
| Other                    | 4 (3.03%)                  | 8 (3.69%)                   | 2 (2.94%)         | 4 (5.45%)         |
| Ethnicity                |                           |                             |                   |                   |
| Hispanic                 | 19 (14.39%)                | 34 (15.67%)                 | 7 (10.29%)        | 6 (9.84%)         |
| Non-Hispanic             | 113 (85.61%)               | 183 (84.33%)                | 61 (89.71%)       | 55 (90.16%)       |
| Sexual orientation       |                           |                             |                   |                   |
| Heterosexual             | 111 (84.73%)               | 175 (81.02%)                | 55 (82.09%)       | 49 (81.67%)       |
| LGBQ+A                   | 20 (15.27%)                | 41 (18.98%)                 | 12 (17.91%)       | 11 (18.33%)       |
| Branch of service        |                           |                             |                   |                   |
| Army                     | 60 (45.11%)                | 103 (47.91%)                | 30 (44.12%)       | 23 (37.70%)       |
| Air Force                | 33 (24.81%)                | 53 (24.65%)                 | 16 (23.53%)       | 18 (29.51%)       |
| Navy                     | 20 (15.04%)                | 43 (20.00%)                 | 12 (17.65%)       | 11 (18.03%)       |
| Marines/Coast Guard      | 17 (12.88%)                | 21 (9.68%)                  | 10 (14.71%)       | 10 (16.13%)       |
| Deployment               |                           |                             |                   |                   |
| None                     | 35 (27.13%)                | 77 (36.49%)                 | 19 (29.69%)       | 22 (37.29%)       |
| Single                   | 46 (35.66%)                | 74 (35.07%)                 | 25 (39.06%)       | 17 (28.81%)       |
| Multiple                 | 48 (37.21%)                | 60 (28.44%)                 | 20 (31.25%)       | 20 (33.90%)       |
| Combat zone              |                           |                             |                   |                   |
| Yes                      | 74 (57.36%)                | 109 (51.66%)                | 37 (57.81%)       | 27 (45.76%)       |
| No                       | 55 (42.64%)                | 102 (48.34%)                | 27 (42.19%)       | 32 (54.24%)       |
| Post-Vietnam/Peacetime   |                           |                             |                   |                   |
| Yes                      | 1 (0.75%)                  | 5 (2.31%)                   | 0 (0.00 %)        | 2 (2.25%)         |
| No                       | 132 (99.25%)               | 211 (97.69%)                | 68 (100.00%)      | 62 (98.02%)       |
| Desert Storm/Shield      |                           |                             |                   |                   |
| Yes                      | 20 (15.04%)                | 24 (11.11%)                 | 7 (10.29%)        | 8 (12.90%)        |
| No                       | 113 (84.96%)               | 192 (88.89%)                | 61 (89.71%)       | 54 (87.10%)       |
| Region                   |                           |                             |                   |                   |
| Northeast                | 8 (6.02%)                  | 30 (13.89%)                 | 4 (5.88%)         | 2 (3.23%)         |
| Midwest                  | 27 (20.30%)                | 43 (19.91%)                 | 14 (20.59%)       | 12 (19.35%)       |
| South                    | 71 (53.38%)                | 103 (47.69%)                | 37 (54.41%)       | 38 (56.08%)       |
| West                     | 27 (20.30%)                | 40 (18.52%)                 | 13 (19.12%)       | 12 (19.35%)       |
| Rurality                 |                           |                             |                   |                   |
| Urban                    | 94 (70.68%)                | 177 (81.94%)                | 47 (69.12%)       | 45 (72.58%)       |
| UNLOCED                   |                           |                             |                   |                   |
| Locked                   | 21 (15.04%)                | 43 (19.91%)                 | 12 (19.35%)       | 12 (19.35%)       |

(continued on next page)
| Marital status | Personal firearm ownership | Household firearm ownership | Loaded vs unloaded | Unlocked vs locked |
|----------------|----------------------------|----------------------------|-------------------|-------------------|
| Rural/highly rural | Yes (n=133) (29.32%) | No (n=217) (18.06%) | Yes (n=136) (30.88%) | No (n=214) (16.90%) | Loaded* (n=68) (30.88%) | Unloaded (n=89) (22.47%) | Unlocked† (n=62) (17.24%) | Locked (n=101) (24.75%) |
| Marital status | Married/remarried | Yes (n=164) (48.12%) | No (n=86) (39.63%) | Yes (n=80) (58.82%) | No (n=70) (32.71%) | Yes (n=56) (41.18%) | No (n=144) (67.29%) | Yes (n=35) (51.47%) | No (n=42) (47.19%) | Yes (n=25) (40.32%) | No (n=53) (52.48%) | Yes (n=33) (48.53%) | No (n=47) (52.81%) | Yes (n=37) (59.68%) | No (n=48) (47.52%) |
| Multiple adult household | Yes | 57 (16.52%) | 157 (73.36%) | 129 (95.56%) | 6 (4.44%) | 77 (36.67%) | 15 (22.73%) | 9 (10.11%) | 13 (21.67%) | 11 (10.89%) |
| Parenting responsibilities | No | 26 (19.85%) | 105 (80.15%) | 35 (53.03%) | 35 (39.33%) | 38 (63.33%) | 36 (35.64%) | 22 (36.67%) | 65 (64.36%) |
| Military sexual trauma | None | 32 (25.60%) | 65 (32.56%) | 38 (29.46%) | 59 (30.26%) | 15 (23.81%) | 26 (30.59%) | 17 (28.81%) | 24 (25.26%) |
| Sexual Harassment | 34 (27.20%) | 44 (22.11%) | 42 (32.56%) | 36 (18.46%) | 22 (34.92%) | 22 (25.88%) | 21 (35.59%) | 27 (28.42%) |
| Sexual Assault | 49 (47.20%) | 90 (45.23%) | 49 (37.98%) | 100 (51.28%) | 26 (41.27%) | 37 (43.53%) | 21 (35.59%) | 44 (46.32%) |
| IPV – lifetime | Yes | 108 (81.20%) | 180 (82.95%) | 115 (84.56%) | 173 (80.84%) | 57 (83.82%) | 73 (82.02%) | 52 (83.87%) | 84 (83.17%) |
| No | 25 (18.80%) | 37 (17.05%) | 21 (15.44%) | 41 (19.16%) | 11 (16.18%) | 16 (17.98%) | 10 (16.13%) | 17 (16.83%) |
| IPV – past-year | Yes | 45 (33.83%) | 89 (41.20%) | 50 (36.76%) | 84 (39.44%) | 26 (38.24%) | 33 (37.08%) | 24 (38.71%) | 34 (33.66%) |
| No | 88 (66.17%) | 127 (58.80%) | 86 (63.24%) | 129 (60.56%) | 42 (61.76%) | 56 (62.92%) | 38 (61.29%) | 67 (66.34%) |
| Provisional PTSD | Yes | 57 (42.86%) | 99 (45.83%) | 57 (41.91%) | 99 (46.48%) | 30 (44.12%) | 32 (35.96%) | 20 (32.26%) | 43 (42.57%) |
| No | 76 (57.14%) | 117 (54.17%) | 79 (58.09%) | 114 (53.52%) | 38 (55.88%) | 57 (64.04%) | 42 (67.74%) | 58 (57.43%) |
| SI – lifetime | Yes | 50 (37.88%) | 96 (44.65%) | 56 (41.18%) | 90 (42.65%) | 33 (48.53%) | 28 (31.82%) | 27 (43.55%) | 38 (38.00%) |
| No | 82 (62.12%) | 119 (55.35%) | 80 (58.82%) | 121 (57.35%) | 35 (51.47%) | 60 (68.18%) | 35 (56.45%) | 62 (62.00%) |
| SI – past-month | Yes | 11 (8.33%) | 27 (12.56%) | 12 (8.82%) | 26 (12.32%) | 11 (16.18%) | 5 (5.68%) | 5 (8.06%) | 11 (11.00%) |
| No | 121 (91.67%) | 188 (87.44%) | 124 (91.18%) | 185 (87.68%) | 57 (83.82%) | 83 (94.32%) | 57 (91.94%) | 89 (89.00%) |
| SA - lifetime | Yes | 25 (18.80%) | 56 (26.05%) | 26 (19.12%) | 55 (25.94%) | 15 (22.06%) | 16 (17.98%) | 13 (20.97%) | 19 (18.81%) |
| No | 108 (81.20%) | 159 (73.95%) | 110 (80.88%) | 157 (74.06%) | 53 (77.94%) | 73 (82.02%) | 49 (79.03%) | 82 (81.19%) |

Note. This table displays frequencies and percentages. Significant p-values (<.05) from chi-square tests and Fisher’s exact tests (for race and post-Vietnam/Peacetime service) are bolded.

*Some or all firearms are stored loaded; †some or all firearms are stored unlocked; ‡LGBTQ+ A lesbian, gay, bisexual, questioning + asexual; §IPV intimate partner violence; ‖PTSD post-traumatic stress disorder; ‡§SI suicidal ideation; **SA suicide attempt

Data missing for the following variables for firearm ownership: age (n=3), race (n=1), ethnicity (n=1), sexual orientation (n=3), branch of service (n=2 for personal); deployment (n=10), combat zone (n=10), era (n=1), region (n=1), rurality (n=1), parenting responsibilities (n=5), multiple adult household (n=5), military sexual trauma (n=26), IPV – past-year (n=1), PTSD (n=1), SI lifetime (n=3), SI past-month (n=3), SA lifetime (n=2)

Data missing for the following variables for firearm storage practices: age (n=1), race (n=1), ethnicity (n=1), sexual orientation (n=2), parenting responsibilities (n=2), branch of service (n=1); deployment (n=5), combat zone (n=5), military sexual trauma (n=11), SI lifetime (n=1), SI past-month (n=1)
residing in the home (APR=6.26 [95% CI=2.87, 13.63]) were associated with increased prevalence of another household member owning firearms. Those with parenting responsibilities were also more likely to report household firearm ownership: PR=1.46 [95% CI=1.12, 1.91], but this was not significant when adjusting for rurality and sexual orientation. Although military sexual harassment was not associated with household firearms in unadjusted analyses, women who experienced military sexual harassment were more likely to report having household firearms after accounting for rurality and sexual orientation: APR=1.46 [95% CI=1.09, 1.96]. Results were similar in sensitivity analyses adjusting for personal firearm ownership.

Firearm Storage (Table 5)
Loaded. Participants with lifetime SI, PR=1.47 [95% CI=1.03, 2.08], or past-month SI, PR=1.69 [95% CI=1.15, 2.48], were more likely to report storing firearms loaded. These associations were not significant in the sensitivity analysis limited to personal firearm owners. Those with other adult(s) living in the home were less likely to store firearms loaded (PR=0.62 [95% CI=0.43, 0.91]).

Unlocked. Participants with parenting responsibilities were less likely to report storing firearms unlocked in unadjusted and adjusted analyses (APR=0.61 [95% CI=0.38, 0.97]). Results were similar in the sensitivity analysis limited to

| Variable                                      | Unadjusted | Adjusted* |
|-----------------------------------------------|------------|-----------|
| Military sexual trauma (MSH† only vs none)   | 324        | 321       |
| Military sexual trauma (MSA‡ vs none)         | 324        | 321       |
| Intimate partner violence - lifetime          | 350        | 346       |
| Intimate partner violence - recent            | 349        | 345       |
| Provisional §PTSD                             | 349        | 345       |
| Marital status                                | 350        | 346       |
| Multiple adult household                      | 345        | 341       |
| Parenting responsibilities                     | 345        | 341       |
| Suicidal ideation - lifetime                  | 347        | 343       |
| Suicidal ideation - past-month                | 348        | 344       |

Note. ns refer to sample sizes across analyses, which vary due to specific variables having some missing data
*Adjusted for age and rurality
†MSH military sexual harassment
‡MSA military sexual assault
§PTSD post-traumatic stress disorder
Table 5 Factors Associated with Storing Firearms Loaded or Unlocked Among Women Veterans

| Variable                        | Loaded Unadjusted | Loaded Adjusted* | Unlocked Unadjusted | Unlocked Adjusted* |
|---------------------------------|-------------------|------------------|---------------------|-------------------|
| Military sexual trauma (MSH† only vs none) | 148 1.37 [0.83, 2.25] 0.22 | 154 1.06 [0.65, 1.71] 0.83 | 151 1.07 [0.67, 1.71] 0.78 |
| Military sexual trauma (MSA‡ vs none) | 148 1.13 [0.68, 1.86] 0.64 | 154 0.78 [0.47, 1.29] 0.33 | 151 0.83 [0.5, 1.35] 0.45 |
| Intimate partner violence - lifetime | 157 1.08 [0.66, 1.77] 0.77 | 163 1.03 [0.60, 1.76] 0.91 | 158 1.17 [0.68, 2.01] 0.56 |
| Intimate partner violence - recent | 157 1.03 [0.71, 1.48] 0.88 | 163 1.14 [0.77, 1.7] 0.51 | 158 1.29 [0.87, 1.91] 0.20 |
| Provisional PTSD † | 157 1.21 [0.85, 1.73] 0.29 | 163 0.76 [0.49, 1.16] 0.20 | 158 0.85 [0.55, 1.32] 0.47 |
| Marital status | 157 1.10 [0.77, 1.58] 0.60 | 163 0.74 [0.49, 1.1] 0.14 | 158 0.89 [0.59, 1.35] 0.59 |
| Multiple adult household | 155 0.62 [0.43, 0.91] 0.01 | 161 0.63 [0.41, 0.98] 0.04 | 158 0.73 [0.48, 1.12] 0.15 |
| Parenting responsibilities | 155 0.73 [0.51, 1.05] 0.09 | 161 0.49 [0.32, 0.75] 0.001 | 158 0.61 [0.38, 0.97] 0.04 |
| Suicidal ideation - lifetime | 156 1.47 [1.03, 2.08] 0.032 | 162 1.15 [0.78, 1.7] 0.48 | 157 1.11 [0.75, 1.63] 0.60 |
| Suicide attempt - lifetime | 156 1.69 [1.15, 2.48] 0.0078 | 162 0.80 [0.38, 1.7] 0.56 | 157 0.73 [0.32, 1.69] 0.46 |
| Suicide attempt - lifetime | 157 1.15 [0.76, 1.75] 0.51 | 163 1.09 [0.68, 1.74] 0.73 | 158 1.11 [0.70, 1.75] 0.66 |

Note. Analyses were specific to those who reported having firearms stored in or around their homes. Significant p-values (<.05) are bolded. ns refer to sample sizes across analyses, which vary due to there being some missing data for specific variables.

*Adjusted for age and having served in a combat zone
†CI confidence interval
‡MSH military sexual harassment
§MSA military sexual assault
PTSD post-traumatic stress disorder

DISCUSSION

To our knowledge, this study is the first to examine the prevalence and correlates of firearm access among women Veterans using VHA RHC. Findings underscore the high prevalence of firearm access in this population, which most commonly entailed personally owning firearms and other household member(s) owning firearm(s). Considering the high prevalence of personal and household firearms in our sample, relative to other samples of women Veterans, it is important that providers ask about access to both personal and household firearms when assessing suicide risk with women Veterans.

Women Veterans who were married or residing with other adult(s) living in the home were less likely to report storing firearms unlocked, but only in unadjusted analyses (PR=0.63 [95% CI=0.41, 0.98]).

Prevalence of personal and household firearms in our sample underscores the need to determine optimal ways to increase safe firearm storage (e.g., locked, unloaded) among women Veterans in RHC. Women Veterans who were married or residing with other adult(s) were more likely to report living in households with firearms that other household members owned. However, those with other adult(s) living in the home were less likely to report storing firearms loaded or unlocked (unadjusted analyses). Thus, including other household members in lethal means safety efforts may bolster the prevention of suicide among women Veterans.

Parenting responsibilities also related to firearm storage. Women Veterans with parenting responsibilities were less likely to report storing firearms unlocked, consistent with other research. One possible explanation is that women Veterans with parenting responsibilities lock firearms to protect their children from firearm injuries. An important point of intervention may entail discussing risks posed to self and youths of storing household firearms unsafely. In other studies, adults with children at home were more likely to report believing it is at least sometimes appropriate for providers to discuss firearms with their patients, if supported in future research with women Veterans, this would bode well for RHC providers having such conversations with women Veterans.

Interpersonal violence was another salient factor associated with firearm behaviors. Women Veterans who experienced military sexual harassment were more likely to report having household firearms owned by others. One potential explanation is that, for women Veterans sexually harassed during military service, firearm access through another household member increases perceived safety. However, unexpectedly, neither MST nor probable PTSD was associated with personal firearm ownership or storage. Thus, specific trauma characteristics (e.g., traumatization frequency, perpetrator identity) or sequelae (e.g., PTSD hyperarousal) may be more influential.

Notably, recent IPV was associated with a lower likelihood of personal firearm ownership before adjusting for household firearms. This is counter to a prior study in which women who experienced lifetime IPV (threats or physical violence) were twice as likely to report keeping a weapon nearby to feel safe. One potential explanation for our finding is that women who recently experienced IPV feel unsafe owning firearms given the ongoing threat that such firearms could be used against them. Additional research is warranted to further elucidate the role of IPV in women Veterans’ firearm ownership.
Women with past-month or lifetime SI were more likely to report having loaded firearms. This finding is disconcerting as both SI and unsafe storage are risk factors for suicide. 40 This suggests that, despite efforts to bolster safe firearm storage among Veterans, 41 enhanced initiatives are necessary within VHA RHC settings. Recent articles have noted the import of accounting for the function of firearm access during lethal means safety discussions 12,13 and collaboratively identifying methods to enhance safety. 42 Nonetheless, as the association between SI and loaded firearms was not significant in the sensitivity analysis, additional research is warranted.

Limitations
Despite minimal non-response bias 18, the overall response rate was low, with low base rates for many constructs (e.g., recent SI, suicide attempt). The focus on younger women Veterans accessing VHA RHC also limits generalizability. Our analysis of IPV, probable PTSD, and MST as categorical variables precludes examining if the severity of these factors relates to firearm access. Additionally, although we presented p-values alongside effect estimates to allow readers to judge clinical and statistical significance, 32,33 multiple comparisons can inflate Type I error. The cross-sectional design precludes drawing conclusions regarding the directionality of observed associations. Finally, the firearm items have not been psychometrically validated.

CONCLUSIONS
This study provides knowledge regarding firearm access among women Veterans using VHA RHC. As a substantial portion of women Veterans reported personal and/or household firearms and unsafe storage, this suggests a need to assess for firearm access and storage in this population, particularly when suicide risk is elevated. Interpersonal factors (marital status, parenting responsibilities, presence of other household adults), trauma (IPV, military sexual harassment), and SI appear relevant to women Veterans’ firearm access. Incorporating these findings into suicide prevention initiatives (e.g., lethal means safety counseling) within VHA RHC settings is essential. In doing so, suicide prevention efforts can be tailored and delivered within a healthcare setting commonly accessed by women Veterans.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s11606-022-07587-1.

Acknowledgements: We would like to acknowledge Laurel Gaeddert for her many contributions to this study and Jerti Forster for statistical consultation.

Corresponding Author: Lindsey L. Monteith, PhD; VA Rocky Mountain Mental Illness, Research, Education and Clinical Center (MIRECC) for Suicide Prevention, Rocky Mountain Regional VAMC, 1700 N. Wheeling Street, Aurora, CO 80045, USA (e-mail: Lindsey. Monteith@va.gov).

Funding The material presented is based upon work supported in part by the Department of Veterans Affairs (VA) and the Rocky Mountain MIRECC for Veteran Suicide Prevention. This work was supported by the VA Health Services Research and Development Grant/Award Number: 112-HX002526-01A1. The views expressed are those of the authors and do not necessarily represent the views or policy of the VA or the United States Government.

Declarations:
Conflict of Interest: The authors report having grant funding from the Department of Veterans Affairs (VA), Health Services Research and Development Service, VA Rehabilitation Research and Development Service, VA Office of Mental Health and Suicide Prevention, VA Office of Patient Safety, VA Office of Women’s Health, and Boeing for research projects and grants focused on Veterans, suicide prevention, and/or mental health.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article’s Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/.

REFERENCES
1. US Department of Veterans Affairs, Office of Mental Health and Suicide Prevention. 2005-2018 National Data Appendix. Available at: https://www.mentalhealth.va.gov/docs/data-sheets/2018/2005-2018-National-Data-Appendix_508.shtm.
2. US Department of Veterans Affairs, Office of Mental Health and Suicide Prevention. 2020 National Veteran Suicide Prevention Annual Report. Available at: https://www.mentalhealth.va.gov/docs/data-sheets/2020/2020-National-Veteran-Suicide-Prevention-Annual-Report-11-2020-508.pdf.
3. Stierauss, JL, Miller Lf, Strickland S. Applying research to advance suicide prevention in women veterans. Med Care. 2021;59:6-8.
4. Fryne SM, Phibbs CS, Saechao F, et al. Sourcebook: Women veterans in the Veterans Health Administration. Volume 4: Longitudinal trends in sociodemographics, utilization, health profile, and geographic distribution. Available at: https://www.womenshealth.va.gov/WOMEN-SHEA2021/SourcebookV4/index.asp.
5. Katon JG, Hoggatt KJ, Balasubramanian V, et al. Reproductive health diagnoses of women veterans using Department of Veterans Affairs health care. Med Care. 2015;53:63-67.
6. Hoffmire CA, Brenner LA, Katon J, et al. Women veterans’ perspectives on suicide prevention in reproductive health care settings: An acceptable, desired, unmet opportunity. Womens Health Issues. 2022 Mar 8.
7. Guanzini L, Denneson LM, Press N, et al. Trust is the basis for effective suicide risk screening and assessment in veterans. J Gen Intern Med. 2013;28(9):1215-1221.
8. American College of Obstetricians and Gynecologists. Gun Violence and Safety: Statement of Policy. Available at: https://www.acog.org/clinical-information/policy-and-position-statements/statements-of-policy/2019/gun-violence-and-safety. Accessed June 26, 2021.
9. Anestis MD, Khazaem LR, Anestis JC. Differentiating suicide decedents who died using firearms from those who died using other methods. Psychiatry Res. 2017;252:23-28.
10. Dempsey CL, Benedek DM, Ziuromski KL et al. Association of firearm ownership, use, accessibility, and storage practices with suicide risk among US Army soldiers. JAMA Network Open. 2019; 2(6), 195383-195383.
11. Miller M, Azrael D, Hepburn L, Hemenway D, Lippmann SJ. The association between changes in household firearm ownership and rates of suicide in the United States, 1981–2002. Injury Prevention. 2006;12(3), 178-182.
12. Monteith LL, Holliday R, Dorsey Holliman BA, Brenner LA, Simonetti JA. Understanding women veterans’ experiences and perspectives of firearms. J Clin Psychol. 2020;76(9),1736-1753.
13. Sadler AG, Mengeling MA, Cook BL, Turner JC. Factors associated with U.S. military women keeping guns or weapons nearby for personal security following deployment. J Women’s Health. 2021;30(1),103-112.
14. Simonetti JA, Azrael D, Rowhani-Rahbar A, Miller M. Firearm storage practices among American veterans. Am J Prev Med. 2018;55,445-454.
15. Azrael D, Cohen J, Salfci C, Miller M. Firearm storage in gun-owning households with children: Results of a 2015 national survey. J Urban Health. 2018;95(3),295-304.
16. Cleveland EC, Azrael D, Simonetti JA, Miller M. Firearm ownership among American Veterans: Findings from the 2015 National Firearm Survey. Inj Epidemiol. 2017;4(1),33.
17. Valenstein M, Walters H, Pfeiffer PN, et al. Possession of household firearms and firearm-related discussions with clinicians among veterans receiving VA mental health care. Arch Suicide Res. 2019;260-279.
18. Gaeddart LA, Schneider AL, Miller CN, et al. Recruitment of women veterans into suicide prevention research: Improving response rates with enhanced recruitment materials and multiple survey modalities. Res Nurs Health. 2020;43(5),538-47.
19. Centers for Disease Control and Prevention. 2017 Behavioral Risk Factor Surveillance System Questionnaire. Available at: https://www.cdc.gov/brfss/questionnaires/pdf-ques/2017_BRFSS_Pub_Ques_508_tagged.pdf Accessed.
20. Mengeling MA, Burkitt KH, True G, et al. Sexual trauma screening for men and women: Examining the construct validity of a two-item screen. Violence Vict. 2019;34(1),175-193.
21. Blais RK, Brigosone E, Fargo JD, Livingston WS, Andrensen FJ. The importance of distinguishing between harassment-only and assault military sexual trauma during screening. Mil Psychol. 2019;31(3),227-232.
22. Monteith LL, Holliday R, Schneider AL, Forster JE, Bahraini NH. Identifying factors associated with suicidal ideation and suicide attempts following military sexual trauma. J Affect Disord. 2019;252,300-309.
23. Sherrin KM, Sinacore JM, Li XQ, Zikter RE, Shalal A. HITs: A short domestic violence screening tool for use in a family practice setting. Fam Med. 1998;30(7),508-512.
24. Iverson KM, King MW, Gerber MR et al. Accuracy of an intimate partner violence screening tool for women VHA patients: A replication and extension. J Trauma Stress. 2015;28(1),79-82.
25. Iverson KM, King MW, Resick PA, Gerber, MR, Kúmerling R, Vogt D. Clinical utility of an intimate partner violence screening tool for women VHA patients. J Gen Intern Med. 2013;28(10),1288-1293.
26. Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, Schnurr PP. The PTSD Checklist for DSM-5 (PCL-5). Available at: www.ptsd.va.gov. Accessed February 20, 2021.
27. Bovin MJ, Marx BP, Weathers FW et al. Psychometric properties of the PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (PCL-5) in Veterans. Psychol Assess. 2016;28(11),1379-1391.
28. Posner K, Brown GR, Stanley B et al. The Columbia-Suicide Severity Rating Scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. Am J Psychiatry. 2008;168(12),1266-1277.
29. Blohm DA, Karras E, Bossarte RM. Response variations to survey items about firearms in the 2004 and 2017 Behavioral Risk Factor Surveillance System. Am J Health Promot. 2021;35:253-261.
30. Hetz AJ, Cohen NL, Holleran L, Álvarez JA, Boren-Miller, MO. Firearm ownership among military veterans with PTSD: A profile of demographic and psychosocial correlates. Military Medicine. 2016;181(10),1207-1211.
31. Hepburn L, Miller M, Azrael D, Henemway D. The US gun stock: Results from the 2004 National Firearms Survey. Inj Prev. 2007;13(1),15-19.
32. Pereneger TV. What’s wrong with Bonferroni adjustments. BJMJ. 1998;316(7139),1236-1238.
33. Rothman KJ. No adjustments are needed for multiple comparisons. Epidemiol. 1990;1(1),43-46.
34. Albright TL, Burge SK. Improving firearm storage habits: Impact of brief office counseling by family physicians. J Am Board Fam Med. 2003;16(1), 40-46.
35. Grossman DC, Mueller BA, Reidy C et al. Gun storage practices and risk of youth suicide and unintentional firearm injuries. JAMA. 2005;293(8),707-714.
36. Betz ME, Azrael D, Barber C, Miller M. Public opinion regarding whether speaking with patients about firearms is appropriate: Results of a national survey. Ann Intern Med. 2016;165(8), 543-550.
37. Stanley IH, Hom MA, Marx BP, Regeer MA. Post-traumatic stress disorder and firearm ownership, access, and storage practices: A systematic review. Clin Psychol. 2020;27(3), 12358.
38. Stanley IH, Anestis MD. The intersection of PTSD symptoms and firearm storage practices within a suicide prevention framework: Findings from a US Army National Guard sample. Psychol Serv. 2020 Jan 9.
39. Zesoi AM, Malinski R, Turcihan B. Risks and targeted interventions: firearms in intimate partner violence. Epidemiol Rev. 2016;38(1),125-39.
40. McHugh CM, Corderoy A, Ryan CJ, Hickie IB, Large MM. Association between suicidal ideation and suicide: Meta-analyses of odds ratios, sensitivity, specificity and positive predictive value. BJPsych Open. 2019;5(2),18.
41. Department of Veterans Affairs. 2019 National Veteran Suicide Prevention Annual Report. Available at: https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf .
42. Hoyt T, Holliday R, Simonetti JA, Monteith LL. Firearm lethal means among military personnel and veterans: Overcoming barriers using a collaborative approach. Prof Psychol Res Pr. 2021 May 20.

Publisher’s Note: Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.