Women serving in the U.S. military are more likely than men to report mental health problems, including “high anxiety” (22.8 percent of women, 15.5 percent of men) and “high depression” (12.0 percent of women, 9.2 percent of men; Barlas et al., 2013). Luxton, Skopp, and Maguen (2010) found that female service members reported more depressive symptoms than male service members, as well as more posttraumatic stress disorder (PTSD) symptoms following combat trauma, and Hourani et al. (2015) reported a general trend toward women reporting more PTSD symptoms. The 2018 Health Risk Behavior Survey showed similar gender differences, with women’s survey responses showing higher prevalence of past-month “serious psychological distress” (12.0 percent) and probable PTSD (13.9 percent) than men’s (9.1 percent and 9.6 percent, respectfully; Meadows, et al., 2021). Similar findings are reported in the Canadian military, with regular force women more likely to report symptoms consistent with past-year PTSD than men (Mota et al., 2012). These effects are similar to those observed in civilian samples, where women have higher odds of reporting internalizing dis-

KEY FINDINGS

- Female service members are more likely than their male counterparts to report worse physical health, symptoms of depression, and symptoms of posttraumatic stress disorder (PTSD). Female service members are also much more likely to report unwanted gender-based experiences—sexual harassment, sexual assault, and gender discrimination.

- Exposure to unwanted gender-based experiences explains virtually all of these gender differences in health.

- This suggests a strong rationale for investing greater attention and resources into preventing sexual harassment and gender discrimination, and for providing care to those who have experienced them.

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a RAND Corporation.
b National Center for PTSD, Boston University School of Medicine.
c Medical University of South Carolina.
The experience of sexual harassment or sexual assault while serving in the military has been shown to have broad deleterious correlates.

orders in the prior year (Kessler et al., 2005) and reporting having “serious psychological distress” (Weissman et al., 2015). However, gender differences in military samples might be expected to be smaller than in the civilian literature, because of population differences in mental and physical health risk factors. That is, the military selects members for health and fitness, all are employed and have access to health care, and the daily roles and activities of men and women may be more similar to each another than in the civilian population.

Women also experience much higher rates of sexual harassment, gender discrimination, and sexual assault than men, and for service members this gender gap is apparent both during and prior to their military service. Specifically, among active duty military personnel, past-year sexual assault in 2014 was estimated at nearly 5 percent for women compared with 1 percent for men, past-year experience of sexual harassment (defined as a sexually hostile workplace environment) was estimated at 20 percent for women versus 7 percent for men, and past-year experience of gender discrimination was estimated at about 12 percent for women but less than 1 percent for men (Farris et al., 2015). History of lifetime sexual assault experience was 18 percent for women and 3 percent for men (Jaycox et al., 2015). Similar statistics are also seen among recent veterans (Barth et al., 2016), former reservists (Street et al., 2008), and veterans seeking care in the Veterans Health Administration (VHA; Maguen et al., 2012). These unwanted gender-based experiences are associated with poor outcomes, including both physical and mental health problems (e.g., Suris and Lind, 2008; Turchik and Wilson, 2010). The experience of sexual trauma (sexual harassment or sexual assault) while serving in the military has been shown to have broad deleterious correlates, including depression, anxiety, PTSD, substance use, and poor health outcomes among veterans seeking care in the VHA (Hankin et al., 1999; Kimerling et al., 2010, Kimerling et al., 2007; Maguen et al., 2012). A 2015 study of college student military personnel showed that sexual assault or harassment during military service was associated with increased suicide risk (Bryan, Bryan, and Clemans, 2015).

The high frequency of gender-linked stressors experienced by military women, and the strong associations between these experiences and negative physical and mental health outcomes, suggest the possibility that these gender-linked stressors may be an important explanatory variable for the reported gender differences in mental and physical health problems. This linkage would also be consistent with the minority stress model explaining observed differences in mental health outcomes among those exposed to discrimination and other stressors as a member of a minority group (Meyer, 2003). In partial support of this hypothesis, in the longitudinal Millennium Cohort Study, no significant gender differences were observed in risk of PTSD or PTSD severity after controlling for demographics and prior sexual assault (Jacobson et al., 2015). However, the Millennium Cohort Study did not include a rigorous assessment of recent sexual harassment, sexual assault, or gender discrimination experiences, so it was impossible to determine the impact of these types of proximal experiences on mental health outcomes. In addition, as of early 2022, no investigations have explored the effect of gender-linked stressors on gender differences in health outcomes beyond PTSD.

This report expands on the existing literature to examine the relationship between gender and self-reported gender discrimination, sexual harassment, sexual assault, and physical and mental health functioning in a large representative sample of active duty military personnel. Specifically, we hypothesized that active duty women would report more-severe symptoms of depression, PTSD, and physical health
problems than men, but that these gender differences might be reduced or eliminated if unwanted gender-based experiences (sexual assault, sexual harassment, and gender discrimination) were accounted for. We examined the contribution of both recent assault (past year) and lifetime sexual assault to acknowledge the potential contribution of both recent and past experiences on current psychological distress, as in other studies (e.g., Himmelfarb, Yaeger, and Mintz, 2006).

Methods

Data and Sample

Data used for these analyses come from survey data collected as part of the 2014 RAND Military Workplace Study (RMWS). RMWS was an independent, confidential study using a representative sample of 477,513 active component service members, including a census of all women and a 25 percent probability sample of men. A 30.4 percent response rate resulted in 145,300 completed surveys. Because of cost and interview length considerations, the psychological distress scales described below were not included in all surveys but only in a randomly selected subset of 17,502 surveys. Our primary results examined the physical and mental health of these 17,502 respondents, using the survey design and sampling weights developed for them in the broader RMWS project (Morral et al., 2014; Morral et al., 2015; Morral et al., 2016). Sampling weights ensured that the gender, age, pay grade, race, ethnicity and other characteristics matched those of the active component military as of April 2014. As such, the weighted sample was 15.0 percent female, 18.6 percent were officers, and the Army, Navy, Air Force, and Marine Corps represented 38.1 percent, 23.8 percent, 23.9 percent, and 14.1 percent of the sample, respectively. The study was approved by the RAND Human Subjects Protection Committee.

Measures

Independent Variables

Gender was established using official personnel records maintained by the U.S. Department of Defense. These personnel records could mischaracterize the gender identification of a small proportion of service members whose perceived gender identity differed from that recorded in official military records.

A main thrust of the 2014 RMWS was to develop new measures of sexual harassment, gender discrimination, and sexual assault that closely align with legal definitions of these events, and these measures have since been adopted by the Department of Defense in its ongoing surveillance of these issues in the biennial Workplace and Gender Relations Survey. Respondents were counted as experiencing a past-year sexual assault if their pattern of responses indicated they had an experience meeting all of the criteria of a sexual assault crime as defined in the Uniform Code of Military Justice (UCMJ), Article 120 (Title 10 USC § 920). This section of the survey included detailed behaviorally specific questions about unwanted sexual or physical experiences that occurred within the past year, along with other questions addressing legal elements related to whether the experience involved coercion and consent and whether its purpose was sexual or to humiliate or demean the respondent (see Morral et al., 2014, Appendix B, for a comparison of the UCMJ and survey items). A shortened series of questions were asked about experiences prior to the past 12 months. These included an introduction—

These questions assess experiences of an abusive, humiliating, or sexual nature, and that occurred even though you did not want it and did not consent. Please include an experience regardless of who did it to you or where it happened. ‘Did not consent’ means that you told or showed them that you were unwilling, that they used physical force or threats to make you do it, or that they did it to you when you were unconscious, asleep, or so high or drunk that you could not understand what was happening.

—followed by five items querying about penetrative, nonpenetrative, and attempted unwanted contacts. Endorsement of any of these experiences qualified the individual as experiencing an assault prior to the past 12 months. Thus, two indices were derived from these data: past-year sexual assault and life-
time sexual assault. For either variable, the assault is not necessarily tied to the military environment—it could occur outside of work or off base. Because these two variables are highly correlated (Pearson correlation = 0.53), we tested each separately in the analytic models.

The scale assessing past-year exposure to sexual harassment was made up of 11 items assessing exposure to a sexually hostile workplace environment (Morral et al., 2014). The items include experiences such as being exposed at work to unwanted sexually explicit jokes or materials, comments about sexual activity, or inappropriate touching that made the respondent uncomfortable, angry, or upset. Thus, they are explicitly tied to military workplace experiences. To measure legal definitions of sexual harassment, subsequent questions queried about whether the activity continued after the harasser knew or should have known it was unwelcome, and whether the activity was such that any reasonable person would consider it offensive. In this study, an individual who positively endorsed any of the 11 experiences in a way that would likely meet the legal threshold for harassment was defined as having experienced sexual harassment in the prior year.

Past-year perception of gender discrimination consisted of two items tapping experiences of (1) someone from work saying people with the respondent’s gender are not as good as the other gender at the respondent’s particular job, or that people of the respondent’s gender should be prevented from having their job, and (2) that the respondent was mistreated, ignored, or insulted at work because of their gender (Morral et al., 2014). For each item, subsequent questions asked whether that experience harmed or limited their career. Individuals with one or both of the qualifying experiences who also indicated the experience harmed or limited their career—“For example, did they hurt your evaluation/fitness report, affect your chances of promotion or your next assignment?”—were coded as having perceived gender discrimination in the prior year.

**Dependent Variables**

We assessed four dependent variables. The RMWS used a single item to measure current overall health, drawn from the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36; Ware and Sherbourne, 1992). Without specifying a time frame, the question asks respondents, “In general, would you say your health is . . .” and the respondent picks among “excellent,” “very good,” “good,” “fair,” or “poor.” We used the continuous score on this item, ranging from 1 to 5, with a 5 being poor health. This single item has been shown to have high validity in predicting a variety of physical health status measures (Cunny and Perri, 1991).

Depressive symptoms were assessed using the eight-item Patient Health Questionnaire (PHQ-8; Kroenke et al., 2009). Symptoms include lack of interest or pleasure in doing things; feeling down, depressed, or hopeless; and sleep, appetite, or energy disturbance. Items are rated on a four-point Likert scale indicating how often the respondent was bothered in the past two weeks by the listed symptoms (not at all, several days, more than half the days, or nearly every day). We derived a continuous total severity score by summing the eight items (range 0–24; higher scores indicating more symptom severity), as used in other studies and similar to scoring the PHQ-9 (Kroenke, et al., 2010).

For PTSD, a dichotomous introductory item drawn from the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5; Prins et al., 2016) first queried about lifetime traumatic event exposure:

Sometimes things happen to people that are unusually or especially frightening, horrible, or traumatic. For example, a serious accident or fire, physical or sexual assault or abuse, earthquake or flood, war, seeing someone be killed or seriously injured, or having a loved one die through homicide or suicide.

The question then asks, “Have you ever experienced this kind of event? Please count any event in your entire life.”

Among those who answered yes to this item, PTSD symptoms were assessed in the past month using the five items from the PC-PTSD-5 (Prins et al., 2016). These items are rated on a yes/no scale and include questions about nightmares or intrusive thinking, avoidance of trauma reminders, being on guard or easily startled, feeling detached from
people, activities or surroundings, and blaming one’s self or others for the event. Although primarily designed to be used as a screener like its predecessor, the PC-PTSD (Prins et al., 2003), the PC-PTSD-5 has also been used for research purposes as a continuous severity score by counting the number of items endorsed (e.g., Asarnow et al., 2008; Goldstein et al., 2007; Luxton, Skopp, and Maguen, 2010; Maguen et al., 2012). We used the continuous score in this study, with a range of 0 to 5 and higher scores indicating more PTSD symptoms.

Control Variables
Demographic and workplace variables were controlled in all analyses. These variables included service (Army, Navy, Marine Corps, Air Force), pay-grade (E1–E3, E4, E5–E6, E7–E9, O1–O3, O4–O6, W1–W5), age, Hispanic ethnicity, and five indicators of race (American Indian or Alaska Native, Asian or Pacific Islander, African American or Black, White, and Other).

Analytic Approach
We used a three-stage modeling approach to estimate the effect of gender and unwanted gender-based experiences on mental and physical health. In the first model, we entered only gender as a predictor of mental and physical health, while also controlling for demographic and workplace variables (service, age, paygrade, Hispanic ethnicity, and race). In the second model, we added the unwanted gender-based experiences (past-year sexual harassment, past-year gender discrimination, past-year sexual assault) to the model as additional predictors. Finally, we ran the same model again but included lifetime sexual assault as a predictor rather than past-year sexual assault. These models were run on the 17,502 RMWS respondents using SAS SURVEY REG to perform a survey weighted linear regression examining reports of overall physical health and depressive symptoms and using SAS SURVEYLOGISTIC to perform a survey weighted logistic regression examining reports of any lifetime trauma exposure. Three additional models were run on the reduced sample of individuals who reported traumatic event exposure and were asked about PTSD symptoms (N = 7,979), following the same procedures using SAS SURVEY REG.

Results
Weighted unadjusted means by gender are presented in Table 1. Female military personnel reported slightly worse physical health, more depressive symptoms, higher likelihood of lifetime trauma, and higher levels of PTSD symptoms in these unadjusted data. However, the gender differences were quite modest. In contrast, reports of unwanted gender-based experiences were elevated in female military personnel compared with male service members, with rates of these experiences three to six times higher among women.

Once demographic and workplace variables were controlled, we observed significant, but modest, gender differences in reports of overall health (see Model 1 in Table 2, first panel). Adding the past-year unwanted gender-based experiences to this model, the gender difference was attenuated to about half of the effect, and prior year sexual harassment emerged as a significant correlate of overall health ratings (see Table 2). Using lifetime sexual assault rather than past-year sexual assault in the model did not substantially change the findings.

Similarly, Table 2 (second panel) shows that female service members were more likely to report depressive symptoms after controlling for demographic and workplace characteristics, but the gender difference was not significant once past-year unwanted gender-based experiences were added to the model, and the point estimate for the gender variable changed signs. Past-year sexual harassment and gender discrimination emerged as significant correlates of depressive symptoms. When we used the lifetime sexual assault variable instead of past-year assault in the model, the results were similar except that lifetime sexual assault also emerged as a significant, albeit weak, correlate of depressive symptoms.

To examine PTSD symptoms, we conducted two related analyses, the first on endorsement of lifetime trauma history, and the second on current symptoms of PTSD among those who endorsed a trauma. Because of the structure of the survey, we examined
TABLE 1
Weighted Unadjusted Means of Key Outcomes and Predictors, by Gender

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th></th>
<th>Males</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Physical Health</td>
<td>2.21</td>
<td>0.52</td>
<td>2.11</td>
<td>1.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>4.24</td>
<td>3.08</td>
<td>3.81</td>
<td>6.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience of Lifetime Trauma</td>
<td>0.51</td>
<td>0.28</td>
<td>0.45</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD Symptoms</td>
<td>0.89</td>
<td>0.89</td>
<td>0.63</td>
<td>1.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past-Year Sexual Assault</td>
<td>0.05</td>
<td>0.12</td>
<td>0.01</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime Sexual Assault</td>
<td>0.18</td>
<td>0.21</td>
<td>0.03</td>
<td>0.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past-Year Sexual Harassment</td>
<td>0.21</td>
<td>0.23</td>
<td>0.07</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past-Year Gender Discrimination</td>
<td>0.12</td>
<td>0.19</td>
<td>0.02</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: SD = standard deviation.

TABLE 2
Regressions of Overall Health and Depressive Symptoms on Female Gender and Unwanted Gender-Based Experiences

<table>
<thead>
<tr>
<th></th>
<th>Overall Health</th>
<th></th>
<th></th>
<th>Depressive Symptoms</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Estimate (SE)</td>
<td>T-Value</td>
<td>R²</td>
<td>N</td>
<td>Estimate (SE)</td>
</tr>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Gender</td>
<td>16,087</td>
<td>0.16 (0.02)</td>
<td>6.43***</td>
<td>0.07</td>
<td>16,173</td>
<td>0.72 (0.18)</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Gender</td>
<td>15,938</td>
<td>0.08 (0.03)</td>
<td>2.16**</td>
<td>0.08</td>
<td>16,008</td>
<td>−0.15 (0.18)</td>
</tr>
<tr>
<td>Past-Year Sexual Harassment</td>
<td>0.41</td>
<td>(0.07)</td>
<td>5.64***</td>
<td>3.57</td>
<td>(0.42)</td>
<td>8.47***</td>
</tr>
<tr>
<td>Past-Year Perceived Gender Discrimination</td>
<td>0.08</td>
<td>(0.07)</td>
<td>0.95</td>
<td>2.37</td>
<td>(0.39)</td>
<td>6.12***</td>
</tr>
<tr>
<td>Past-Year Sexual Assault</td>
<td>0.08</td>
<td>(0.17)</td>
<td>0.17</td>
<td>0.89</td>
<td>(0.74)</td>
<td>1.21</td>
</tr>
<tr>
<td>Model 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Gender</td>
<td>15,938</td>
<td>0.07 (0.03)</td>
<td>2.33*</td>
<td>0.08</td>
<td>16,008</td>
<td>−0.44 (0.26)</td>
</tr>
<tr>
<td>Past-Year Sexual Harassment</td>
<td>0.40</td>
<td>(0.07)</td>
<td>5.61***</td>
<td>3.20</td>
<td>(0.48)</td>
<td>6.67***</td>
</tr>
<tr>
<td>Past-Year Perceived Gender Discrimination</td>
<td>0.07</td>
<td>(0.07)</td>
<td>1.03</td>
<td>2.07</td>
<td>(0.41)</td>
<td>5.02***</td>
</tr>
<tr>
<td>Lifetime Sexual Assault</td>
<td>0.07</td>
<td>(0.10)</td>
<td>0.76</td>
<td>2.78</td>
<td>(1.16)</td>
<td>2.38*</td>
</tr>
</tbody>
</table>

NOTES: SE = Standard error. All models control for service, age, paygrade, Hispanic ethnicity, and race.
* = p < .05; ** = p < .01; *** = p < .001.
each in turn. Women had greater odds of reporting a lifetime traumatic event than men (odds ratio [OR] = 1.67 [1.51, 1.85]) when other demographic and workplace variables were controlled. When the three past-year unwanted gender-based experiences were added to the model, women still had higher, though somewhat reduced, odds of this type of report (OR = 1.44 [1.29, 1.61]) than men, and the two workplace experiences predicted higher odds of reporting lifetime traumatic event exposure, but not past-year sexual assault (past-year hostile work environment: OR = 1.63 [1.21, 2.02]; past-year gender discrimination: OR = 1.90 [1.43, 2.52]; past-year sexual assault: OR = 1.55 [0.75, 3.23]). When we conducted the same model with lifetime sexual assault rather than past-year assault, results were similar (gender OR = 1.34 [1.18, 1.51]), and all three of the unwanted gender-based experiences predicted higher odds of reporting lifetime traumatic event exposure (hostile work environment: OR = 1.50 [1.10, 2.05]; gender discrimination: OR = 1.79 [1.36, 2.36]; lifetime sexual assault: OR = 2.19 [1.48, 3.24]).

Finally, we examined PTSD symptom severity among individuals who reported having experienced a lifetime traumatic event (n = 7,979) (see Table 3). Just as in the models for depressive symptoms, women reported higher levels of PTSD symptoms than men when gender was examined only with demographic and workplace controls. However, this gender difference was cut to about one-third the size when the past-year unwanted gender-based experiences were added to the model, and all three were significant correlates of PTSD symptoms. When we replaced past-year sexual assault with lifetime sexual assault, results were similar except that the gender difference was completely attenuated. For PTSD, the three unwanted gender-based experiences were similar in the magnitude of their associations with symptoms in the model using lifetime sexual assault.

### Discussion

Using a large and representative sample of active duty service members in the U.S. military and state-of-the-art measures of unwanted gender-based experiences that conform to legal definitions, we found that gender differences in self-reported overall health and

<table>
<thead>
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<th>TABLE 3</th>
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<tr>
<td>Regressions of PTSD Symptoms on Female Gender and Unwanted Gender-Based Experiences</td>
</tr>
<tr>
<td></td>
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<tr>
<td><strong>N</strong></td>
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<tr>
<td>Model 1</td>
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<td>Female Gender</td>
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<td>Model 2</td>
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<tr>
<td>Female Gender</td>
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<tr>
<td>Past-Year Sexual Harassment</td>
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<td>Past-Year Sexual Assault</td>
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<tr>
<td>Female Gender</td>
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<tr>
<td>Past-Year Sexual Harassment</td>
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<tr>
<td>Past-Year Gender Discrimination</td>
</tr>
<tr>
<td>Lifetime Sexual Assault</td>
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</table>

NOTE: All models control for service, age, paygrade, Hispanic ethnicity, and race.

* = p < .05; ** = p < .01; *** = p < .001.
symptoms of PTSD and depression are associated with exposure to sexual assault, sexual harassment, and gender discrimination. This finding is consistent with evidence from other military and civilian samples showing that sexual assault and sexual harassment are associated with health outcomes (e.g., Fitzgerald et al., 1997; Kimerling et al., 2010; Street et al., 2008). We found, however, that exposure to sexual harassment, sexual assault, and gender discrimination explains virtually all of the gender differences in depression and PTSD symptoms, as well as overall health ratings. The findings are also consistent with findings from the Millennium Cohort Study, in which observed gender differences in the development of PTSD were no longer significant after accounting for prior sexual assault (Jacobson et al., 2015).

Sexual assault is frequently a traumatic experience with long-lasting effects on individuals’ health and well-being for both males and females (Hankin et al., 1999; Kimerling et al., 2007; Kimerling et al., 2010, Maguen et al., 2012). Surprisingly, however, past-year sexual harassment had the greatest unique explanatory power for physical health, and past-year sexual harassment and gender discrimination explained the most variance for depressive symptoms. In models using just past-year measures of each variable, the sexual assault variable explained less variance than in the models using lifetime sexual assault for both depressive symptoms and PTSD symptoms. These unwanted experiences were related to but also distinct from endorsing the lifetime traumatic event question. Past-year sexual harassment was associated with greater odds of reporting a lifetime trauma (as expected, because some of the sexual harassment experiences would count as a trauma), but not as much as a sexual assault experience. Among those who endorsed a lifetime traumatic event and therefore reported on PTSD symptoms, all three unwanted gender-based experiences explained a significant amount of the variance in PTSD symptoms and completely attenuated the gender effect for PTSD symptoms.

One reason sexual harassment and gender discrimination might have been comparatively more important in explaining health ratings in this population is that they are experiences that are far more common than sexual assault. Whereas, on average in the military, only 1.5 percent of active component members are sexually assaulted per year, rates of sexual harassment are five times greater, with 21.4 percent of women and 6.6 percent of men reporting harassment each year (Farris et al., 2015). Similarly, gender discrimination is about twice as common as sexual assault (Farris et al., 2015). It is possible, therefore, that sexual assault has a larger effect on each individual’s well-being. This would be consistent with our finding that sexual assault was more strongly associated with endorsing exposure to a lifetime trauma than either sexual harassment or gender discrimination. Nevertheless, the smaller average individual effect of sexual harassment and gender discrimination spread across the much larger population of exposed service members could explain the relative explanatory power of these variables in our models.

Alternatively, it is possible that the nature of sexual harassment and gender discrimination occurring in the workplace makes them insidious, chronic stressors. Survey respondents in this study were still on active duty status in the military and reported these events occurring in the past year, so it is likely that many were still exposed to the perpetrators or environment that allowed these experiences to occur. Although these experiences might not qualify as a Criterion A stressor as defined by The Diagnostic and
and can be sometimes dismissed as lower forms of stress, the data here show a significant relationship with health and well-being. Indeed, there is support for the idea that sexual harassment and other stressful life events can exacerbate PTSD symptoms over and above sexual assault or combat exposure (Wolfe et al., 1998). Recent work places these experiences on a continuum, with sexual harassment also shown to be a predictor of subsequent sexual assault (McNee, Thomsen, and Laurence, 2018; Morrall et al., 2015; Schell et al., 2021; Stander et al., 2018). Indeed, cumulative stress, or “allostatic load,” has been shown to contribute to a variety of health and mental health problems (e.g., Guidi et al., 2021; Slopen, Meyer, and Williams, 2018).

A limitation of this cross-sectional study is that we could not assess whether the observed association between unwanted gender-based experiences and health outcomes is due to a causal effect of sexual assault, sexual harassment, and gender discrimination on women’s elevated self-reported symptoms of depression, anxiety, and poor overall health. Our results are consistent with such an effect but do not prove it. Although care was taken to define specific time intervals for each experience and current symptoms, the respondents completed the survey at a single point in time.

Another limitation is the potential for bias in the self-reports of these unwanted gender-based experiences. Sexual assault, for example, has been shown to be underreported in some studies. However, in this independent study, we assured respondents that the military would never know their responses and that their answers would remain confidential, likely reducing the potential for reporting bias. The use of specific behavioral language to define and assess these experiences (rather than asking about “sexual assault” or “sexual harassment”) also likely reduced some of the reporting bias seen in other studies. The extent to which sexual harassment and gender discrimination might be biased on a confidential survey is unknown. It is unclear how such biases could produce the pattern of results observed.

In addition, we do not have a measure of lifetime sexual harassment because none was included on the survey used here. Little information exists about the long-term impact of sexual harassment and gender discrimination, so we cannot know whether the association between lifetime measures of sexual harassment and gender discrimination would be even greater than what we found with past-year measures. Finally, we do not have a measure of combat trauma exposure in this study, which differentially affects men in the military, nor about other forms of trauma or their severity. The number and types of trauma exposure have been demonstrated to be predictors of PTSD (Jakob et al., 2017; Lebavot et al., 2018). We also did not have available other measures of explanatory variables related to gender differences in mental health, such as social, cognitive, and biological variables, nor measures of broader behavioral health, such as substance abuse.

Sexual harassment and gender discrimination in the military have received far less attention in the press and among members of Congress than has sexual assault. Our findings suggest that although these unwanted workplace experiences may be less traumatic than sexual assault, they are more strongly associated with poor health outcomes at the population level. Other employers have strong incentives to prevent, detect, and end sexual harassment. If they do not, they become liable for large monetary settlements with victims. Members of the armed forces cannot, however, sue their employer. If sexual harassment and gender discrimination are elevating symptoms of ill health among a large portion of the military workforce, this suggests a strong rationale for investing greater attention and resources into preventing sexual harassment and gender discrimination, and for providing care to those who have experienced them. Such programming will need incorporate evidence-based and multipronged prevention, accountability, and deterrence approaches (Acosta, Chinman, and Shearer, 2021).

Note
1 Reference to sexual assault and sexual harassment is based on survey respondents’ answers to questions about their experiences but does not reflect whether any crimes or violations were substantiated by an investigation.

jacobson, i. g., donoho, c. l., crum-cianflone, n. f., & maguen, s. (2015). longitudinal assessment of gender differences in the development of ptsd among us military personnel deployed in support of the operations in iraq and afghanistan. journal of psychiatric research, 68, 30–36.

jakob, j. m., lamp, k., rauch, s. a., smith, e. r., & buchholz, k. r. (2017). the impact of trauma type or number of traumatic events on ptsd diagnosis and symptom severity in treatment seeking veterans. journal of nervous and mental disease, 205(2), 83–86.


kimerling, r., gima, k., smith, m. w., street, a., & frayne, s. (2007). The veterans health administration and military sexual trauma. American journal of public health, 97(12), 2160–2166.

kimerling, r., street, a. e., pavao, j., smith, m. w., cronkite, r. c., holmes, t. h., & frayne, s. m. (2010). Military-related sexual trauma among veterans health administration patients returning from afghanistan and iraq. American journal of public health, 100(8), 1409–1412.


lehavot, k., goldberg, s. b., chen, j. a., katon, j. g., glass, j. e., fortney, j. c., et al. (2018). Do trauma type, stressful life events, and social support explain women veterans’ high prevalence of PTSD? Social psychiatry and psychiatric epidemiology, 53(9), 943–953.

luxton, d. d., skopp, n. a., & maguen, s. (2010). Gender differences in depression and PTSD symptoms following combat exposure. Depression and anxiety, 27(11), 1027–1033.


U.S. Code, Title 10—Armed Forces; Subtitle A—General Military Law; Part II—Personnel; Chapter 47—Uniform Code of Military Justice; Subchapter X—Punitive Articles; Section 920—Art. 120. Rape and sexual assault generally.


About This Report

This report capitalizes on a unique dataset (the 2014 RAND Military Workplace Study) to understand gender differences in health and mental health outcomes among military service members. Specifically, it examines how unwanted gender-based experiences (sexual harassment, perceived gender discrimination, and sexual assault in the prior year) relate to general health, depressive symptoms, and posttraumatic stress disorder symptoms. More information on the RAND Military Workplace Study, including links to volumes documenting the study methodology and other related topics, is available at www.rand.org/rmws.

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For more information on the RAND Forces and Resources Policy Center, see www.rand.org/nsrd/frp or contact the director (contact information is provided on the webpage).

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