



Published in final edited form as:

Behav Med. 2023 ; 49(2): 183–194. doi:10.1080/08964289.2021.2006132.

PTSD Symptoms and Hazardous Drinking Indicators among Trauma–Exposed Sexual Minority Women during Heightened Societal Stress

Emily C. Helminen^a, Jillian R. Scheer^a, Skyler D. Jackson^b, Cal D. Brisbin^{a,c}, Abigail W. Batchelder^{d,e,f}, Cory J. Cascalheira^{a,g}, Tami P. Sullivan^h

^aDepartment of Psychology, Syracuse University

^bDepartment of Social and Behavioral Sciences, Yale University School of Public Health

^cLuskin School of Public Affairs, The University of California

^dHarvard Medical School, Harvard University

^eBehavioral Medicine Program, Department of Psychiatry, Massachusetts General Hospital

^fFenway Health, The Fenway Institute

^gDepartment of Counseling and Educational Psychology, New Mexico State University

^hDepartment of Psychiatry, Yale University School of Medicine

Abstract

Trauma-exposed sexual minority women (SMW) are at elevated risk of posttraumatic stress disorder (PTSD) and hazardous drinking compared to trauma-exposed heterosexual women. To understand whether these problems might be exacerbated during times of elevated societal stress, we collected data from a New York-based sample of trauma-exposed SMW between April 2020 and August 2020, a period of notable, compounding societal stressors, including: (a) living in or near one of the first epicenters of the coronavirus disease 2019 (COVID-19) epidemic in the United States and (b) living through multiple high-profile occurrences of racism-related police violence and subsequent racial unrest. SMW ($n=68$) completed online self-report questionnaires related to trauma, PTSD symptoms, and alcohol use, and a subset ($n=29$) completed semi-structured qualitative interviews. PsycINFO was searched with terms related to SMW, PTSD, and alcohol use to identify studies with samples of SMW from articles published within the last 10 years to which we could compare our sample; this produced nine studies. Welch's t -tests and Chi-square analyses revealed that SMW within our sample reported significantly higher PTSD symptom severity, probable PTSD, and hazardous drinking indicators (i.e., alcohol use disorder and heavy episodic drinking) between April 2020 and August 2020 compared to similar samples (i.e., trauma-exposed SMW and general samples of SMW) assessed previously. Qualitative reports

CONTACT Jillian R. Scheer jrscheer@syr.edu Department of Psychology, Syracuse University, 414 Huntington Hall, Syracuse, NY 13244, USA.

Supplemental data for this article is available online at <https://doi.org/10.1080/08964289.2021.2006132>.

This study was conducted while Jillian Scheer was affiliated with the Department of Social and Behavioral Sciences, Yale School of Public Health, New Haven, Connecticut.

also indicated that the societal stressors of 2020 contributed to mental and behavioral health concerns. These results underscore the need for integrated PTSD and alcohol use prevention and intervention efforts for trauma-exposed SMW during times of heightened societal stress.

Keywords

alcohol use disorder; heavy episodic drinking; PTSD symptoms; sexual minority women; trauma

Introduction

Sexual minority women (SMW; e.g., those who identify as lesbian, bisexual, queer, or same-gender-loving) are twice as likely to report trauma exposure and are more likely to develop posttraumatic stress disorder (PTSD) symptoms relative to heterosexual women.^{1,2} For example, one recent population-based study across 28 countries demonstrated that SMW were between eight and 14 times as likely to report intimate partner violence compared to heterosexual women.³ SMW are also more likely than heterosexual women to report increased risk for hazardous drinking⁴ and/or patterns of alcohol consumption that confer risk for adverse consequences.^{1,5} In fact, SMW are between six and seven times as likely as heterosexual women to meet criteria for alcohol dependence.^{6,7} However, research has yet to examine whether contextual factors, such as periods of increased societal stress, are associated with elevated risk of PTSD and hazardous drinking indicators (e.g., alcohol use disorder, heavy episodic drinking) among trauma-exposed SMW.

One such period of increased societal stress occurred in 2020, during which the coronavirus disease 2019 (COVID-19) was identified and deemed uncontainable within the United States (US), and particularly in New York (NY). Researchers and community organizations have called for increased attention to the impact of COVID-19 on vulnerable sexual minority subgroups,⁸ including SMW.^{9,10} The year 2020 was also characterized by a prolonged period of national-level racial reckoning. Specifically, this period was triggered by released video footage of a police killing of a Black man, George Floyd, who was one of many people of color murdered by police in 2020. In fact, 164 Black people died at the hands of police in the first eight months of 2020.¹¹ Sexual minority communities also have a long history of experiencing police violence and harassment,¹² including communities living in NY¹³ and among racially and ethnically diverse sexual minorities.¹⁴ Thus, SMW in NY may have been highly attuned to—and vicariously impacted by—these events. Knowing whether NY-based trauma-exposed SMW's PTSD symptoms and hazardous drinking indicators are elevated during this tumultuous period of 2020 relative to other periods could provide insight into the ways that co-occurring health risks may be exacerbated by macro-level stressors.^{10,15}

Trauma-exposed SMW's elevated risk of PTSD symptoms and hazardous drinking may be understood within a stress-sensitivity framework. Stress-sensitivity theory posits that trauma exposure may have lasting effects on the stress response by sensitizing individuals to future stressors, which can increase overall vulnerability to mental health symptoms.^{16,17} Development of mental health symptoms, such as PTSD, may in turn lead to increased

alcohol use as a method of self-medication in order to cope with PTSD symptoms,^{18–20} Indeed, negative reinforcement models suggest that alcohol use may temporarily alleviate PTSD symptoms, thereby increasing the likelihood of coping-oriented drinking^{21,22} and the development of alcohol use disorders.^{23,24} Considering stress-sensitivity theory, trauma-exposed SMW may be even more susceptible to comorbid PTSD symptoms and hazardous drinking due to their exposure to stigma-related stress (i.e., minority stress).^{25,26} According to the minority stress model, SMW experience unique and chronic distal minority stressors (e.g., discrimination, prejudice) and proximal minority stressors (e.g., identity concealment, internalized stigma) in addition to general life stressors.^{21,27–29} Studies have demonstrated that these distal and proximal minority stressors may exacerbate trauma-exposed SMW's risk for PTSD and alcohol use.^{30–33}

While a history of trauma and minority stress creates an already staggering stress burden among trauma-exposed SMW, living during macro-level periods of stress might be associated with elevated health risks among trauma-exposed SMW. Studies have demonstrated increases in mental health symptoms and hazardous drinking among the general US population (i.e., predominantly non-SMW) during the COVID-19 pandemic,^{34,35} and recent research has demonstrated that COVID-19-related stress is strongly associated with posttraumatic stress symptoms in general populations.³⁶ Additional studies found that more general samples of sexual minorities (i.e., including both SMW and sexual minority men), exhibited increased peritraumatic stress and mental health symptoms relative to heterosexual individuals during the COVID-19 epidemic in the US.^{37,38} Among women, research has demonstrated that SMW (a) reported more exposure to COVID-19 through personal networks and workplaces; and (b) perceived COVID-19 as a greater threat than heterosexual women.³⁹ Recent qualitative research also has indicated that SMW report increased stress related to the COVID-19 pandemic and high-profile killings of Black people, paired with fewer coping resources, such as access to social support from sexual minority communities.⁴⁰ However, these previous studies have not examined PTSD symptom severity, probable PTSD, and hazardous drinking among an already uniquely stress-exposed sample; namely, trauma-exposed SMW.

Since trauma-exposed SMW are already exposed to considerable stress, they may be stress-sensitized and more vulnerable to adverse mental and behavioral health concerns. The current study aims to extend research on trauma-exposed SMW's PTSD symptom severity, probable PTSD, and hazardous drinking during a time of heightened societal stress. We hypothesized that our sample of trauma-exposed SMW living in or near one of the first epicenters of the COVID-19 epidemic in the US and living through multiple high-profile occurrences of racism-related police violence and subsequent racial unrest would report elevated (1) PTSD symptom severity; (2) probable PTSD; (3) comorbid PTSD and alcohol use disorder; and (4) hazardous drinking indicators (i.e., alcohol use disorder, heavy episodic drinking) compared to trauma-exposed SMW and general samples of SMW in previously published studies conducted prior to 2020. Our findings aim to understand whether proximity to societal stress may be associated with trauma-exposed SMW's underlying vulnerability to health risks.

Methods

Participants and procedures

Data were collected from 68 trauma-exposed SMW living in NY who completed a baseline assessment as part of a qualitative study examining this population's trauma exposure, minority stressors, coping mechanisms, help-seeking behaviors, and overall health. From April 2020 through August 2020, participants were recruited through targeted advertisements on social media platforms (e.g., Facebook, Reddit), LGBTQ-related online listservs, online classifieds (i.e., Craigslist), and NY-based college counseling centers, community organizations, and businesses serving sexual and gender minority populations. All potential participants completed a brief online eligibility questionnaire. Eligibility criteria included being 18 or older, identifying as a SMW, living in NY, reporting English fluency, endorsing at least one Criterion A traumatic event (assessed with the Life Events Checklist for *DSM-5*),⁴¹ currently having internet access, and not having received inpatient psychiatric support in the past six months. Qualitative semi-structured interviews were completed with a subset of 29 participants who were purposefully selected because they were diverse across gender identity, sexual identity, race/ethnicity, sex assigned at birth, and location within NY. All participants provided informed consent, and study procedures were approved by the Human Subjects Committee at Yale University.

Measures

PTSD symptom severity—Past-month PTSD symptom severity was assessed with the 20-item PTSD Checklist for *DSM-5* (PCL-5).⁴² Items were summed to create a total score (Cronbach's α : 0.93).

Probable PTSD. Probable PTSD was assessed with a dichotomous variable created using a PCL-5 cutoff score of ≥ 33 to indicate those who did not meet criteria for PTSD (0) vs. those who did (1).

Hazardous drinking indicators—Alcohol use was assessed with the 3-item Alcohol Use Disorders Identification Test, alcohol consumption questions (AUDIT-C).⁴³ Items were summed to create a total score (Cronbach's α : 0.75). A dichotomous variable was created to indicate individuals who met criteria using an AUDIT-C cutoff of ≥ 3 for those who did not meet criteria for probable alcohol use disorder (0) vs. those who did (1). A separate dichotomous variable was created for the presence of heavy episodic drinking, with responses coded as no past-year heavy episodic drinking (0) vs. one or more instance of past-year heavy episodic drinking (1).

Perceptions of heightened societal stress—Participants' perceptions of heightened societal stress were assessed with questions during the semi-structured qualitative interview asking participants to describe their experiences of COVID-19 and racism-related stressors.

Identifying comparison samples

We explored the PsycINFO database with search terms related to trauma exposure, SMW, PTSD, and alcohol use. We aimed to find similar comparison samples from the US in

empirical articles that were published in peer-reviewed journals within the last 10 years. We identified probability and non-probability comparison samples of SMW for several reasons. Probability sample comparisons allowed us to establish whether there appear to be differences in PTSD symptom severity, probable PTSD, and hazardous drinking indicators between our geographically-specific (i.e., NY-based) sample and representative US samples of SMW. This approach also helped to eschew selection bias in our comparison samples. However, probability surveys tend to yield smaller samples of SMW than those derived from non-probability surveys—the predominant sampling method used in sexual minority health research to date.⁴⁴ Further, SMW in non-probability samples report significantly higher proportions of PTSD and alcohol use than those in probability samples.⁴⁵ Because non-probability studies tend to report higher probable PTSD and alcohol use, these types of comparisons allowed us to more robustly evaluate whether our sample reported higher proportions of PTSD and alcohol use than the greater SMW literature base.

In identifying comparison literature, we first included studies with trauma-exposed SMW samples that reported comparable outcome measures to ours, resulting in two samples for PTSD symptom severity comparisons^{30,46} and three samples for probable PTSD comparisons.^{2,30,46} We then broadened the search to identify studies with general samples of SMW (i.e., we did not require the sample to be trauma-exposed) that reported outcome data comparable to our measures. This resulted in one additional sample for a probable PTSD comparison,⁴⁷ two samples for probable alcohol use disorder comparisons,^{48,49} one sample for a comorbid PTSD and alcohol use disorder comparison,³⁸ and four samples for heavy episodic drinking comparisons.^{45,50,51} In total, we gathered nine comparison papers from which we conducted two PTSD symptom severity comparisons, four probable PTSD comparisons, two probable alcohol use disorder comparisons, one comorbid PTSD and alcohol use disorder comparison, and four heavy episodic drinking comparisons.

Data analyses

All quantitative analyses were conducted in R version 4.0.3 (R Core Team, 2020). One participant had missing data for one of the AUDIT-C questions; however, their AUDIT-C score from the other two questions was above the hazardous drinking cutoff, so this participant was retained for analyses. There were no missing data for demographic or PTSD items. Descriptive statistics summarized our study's sample demographic characteristics. We also calculated the descriptive statistics for our key outcome variables: PTSD symptom severity, probable PTSD, probable alcohol use disorder, comorbid PTSD and alcohol use disorder, and heavy episodic drinking. Data on these key variables were then extracted from previously published data in similar samples as described above.^{2,30,45–51}

For PTSD symptom severity comparisons, Welch's *t*-tests were conducted between our sample and the extracted means and standard deviations from comparison samples that used the same PTSD symptom checklist (i.e., the PCL-5; $n=2$). Welch's *t*-tests were selected to account for the different sample sizes between groups. Chi-square analyses were conducted between our sample and other samples' dichotomous outcomes; specifically, probable PTSD ($n=4$ comparisons), alcohol use disorder ($n=2$), comorbid PTSD and alcohol use disorder ($n=1$), and heavy episodic drinking ($n=4$). Overall, 13 comparisons were conducted. To

account for multiple comparisons, we adjusted p -values in accordance with Benjamini-Hochberg procedures.⁵² All tests that were significant at $\alpha = .05$ remained significant after adjustments.

To contextualize these quantitative results within the April to August 2020 time frame, and to understand whether our participants' perceptions of COVID-19 and racism-related stress align with previous qualitative research among SMW during the pandemic,⁴⁰ we analyzed 29 semi-structured interviews conducted with our sample.

The second author, a licensed counseling psychologist and study principal investigator, conducted all interviews. The first and fourth authors (school psychology and social work graduate students, respectively, with formal training in qualitative analysis) coded the interviews using thematic analysis.⁵³ Consistent with qualitative research among SMW,^{54,55} thematic analysis was chosen given that it locates participants' accounts within broader societal contexts. An iterative process of reading, coding, and refining codes was adopted to ensure that developing themes were fully grounded in the data.⁵⁶ Specifically, the first and fourth authors coded the interview data and developed a dictionary of salient quotes. Discrepancies were resolved through discussion with a third coder (sixth author and counseling psychology graduate student with formal training in qualitative analysis). A validation sheet was created that included a description of each theme. Regarding positionality,⁵⁷ research team members included insiders and outsiders of the target population (i.e., diverse across gender identity, sexual identity, sex assigned at birth, race/ethnicity, and location). All analyses were conducted using Dedoose, version 8.1.8 (2018) to allow for iterative coding and refinements. Supporting quotes from interviews were extracted and are presented alongside the quantitative findings in order to demonstrate groundedness (i.e., that quantitative findings are rooted in a thorough analysis of the data).^{56,58}

Results

Sample characteristics

Table 1 presents sample demographics. Our sample of SMW living in NY ($n = 68$) lived both in and around New York City ($n = 30$) and in Upstate New York ($n = 34$). The sample had a mean age of 28.74 ($SD = 7.86$) and was predominantly White (66.2%). Participants were able to select one or more gender identities, and slightly over half identified solely as cisgender women (55.9%; $n=38$), with the rest endorsing one or more diverse gender identities, including non-binary (22.1%; $n = 15$), gender non-conforming (16.2%; $n = 11$), genderqueer (13.2%; $n = 9$), transgender woman (10.3%; $n = 7$), gender fluid (4.4%; $n = 3$), transgender man (2.9%; $n = 2$), and/or something else (8.8%; $n=6$). Participants endorsed diverse sexual orientations (e.g., queer, bisexual, lesbian, pansexual; see Table 1). The qualitative interviews were conducted with a heterogeneous subset of the NY-based sample (i.e., 29 of the 68 SMW), with similar demographics to the full sample (see Table 1).

For comparison studies that reported the race/ethnicity of their samples, most samples were predominantly White (>60%; see Table 1, supplementary material). Two exceptions^{45,51} were from studies that examined data from different waves of the Chicago Health and Life Experiences of Women study; both studies featured predominantly nonwhite samples. Mean

age of comparison samples varied widely, ranging from 22.7⁴⁸ to 48.1² years old. The comparison papers largely excluded reporting gender identity information of SMW samples beyond reporting that participants identified as women.

PTSD symptoms severity and probable PTSD

The mean PCL-5 symptom severity score for this sample was 30.10 ($SD = 15.76$), compared to 20.92 ($SD=20.08$)³⁰ and 21.30 ($SD=20.22$)⁴⁶ reported in two previous samples of trauma-exposed SMW. Welch's *t*-tests revealed that our sample's mean PCL-5 score was significantly higher than both previously collected samples (see Table 2). The proportion of our sample reporting probable PTSD was 35.3% ($n=24$) compared to 21.9%, 23.7%, and 27.3% reported in three previous samples of trauma-exposed SMW,^{2,30,46} and compared to 21.0% reported in a previous general sample of bisexual women.⁴⁷ Chi-square analyses revealed that our sample's probable PTSD was significantly higher than two of the samples^{2,47} but it was not significantly higher than the other two samples.^{30,46}

Alcohol use disorder and heavy episodic drinking

The proportion of our sample reporting probable alcohol use disorder was 47.1% ($n = 32$) compared to 28.3% and 27.1% reported in two previous samples of SMW.^{48,49} Chi-square analyses revealed that our sample demonstrated significantly higher alcohol use disorder than both samples (see Table 2).^{48,49} The proportion of our sample reporting heavy episodic drinking was 45.6% ($n=31$) compared to 9.5%, 25.5%, 33.8%, and 39.3%, reported in four previous samples of SMW.^{45,50,51} Chi-square analyses revealed that our sample demonstrated a significantly higher heavy episodic drinking relative to two of the previous samples,^{50,51} but it was not significantly higher than the two samples from Drabble et al. (2018).⁴⁵

Comorbid PTSD and alcohol use disorder

The proportion of our sample reporting probable comorbid PTSD and alcohol use disorder was 17.6% ($n = 12$) compared to approximately 8.5% reported in a previous sample of bisexual women.⁴⁷ Chi-square analysis revealed that our sample demonstrated significantly higher comorbid PTSD and alcohol use disorder than that sample.⁴⁷

Qualitative perceptions of heightened societal stress

Through thematic analysis of qualitative interviews, we identified three themes related to increased stress and worse mental and behavioral health due to COVID-19 and/or high-profile police violence. Salient quotes related to each theme are displayed in Table 3.

Theme 1: Increased stress and worse mental health due to COVID-19—Trauma-exposed SMW reported heightened stress, expressed fears about COVID-19 infection, and perceived COVID-19 impacting their mental health. For example, a 35-year-old multiracial queer non-binary person said: "I live next to a hospital, so I always see semi-trucks that had like the freezers for all like, the bodies essentially, the overflow of bodies. That was very traumatizing." A 36-year-old White bisexual cisgender woman reported heightened stress due to fears about contracting the virus:

I have asthma and so I am considered at higher risk of getting [COVID-19] and at that time I was very concerned that, “Oh my god, I’m gonna go to the grocery store and somehow get it and die horribly.”

Regarding impacts of COVID-19 on mental health, a 29-year old White queer non-binary person said: “I would say that [COVID-19] has had a negative effect on my mental health [...] it’s hard because the things that I would normally do to cope are limited.”

Theme 2: Increased stress and worse mental health due high-profile police violence—This sample of SMW expressed aversion to witnessing police violence, underscored safety concerns, and noted how police violence affected their functioning, particularly among SMW of color. Several participants noted the considerable impact of George Floyd’s murder and witnessing police violence during the subsequent protests. One participant, a 20-year-old American Indian/Alaska Native queer cisgender woman, said:

When the George Floyd video came out, I was, like, “I don’t think I can watch someone [...] get choked for eight minute[s] and watch the light leave their eyes, I don’t think I can do that.” And then all the videos that came out from the protest, and just, watching people get batoned and teargassed and just, blood, it was too much chaos.

Other participants worried about their safety and safety of friends and family; a 21-year-old biracial queer cisgender woman stated: “I could be White-passing. But my mom is a Black woman. So, for me, it came a little more personal because I was like, ‘They could kill my mom.’” Numerous participants indicated that the increased stress related to police violence affected several areas of their life. For example, a 28-year-old Black pansexual cisgender woman said:

At one point, I was having nightmares where I was getting either murdered or raped by White male police officers. And I had to take some time off work because I was like, “I can’t focus, ‘cause I’m staying up until like 5:00 am because I’m afraid to go sleep.”

Others noted the combined stress of high-profile police violence and the pandemic occurring simultaneously, such as a 35-year-old White lesbian cisgender woman, who described how: “With everything going on with the pandemic and then race relations I think that—when that—those two things together started I think I went somewhere not great [...] it was just very overwhelming and depressing.”

Theme 3: Increased alcohol use due to COVID-19—Several participants indicated increased alcohol use during the pandemic. A 36-year-old White queer cisgender woman noted:

I would say that before the pandemic—a year ago I probably had one to two beers or glasses of wine like four-ish times a week—and now it’s like two beers or glasses of wine and an occasional third almost every day.

A 35-year-old White lesbian cisgender woman indicated increased drinking as a way to escape: “I do drink more on the weekends now during the pandemic...it’s not to a bad degree but I do think there is a heightened level of escapism to an extent.”

Discussion

This is the first study to demonstrate that NY-based trauma-exposed SMW exhibited elevated PTSD symptom severity, probable PTSD, and hazardous drinking during a period of heightened societal stress (i.e., April 2020 to August 2020) relative to previously published probability and non-probability samples of SMW. Contextualized by qualitative reports from participants, these elevations in mental and behavioral health concerns seem attributable, in part, to living near one of the first epicenters of COVID-19 and living through a period of increased racism-related stress at the time of data collection. Specifically, across all comparisons and regardless of sampling method of previous samples (i.e., probability or non-probability sampling), our sample demonstrated the highest PTSD symptom severity, probable PTSD, and hazardous drinking indicators. Regarding the two samples^{30,46} from which our sample did not demonstrate significantly higher probable PTSD, the mean PTSD symptom severity score from our sample was still significantly higher compared to the mean scores from the same studies.^{30,46} Thus, it is likely that even if more SMW in our sample did not meet PTSD criteria, they still exhibited significantly greater PTSD symptoms overall. Taken together, our findings suggest that NY-based SMW with preexisting vulnerabilities (e.g., prior trauma exposure) may be sensitized to periods of heightened societal stress (i.e., COVID-19, racism-related stress), potentially increasing their overall vulnerability to PTSD and alcohol use.^{16,17}

These results also add to a growing literature that demonstrates concerning rates of comorbid PTSD and alcohol use among trauma-exposed populations in general,⁵⁹ and specifically among SMW.^{47,60,61} Results from this study suggest that systemic and social determinants of health, including viral pandemics and societal racial unrest, are associated with increases in PTSD symptom severity, probable PTSD, and hazardous drinking in populations already contending with high levels of trauma and minority stressors. Indeed, trauma exposure and minority stressors may heighten one’s sensitivity to potentially threatening stimuli due to physiological alterations in response to stress, which might intensify avoidant coping strategies and impede effective adjustment to additional stressors.⁶²

At the same time, cumulative adverse experiences may also have salutogenic effects (i.e., posttraumatic growth,⁶³ such as positive retrospective appraisals of prior trauma that may improve coping with heightened societal stress).⁶⁴ Indeed, SMW with intersecting marginalized identities, including SMW of color, often display resilient stigma-coping strategies, such as embracing positive aspects of the self and engaging in social activism.^{55,65} Still, SMW who experience multiple forms of inequality face heightened risk of PTSD and hazardous drinking due to their disproportionate and often compounding experiences of stigma,⁶⁶ and as the current study suggests, potentially increased sensitivity to COVID-19-related stress and high-profile police killings of Black people. Future research

is needed to identify factors that predict whether adverse events lead to greater sensitivity or greater resilience to future stressors among SMW.

Based on the significantly elevated proportion of comorbid PTSD and hazardous drinking in our sample compared to previous samples, delivering tailored interventions targeting PTSD, alcohol use, and SMW's unique needs may give this population tools to cope with distal factors, such as stress related to trauma, COVID-19, and interpersonal and systemic stigma. For example, validating SMW's traumatic experiences while also helping to externalize their associated negative internalized thoughts and beliefs (e.g., shame, guilt, self-blame) could benefit their ability to cope with future adversities.^{55,67} Providers could also promote SMW's empowerment (e.g., encouraging SMW to participate in decision making around alcohol-related treatment goals) to help this population develop adaptive and values-driven responses to future stressors.^{55,68} Integrated PTSD and alcohol use interventions could also include emotion regulation skills-building exercises, psychoeducation about macro-level determinants of health, and the facilitation of SMW's access to affirming community-based services.⁶⁹ Beyond incorporating macro-level psychoeducation into individual-level interventions, implementing macro-level interventions, such as connection to activist communities and participation in anti-racist organizations, may help to shift broader cultural and societal norms. Macro-level interventions could also target structural factors (e.g., policies, norms) in efforts to reduce the impact of societal stress on marginalized populations' PTSD symptoms and hazardous drinking.

Despite this study's substantial strengths, it is not without limitations. Our sample was a non-probability purposive convenience sample, which may result in biased parameter estimates. It was also limited in size and location, so the extent to which results generalize to samples of SMW living outside of NY during the COVID-19 pandemic is unclear. Another limitation is that the sample was predominantly White. The COVID-19 pandemic has disproportionately affected racial/ethnic minorities,⁷⁰ and racial/ethnic minorities may be particularly vulnerable to high-profile racial violence and racism-related unrest events.^{71,72} As such, rates of PTSD and alcohol use in this sample could be underestimated among vulnerable subgroups, such as trauma-exposed SMW of color. Further, these results are cross-sectional, and thus, temporal conclusions regarding the direction of the relationship between PTSD and alcohol use cannot be determined. Future research should investigate this population's comorbid PTSD symptoms and alcohol use over time to better understand the development, maintenance, and co-occurrence of these health risks in the context of acute societal stress. Future studies might also consider examining individual-, interpersonal-, and community-level mechanisms underlying the influence of macro-level factors on trauma-exposed SMW's health risks. For instance, self-efficacy, discrimination, and access to resources, respectively, might help to explain the ways in which societal stress may confer distinct risk for PTSD symptom severity, probable PTSD, and hazardous drinking among trauma-exposed SMW.

Conclusions

Relative to previously published samples of trauma-exposed SMW and general samples of SMW, the current study demonstrated higher PTSD symptom severity, probable PTSD,

comorbid PTSD and alcohol use disorder, and hazardous drinking indicators among trauma-exposed SMW living in or near one of the first COVID-19 epicenters in the US and during a time of nationally heightened societal tensions related to racism. In qualitative interviews, many participants directly attributed their mental and behavioral health concerns to increased stress during 2020. Given that trauma-exposed SMW are already at increased risk for PTSD and increased alcohol use, these findings highlight the need for public health officials and intervention scientists to enhance affirming trauma-informed interventions among SMW, particularly those living in areas of increased societal stress, such as in NY.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Jillian Scheer is supported by a Mentored Scientist Development Award (K01AA028239) from the National Institute on Alcohol Abuse and Alcoholism. Skyler Jackson is supported by a Mentored Scientist Development Award (K01MH12231601) from the National Institute on Mental Health. Abigail Batchelder is supported by a Mentored Scientist Development Award (K23DA043418) from the National Institute on Drug Abuse. Cory Cascalheira is supported as a RISE Fellow by the National Institutes of Health (R25GM061222). The research presented herein is the authors' own and does not represent the views of the funders, including the National Institutes of Health.

Funding

This study was funded by the Yale University Women's Faculty Forum Seed Grant and Yale University's Fund for Lesbian and Gay Studies (PI: Scheer). The content contained herein is the authors' own and does not necessarily reflect the views of the funders.

References

- [1]. Hughes T, McCabe SE, Wilsnack SC, West BT, Boyd CJ. Victimization and substance use disorders in a national sample of heterosexual and sexual minority women and men. *Addiction*. 2010;105(12):2130–2140. doi:10.1111/j.1360-0443.2010.03088.x. [PubMed: 20840174]
- [2]. Roberts AL, Austin SB, Corliss HL, Vandermorris AK, Koenen KC. Pervasive trauma exposure among US sexual orientation minority adults and risk of posttraumatic stress disorder. *Am J Public Health*. 2010;100(12):2433–2441. doi:10.2105/AJPH.2009.168971. [PubMed: 20395586]
- [3]. Scheer JR, Pachankis JE, Bränström R. Gender-based structural stigma and intimate partner violence across 28 countries: a population-based study of women across sexual orientation, immigration status, and socioeconomic status. *J Interpers Violence*. 2020:1–24. doi:10.1177/0886260520976212.
- [4]. Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol Consumption-II. *Addiction*. 1993;88(6):791–804. doi:10.1111/j.1360-0443.1993.tb02093.x. [PubMed: 8329970]
- [5]. Drabble L, Midanik LT, Trocki K. Reports of alcohol consumption and alcohol-related problems among homosexual, bisexual and heterosexual respondents: results from the 2000 National Alcohol Survey. *J Stud Alcohol* 2005;66(1):111–120. doi: 10.15288/jsa.2005.66.111. [PubMed: 15830911]
- [6]. McCabe SE, Hughes TL, Bostwick WB, West BT, Boyd CJ. Sexual orientation, substance use behaviors and substance dependence in the United States. *Addiction*. 2009;104(8):1333–1345. doi:10.1111/j.1360-0443.2009.02596.x. [PubMed: 19438839]

- [7]. Talley AE, Hughes TL, Aranda F, Birkett M, Marshal MP. Exploring alcohol-use behaviors among heterosexual and sexual minority adolescents: intersections with sex, age, and race/ethnicity. *Am J Public Health*. 2014;104(2):295–303. doi:10.2105/AJPH.2013.301627. [PubMed: 24328614]
- [8]. Whittington C, Hadfield K, Calderon C. The lives and livelihoods of many in the LGBTQ community are at risk amidst COVID-19 crisis. *Human Rights Campaign*. <https://www.hrc.org/resources/the-lives-and-livelihoods-of-many-in-the-lgbtq-community-are-at-risk-amidst>. Published 2020. Accessed August 20, 2021.
- [9]. Cerezo A, Ramirez A, O’Shaughnessy T, Sanchez A, Mattis S, Ross A. Understanding the power of social media during COVID-19: forming social norms for drinking among sexual minority gender expansive college women. *J Homosex*. 2021;68(4):560–576. doi:10.1080/00918369.2020.1868183. [PubMed: 33428564]
- [10]. Salerno JP, Williams ND, Gattamorta KA. LGBTQ populations: psychologically vulnerable communities in the COVID-19 pandemic. *Psychol Trauma*. 2020;12(S1):S239–S242. doi:10.1037/tra0000837. [PubMed: 32551761]
- [11]. Fatal Force: Police shootings database. *Washington Post*. <https://www.washingtonpost.com/graphics/investigations/police-shootings-database>. Accessed August 20, 2021.
- [12]. Mallory C, Hasenbush A, Sears B. Discrimination and Harassment by Law Enforcement Officers in the LGBT Community. *Williams Institute*. <https://williamsinstitute.law.ucla.edu/publications/lgbt-discrimlaw-enforcement>. Published 2015. Accessed August 20, 2021.
- [13]. Carroll TW. Social protest photography and public history: “Whose streets? Our streets!”: New York City, 1980–2000. *J Hist Behav Sci*. 2021;57(1):34–59. doi:10.1002/jhbs.22082. [PubMed: 33502023]
- [14]. Levitt HM, Puckett JA, Ippolito MR, Horne SG. Sexual minority women’s gender identity and expression: challenges and supports. *J Lesbian Stud*. 2012;16(2):153–176. doi:10.1080/10894160.2011.605009. [PubMed: 22455340]
- [15]. Jackson SD. “Connection is the antidote”: psychological distress, emotional processing, and virtual community building among LGBTQ students after the Orlando shooting. *Psychol Sex Orientat Gend Divers*. 2017;4(2):160–168. doi:10.1037/sgd0000229.
- [16]. Hammen C, Henry R, Daley SE. Depression and sensitization to stressors among young women as a function of childhood adversity. *J Consult Clin Psychol*. 2000;68(5):782–787. doi:10.1037/0022-006X.68.5.782. [PubMed: 11068964]
- [17]. Stroud CB. The stress sensitization model. In: Harkness KL, Hayden EP, eds. *The Oxford Handbook of Stress and Mental Health*. Oxford University Press; 2020:348–370. doi:10.1093/oxfordhb/9780190681777.013.16.
- [18]. Haller M, Chassin L. Risk pathways among traumatic stress, posttraumatic stress disorder symptoms, and alcohol and drug problems: a test of four hypotheses. *Psychol Addict Behav*. 2014;28(3):841–851. doi:10.1037/a0035878. [PubMed: 24933396]
- [19]. Hellmuth JC, Jaquier V, Young-Wolff K, Sullivan TP. Posttraumatic stress disorder symptom clusters, alcohol misuse, and women’s use of intimate partner violence. *J Trauma Stress*. 2013;26(4):451–458. doi:10.1002/jts.21829. [PubMed: 23868671]
- [20]. Khantzian EJ. The self-medication hypothesis of substance use disorders: a reconsideration and recent applications. *Harv Rev Psychiatry*. 1997;4(5):231–244. doi:10.3109/10673229709030550. [PubMed: 9385000]
- [21]. Allan CA. Alcohol problems and anxiety disorders – a critical review. *Alcohol Alcohol*. 1995;30(2):145–151. doi:10.1093/oxfordjournals.alcalc.a045708. [PubMed: 7662032]
- [22]. Kushner MG, Abrams K, Borchardt C. The relationship between anxiety disorders and alcohol use disorders: a review of major perspectives and findings. *Clin Psychol Rev*. 2000;20(2):149–171. doi: 10.1016/S0272-7358(99)00027-6. [PubMed: 10721495]
- [23]. Simpson TL. Childhood sexual abuse, PTSD, and the functional roles of alcohol use among women drinkers. *Subst Use Misuse*. 2003;38(2):249–270. doi:10.1081/ja-120017248. [PubMed: 12625430]
- [24]. Weiss NH, Bold KW, Contractor AA, Sullivan TP, Armeli S, Tennen H. Trauma exposure and heavy drinking and drug use among college students: identifying the roles of negative

- and positive affect lability in a daily diary study. *Addict Behav.* 2018;79:131–137. doi:10.1016/j.addbeh.2017.12.015. [PubMed: 29289852]
- [25]. Brooks VR. *Minority Stress and Lesbian Women*. Lexington Books; 1981.
- [26]. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull.* 2003;129(5):674–697. doi:10.1037/0033-2909.129.5.674. [PubMed: 12956539]
- [27]. Calabrese SK, Meyer IH, Overstreet NM, Haile R, Hansen NB. Exploring discrimination and mental health disparities faced by black sexual minority women using a minority stress framework. *Psychol Women Q.* 2015;39(3):287–304. doi:10.1177/0361684314560730. [PubMed: 26424904]
- [28]. Lehavot K, Simoni JM. The impact of minority stress on mental health and substance use among sexual minority women. *J Consult Clin Psychol.* 2011;79(2):159–170. doi:10.1037/a0022839. [PubMed: 21341888]
- [29]. Watson LB, Grotewiel M, Farrell M, Marshik J, Schneider M. Experiences of sexual objectification, minority stress, and disordered eating among sexual minority women. *Psychol Women Q.* 2015;39(4):458–470. doi:10.1177/0361684315575024.
- [30]. Dworkin ER, Jaffe AE, Fitzpatrick S, Rhew IC, Kaysen D. Daily relationships between posttraumatic stress symptoms, drinking motives, and alcohol consumption in trauma-exposed sexual minority women. *Psychol Addict Behav.* 2021;35(1):3–15. doi:10.1037/adb0000680. [PubMed: 33030918]
- [31]. Fitzpatrick S, Dworkin ER, Zimmerman L, Javorka M, Kaysen D. Stressors and drinking in sexual minority women: the mediating role of emotion dysregulation. *Psychol Sex Orientat Gen Divers.* 2020;7(1):46–54. doi:10.1037/sgd0000351. [PubMed: 32596411]
- [32]. McLaughlin KA, Conron KJ, Koenen KC, Gilman SE. Childhood adversity, adult stressful life events, and risk of past-year psychiatric disorder: a test of the stress sensitization hypothesis in a population-based sample of adults. *Psychol Med.* 2010;40(10):1647–1658. doi:10.1017/S0033291709992121. [PubMed: 20018126]
- [33]. Roberts AL, Rosario M, Corliss HL, Koenen KC, Austin SB. Elevated risk of posttraumatic stress in sexual minority youths: mediation by childhood abuse and gender nonconformity. *Am J Public Health.* 2012;102(8):1587–1593. doi:10.2105/AJPH.2011.300530. [PubMed: 22698034]
- [34]. Holman EA, Thompson RR, Garfin DR, Silver RC. The unfolding COVID-19 pandemic: a probability-based, nationally representative study of mental health in the United States. *Sci Adv.* 2020;6(42):1–7. doi: 10.1126/sciadv.abd5390.
- [35]. Pollard MS, Tucker JS, Green HD. Changes in adult alcohol use and consequences during the COVID-19 pandemic in the US. *JAMA Netw Open.* 2020;3(9):e2022942. doi:10.1001/jamanetworkopen.2020.22942. [PubMed: 32990735]
- [36]. Gallagher MW, Smith LJ, Richardson AL, Long LJ. Examining associations between COVID-19 experiences and posttraumatic stress. *J Loss Trauma.* 2021;26(8):752–766. doi:10.1080/15325024.2021.1886799.
- [37]. Moore SE, Wierenga KL, Prince DM, Gillani B, Mintz LJ. Disproportionate impact of the COVID-19 pandemic on perceived social support, mental health and somatic symptoms in sexual and gender minority populations. *J Homosex.* 2021;68(4):577–591. doi:10.1080/00918369.2020.1868184. [PubMed: 33399504]
- [38]. Peterson ZD, Vaughan EL, Carver DN. Sexual identity and psychological reactions to COVID-19. *Traumatology.* 2021;27(1):6–13. doi: 10.1037/trm0000283.
- [39]. Potter EC, Tate DP, Patterson CJ. Perceived threat of COVID-19 among sexual minority and heterosexual women. *Psychol Sex Orientat Gen Divers.* 2021;8(2):188–200. doi:10.1037/sgd0000454.
- [40]. Riggle EDB, Drabble LA, Bochicchio LA, et al. Experiences of the COVID-19 pandemic among African American, Latinx, and White sexual minority women: a descriptive phenomenological study. *Psychol Sex Orientat Gen Divers.* 2021;8(2):145–158. doi:10.1037/sgd0000510. [PubMed: 34746332]

- [41]. Weathers FW, Blake DD, Schnurr PP, Kaloupek DG, Marx BP, Keane TM. The life events checklist for DSM-5 (LEC-5). National Center for PTSD. https://www.ptsd.va.gov/professional/assessment/te-measures/life_events_checklist.asp. Published 2013. Accessed May 20, 2021.
- [42]. Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, Schnurr PP. The PTSD Checklist for DSM-5 (PCL-5). National Center for PTSD. <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>. Published 2013. Accessed May 20, 2021.
- [43]. Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA. The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. Arch Intern Med. 1998;158(16):1789–1795. doi:10.1001/archinte.158.16.1789. [PubMed: 9738608]
- [44]. Salway TJ, Morgan J, Ferlatte O, Hawkins B, Lachowsky NJ, Gilbert M. A systematic review of characteristics of nonprobability community venue samples of sexual minority individuals and associated methods for assessing selection bias. LGBT Health. 2019;6(5):205–215. doi:10.1089/lgbt.2018.0241. [PubMed: 31135260]
- [45]. Drabble LA, Trocki KF, Korcha RA, Klinger JL, Veldhuis CB, Hughes TL. Comparing substance use and mental health outcomes among sexual minority and heterosexual women in probability and non-probability samples. Drug Alcohol Depend. 2018;185:285–292. doi:10.1016/j.drugalcdep.2017.12.036. [PubMed: 29482053]
- [46]. Straub KT, McConnell AA, Messman-Moore TL. Internalized heterosexism and posttraumatic stress disorder symptoms: the mediating role of shame proneness among trauma-exposed sexual minority women. Psychol Sex Orientat Gen Divers. 2018;5(1):99–108. doi:10.1037/sgd0000263.
- [47]. Evans-Polce RJ, Kcomt L, Veliz PT, Boyd CJ, McCabe SE. Alcohol, tobacco, and comorbid psychiatric disorders and associations with sexual identity and stress-related correlates. Am J Psychiatry. 2020;177(11):1073–1081. doi:10.1176/appi.ajp.2020.20010005. [PubMed: 32911997]
- [48]. Coulter RWS, Jun H-J, Truong N, et al. Effects of familial and non-familial warmth during childhood and adolescence on sexual-orientation disparities in alcohol use trajectories and disorder during emerging adulthood. Drug Alcohol Depend. 2019;205:107643. doi:10.1016/j.drugalcdep.2019.107643 [PubMed: 31689643]
- [49]. Kahle EM, Veliz P, McCabe SE, Boyd CJ. Functional and structural social support, substance use and sexual orientation from a nationally representative sample of US adults. Addiction. 2020;115(3):546–558. doi:10.1111/add.14819. [PubMed: 31599027]
- [50]. Drabble L, Trocki KF, Klinger JL. Religiosity as a protective factor for hazardous drinking and drug use among sexual minority and heterosexual women: findings from the National Alcohol Survey. Drug Alcohol Depend. 2016;161:127–134. doi: 10.1016/j.drugalc-dep.2016.01.022. [PubMed: 26857897]
- [51]. Johnson TP, Hughes TL, Cho YI, Wilsnack SC, Aranda F, Szalacha LA. Hazardous drinking, depression, and anxiety among sexual minority women: self-medication or impaired functioning? J Stud Alcohol Drugs. 2013;74(4):565–575. doi:10.15288/jsad.2013.74.565. [PubMed: 23739020]
- [52]. Benjamini Y, Hochberg Y. Controlling the false discovery rate: a practical and powerful approach to multiple testing. J R Stat Soc Ser B Methodol. 1995;57(1):289–300. doi:10.1111/j.2517-6161.1995.tb02031.x.
- [53]. Braun V, Clarke V. Thematic analysis. In: Cooper H, Camic PM, Long DL, Panter AT, Rindskopf D, Sher KJ, eds. APA Handbook of Research Methods in Psychology, Vol. 2: Research Designs: Quantitative, Qualitative, Neuropsychological, and Biological. Washington DC, US: American Psychological Association; 2012:57–71. doi:10.1037/13620-004.
- [54]. Huxley C, Clarke V, Halliwell E. Resisting and conforming to the ‘Lesbian Look’: the importance of appearance norms for lesbian and bisexual women. J Community Appl Soc Psychol. 2014;24(3):205–219. doi:10.1002/casp.2161.
- [55]. Scheer JR, Clark KA, McConocha E, Wang K, Pachankis JE. Toward Cognitive-Behavioral Therapy for Sexual Minority Women: Voices from Stakeholders and Community Members. [Unpublished Manuscript]. Syracuse, NY: Syracuse University; 2021.

- [56]. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77–101. doi:10.1191/1478088706qp063oa.
- [57]. Corlett S, Mavin S. Reflexivity and researcher positionality. In Cassell Catherine, Cunliffe Ann L. & Grandy Gina, eds. *The SAGE Handbook of Qualitative Business and Management Research Methods: History and Traditions.* London, UK: SAGE Publications Ltd; 2018:377–398. doi:10.4135/9781526430212.
- [58]. Levitt HM, Morrill Z, Collins KM, Rizo JL. The methodological integrity of critical qualitative research: principles to support design and research review. *J Couns Psychol.* 2021;68(3):357–370. doi:10.1037/cou0000523. [PubMed: 34043379]
- [59]. Sullivan TP, Armeli S, Tennen H, Weiss NH, Hansen NB. Fluctuations in daily PTSD symptoms are related to proximal alcohol use: a micro-longitudinal study of women victims of intimate partner violence. *Am J Drug Alcohol Abuse.* 2020;46(1):98–108. doi:10.1080/00952990.2019.1624765. [PubMed: 31311330]
- [60]. Mereish EH, Lee JH, Gamarel KE, Zaller ND, Operario D. Sexual orientation disparities in psychiatric and drug use disorders among a nationally representative sample of women with alcohol use disorders. *Addict Behav.* 2015;47:80–85. doi:10.1016/j.addbeh.2015.03.023. [PubMed: 25899096]
- [61]. Pietrzak RH, Goldstein RB, Southwick SM, Grant BF. Prevalence and Axis I comorbidity of full and partial posttraumatic stress disorder in the United States: results from Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions. *J Anxiety Disord.* 2011;25(3):456–465. doi: 10.1016/j.janxdis.2010.11.010. [PubMed: 21168991]
- [62]. Lee SY, Park CL, Pescatello LS. How trauma influences cardiovascular responses to stress: contributions of posttraumatic stress and cognitive appraisals. *J Behav Med.* 2020;43(1):131–142. doi:10.1007/s10865-019-00067-8. [PubMed: 31165948]
- [63]. Tedeschi RG, Shakespeare-Finch J, Taku K, Calhoun LG. *Posttraumatic Growth: Theory, Research, and Applications.* Routledge; 2018.
- [64]. Hamam AA, Milo S, Mor I, Shaked E, Eliav AS, Lahav Y. Peritraumatic reactions during the COVID-19 pandemic - the contribution of posttraumatic growth attributed to prior trauma. *J Psychiatr Res.* 2021;132:23–31. doi:10.1016/j.jpsychires.2020.09.029. [PubMed: 33038562]
- [65]. Ghabrial MA. “Trying to figure out where we belong”: narratives of racialized sexual minorities on community, identity, discrimination, and health. *Sex Res Soc Policy.* 2017;14(1):42–55. doi: 10.1007/s13178-016-0229-x.
- [66]. Cerezo A, Ramirez A. Perceived discrimination, alcohol use disorder and alcohol-related problems in sexual minority women of color. *J Soc Serv Res.* 2021;47(1):33–46. doi:10.1080/01488376.2019.1710657.
- [67]. Salim SR, McConnell AA, Messman TL. Bisexual women’s recovery after sexual assault: stigma, negative social reactions, and hazardous drinking. *Psychol Sex Orientat Gen Divers.* 2021;1–10. doi:10.1037/sgd0000490.
- [68]. Scheer JR, Batchelder AW, Bochicchio LA, Kidd JD, Hughes TL. Alcohol Use, Help-Seeking, and Treatment Satisfaction among Sexual Minority Women [unpublished manuscript]. Syracuse, NY: Syracuse University; 2021.
- [69]. Scheer JR, Edwards KM, Sheinfil AZ, Dalton MR, Firkey MK, Watson RJ. Interpersonal victimization, substance use, and mental health among sexual and gender minority youth: the role of self-concept factors. *J Interpers Violence.* 2021. doi: 10.1177/08862605211035868.
- [70]. Fortuna LR, Tolou-Shams M, Robles-Ramamurthy B, Porche MV. Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: the need for a trauma-informed social justice response. *Psychol Trauma.* 2020;12(5):443–445. doi:10.1037/tra0000889. [PubMed: 32478545]
- [71]. First JM, Danforth L, Frisby CM, Warner BR, Ferguson MW, Houston JB. Posttraumatic stress related to the killing of Michael Brown and resulting civil unrest in Ferguson, Missouri: roles of protest engagement, media use, race, and resilience. *J Soc Soc Work Res.* 2020;11(3):369–391. doi: 10.1086/711162.
- [72]. Mason TB, Maduro RS, Derlega VJ, Hacker DS, Winstead BA, Haywood JE. Individual differences in the impact of vicarious racism: African American students react to the George

Zimmerman trial. *Cultur Divers Ethnic Minor Psychol.* 2017;23(2):174–184. doi:10.1037/cdp0000099. [PubMed: 27736105]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 1.

Sample characteristics of trauma-exposed sexual minority women

Sample Characteristics	Total Sample (n = 68)		Qualitative Subset (n = 29)	
	n	%	n	%
Age, years				
Mean		28.74		29.41
SD		7.85		9.03
Range		18 – 57		19 – 57
Assigned sex at birth				
Female	59	86.8	26	89.7
Male	8	11.8	3	10.3
Intersex	1	1.5	0	0.0
Gender identity				
Cisgender woman	38	55.9	16	55.2
Transgender or other gender minority (e.g., gender non-conforming, genderqueer)	30	44.1	13	44.8
Sexual orientation ^a				
Queer	33	48.5	16	55.2
Bisexual	28	41.2	12	41.4
Lesbian	26	38.2	8	27.6
Pansexual	19	27.9	6	20.7
Unsure/questioning	6	8.8	2	6.9
Demisexual	5	7.4	3	10.3
Gay	5	7.4	5	17.2
Asexual	4	5.9	2	6.9
Straight or heterosexual	2	2.9	0	0.0
Fluid	1	1.5	1	3.4
Race/ethnicity ^a				
American indian or Alaska Native	4	5.9	2	6.9
Asian	7	10.3	4	13.8
Black or African American	4	5.9	3	10.3

Sample Characteristics	Total Sample (n = 68)		Qualitative Subset (n = 29)	
	n	%	n	%
Latina/Latino/Latinx or Hispanic	9	13.2	4	13.8
Middle Eastern	2	2.9	2	6.9
Biracial	5	7.4	2	6.9
Multiracial	4	5.9	2	6.9
White	59	76.5	20	69.0
Something else	1	1.5	0	0.0

^aPercentages do not add up to 100% as participants were able to make multiple selections

Table 2. Differences in PTSD and alcohol use among New York sample and previously published samples

	Trauma-exposed SMW living in New York during April-August 2020 (<i>n</i> = 68) ^{a,b,c}				Comparison Samples			Comparison Statistics	
	Mean (SD) ^d	Proportion (%)	Paper	<i>n</i>	Population	Mean (SD) [†]	Proportion (%)	Welch's <i>t</i>	<i>X</i> ²
PTSD symptom severity and probable PTSD	30.10 (15.76)	35.3%	Dworkin et al. (2020) ^a	81	Trauma-exposed SMW	20.92 (20.08)	23.7%	3.13 ^{**}	2.52
			Straub et al. (2018) ^a	326	Trauma-exposed SMW	21.30 (20.22)	27.3%	3.97 ^{***}	1.76
			Roberts et al. (2010) ^e	306	Trauma-exposed SMW		21.9%		5.43 [*]
			Evans-Polce et al. (2020) ^f	801 ^g	Bisexual women from NESARC-III		21.0%		7.47 ^{**}
Alcohol use disorder		47.1%	Kalthe et al. (2020) ^f	817	SMW from NESARC-III		27.1%		12.31 ^{***}
			Coulter et al. (2019) ^e	1141	SMW from GUTS		28.3%		10.89 ^{***}
Comorbid PTSD and alcohol use disorder		17.6%	Evans-Polce et al. (2020) ^f	801 ^g	Bisexual women from NESARC-III		8.5% ^h		6.29 [*]
Heavy episodic drinking		45.6%	Johnson et al. (2013) ^c	384	SMW from the CHLEW study (Wave 1)		25.5%		11.41 ^{***}
			Drabble et al. (2018) ^c	688	SMW from the CHLEW study (Wave 3)		39.3%		1.04
			Drabble et al. (2018) ⁱ	315	SMW from NAS (2000–2015 Waves)		33.8%		3.47
			Drabble et al. (2016) ⁱ	262	SMW from NAS (2000–2010 Waves)		9.5%		49.79 ^{***}

Note: PTSD = posttraumatic stress disorder; SMW = sexual minority women; NESARC-III = National Epidemiologic Survey on Alcohol and Related Conditions-III; CHLEW = Chicago Health and Life Experiences of Women; GUTS = Growing Up Today Study; NAS = National Alcohol Survey.

^a PTSD Checklist for DSM-5.

^b Alcohol Use Disorders Identification Test, alcohol consumption questions (AUDIT-C).

^c At least one occasion in the past year of 6+ drinks.

^d Mean and SD represent PTSD symptom severity scores using the PTSD Checklist for DSM-5; range = 0 – 80.

^e DSM-IV criteria.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

f Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS-5) – includes assessment of PTSD based on *DSM-5* criteria.

g Sample size estimated by assuming half of the sexual minority sample were women, and half of the sexual minority women were bisexual. Only the total sexual minority participant sample was reported ($n = 3,204$). We only used the proportion of the bisexual sample, since proportion of PTSD and alcohol use disorder were higher in the bisexual sample and provide a more robust comparison.

h Estimate from a graph.

i At least one occasion in the past year of 5+ drinks.

* $p < .05$

** $p < .01$

*** $p < .001$.

Table 3.

Sample excerpts from qualitative Interviews.

Themes	Excerpts
Increased stress and mental health concerns related to COVID-19	<p>“I have asthma and so I am considered at higher risk of getting [COVID-19] and at that time I was very concerned that, ‘Oh my god, I’m gonna go to the grocery store and somehow get it and die horribly.’” (36-year-old White bisexual cisgender woman)</p> <p>“I live next to a hospital, so I always see semi-trucks that had like the freezers for all like, the bodies essentially, the overflow of bodies. That was very traumatizing.” (35-year-old multiracial queer non-binary person assigned female sex at birth)</p> <p>“It’s really challenging to, even being safe and even being economically okay, seeing so much sickness and death and stress and feeling so ill cared for by the government and the people who are theoretically supposed to make sure that people are safe” (36-year-old White queer cisgender woman)</p> <p>“I definitely have been struggling more than I was pre-Covid.” (32-year-old White lesbian gender non-conforming cisgender woman)</p> <p>“I would say that [COVID-19] has had a negative effect on my mental health [...] it’s hard because the things that I would normally do to cope are limited. So I try to have outdoor exercise, but the more people that are outdoors, the more fearful I am of that, and people aren’t social distancing and they’re not wearing masks, while they’re experiencing outdoor spaces. So that is stressful.” (29-year-old White queer non-binary person assigned female sex at birth)</p> <p>“This came up with my therapist the other day because I felt like the pandemic hit and I felt like I was fucking undoing years and years of mental work trying to get myself to a certain place, and then something completely out of my control happens and I feel like I’m spiraling again.” (25-year-old Asian bisexual cisgender woman)</p> <p>“I think something that the pandemic has done, because it has fully erased my calendar, that now I have to sit and just be with myself and it’s been a very tough thing.” (21-year-old biracial queer cisgender woman)</p>
Increased stress and mental health concerns related high-profile police violence	<p>“I’m very concerned about the violence that’s been going on against protestors, especially in [urban area]. Just, like, the impending fascism is really not great for mental health.” (20-year-old White queer non-binary person assigned female sex at birth)</p> <p>“At one point, I was having nightmares where I was getting either murdered or raped by White male police officers. And I had to take some time off work because I was like, “I can’t focus, ‘cause I’m staying up until like 5:00 am because I’m afraid to go sleep.” (28-year-old Black pansexual cisgender woman)</p> <p>“Even though I’m not Black, the Black Lives Matter movement has impacted me and also it has impacted me by the fact that [...] my friends at home and mostly Black and they’ve been targeted and they’ve been feeling something like a stress, they feel like depressed, and I feel like as a friend, I want to try to help.” (20-year-old Asian bisexual cisgender woman)</p> <p>“But like the recent killings have been disgusting, you know it’s horrifying. Like Breonna Taylor for like they went into her house when she was like sleeping and shot. I mean it’s just you know like I mean I never watched the video of the George Floyd murder, but you know unfortunately my father has described it to me in great detail. [It] literally sounds like someone like smiling while lynching someone. Like it’s absolutely horrifying you know.” (41-year-old White queer gender non-conforming person assigned female sex at birth)</p> <p>“It’s horribly upsetting to witness” (28-year-old White lesbian transgender woman)</p> <p>“But then I think with everything going on with the pandemic and then race relations I think that—when that—those two things together started I think I went somewhere not great for a little while. Like I just felt like I wanted to get out and get away and just be in nature and not around anybody because it was just very overwhelming and depressing.” (35-year-old White lesbian cisgender woman)</p> <p>“When the George Floyd video came out, I was, like, ‘I don’t think I can watch someone [...] get choked for eight minute[s] and watch the light leave their eyes, I don’t think I can do that’. And then all the videos that came out from the protest, and just, watching people get bated and teargassed and just, blood, it was too much chaos.” (20-year-old American Indian/Alaska Native queer cisgender woman)</p> <p>“I could be White-passing. But my mom is a Black woman. So, for me, it came a little more personal because I was like, ‘They could kill my mom.’” (21-year-old biracial queer cisgender woman)</p>
Increased alcohol use related to COVID-19	<p>“Yeah, I would say that before the pandemic, like a year ago I probably had one to two beers or glasses of wine like four-ish times a week and now it’s like two beers or glasses of wine and an occasional third like almost every day.” (36-year-old White queer cisgender woman)</p> <p>“So I am looking forward to eventually going back to work in [name of workplace] again, and you can’t drink on the clock there. So I’m looking forward to that. But right now it’s just like I’m bored, so I wanna drink.” (28-year-old Black queer cisgender woman)</p> <p>“I do drink more on the weekends now during the pandemic. Which it’s not up to a bad degree but I do think there is that a little bit heightened level of escapism to an extent.” (35-year-old White lesbian cisgender woman)</p>