U.S. Department of Veterans Affairs

Public Access Author manuscript

Psychol Sex Orientat Gend Divers. Author manuscript; available in PMC 2020 January 01.

Published in final edited form as:

Psychol Sex Orientat Gend Divers. 2019 ; 6(3): 347–358. doi:10.1037/sgd0000333.

Race/Ethnicity and Sexual Orientation Disparities in Mental Health, Sexism, and Social Support among Women Veterans

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Abstract

Objective: To identify patterns of risk and resilience by the intersections of race/ethnicity and sexual orientation in mental health symptom severity, sexism, and social support among U.S. women veterans.

Methods: A national sample of women veterans ($n = 648$, 38% sexual minority, 15% racial/ethnic minority) was recruited online in 2013 using social networking websites and listservs. Using cross-sectional survey data, we evaluated main and interactive associations between race/ethnicity and sexual orientation on depression, anxiety, posttraumatic stress, unhealthy alcohol use, sexism, and social support. Models were adjusted for other demographic characteristics.

Results: Across depression, anxiety, and sexism, White heterosexual women reported the least distress and racial/ethnic minority heterosexual women the most distress (race/ethnicity $\times$ sexual orientation interactions $p < .05$). Among White women, sexual minority women reported greater levels of depression, anxiety, and sexism than heterosexual women. The effects were the opposite among racial/ethnic minority women, where heterosexual women reported similar or worse depression, anxiety, and sexism than sexual minority women. There were no race/ethnicity or sexual orientation interaction effects on posttraumatic stress symptoms or unhealthy alcohol use and marginally significant effects on social support.

Conclusions: Among women veterans, race/ethnicity and sexual orientation were associated with mental health and sexism, alone and in combination. Findings suggest that those who were both racial/ethnic and sexual minorities may develop resilience from their lived experience. On the other hand, women veterans with a minority race/ethnicity or a minority sexual orientation appeared more vulnerable to adverse outcomes and may need targeted care.

Second Abstract

This study suggests that women veterans with minority race/ethnicity or minority sexual orientation report higher levels of depression, anxiety, alcohol use, and experiences of sexism when compared with White, heterosexual women veterans. Surprisingly, women veterans with both minority race/ethnicity and minority sexual orientation did not always fare worse than White, heterosexual women veterans, suggesting that women at the intersection of these minority identities may develop resilience from their lived experience.

Keywords

Women veterans; intersectionality; race/ethnicity; sexual orientation; health disparities

Women have been involved in and serving with the U.S. military in various official capacities since the Revolutionary War, although it was not until 1948 that all women who served were fully recognized as service members and veterans (Di Leone et al., 2015). In the last decade, women's roles and representation in the military have changed dramatically. Indeed, while the veteran demographic has traditionally been predominantly male, women currently make up one of the fastest growing groups of new veterans (Danan et al., 2017). Women veterans are also a vulnerable population—they report poorer health, including higher rates of mental health disorders, compared to their civilian counterparts (Lehavot et al., 2012; 2018), as well as a high burden of trauma exposure across their lifespan (Zinzow et al., 2007). Compared to their male counterparts, they are more likely to have a service-connected disability and a mental health diagnosis (Frayne et al., 2007; Seal et al., 2007), as well as report greater exposure to child abuse and interpersonal violence (Lehavot et al., 2018). Taken together, these findings suggest that they may be susceptible to overlapping vulnerabilities, including their status as both veterans and women.

Women veterans make up a diverse and heterogeneous group. They are overrepresented by both racial/ethnic minorities and sexual minorities compared to the general population (Blosnich et al., 2013a; Gates, 2010; Humes, Jones, & Ramirez, 2011; Koo et al., 2015a). Nonetheless, an evidence-based map of the women veterans' health literature from 2008–2015 found that of 437 studies focused on women veterans' health, only 11 highlighted issues related to racial and ethnic minorities and 10 related to sexual minorities (Danan et al., 2016). Among women veterans, one study found racial/ethnic differences in cardiovascular risk factors, such that Black and Hispanic women veterans were more likely than White women veterans to report a diabetes diagnosis as well as a host of other physical health conditions (Rose et al., 2013), and another found that American Indian and Hispanic women were less likely to use mental health outpatient services than White women veterans (Koo, Madden, & Maguen, 2015b). With respect to sexual orientation, research on women veterans has shown that sexual minority women report higher odds of depression (44% vs. 34%; Lehavot & Simpson, 2014), unhealthy alcohol use (35% vs. 16%; Mattocks et al., 2013), and smoking (34% vs. 17%; Blosnich, Foynes, & Shipherd, 2013b) compared to heterosexual women. Given the limited available research, the authors of the evidence-based map called for future studies that directly assess health issues in racial/ethnic and sexual minority women veterans (Danan et al., 2016).

Given that women veterans may be susceptible to overlapping vulnerabilities related to gender and veteran status, and both racial/ethnic and sexual minorities are overrepresented among women veterans, an intersectional framework is needed to fully understand the multiple social statuses held by this group and how they interact to influence health (Rosenthal, 2016). Intersectionality has its roots in the work of Black feminist activists (e.g., Collins, 1990; Combahee River Collective, 1977/1995; Crenshaw, 1991; Davis, 1981; hooks, 1989; Truth, 1851). As outlined by Kimberle Crenshaw, intersectionality describes a means of understanding the complicated layers of identity that intertwine in a person's life to create unique experiences that go beyond the simplistic identities of a single group (Crenshaw, 1989). This framework suggests that examining single demographic categories, such as those based on race/ethnicity or sexual orientation alone, may obscure important within-group distinctions (Glenn, 2000; Jackson, 2005). Even beyond examining multiple identities, an intersectionality lens seeks to understand interdependence among systems of power, privilege, and oppression that lead to differential access to resources and health risks (APA, 2017; Grzanka & Miles, 2016). Within societal systems of power, this convergence of social identities and structural inequalities can produce magnified experiences of disadvantage, which may require interventions that are designed specifically for these unique intersections (Crenshaw, 1991; Hicken et al., 2018; Gkiouleka et al., 2018). There is growing recognition of the importance of individuals' complex identities, yet intersectionality research focused on women veterans is limited. While several studies have examined mental health disparities related to race/ethnicity and sexual orientation alone among women veterans (Carter et al., 2016), no studies to our knowledge have explored the intersection of race/ethnicity and sexual orientation on mental health outcomes in this population.

There is debate as to the best way to incorporate an intersectional framework into research. When conducting intersectionality research, it is important to consider the whole of a person's identity, rather than treating marginal identities as discrete units because a person is not Black or a woman or bisexual in isolation (Bowleg, 2008; Collins, 1998). However, methodologically this can be a challenge. Statistical models are not designed for the interlacing web of experiences that occur in the real world, and while qualitative studies have proven extremely valuable for teasing out nuance in the experiences of marginalized groups, they often cannot be scaled up to represent larger populations (Bowleg, 2008). Additionally, in quantitative research it is often not possible to include every possible identity combination in analyses (Warner, 2008). Else-Quist and Hyde (2016) recommend forgoing an additive approach, while still considering the value of additive effects and also examining multiplicative and interactive effects. This avoids a "ranking of oppressions" while still acknowledging the importance of single social categories (Else-Quist & Hyde, 2016) and also allows for a consideration of similarities between groups rather than only differences (Cole, 2009).

Empirical studies that have applied quantitative methods to examine physical and mental health at the intersection of minority race/ethnicity and sexual orientation have demonstrated mixed findings. For example, some research has found that multiple marginalized identities are associated with greater risk, meaning that each disadvantaged social status would relate to an increment in adverse outcomes (Cochran & Mays, 1994; Diaz et al., 2001). For example, such studies have found greater risk for mental distress and general health (Kim &

Fredriksen-Goldsen, 2012), lifetime substance use disorders (Mereish & Bradford, 2014), and greater exposure to stress and fewer coping resources (Meyer, Schwartz, & Frost, 2008) among individuals with both a minority race/ethnicity and sexual orientation compared to those with only one such minority identity. The greater risk hypothesis suggests that these disparities may be linked to differences in exposure to increased and unique social stressors, such as prejudice and discrimination (Meyer, 2003; Hatzenbuehler, 2010). On the other hand, other findings support a theory of resilience, which highlights the potential resources and strengths of minority communities, especially those with intersecting minority characteristics (Balsam, 2004). For example, in a study on suicidality among youth, Asian and Black sexual minority youth were at lower risk than White sexual minority youth (Bostwick et al., 2014), and another study among U.S. college students found that some racial/ethnic minority and sexual minority groups (notably, Latinx students) had lower odds of past 12-month suicidal ideation than White sexual minority students (Lytle et al., 2015). These two studies suggest that individuals with multiple minority statuses across both race/ethnicity and sexual orientation may be at reduced risk specifically for suicidality but could be at increased risk for other negative mental health outcomes, stress, and negative physical health outcomes.

Taken together, the literature on intersections of race/ethnicity and sexual orientation is both limited and mixed. Reasons for discrepant findings may have to do with different patterns for specific outcomes assessed in each study or age or gender of the sample. Given mixed findings and the importance of this topic, we sought to expand this body of work by examining patterns of risk and resilience by the intersections of race/ethnicity and sexual orientation among U.S. women veterans. Understanding health disparities across these intersections is critical in order to characterize the ways in which race/ethnicity and sexual orientation “intertwine and are expressed in disparate chances for health, illness, and well-being” (Schulz & Mullings, 2006), particularly among an already vulnerable population—women veterans. This approach helps to identify subgroups who may have an increased need for services or targeted prevention efforts, as well as where the greatest efforts and resource allocation are needed to improve healthcare quality, which can influence subsequent utilization, treatment adherence, and health outcomes (Boyer & Lutfey, 2010). Moreover, identifying disparities—particularly in nuanced ways with respect to subgroups and outcomes—is considered a critical first step before research can focus on understanding mechanisms of observed disparities and on developing evidence-based interventions to reduce those disparities (Fine, Ibrahim, & Thomas, 2005).

Using a national, online survey, we assessed disparities in mental health outcomes and social factors (e.g., sexist discrimination and social support) in women veterans, hypothesizing that racial/ethnic minority women and sexual minority women would report worse outcomes compared to their White and heterosexual counterparts, respectively. Due to the limited literature in this area, we did not have *a priori* hypotheses regarding the relationship between these intersections and our outcomes. To our knowledge, this is the first study to assess mental health and social disparities using interactional methods in a veteran population, as well as the first to use these methods to assess disparities in sexual minority and racial/ethnic minority women.

Methods

Procedure and Participants

Data were collected via an online survey about women veterans' health between February and May 2013. The study was advertised as an anonymous survey focused on the unique life experiences of women who had served in the military. Because the study's primary aim was to assess sexual orientation disparities (Lehavot & Simpson, 2014), ads specifically targeting sexual minority women veterans were also used. Ads were disseminated using Facebook advertising as well as through listservs and online groups serving veterans, women veterans, sexual minority veterans, and the wider sexual minority community. Participants who followed the survey link provided in the ad were taken to a web-based information statement, which explained eligibility criteria (age 18 or older; assigned female at birth and current identification as a woman; living in the U.S.; and a veteran of the US armed forces), the anonymous nature of the survey, and risks and benefits of participating. The survey took approximately 40 minutes to complete and women were not compensated for participating. The research was approved by the Institutional Review Board at VA Puget Sound Health Care System.

A total of 1,145 individuals entered the survey, and of these 918 participated. Seventeen individuals were ineligible because they identified as transgender ($n = 10$), were underage ($n = 1$), or did not identify their birth sex, current gender, or both ($n = 6$). Of the remaining 901 eligible participants, 253 were excluded from further analyses because they did not complete the relevant outcome measures used in this analysis ($n = 205$), did not provide information on other demographic characteristics ($n = 23$), identified their sexual orientation as "other" ($n = 14$), did not provide information on their sexual orientation ($n = 8$), or did not provide information on their race/ethnicity ($n = 3$), leaving a final sample of 648 women veterans. Compared to the 648 women in the final sample, the 253 excluded women were more likely to be racial/ethnic minorities (26% vs. 15%) and more likely to have an income below \$15,000 (17% vs. 11%), $ps < .05$. There were no differences in sexual orientation, age, or marital status, depression, anxiety, PTSD, unhealthy alcohol use, past-year experiences of sexist events, or social support between the two groups.

Measures

Demographic characteristics.—Demographic items included age, whether currently married or in a domestic partnership, and total household income. Race/ethnicity was categorized as either racial/ethnic minority (*Black, Asian, Hispanic, Native American, Pacific Islander, Mixed-race, Other*) or *non-Hispanic White*. Self-identified sexual orientation options included *lesbian/gay, bisexual, heterosexual, or other*. Participants were grouped as either lesbian/gay/bisexual or heterosexual in the current study. If participants selected "other," they were invited to specify how they identify. Fourteen women who chose this latter option wrote a variety of responses (e.g., "pansexual," "questioning," "no sexual label," "asexual," "decline to answer," "monogamous") and were excluded from the sample in order to avoid misclassification. Thus, sexual minority women in our sample included self-identified lesbian and bisexual women.

Depression.—The 8-item Patient Health Questionnaire (PHQ-8; Kroenke, Spitzer, & Williams, 2001; Kroenke et al., 2009) was used to screen for depression. The measure assesses how often the participant has been bothered by a range of depressive symptoms (e.g., “little interest or pleasure in doing things,” “feeling down, depressed, or hopeless”) from 0 (*not at all*) to 3 (*nearly every day*) over the last two weeks, with higher scores indicating greater depressive symptoms. The PHQ-8 has demonstrated similar operating characteristics to the well-validated PHQ-9, which is identical to the PHQ-8 but includes one additional item on suicidal ideation and whose internal reliability has been reported to be .86-.89 and test-retest reliability to be .84 (Kroenke & Spitzer, 2002; Kroenke, Spitzer, & Williams, 2001). The PHQ-8 also has good construct validity as evidenced by substantial impairment across multiple domains of health-related quality of life for those classified as depressed (Kroenke et al., 2009). Cronbach’s α in the current study was .94.

Anxiety.—Anxiety was assessed with the 7-item Generalized Anxiety Disorder Scale (GAD-7), which has good internal consistency and test-retest reliability as well as convergent, construct, criterion, procedural and factorial validity for the diagnosis of GAD (Kroenke et al., 2007; Lowe et al., 2008; Spitzer et al., 2006). The response options of the GAD-7 items are identical to the PHQ-8 and range from 0 to 21, with higher scores indicating greater severity of anxiety symptoms. Cronbach’s α in the current study was .96.

PTSD.—The widely used and well-validated PTSD Checklist-Civilian Version (PCL-C) was used to assess presence of current PTSD symptoms (Weathers & Ford, 1996). Unlike the military version, which asks about symptoms in response to “stressful military experiences,” the civilian version more broadly asks about symptoms in relation to “stressful experiences,” which may be more appropriate to capture PTSD among women veterans given their exposure to traumas across the lifespan (Zinzow et al., 2007). The measure consists of 17 items assessing symptoms in the past month that correspond to criteria for PTSD in DSM-IV. Participants rate each item using a 5-point response format from 1 (*not at all*) to 5 (*extremely*), and items are summed for a total score ranging from 17 to 85 with higher scores indicating greater PTSD symptom severity. This scale has demonstrated high internal consistency (Cronbach’s $\alpha = .94$), good test-retest reliability ($r = .68-.92$), as well as convergent and discriminant validity as evidenced by high correlations ($r > .75$) between the PCL and scores obtained on other well-established measures for PTSD and significantly lower correlations between the PCL and a general symptom checklist (Ruggiero et al., 2003). Cronbach’s α in the current study was .97.

Unhealthy alcohol use.—Unhealthy alcohol use in the past 12 months was assessed with the well-validated, 10-item Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993). One item was modified (“How often do you have 6+ drinks on one occasion?”) to capture binge drinking specific to women (4+ drinks; Wechsler et al., 1995). Scores were calculated in the standard manner by summing the items. A systematic review of the AUDIT’s psychometric properties confirmed its validity in the identification of harmful use, abuse, and dependence of alcohol (de Meneses-Gaya et al., 2009). Cronbach’s α in the current study was .83.

Past-year sexist events.—The Schedule of Sexist Events (SSE; Klonoff & Landrine, 1995) was used to assess past-year experiences of sexism. This measure assesses daily occurrences of sexist events across a range of domains with 20 Likert-type items scored from 0 (*never*) to 6 (*almost all of the time*), with higher scores indicating greater levels of sexism. Example items include, “How many times have you heard people making sexist jokes or degrading sexual jokes?” and “How many times have people failed to show you the respect that you deserve because you are a woman?” The SSE has shown good internal consistency (Cronbach’s $\alpha = .90$), test-retest reliability ($r = .83$), and convergent validity ($r_s = .24-.27$ with the Hassles Frequency and the PERI-Life Events scales; Klonoff & Landrine, 1995). Cronbach’s α in the current study was .94.

Social support.—Current, perceived social support was assessed using the 12-item Multidimensional Scale of Perceived Social Support, which assesses support from family, friends, and a significant other (MSPSS; Zimet et al., 1988). Responses are scored on a 7-point scale from 1 (*completely disagree*) to 7 (*completely agree*). Higher scores indicate greater perceived support. The scale has shown good internal reliability across subject groups (Zimet et al., 1990). Cronbach’s α was .95.

Analysis Plan

Descriptive statistics of demographic and outcome variables were first computed for the sample overall and by race/ethnicity and sexual orientation groups. Next, we conducted a series of hierarchical linear regression models with depression, anxiety, PTSD, unhealthy alcohol use, sexism, and social support as the continuous dependent variables. In each case, race/ethnicity and sexual orientation were entered as main effects in the first block, with non-Hispanic White race/ethnicity and heterosexual orientation as the reference groups. In the second block, a race/ethnicity $\times$ sexual orientation interaction term was entered to examine their interactive effect. When interactions were significant ($p < .05$), we plotted the marginal estimated means of each outcome across race/ethnicity and sexual orientation and conducted post-hoc tests comparing marginal effects across groups and (Aiken & West, 1991). All analyses were adjusted for age, household income, and marital status/domestic partnership and were conducted in STATA v.14.

To address potential biases resulting from missing data due to inclusion criteria (i.e., missing outcome and covariate data), we conducted several sensitivity analyses. Specifically, we repeated analyses using listwise deletion (n s ranged from 673–801) and compared results to primary results obtained via complete case analysis ($n = 648$ for all analyses). We found no change in the pattern of findings, except for social support findings moving from the cusp of significance ($p = .05$) to marginally significant ($p = .08$) with complete case analysis. Additionally, because missing data were common on some outcomes (ranging from 0.05% on social support to 16% on PTSD), we tested whether data were missing completely at random using Little’s test. Results were not significant ($p = .18$), thus complete case analyses are presented.

Results

Among the 648 women who met inclusion criteria, 38% identified as sexual minority (30% lesbian/gay and 8% bisexual) and 15% as racial/ethnic minority (4% non-Hispanic Black, 4% Hispanic, and 7% another race, including Native American, Asian, and other; Table 1). The average age of the sample was 49 years old, although there were significant differences across groups, with White heterosexual women being the oldest ($M = 51.43$, $SD = 13.95$) and racial/ethnic and sexual minority women being the youngest ($M = 41.23$, $SD = 12.62$). White sexual minority women were more likely to classify themselves as lesbian/gay than racial/ethnic and sexual minority women (81% v. 66%), who were more likely to identify as bisexual (34% vs. 18%). There were significant differences across groups in income distribution, with White heterosexual women being most likely to earn more than \$71,000 (39% vs. 23% of both White sexual minority women and racial/ethnic and sexual minority women). Across race/ethnicity, heterosexual women were more likely to be married or in a domestic partnership than sexual minority women.

For the mental health regression models, minority race/ethnicity and sexual orientation were each independently associated with depression ($\beta = .11$ and $.09$, p -values both $< .05$) and anxiety severity ($\beta = .16$ and $.08$, p -values both $< .05$), but there were also significant race/ethnicity $\times$ sexual orientation interaction effects ($p = .04$ and $.02$ for depression and anxiety interactions, respectively; Table 2). Plotting the predicted means for these two interactions showed that White heterosexual women had the lowest average depression score ($M = 7.64$, 95% $CI = 6.93 - 8.35$) and heterosexual racial/ethnic minority women had the highest ($M = 9.90$, 95% $CI = 8.11 - 11.69$; Figure 1). Among sexual minority women, those who were also racial/ethnic minorities had a slightly lower average depression symptom severity score ($M = 8.22$, 95% $CI = 6.21 - 10.23$) than those who were White ($M = 9.00$, 95% $CI = 8.07 - 9.94$), but this was not significant ($p = 0.49$). The pattern of results was similar for anxiety severity (Figure 2, Table 4). Overall, for both depression and anxiety severity, the biggest difference occurred between White and racial/ethnic minority heterosexual women, whereas there was little difference between the two groups of sexual minority women (Figures 1 and 2; Table 4). Post-hoc tests comparing marginal effects across groups showed that White heterosexual women had significantly lower predicted estimated means of depression and anxiety severity than both White sexual minority and racial/ethnic minority heterosexual women, but that they were not significantly different than women who were both racial/ethnic and sexual minorities (Table 4).

With respect to PTSD symptom severity, there was a significant main effect showing increased severity for racial/ethnic minority status ($\beta = 0.10$, $p = 0.047$), but no main effect for sexual orientation or the race/ethnicity $\times$ sexual orientation interaction (Table 2). For unhealthy alcohol use, there was only a significant main effect for sexual minority status ($\beta = 0.13$, $p = .003$), showing increased unhealthy alcohol use in this population (Table 2).

In regression analyses on social factors, there was a significant main effect for racial/ethnic minority status ($\beta = 0.24$, $p < 0.001$) on increased past-year sexist events, but no main effect for sexual orientation (Table 3). However, there was also a significant race/ethnicity $\times$ sexual orientation interaction ($\beta = -.13$, $p = .01$). Consistent with depression and anxiety, the

largest difference was found between White heterosexual women with the lowest average score of past-year sexist events and racial/ethnic minority heterosexual women with the highest (Figure 3 and Table 4). Post-hoc tests comparing groups found that White heterosexual women had significantly lower predicted marginal means from both heterosexual racial/ethnic minority women and women who are both racial/ethnic and sexual minorities, but were not significantly different from White sexual minority women. Finally, for social support, there was a significant main effect for racial/ethnic minority status ($\beta = -0.12, p = 0.01$) indicating decreased social support in this group of women but no main effect for sexual orientation, with the interaction effect being marginally significant ($\beta = 0.09, p = 0.08$). While only marginally significant, this interaction was similar to patterns found in analyses on depression, anxiety, and sexist events, such that White heterosexual women had the greatest average amount of social support and racial/ethnic minority heterosexual women had the lowest average amount (Table 4). Sexual minority women had similar social support scores regardless of race/ethnicity.

Discussion

Being a woman veteran is a central aspect of identity, as women are a small yet highly visible and vulnerable group among veterans (Di Leone et al., 2016). Women veterans have discussed their intersecting identities as both women and Veterans as a salient aspect of their experience, particularly within healthcare settings (Shamaskin-Garroway et al., 2018). Among this population with double minority status, our study examined how additional marginalized identities, specifically minority race/ethnicity and sexual orientation, alone and in combination, may influence mental health symptoms and social factors.

Consistent with the risk hypothesis, we observed the fewest negative health and social outcomes among White heterosexual women. Thus, while all participants represented a minority group by virtue of being women, and women veterans specifically, those with a majority race/ethnicity and sexual orientation (i.e., White heterosexual) reported substantially less distress. However, our study also yielded some findings that are inconsistent with the risk perspective and may be better explained by the resilience hypothesis. Specifically, among women veterans who were racial/ethnic minorities, sexual minority status appeared to be *protective* with respect to depression, anxiety, and sexist events. These latter results suggest the possibility that multiply marginalized populations are not necessarily at greater risk for adverse health outcomes (Balsam, 2004).

Different individual and contextual factors may help bolster racial/ethnic and sexual minority women's outcomes (Hicken et al., 2018; Gkiouleka et al., 2018). One hypothesis is that the challenges associated with multiple marginalized identities can foster development of effective coping (Bowleg et al., 2003). Another possibility is that women with several marginalized identities have more protective and affirming communities that buffer against sexist discrimination and poorer health (Wellman & Wortley, 1990). Indeed, racial/ethnic and sexual minority women reported greater perceived support than racial/ethnic minority heterosexual women. One of the potential strengths of smaller minority communities is their ability to unite and provide their community members with a sense of united purpose in the face of adversity and stigma (DeBlaere et al., 2014; Szymanski & Owens, 2009). Moreover,

social support may be central to better health. A study in a representative, national sample of women veterans found that greater social support was associated with better self-reported physical health (Lehavot et al., 2013).

Whereas past intersectionality studies have found some protective effects of combined minority race/ethnicity and sexual orientation on suicide ideation and risk (Bostwick et al., 2014; Lytle et al., 2015), our study extends these findings to broader mental health and social outcomes among a sample of women veterans. The pattern of findings also suggests that conceptualizing health outcomes among minority populations in terms of either risk or resilience may be overly simplistic and may not accurately capture the complexity of the effects of intersecting identities on health. A more dynamic theory that incorporates aspects from each perspective, as well as other social determinants and contextual factors that may influence health, may be necessary.

Racial/ethnic minority heterosexual women fared the most poorly on most outcomes (i.e., depression, anxiety, past-year sexist events, and social support) compared to the other groups. In the broader literature on racial/ethnic disparities, Black women have been found to be especially at risk for adverse outcomes, although other racial/ethnic groups are also at high risk (Dunlop et al., 2003; Myers et al., 2002; Read & Gorman, 2006). Some research among women veterans has revealed racial/ethnic disparities in health (Koo et al., 2015b; Rose et al., 2013); the current findings extend these disparities for mental health specifically and highlight the intersection of racial/ethnic minority status with a heterosexual sexual orientation as a risk factor for women veterans. An additional finding in our study was that, across sexual orientation, racial/ethnic minority women reported more severe PTSD symptoms than White women. This is especially noteworthy as women veterans overall are more likely than their civilian and male counterparts to report PTSD (Lehavot et al., 2018). Thus, these results highlight the particular vulnerability of racial/ethnic minority women veterans and the need for culturally sensitive and effective mental health prevention and intervention efforts that target their unique intersection of marginal identities.

Independent of race/ethnicity, sexual minority women reported greater unhealthy alcohol use than heterosexual women. Sexual minority women's greater risk for problematic alcohol use, including increased rates of risky drinking and more negative consequences due to drinking, is a consistent finding in the literature (Burgard, Cochran, & Mays, 2005; Institute of Medicine, 2011; Wilsnack et al., 2008), including among women veterans (Lehavot et al., 2016; Mattocks et al., 2013). Our results further highlight that this is the case across racial/ethnic groups among sexual minority women veterans. These results echo others' findings on race/ethnicity, sexual orientation, and alcohol use (Balsam et al., 2015; Hughes et al., 2006; Parks & Hughes, 2005), which have found similar rates of heavy episodic drinking and alcohol-related consequences across race among sexual minority women (Balsam et al., 2015). These findings continue to highlight the necessity of understanding the unique risk factors that put sexual minority women at risk for unhealthy alcohol use as well as evaluating their responsiveness to treatment.

The current study raises several important areas for future inquiry. While our objective was to examine patterns of risk and resilience and identify areas of potential disparities—often

termed “first generation” health disparities research—second generation research that builds on the current findings might explore the mechanisms underlying the observed disparities (Fine et al, 2005). For example, what factors might mediate the relationship between group status and poorer health outcomes for heterosexual racial/ethnic minority women veterans, or poorer alcohol outcomes for sexual minority women veterans? Research that further investigates protective factors among racial/ethnic and sexual minorities is also greatly needed, as much of intersectionality research to date has focused on risk factors (Bauer, 2014; Frost, 2017). This type of work would not only highlight vulnerable communities’ resilience and strengths, but may pave the way for public health interventions that could build on those strengths. Furthermore, more information is needed on intersections of race/ethnicity and sexual orientation across broader populations, both to replicate findings and to understand how findings may be specific to the population of women veterans.

Our findings suggest that prevention and intervention programs tailored to racial/ethnic minority women veterans, particularly those identifying as heterosexual, may be called for. Such strategies may include tailored outreach materials that clarify VA’s mental health and women’s health services and resources, race-informed therapeutic groups (Comas-Díaz, 2016), or provider trainings focused on acknowledging and remedying the social and structural inequities (e.g., racism, sexism) that lead to poorer health outcomes. Similar approaches might be taken with respect to sexual minority women veterans, especially interventions that target unhealthy alcohol use. Indeed, the VA has recently expanded its resources and capacity to provide quality care for sexual minority veterans in a variety of ways, including the 2017 VA LGB Veteran directive (Department of Veterans Affairs, 2017) that establishes equitable, respectful, and affirming delivery of health care to LGB Veterans, creation of inter-professional postdoctoral psychology fellowships in LGBT health (Kauth et al., 2016), as well as the installation of LGBT Care Coordinators at every VA site to improve provider education (Shipherd, 2018). This program and other VA didactic opportunities may benefit from incorporating intersectional perspectives and their implications for providing structurally-competent, tailored care and treatment planning that take into account the larger social systems in which individuals are embedded (Metzl & Hansen, 2014). Nonetheless, healthcare interventions and provider trainings alone will likely not eliminate health inequalities. Rather, policies that target and change socio-political and economic systems—including the U.S. healthcare, economic and legal systems—will likely be necessary to see improvements in disparities (Williams, 2002). This type of drastic societal change is exactly what intersectionality calls for to change systems of oppression (Combahee River Collective, 1977/1995).

There are several important limitations to the current study. First, lesbian/gay and bisexual women were combined into one category and racial/ethnic minority women were combined into one category. This was done because of the limited sample sizes in the bisexual and specific racial/ethnic minority groups. Nonetheless, there are important variations in health between lesbian/gay and bisexual individuals as well as among different racial/ethnic groups (Smalley et al., 2016; Williams, 2002), and thus adequately powered, diverse samples are needed for further analysis. Whereas the number of sexual minority women in the sample was relatively large, we were likely underpowered with respect to race/ethnicity. In addition, participants were recruited online, thus limiting generalizability to those who had internet

access and saw our advertisements. There was a substantial amount of missing data in the survey with respect to some outcomes, and limiting the analysis to those with no missing data resulted in a sample with significantly fewer racial/ethnic minority women, who were more likely to be excluded. Nonetheless, missing data were shown to be missing at random and incorporation of all available data did not alter the pattern of results. Another limitation relates to our assessment of sexist discrimination. While this type of discrimination was relevant to all participants in our sample as women, the pattern of findings may have been different if measures of racism, heterosexism, or other forms of stigma were included. For racial/ethnic and sexual minority women, for example, it is possible that other forms of discrimination may be more salient (Bowleg, 2008; Warner, 2008). Finally, intersectionality is a complex theory of how identity and societal structures intersect to shape individual experiences. This theory indicates that health may be influenced by many demographic and contextual variables that were unmeasured in this study, such as geographic location, acculturation, gender nonconformity, education, and other variables encompassing socioeconomic status. Comparing outcomes across individual characteristics without a contextual analysis of structural factors offers only a partial understanding of the root causes of health disparities (Schulz & Mullings, 2006), but we believe this study offers an important first step to unpacking the social, political, and economic processes that shape health and well-being. Though unmeasured, it is likely that lifetime experiences of discrimination across multiple identities—as well as individual and community levels of resilience— influenced the pattern of findings.

In summary, race/ethnicity and sexual orientation, alone and in combination, were associated with mental health symptoms and sexism among a national sample of women veterans. Symptoms and experiences were lowest among White heterosexual women. The effect of sexual orientation on depression, anxiety, and past-year sexist events was stronger among White women than among racial/ethnic minority women, highlighting the potential resilience of multiply-marginalized, racial/ethnic and sexual minority women veterans and the need for research that identifies processes contributing to their resilience. At the same time, women veterans with a minority race/ethnicity or a minority sexual orientation appeared more vulnerable to adverse outcomes and may need targeted care.

References

- Aiken LS, West SG, & Reno RR (1991). Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage.
- American Psychological Association. 2017 Multicultural Guidelines: An Ecological Approach to Context, Identity, and Intersectionality. Retrieved from: <http://www.apa.org/about/policy/multicultural-guidelines.pdf>
- Balsam K (2004). Trauma, stress, and resilience among sexual minority women: Rising like the phoenix. New York, NY: Routledge.
- Balsam KF, Molina Y, Blayney JA, Dillworth T, Zimmerman L, & Kaysen D (2015). Racial/ethnic differences in identity and mental health outcomes among young sexual minority women. *Cultural Diversity and Ethnic Minority Psychology*, 21, 380–390. [PubMed: 25642782]
- Bauer GR (2014). Incorporating intersectionality theory into population health research methodology: challenges and the potential to advance health equity. *Social Science and Medicine*, 110, 10–17. [PubMed: 24704889]

- Blosnich J, Bossarte R, Silver E, & Silenzio V (2013a). Health care utilization and health indicators among a national sample of U.S. veterans in same-sex partnerships. *Military Medicine*, 178, 207–212. [PubMed: 23495467]
- Blosnich J, Foynes MM, & Shipherd JC (2013b). Health disparities among sexual minority women veterans. *Journal of Women's Health*, 22, 631–636.
- Bostwick WB, Meyer I, Aranda F, Russell S, Hughes T, Birkett M, & Mustanski B (2014). Mental health and suicidality among racially/ethnically diverse sexual minority youths. *American Journal of Public Health*, 104, 1129–1136. [PubMed: 24825217]
- Bowleg L, Huang J, Brooks K, Black A, & Burkholder G (2003). Triple jeopardy and beyond: Multiple minority stress and resilience among Black lesbians. *Journal of Lesbian Studies*, 7, 87–108. [PubMed: 24831386]
- Boyer CA, & Lutfey KE (2010). Examining critical health policy issues within and beyond the clinical encounter: Patient-provider relationships and help-seeking behaviors. *Journal of Health and Social Behavior*, 51, S80–S93. [PubMed: 20943585]
- Burgard SA, Cochran SD, & Mays VM (2005). Alcohol and tobacco use patterns among heterosexually and homosexually experienced California women. *Drug and Alcohol Dependence*, 77, 61–70. [PubMed: 15607842]
- Carter A, Borrero S, Wessel C, Washington DL, Bean-Mayberry B, Corbelli J, ... & Keene R (2016). Racial and ethnic health care disparities among women in the Veterans Affairs healthcare system: A systematic review. *Women's Health Issues*, 26, 401–409. [PubMed: 27138241]
- Cochran SD, & Mays VM (1994). Depressive distress among homosexually active African American men and women. *American Journal of Psychiatry*, 151, 524–529. [PubMed: 8147449]
- Cole ER (2009). Intersectionality and research in psychology. *American Psychologist*, 64, 170. [PubMed: 19348518]
- Collins PH (1998). It's all in the family: Intersections of gender, race, and nation. *Hypatia*, 13, 62–82.
- Collins PH (1990). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment*. New York, NY: Routledge.
- Comas-Diaz L (2016). Racial trauma recovery: A race-informed therapeutic approach to racial wounds In Alvarez AN, Liang CTH, & Neville HA (Eds.), *Cultural, racial, and ethnic psychology book series. The cost of racism for people of color: Contextualizing experiences of discrimination* (pp. 249–272). Washington, DC: American Psychological Association.
- Combahee River Collective. (1995). Combahee River Collective statement In Guy-Sheftall B (Ed.), *Words of fire: An anthology of African American feminist thought* (pp. 232–240). New York, NY: New Press. (Original work published 1977)
- Crenshaw K (1989). Demarginalizing the intersection of race and sex: A Black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *University of Chicago Legal Forum*, 1989, 139–167.
- Crenshaw K (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43, 1241–1299.
- Danan E, Ensrud K, Krebs E, Koeller E, Greer N, Velasquez T, MacDonald R, & Wilt TJ (2016). *An evidence map of the women veterans' health research literature (2008 – 2015)*. VA ESP Project #09–009; 2016.
- Danan ER, Krebs EE, Ensrud K, Koeller E, MacDonald R, Velasquez T, Greer N, & Wilt TJ (2017). An evidence map of the women veterans' health research literature (2008–2015). *Journal of General Internal Medicine*, 32, 1359–1376. [PubMed: 28913683]
- Davis AY (1981). *Women, race, and class*. New York, NY: Random House, Inc.
- DeBlaere C, Brewster ME, Bertsch KN, DeCarlo AL, Kegel KA, & Plessieu CD (2014). The protective power of collective action for sexual minority women of color: An investigation of multiple discrimination experiences and psychological distress. *Psychology of Women Quarterly*, 38, 20–32.
- de Meneses-Gaya C, Zuairi AW, Loureiro SR, & Crippa JAS (2009). Alcohol Use Disorders Identification Test (AUDIT): An updated systematic review of psychometric properties. *Psychology & Neuroscience*, 2, 83–97.

- Department of Veterans Affairs. (2017). Provision of Health Care for Veterans Who Identify as Lesbian, Gay, or Bisexual. https://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=5438
- Diaz RM, Ayala G, Bein E, Jenne J, & Marin BV (2001). The impact of homophobia, poverty and racism on the mental health of Latino gay men. *American Journal of Public Health*, 91, 927–932. [PubMed: 11392936]
- Di Leone BA, Wang JM, Kressin N, & Vogt D (2016). Women's veteran identity and utilization of VA health services. *Psychological Services*, 13, 60–68. [PubMed: 25729892]
- Dunlop DD, Song J, Lyons JS, Manheim LM, & Chang RW (2003). Racial/ethnic differences in rates of depression among preretirement adults. *American Journal of Public Health*, 93, 1945–1952. [PubMed: 14600071]
- Else-Quest NM, & Hyde JS (2016). Intersectionality in quantitative psychological research: Theoretical and epistemological issues. *Psychology of Women Quarterly*, 40, 155–170.
- Fine MJ, Ibrahim SA, & Thomas SB (2005). The role of race and genetics in health disparities research. *American Journal of Public Health*, 95, 2125–2128. [PubMed: 16257933]
- Frayne SM, Yu W, Yano EM, Ananth L, Iqbal S, Thraikill A, & Phibbs CS (2007). Gender and use of care: planning for tomorrow's Veterans Health Administration. *Journal of Women's Health*, 16, 1188–1199.
- Frost DM (2017). The benefits and challenges of health disparities and social stress frameworks for research on sexual and gender minority health. *Journal of Social Issues*, 73, 462–476.
- Gates GJ (2010). Lesbian, gay, and bisexual men and women in the U.S. military: Updated estimates. Retrieved from <http://www3.law.ucla.edu/williamsinstitute/pdf/GLBmilitaryUpdate.pdf>.
- Gkiouleka A, Huijts T, Beckfield J, & Bamba C (2018). Understanding the micro and macro politics of health: Inequalities, intersectionality, and institutions – A research agenda. *Social Science and Medicine*, 200, 92–98. [PubMed: 29421476]
- Glenn EN (2000). The social construction and institutionalization of gender and race: An integrative framework. In Ferree MM, Lorber J, & Hess BB (Eds.), *Revisiting gender* (pp. 3–43). Walnut Creek, CA: Altamira Press.
- Grzanka PR, & Miles JR (2016). The problem with the phrase “intersecting identities”: LGBT affirmative therapy, intersectionality, and neoliberalism. *Sexuality Research and Social Policy*, 13, 371–389. 10.1007/s13178-016-0240-2
- Hatzenbuehler ML (2010). Social factors as determinants of mental health disparities in LGB populations: Implications for public policy. *Social Issues and Policy Review*, 4, 31–62.
- Hicken MT, Kravitz-Wirtz N, Durkee M, & Jackson JS (2018). Racial inequalities in health: Framing future research. *Social Science and Medicine*, 199, 11–18. [PubMed: 29325781]
- hooks b. (1989). *Talking back: Thinking feminist, thinking black*. Boston, MA: Sound End Press.
- Hughes TL, Wilsnack SC, Szalacha LA, Johnson T, Bostwick WB, Seymour R, Aranda F, Benson P, & Kinnison KE (2006). Age and racial/ethnic differences in drinking and drinking-related problems in a community sample of lesbians. *Journal of Studies on Alcohol*, 67, 579–590. [PubMed: 16736078]
- Humes KR, Jones NA, & Ramirez RR (2011). Overview of race and Hispanic origin: 2010 Census Briefs. No C2010BR-02. Washington, DC: US Department of Commerce, Economics and Statistics Administration, US Census Bureau.
- Institute of Medicine. (2011). *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. Washington, DC: The National Academies Press.
- Jackson PB (2005). Health inequalities among minority populations. *The Journal of Gerontology: Series B*, 60, 63–67.
- Kauth MR, Shipherd JC, Barrera TL, Ortigo K, & Jones KR (2016). Trainees' perceptions of the Veterans Health Administration interprofessional psychology fellowships in lesbian, gay, bisexual, and transgender health. *Training and Education in Professional Psychology*, 10, 165–170.
- Kim HJ, & Fredriksen-Goldsen KI (2012). Hispanic lesbians and bisexual women at heightened risk or health disparities. *American Journal of Public Health*, 102, e9–e15.
- Klonoff EA, & Landrine H (1995). The Schedule of Sexist Events: A measure of lifetime and recent sexist discrimination in women's lives. *Psychology of Women Quarterly*, 19, 439–472.

- Koo KH, Hebenstreit CL, Madden E, Seal KH, & Maguen S (2015a). Race/ethnicity and gender differences in mental health diagnoses among Iraq and Afghanistan veterans. *Psychiatry Research*, 229, 724–731. [PubMed: 26282226]
- Koo KH, Madden E, & Maguen S (2015b). Race-ethnicity and gender differences in VA health care service utilization among U.S. Veterans of recent conflicts. *Psychiatric Services*, 66, 507–513. [PubMed: 25588415]
- Kroenke K, Spitzer RL, & Williams JBW (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16, 606–613. [PubMed: 11556941]
- Kroenke K, & Spitzer RL (2002). The PHQ-9: a new depression diagnostic and severity measure. *Psychiatric Annals*, 32, 509–515.
- Kroenke K, Spitzer RL, Williams JB, Monahan PO, & Lowe B (2007). Anxiety disorders in primary care: Prevalence, impairment, comorbidity, and detection. *Annals of Internal Medicine*, 6, 317–325.
- Kroenke K, Strine TW, Spitzer RL, Williams JBW, Berry JT, & Mokdad AH (2009). The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders*, 114, 163–173. [PubMed: 18752852]
- Kung HC, Hoyert DL, Xu J, & Murphy SL (2008). Deaths: Final data for 2005. *National Vital Statistics Reports*, 56, 4–26.
- Lehavot K, Hoerster KD, Nelson KM, Jakupcak M, & Simpson TL (2012). Health indicators for military, veteran, and civilian women. *American Journal of Preventive Medicine*, 42, 473–480. [PubMed: 22516487]
- Lehavot K, Der-Martirosian C, Simpson TL, Shipherd JC, & Washington DL (2013). The role of military social support in understanding the relationship between PTSD, physical health, and healthcare utilization in women veterans. *Journal of Traumatic Stress*, 26, 1–4. [PubMed: 23417873]
- Lehavot K, & Simpson T (2014). Trauma, posttraumatic stress disorder, and depression among sexual minority and heterosexual women veterans. *Journal of Counseling Psychology*, 61, 392–403. [PubMed: 25019543]
- Lehavot K, Williams EC, Millard SP, Bradley KA, & Simpson TL (2016). Association of alcohol misuse with sexual identity and sexual behavior in women veterans. *Substance Use and Misuse*, 51, 216–229. [PubMed: 26800263]
- Lehavot K, Katon JG, Chen JA, Fortney JC, & Simpson TL (2018). Post-traumatic stress disorder by gender and veteran status. *American Journal of Preventive Medicine*, 54, e1–e9. [PubMed: 29254558]
- Lowe B, Decker O, Müller S, Brahler E, Schellberg D, Herzog W, & Herzberg PY (2008). Validation and standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the general population. *Medical Care*, 46, 266–274. [PubMed: 18388841]
- Lytle MC, De Luca SM, Blosnich JR, & Brownson C (2015). Associations of racial/ethnic identities and religious affiliation with suicidal ideation among lesbian, gay, bisexual, and questioning individuals. *Journal of Affective Disorders*, 178, 39–45. [PubMed: 25795534]
- Mattocks KM, Sadler A, Yano EM, Krebs EE, Zephyrin L, Brandt C, Kimerling R, Sandfort T, Dichter ME, Weiss JJ, Allison J, & Haskell S (2013). Sexual victimization, health status, and VA healthcare utilization among lesbian and bisexual OEF/OIF veterans. *Journal of General Internal Medicine*, 28, 604–608.
- Mereish EH, & Bradford JB (2014). Intersecting identities and substance use problems: Sexual orientation, gender, race, and lifetime substance use problems. *Journal of Studies on Alcohol and Drugs*, 75, 179–188. [PubMed: 24411810]
- Metzl JM, & Hansen H (2014). Structural competency: Theorizing a new medical engagement with stigma and inequality. *Structural Stigma and Population Health*, 103, 126–133. Doi: 10.1016/j.socscimed.2013.06.032
- Meyer IH (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129, 674–697. [PubMed: 12956539]

- Meyer IH, Schwartz S, & Frost DM (2008). Social patterning of stress and coping: Does disadvantaged social statuses confer more stress and fewer coping resources? *Social Science & Medicine*, 67, 368–379. [PubMed: 18433961]
- Myers HF, Lesser I, Rodriguez, Mira CB, Hwang W, Camp C, Anderson D, Erickson L, & Wohl M (2002). Ethnic differences in clinical presentation of depression in adult women. *Cultural Diversity and Ethnic Minority Psychology*, 8, 138–156. [PubMed: 11987591]
- Parks CA, & Hughes TL (2005). Alcohol use and alcohol-related problems in self-identified lesbians: An historical cohort analysis. *Journal of Lesbian Studies*, 9, 31–44.
- Purdie-Vaughns V, & Eibach RP (2008). Intersectional invisibility: The distinctive advantages and disadvantages of multiple subordinate-group identities. *Sex Roles*, 59, 377–391.
- Read JG, & Gorman BK (2006). Gender inequalities in US adult health: The interplay of race and ethnicity. *Social Science and Medicine*, 62, 1045–1065. [PubMed: 16122860]
- Rose DE, Farmer MM, Yano EM, & Washington DL (2013). Racial/ethnic differences in cardiovascular risk factors among women veterans. *Journal of General Internal Medicine*, 28 *Suppl* 2, S524–S528. [PubMed: 23807060]
- Rosenthal L (2016). Incorporating intersectionality into psychology: An opportunity to promote social justice and equity. *American Psychologist*, 71, 474–485. [PubMed: 27571527]
- Ruggiero KJ, Del Ben K, Scotti JR, & Rabalais AE (2003). Psychometric properties of the PTSD Checklist-Civilian Version. *Journal of Traumatic Stress*, 16, 495–502. [PubMed: 14584634]
- Saunders JB, Aasland OG, Babor TF, de la Fuente JR, & Grant M (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption—II. *Addiction*, 88, 791–804. [PubMed: 8329970]
- Schulz A, & Mullings L (2006). *Gender, race, class, and health: Intersectional approaches* (1st ed.). San Francisco, CA: Jossey-Bass.
- Seal KH, Bertenthal D, Miner CR, Sen S, & Marmar C (2007). Bringing the war back home: Mental health disorders among 103 788 US veterans returning from Iraq and Afghanistan seen at Department of Veterans Affairs Facilities. *Archives of Internal Medicine*, 167, 476–482. [PubMed: 17353495]
- Shamaskin-Garroway AM, Knobf MT, Adams LJ, & Haskell SG (2018). “I think it’s pretty much the same, as it should be”: Perspectives of inpatient care among women veterans. *Qualitative Health Research*, 28, 600–609. [PubMed: 29231129]
- Shipherd JC, Darling JE, Klap RS, Rose D, & Yano EM (2018). Experiences in the Veterans Health Administration and Impact on Healthcare Utilization: Comparisons Between LGBT and Non-LGBT Women Veterans. *LGBT Health*, 5, 303–311. [PubMed: 29979640]
- Smalley KB, Warren JC, & Barefoot KN (2016). Differences in health risk behaviors across understudied LGBT subgroups. *Health Psychology*, 35, 103–114. [PubMed: 26375040]
- Spitzer RL, Kroenke K, Williams JB, & Löwe B (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166, 1092–1097. [PubMed: 16717171]
- Szymanski DM, & Owens GP (2009). Group-level coping as a moderator between heterosexism and sexism and psychological distress in sexual minority women. *Psychology of Women Quarterly*, 33, 197–205.
- Truth S (1851). Ain’t I a woman? [Electronic Version]. Retrieved from <http://teachingamericanhistory.org/library/document/aint-i-a-woman/>.
- Warner LR (2008). A best practices guide to intersectional approaches in psychological research. *Sex Roles*, 59, 454–463.
- Weathers F, & Ford J (1996). Psychometric properties of the PTSD Checklist (PCL-C, PCL-S, PCL-M, PCL-PR) In Stamm BH (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 250–252). Lutherville, MD: Sidran Press.
- Wechsler H, Dowdall GW, Davenport A, & Rimm EB (1995). A gender-specific measure of binge drinking among college students. *American Journal of Public Health*, 85, 982–985. [PubMed: 7604925]
- Wellman B, & Wortley S (1990). Different strokes from different folks: Community ties and social support. *American Journal of Sociology*, 96, 558–588.

- Williams DR (2002). Racial/ethnic variations in women's health: The social embeddedness of health. *American Journal of Public Health*, 92, 588–597. [PubMed: 11919058]
- Wilsnack SC, Hughes TL, Johnson TP, Bostwick WB, Szalacha LA, Benson P, Aranda F, & Kinnison KE (2008). Drinking and drinking-related problems among heterosexual and sexual minority women. *Journal of Studies on Alcohol and Drugs*, 69, 129–139. [PubMed: 18080073]
- Zimet GD, Dahlem NW, Zimet SG, & Farley GK (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52, 30–41.
- Zimet GD, Powell SS, Farley GK, Werkman S, & Berkoff KA (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of Personality Assessment*, 55, 610–617. [PubMed: 2280326]
- Zinzow HM, Grubaugh AL, Monnier J, Suffoletta-Maierle S, & Frueh BC (2007). Trauma among female veterans: A critical review. *Trauma, Violence, and Abuse*, 8, 384–400.

Figure 1.
Predicted Margins with 95% Confidence Intervals of Race/Ethnicity and Sexual Orientation on Depression.

Figure 2.
Predicted Margins with 95% Confidence Intervals of Race/Ethnicity and Sexual Orientation on Anxiety.

Figure 3.
Predicted Margins with 95% Confidence Intervals of Race/Ethnicity and Sexual Orientation
on Past-year Sexist Events.

Table 1.
Demographic Characteristics of Women Veterans by Race/Ethnicity and Sexual Orientation.

Variable	Total (N=648)		White Heterosexual (n=349)		White Sexual Minority (n=201)		Racial/Ethnic Minority Heterosexual (n=54)		Racial/Ethnic Minority, Sexual Minority (n=44)	
	N (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Age, M (SD)	49.43 (13.86)	51.43 (13.95)	48.25 (13.72)	47.61 (11.68)	41.23 (12.62)					
Race/ethnicity										
White, non-Hispanic	550 (84.9)	349 (100)	201 (100)	--	--		--	--	--	
Black, non-Hispanic	25 (3.9)	--	--	18 (33.3)	7 (15.9)					
Hispanic	28 (4.3)	--	--	13 (24.1)	15 (34.1)					
Other	45 (6.9)	--	--	23 (42.6)	22 (50.0)					
Sexual Orientation										
Heterosexual	403 (62.2)	349 (100)	--	54 (100)	--				--	
Bisexual	52 (8.0)	--	37 (18.4)	--	15 (34.1)					
Lesbian/Gay	193 (29.8)	--	164 (81.6)	--	29 (65.9)					
Income										
15,000	68 (10.5)	14 (6.9)	32 (15.9)	6 (11.1)	6 (13.6)					
16,000–35,000	158 (24.4)	78 (22.4)	52 (25.9)	15 (27.8)	13 (29.6)					
36,000–50,000	117 (18.1)	53 (15.2)	45 (22.4)	11 (20.4)	8 (18.2)					
51,000–70,000	96 (14.8)	38 (16.6)	25 (12.4)	6 (11.1)	7 (15.9)					
71,000	209 (32.3)	136 (39.0)	47 (23.4)	16 (29.6)	10 (22.7)					
Married/domestic partner	288 (44.4)	179 (51.3)	69 (34.3)	28 (51.8)	12 (27.3)					

Variable	Total (N=648)		White Heterosexual (n=349)		White Sexual Minority (n=201)		Racial/Ethnic Minority Heterosexual (n=54)		Racial/Ethnic Minority, Sexual Minority (n=44)	
	N (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Depression, M (SD)	8.29 (7.07)	7.19 (6.76)	9.48 (7.36)	9.23 (6.66)						
Anxiety, M (SD)	6.79 (6.53)	5.72 (6.18)	7.68 (6.70)	8.07 (6.76)						
PTSD, M (SD)	41.13 (20.34)	38.15 (20.07)	43.38 (20.13)	48.25 (19.43)						
Unhealthy alcohol use, M (SD)	4.32 (5.21)	3.57 (4.21)	5.25 (5.77)	6.50 (7.24)						
Past-year sexist events, M (SD)	1.80 (0.78)	1.67 (0.71)	1.85 (0.77)	2.07 (0.83)						
Social support, M (SD)	4.43 (1.66)	4.59 (1.65)	4.28 (1.53)	4.41 (1.76)						

Table 2.
Hierarchical Regression of Interaction Effect of Race/ethnicity and Sexual Orientation on Mental Health.

Variable	Depression						Anxiety					
	Model 1, <i>F</i> (5, 642)			Model 2, <i>F</i> (6, 641)			Model 1, <i>F</i> (5, 642)			Model 2, <i>F</i> (6, 641)		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Racial/ethnic minority	.95	.74	.05	2.26*	.98	.11	1.54*	.68	.08	2.88***	.89	.16
Sexual minority	.88	.56	.06	1.36*	.60	.09	0.63	.51	.05	1.12*	.55	.08
Interaction of race/ethnicity and sexual orientation	--	--	--	-3.04*	1.49	-.11	--	--	--	-3.09*	1.35	-.12
<i>F</i>	15.82			13.95			19.56			17.28		
<i>F</i> (<i>df</i>)	--			4.20 (1, 641)			--			5.20 (1, 641)		
<i>R</i> ²	0.110***			0.115***			0.132***			0.139***		
<i>R</i> ²	--			0.006*			--			0.007*		
Variable	PTSD						Unhealthy Alcohol Use					
	Model 1, <i>F</i> (5, 642)			Model 2, <i>F</i> (6, 641)			Model 1, <i>F</i> (5, 642)			Model 2, <i>F</i> (6, 641)		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Racial/ethnic minority	4.29*	2.10	.08	5.53*	2.78	.10	.28	.55	.02	.07	.73	.00
Sexual minority	1.92	1.58	.05	2.38	1.71	.06	1.42***	.42	.13	1.35**	.45	.13
Interaction of race/ethnicity and sexual orientation	--	--	--	-2.88	4.21	-.04	--	--	--	.48	1.11	.02
<i>F</i>	21.45			17.94			13.03			10.88		
<i>F</i> (<i>df</i>)	--			0.47 (1, 641)			--			0.19 (1, 641)		
<i>R</i> ²	0.143***			0.144***			0.092***			0.092***		
<i>R</i> ²	--			0.001			--			0.000		

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Note. All analyses adjusted for age, married/domestic partner, and income.

* $p<.05$,
** $p<.01$,
*** $p<.001$.

Table 3.
Hierarchical Regression of Interaction Effect of Race/Ethnicity and Sexual Orientation on Social Factors.

Variable	Past-year Sexist Events						Social Support					
	Model 1, <i>F</i> (5, 642)			Model 2, <i>F</i> (6, 641)			Model 1, <i>F</i> (5, 642)			Model 2, <i>F</i> (6, 641)		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Racial/ethnic minority	.35***	.08	.16	.53***	.11	.24	-.31	.18	-.07	-.57*	.23	-.12
Sexual minority	.03	.06	.02	.10	.07	.06	-.05	.13	-.01	-.14	.14	-.4
Interaction of race/ethnicity and sexual orientation	--	--	--	-.40*	.16	-.13	--	--	--	.62	.35	.09
<i>F</i>	15.93			14.38			12.00			10.545		
<i>F</i> (<i>df</i>)	--			6.01 (1, 641)			--			3.061 (1, 641)		
<i>R</i> ²	0.110***			0.119***			0.085***			0.090***		
<i>R</i> ²	--			0.008**			--			0.004		

Note. All analyses adjusted for age, married/domestic partner, and income.

* $p < .05$,

** $p < .01$,

*** $p < .001$.

Table 4.

Predicted Marginal Means by Sexual Orientation and Race/Ethnicity.

	Outcomes											
	Depression		Anxiety		PTSD		Unhealthy Alcohol Use		Past-year Sexist Events		Social Support	
	Margin	95% CI	Margin	95% CI	Margin	95% CI	Margin	95% CI	Margin	95% CI	Margin	95% CI
White Heterosexual	7.64 ^a	6.92–8.35	6.14 ^c	5.49–6.79	39.59 ^e	37.57–41.60	3.77 ^g	3.24–4.30	1.71 ⁱ	1.63–1.79	4.53 ^k	4.36–4.70
White Sexual Minority	9.00 ^b	8.07–9.94	7.26 ^d	6.41–8.12	41.96 ^{e,f}	39.31–44.61	5.11 ^h	4.42–5.81	1.81 ⁱ	1.70–19.91	4.39 ^{j,k}	4.16–4.61
Racial/Ethnic Minority Heterosexual	9.90 ^b	8.11–11.69	9.02 ^d	7.39–10.65	45.12 ^f	40.05–50.19	3.84 ^{a,h}	2.50–5.17	2.24	2.04–2.44	3.96 ^j	3.53–4.38
Racial/Ethnic Minority, Sexual Minority	8.22 ^{a,b}	6.21–10.23	7.05 ^{c,d}	5.22–8.88	44.62 ^{e,f}	38.93–50.31	5.66 ^b	4.16–7.16	1.93 ⁱ	1.71–2.15	4.43 ^{j,k}	3.95–4.91

Note. Margins sharing a letter in the group label (i.e., column) are not significantly different at $p < .05$.