HHS Public Access

Author manuscript

Subst Use Misuse. Author manuscript; available in PMC 2023 August 16.

Published in final edited form as:

Subst Use Misuse. 2022 ; 57(8): 1237–1247. doi:10.1080/10826084.2022.2076874.

Discrimination, Substance Use, and Mental Health among Sexual and Gender Minority Adults Accessing Day Shelter Services

Sarah J. Ehlke[a], **Amy M. Cohn**[a,b], **Laili K. Boozary**[a,c], **Adam C. Alexander**[a,d], **Joseph J. C. Waring**[a], **Michael S. Businelle**[a,d], **Darla E. Kendzor**[a,d]

[a]TSET Health Promotion Research Center, Stephenson Cancer Center, The University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, USA

[b]Department of Pediatrics, The University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, USA

[c]Department of Psychology, Cellular and Behavioral Neurobiology, The University of Oklahoma, Norman, OK

[d]Department of Family and Preventive Medicine, The University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

Abstract

Background: Sexual and gender minority (SGM) adults are overrepresented in the population of individuals experiencing homelessness, and high rates of substance use are common in this group. Plausibly, poor mental health and discrimination may contribute to substance use among SGM adults experiencing homelessness. This study described participant characteristics, and the interrelations among sociodemographic variables, substance use, mental health, and discrimination experiences among 87 SGM adults seeking services at a day shelter in Oklahoma City, OK. Discrimination experiences were characterized by race (White vs. non-White), sex (female vs. male), sexual identity (heterosexual vs. sexual minority), and gender identity (gender conforming vs. gender minority).

Methods: Participants reported their past 30-day tobacco (cigarette/cigarillos, alternative tobacco products [ATP]), alcohol, and marijuana use, as well as everyday and lifetime major discrimination experiences, substance use problems, depression, anxiety, and post-traumatic stress disorder (PTSD). Independent samples t-tests examined differences in discrimination based on substance use and mental health.

Results: Participants had high rates of tobacco and marijuana use, substance use problems, depression, anxiety, and PTSD. Over 80% reported experiencing everyday or lifetime major discrimination. Depression and PTSD were associated with ATP use, and anxiety was associated with alcohol use. All mental health variables were associated with substance use problems and everyday discrimination. Depression was associated with lifetime major discrimination.

CONTACT Sarah J. Ehlke, Sarah-Ehlke@ouhsc.edu, TSET Health Promotion Research Center, The University of Oklahoma Health Sciences Center, 655, Research Pkwy #400, Oklahoma City, OK, 73104, USA.

Declaration of interest

The authors report no conflict of interest.

Conclusions: SGM adults accessing shelter services frequently experienced discrimination and poor mental health, and substance use was common. Future research should examine the causal impact of discrimination on mental health and substance use among SGM adults experiencing homelessness.

Keywords

Discrimination; substance use; mental health; sexual minority; gender minority; homelessness

Sexual and gender minority (SGM) individuals are overrepresented in the homeless population (Choi et al., 2015; Flentje et al., 2016; Fraser et al., 2019). Although difficult to estimate, national surveys (i.e., Generations Study, TransPop Study) in the United States reveal that 2.5% of sexual minority adults and 8.3% of transgender adults experienced homelessness in the past 12 months (Wilson et al., 2020). Further, 17% of sexual minority individuals reported experiencing homeless in their lifetime (Wilson et al., 2020). These estimates were higher than estimates of their cisgender heterosexual counterparts (past 12 months: 1.4%, lifetime: 6.2%; Wilson et al., 2020) and highlight the need to understand the experiences and health conditions of SGM individuals experiencing homelessness. SGM adults (Barger et al., 2021; Ganz et al., 2018; Phillips II et al., 2020), and individuals experiencing homelessness (Baggett & Rigotti, 2010; North et al., 2010), have high rates of tobacco, alcohol, and marijuana use, although limited research has examined the intersection of these vulnerabilities (i.e., SGM adults experiencing homelessness). A recent review article concluded that SGM adults experiencing homelessness are more likely to engage in substance use, though a gap remains in our understanding of the reasons for this association (Ecker et al., 2019).

Major contributing factors to the high rates of substance use among SGM adults and individuals experiencing homelessness include poor mental health and high levels of stress, including stress resulting from discrimination experiences (Lehavot & Simoni, 2011; Skosireva et al., 2014; Slater et al., 2017; Stein et al., 2008). According to minority stress theory (Meyer, 2003), SGM individuals experience stress and discrimination related to their sexual and gender identity, which may exacerbate mental health problems and substance use. Consistent with the self-medication hypothesis (Khantzian, 1985), SGM adults experiencing homelessness may cope with poor mental health and discrimination by engaging in substance use. Further, discrimination experiences may differ based on sexual identity (McCabe et al., 2019), gender identity (Grant et al., 2010; Kattari et al., 2016), race (Kendzor et al., 2014; Wrighting et al., 2019), and sex (Hahm et al., 2010; Otiniano Verissimo et al., 2014; Shastri, 2014). Understanding differences in the type of discrimination experiences may reveal additional disparities which are possibly associated with poor health outcomes and behaviors within this vulnerable group. Unfortunately, little is known about the interrelations among substance use, mental health, and discrimination among SGM adults experiencing homelessness and the types of discrimination that are mostly commonly experienced.

Understanding the associations among substance use, experiences of discrimination and poor mental health in the understudied population of SGM adults experiencing homelessness

could inform the development of treatment approaches. As such, this study sought to 1) describe the sociodemographic characteristics, substance use, mental health, and discrimination experiences of SGM adults seeking services at a day shelter in Oklahoma, 2) examine the associations among these variables, and 3) describe discrimination experiences by race, sex, sexual identity, and gender identity.

Methods

Participants and procedures

This study included 87 SGM participants who were a subsample of individuals from a larger study (15.7%; $N = 554$) of adults utilizing day shelter services (e.g., free meals, showers, access to computers and phones, legal support, mental and physical health services) in Oklahoma City, Oklahoma. In order to utilize day shelter services, adults had to obtain a shelter identification card, which required a certification form signed by an outreach or service worker to verify that the person was considered homeless at their initial arrival to the shelter (Alexander et al., 2022). Thus, all adults in the current study were homeless upon service initiation, and most (92.0%, $n = 80$) considered themselves to be currently homeless. Similar to prior research (Eisenberg et al., 2017; Ganz et al., 2018), individuals were included in this analysis if they indicated their sexual identity as lesbian/gay/queer, bisexual, other, or don't know/not sure, or they indicated their gender identity as transgender, gender nonconforming, or don't know/not sure.[1] Participants were eligible for the study if they had a valid shelter identification card. Eligible participants completed a 30-minute survey on a tablet computer, in a private room, and were compensated with a $10 gift card. Participants could skip any questions that made them uncomfortable. The Institutional Review Board of the University of Oklahoma Health Sciences Center approved all study procedures, which included a waiver of informed consent for an anonymous survey. Instead, participants received a letter providing details about the study and study contact information.

Materials

Demographic characteristics—Basic demographic information was collected such as sex (i.e., "What is your biological sex?") with response options of 1) male or 2) female, and race (recoded into [1] White and [2] non-White [Black or African American, Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska Native, multi-racial, other]). Additionally, participants were asked "Do you consider yourself to be:" 1) straight, 2) lesbian or gay or queer, 3) bisexual, 4) other, or 5) don't know/not sure. Individuals who identified as lesbian or gay or queer, bisexual, other, or don't know/not sure were considered a sexual minority person. As a measure of gender identity, participants were asked "Do you consider yourself to be transgender?" 1) yes, transgender, female to male, 2) yes, transgender, male to female, 3) yes, transgender, gender nonconforming, 4) no, not transgender, or 5) don't know/not sure. Individuals who identified as transgender, gender nonconforming, or don't know/not sure were considered gender minority persons.

[1]Intersex was not examined for this study.

Substance use—Participants were asked: "Have you smoked cigarettes or cigarillos in the past 30 days?" (0 = no, 1 = yes). Individuals who endorsed smoking in the past 30 days were asked how many cigarettes or cigarillos they smoked per day (CPD), and they completed the two-item Heaviness of Smoking Index (HSI; Heatherton et al., 1989) to assess cigarette dependence. Participants also reported past 30-day use of 10 alternative tobacco products (ATPs), including snus, roll-your-own cigarettes, hookah, dissolvable tobacco, electronic cigarettes, cigars, little cigars/cigarillos, chewing tobacco, and other products. Participants were grouped into individuals who did not endorse any ATP use (0) and individuals who endorsed ≥ 1 ATP in the past 30 days (1).

Participants were asked if they drank any alcohol in the past 30 days (0 = no, 1 = yes). Participants also indicated how many standard drinks they consumed on each of the past 7 days using a scale of 0 = "0 drinks" to 11 = "11 or more drinks". Among individuals who reported consuming at least one drink in the past week, an alcohol quantity variable was created by summing together the number of drinks consumed the previous week. Using this variable, heavy alcohol use (>7/14 drinks for females/males during the previous week; 0 = no, 1 = yes) and binge drinking (≥4/5 drinks for women/men on a single day; 0 = no, 1 = yes) were computed (National Institutes on Alcohol Abuse and Alcoholism [NIAAA]).

Participants were asked about past 30-day use of marijuana (0 = no, 1 = yes). Individuals who used marijuana reported the number of days they used in the past 30 days. Daily/near-daily use was computed as individuals who used on ≥20 days in the past 30 days (1) vs. individuals who used on <20 days (0; Compton et al., 2019).

Participants completed the Texas Christian University Drug Screen Evaluation (TCU-V; Institute of Behavioral Research, 2020) to examine the severity of substance use problems (SUD) in the past 3 months. Participants responded "yes" (1) or "no" (0) to 13 items assessing the severity of drug/alcohol problems (e.g., "Did you try to control or cut down on your drug and/or alcohol use but were unable to do it?" and "Did you use drugs that put you or others in physical danger?"). Participants were assigned 1 point for each "yes" response for items 1 through 9 and 1 point for responding "yes" to items 10 or 11 and 12 or 13. A summed score was created for all "yes" responses (α = .94). The TCU-V contains SUD categories of no disorder (scores of 0-1), mild disorder (scores of 2-3), moderate disorder (scores of 4-5), and severe disorder (scores ≥ 6), to correspond to criteria from the Diagnostic Statistical Manuel of Mental Disorders (DSM-5). For the current study, participants with summed scores of 0–1 were considered negative for a SUD (0), and individuals with scores of ≥2 were considered positive for a SUD (1).

Mental health—An adapted version of the Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002), that did not include an item about suicidal behavior, was used to assess current depression. Participants indicated how often in the past two weeks they experienced each of the eight symptoms, with scores ranging from "not at all" (0) to "nearly every day" (3). Participants who endorsed depressed mood or anhedonia and at least five of the eight symptoms "more than half the days" or "nearly every day" were considered to have probable major depressive disorder (MDD; α = .96).

The Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006) scale assessed probable GAD. Participants indicated how often they experienced each of seven symptoms during the past 2-weeks on a scale from 0 "not at all" to 3 "nearly every day." Scores of 10 or higher reflected probable GAD (α=.98; Spitzer et al., 2006).

The Primary Care Posttraumatic Stress Disorder (PTSD) Screen (PC-PTSD; Prins et al., 2003) assessed lifetime exposure to traumatic events, with 4 questions about the impact of the exposure over the past month. Participants responded "yes" or "no" to each of 4 symptoms of PTSD. Endorsing "yes" to at least three items was indicative of a positive screen for PTSD (α = .88).

Discrimination—The Detroit Area Study Assessment of Day-to-Day Discrimination (Williams et al., 1997) questionnaire is a 9-item measure that assessed the frequency of everyday experiences of discrimination. Participants indicated how often they experienced each type of discrimination on a 6-point scale (0 = "never", 1 = "less than once a year", 2 = "a few times a year", 3 = "a few times a month", 4 = "at least once a week", 5 = "almost every day") in their "day-to-day life". A mean item score was computed, with higher scores indicating that the person experienced more frequent discrimination (α = .96).

The MacArthur Major Discrimination (Kessler et al., 1999; MacArthur, 2008; Williams, 2016) questionnaire assessed major discrimination experiences. Participants indicated "how many times in their life" they had experienced each of 11 types of discrimination. Due to high frequencies of endorsement and consistent with prior studies (Fuller-Rowell et al., 2019; Parker et al., 2016), responses were first coded as experienced each item (no = 0; yes =1). Next, a sum score was computed to reflect the total types of lifetime major discrimination experiences reported (range = 0–11, α = .89), with higher scores indicating that the participant had experienced more types of major discrimination experiences. For each of the two discrimination measures, participants who experienced at least one type of discrimination reported their perception of the main reason for the discrimination.

Data analysis

Analyses were conducted using SPSS 27. Normality and outliers were examined. One alcohol quantity score and report of CPD were identified as outliers and winsorized (Reifman & Keyton, 2010). For analyses, first, sociodemographic, mental health, and substance use characteristics of the sample were described by calculating means with standard deviations and frequencies. Second, independent samples *t*-tests were conducted to examined difference in the frequency of everyday discrimination and the number of major discrimination experiences by race (White vs. non-White), sex (female vs. male), sexual identity (heterosexual vs. sexual minority), and gender identity (gender conforming vs. gender minority). The most common everyday and major discrimination experiences were also described. Third, chi-square tests examined associations between mental health (MDD, GAD, PTSD) and substance use variables (any cigarette, ATP, alcohol, and marijuana use, and SUD). Fourth, independent samples *t*-test analyses examined differences in the frequency of everyday discrimination and the number of major discrimination experiences by substance use and mental health variables. Lastly, Pearson correlations examined

associations between discrimination experiences and continuous substance use variables (CPD, HSI, drinking quantity, and days used marijuana).

Results

Participants (N = 87) were primarily male (as measured by reported biological sex), White, unemployed, and had completed an average of 10.85 (SD = 3.92) years of education (see Table 1). Three-quarters of the sample identified as a sexual minority (n = 66) and 42.5% (n = 37) identified as a gender minority. Male participants were older (M = 44.78, SD = 12.18) than female participants [M = 39.61, SD = 10.41; $t(85) = -2.09$, p = .040]. Table 2 displays the substance use and mental health characteristics of the sample. More than two-thirds of participants reported past 30-day cigarette/cigarillo use. Among smokers, participants smoked an average of 13 CPD (SD = 10.57). Nearly half of participants (47.1%) reported ATP use and 35.6% reported alcohol use in the past 30 days. Among participants who consumed at least one drink in the past week, 58.3% engaged in heavy alcohol use and 37.5% engaged in binge drinking. About half (50.6%) of participants reported marijuana use in the past 30 days. Participants who used marijuana reported an average of 13.11 (SD = 11.43) days of use in the past 30 days; 34.1% were categorized as daily/near-daily users. Nearly half of the participants screened positive for a SUD. In terms of mental health, 21.8% met the criteria for probable MDD, and over one-third screened positive for GAD (35.6%) and PTSD (37.9%).

The majority of participants (80.2%) had ever experienced everyday discrimination in their “day-to-day life” (M = 1.91, SD = 1.62), and 53.5% reported experiencing everyday discrimination at least “a few times a month.” There were no significant differences between White (M = 2.09, SD = 1.64) and non-White participants (M = 1.76, SD = 1.61), female (M = 2.23, SD = 1.69) and male (M = 1.68, SD = 1.54) participants, heterosexual (M = 1.55, SD = 1.50) and sexual minority (M = 2.03, SD = 1.65) participants, or gender conforming (M = 2.19, SD = 1.66) and gender minority (M = 1.54, SD = 1.51) participants on frequency of experiencing everyday discrimination, although differences by gender identity approached significance [race: $t(84) = 0.94$, p = .352; sex: $t(84) = 1.58$, p = .118; sexual identity: $t(84) = -1.20$, p = .233; gender identity: $t(84) = 1.87$, p = .065]. As shown in Table 3, the three most frequently reported everyday discrimination experiences were: being called names or insulted, people acting as if they are better than you, and being threatened or harassed. Among participants who reported experiencing any everyday discrimination, the most commonly perceived reason for everyday discrimination was homelessness (see Table 4 for the top five reasons). Only non-White participants reported that they experienced everyday discrimination due to their race. Females most commonly endorsed homelessness and gender as reasons for experiencing everyday discrimination. Only males reported experiencing everyday discrimination due to their sexual orientation. Only sexual minority adults endorsed that the main reason for experiencing everyday discrimination was due to their sexual orientation. A larger percentage of gender conforming adults, relative to gender minority adults, reported homelessness as a reason for experiencing everyday discrimination. More gender minority adults endorsed age as a reason for experiencing major discrimination.

The majority of participants (88.5%) reported at least one type of major discrimination experience ($M = 4.71$, $SD = 3.65$, range = 0–11). There were no significant differences on the number of different types of discrimination experienced between White ($M = 4.35$, $SD = 3.75$) and non-White ($M = 5.02$, $SD = 3.57$) participants, female ($M = 4.97$, $SD = 3.85$) and male ($M = 4.51$, $SD = 3.52$) participants, heterosexual ($M = 4.57$, $SD = 3.78$) and sexual minority ($M = 4.75$, $SD = 3.64$) participants, or gender confirming ($M = 4.31$, $SD = 3.55$) and gender minority ($M = 5.24$, $SD = 3.77$) participants on the number of major discrimination experiences [race: $t(84) = -0.85$, $p = .398$; sex: $t(84) = 0.58$, $p = .564$; sexual identity: $t(84) = -0.20$, $p = .844$; gender identity: $t(84) = -1.18$, $p = .241$]. The most commonly reported types of major discrimination experiences included: not being hired for a job, being hassled by the police, and being fired (see Table 3). Among participants who reported at least one major discrimination experience, the most commonly perceived reason for discrimination was homelessness (Table 4). Similar to above, only non-White participants reported race as the primary reason for the major discrimination. Only males endorsed sexual orientation and age as the reason for major discrimination. Only sexual minority adults reported sexual orientation as the reason for experiencing major discrimination. A large number of heterosexual adults reported age as the main reason for major discrimination. More gender conforming adults endorsed homelessness as the reason for experiencing major discrimination than gender minority participants.

As shown in Table 5, a greater proportion of participants who had probable MDD and PTSD reported ATP use in the past 30 days, and participants with probable anxiety were more likely to report past 30-day alcohol use. Additionally, a greater proportion of participants with probable depression, anxiety, and PTSD screened positive for a SUD. Participants with probable depression, anxiety, and PTSD reported experiencing everyday discrimination more frequently (see Table 6). Participants with probable depression reported more major discrimination experiences in their lifetime. Experiencing more frequent everyday discrimination was associated with higher CPD ($r = .29$, $p = .025$). Everyday discrimination was not significantly associated with other indices of substance use.

Discussion

This study described participants characteristics, and the interrelations among sociodemographic variables, substance use, mental health, and discrimination experiences among SGM adults seeking services at a day shelter in Oklahoma City, Oklahoma. SGM adults represented approximately 16% of the total sample of adults accessing services at an urban day shelter, which is nearly three times higher than the proportion of SGM adults in the general U.S. population (approximately 5.6%; Jones, 2021). Consistent with prior research focused on SGM adults (Barger et al., 2021; Ganz et al., 2018) and adults experiencing homelessness (Baggett & Rigotti, 2010; North et al., 2010), substance use was prevalent among study participants. Rates of past 30-day tobacco (69.0%) and marijuana use (50.6%) among study participants were far higher than rates of use among the larger population of Oklahomans (tobacco use: 32.3%, marijuana use: 15.8%; Substance Abuse and Mental Health Services Administration, 2020a). It is surprising that marijuana use (50.6%) was more prevalent than alcohol use (35.6%) in the current sample, given previous findings that alcohol is the most frequently used substance among adults experiencing

homelessness (Famutimi & Thompson, 2018; Stringfellow et al., 2016). Likewise, rates of poor mental health in the current sample (depression: 21.8%, anxiety: 36.5%, PTSD: 38.8%) were far higher than in the general U.S. adult population (past-year major depression: 5.3–15.7%, anxiety: 2.1%, and PTSD: 4.5%; Hasin & Grant, 2015; Substance Abuse and Mental Health Services Administration, 2020b). Participants in the current study, on average, experienced everyday discrimination a few times per year, with over half reporting everyday discrimination at least monthly. Previous research has indicated that experiencing discrimination can lead to or exacerbate poor mental health (Lee et al., 2016; Sutter & Perrin, 2016; Vargas et al., 2020).

In the current study, everyday discrimination was associated with smoking more cigarettes/cigarillos per day. Tobacco use is commonly reported among adults experiencing homelessness (Torchalla et al., 2011; Tsai & Rosenheck, 2012), and discrimination may exacerbate nicotine dependence and smoking intensity (Kendzor et al., 2014). However, discrimination was not associated with other substance use indicators such as past 30-day use of ATPs, alcohol or marijuana use, or SUD. Plausibly, discrimination may have an indirect impact on substance use. That is, discrimination may adversely impact mental health, which could, in turn, lead to increased substance use. In fact, prior research, not specific for SGM adults experiencing homelessness, has shown that poor mental health mediates the association between discrimination and substance use (Clark, 2014; English et al., 2018; Gibbons et al., 2014). Although untested in the current study due to the cross-sectional design, this hypothesis is partially supported by findings that discrimination was associated with poor mental health, and poor mental health was associated with ATP use, alcohol use and SUD.

Homelessness was the most commonly perceived cause of discrimination among all participants. This is important given that the adults in this sample had intersecting marginalized identities (e.g., SGM and experiencing homelessness). Thus, experiencing homelessness appears to be an extremely salient characteristic that may increase the likelihood of experiencing discrimination. Providing housing for adults experiencing homelessness may reduce some discrimination experiences because it allows individuals to control their hygiene and store belongings; factors that may call attention to their homelessness status and lead to discrimination experiences. For example, Housing First programs provide housing that is not contingent on being substance-free (Baxter et al., 2019; Peng et al., 2020), and also offers monitoring and assistance to individuals experiencing mental health and substance use problems.

When examining differences in discrimination experiences by race, only non-White participants reported discrimination due to their race. This is not surprising given that 63.1% of racial/ethnic minority (Black, Hispanic, and Asian) adults in the U.S. reported experiencing discrimination, compared to only 29.6% of White adults (Lee et al., 2019). This finding is also consistent with prior research showing that non-White adults experiencing homelessness, particularly Black individuals, are more likely than White individuals to attribute discrimination experiences to their race (Wrighting et al., 2019). Moreover, published work has shown that non-White sexual minority adults are more likely to experience discrimination in the past year than White sexual minority adults

(Bostwick et al., 2014). Thus, non-White SGM adults experiencing homelessness may be at particularly high risk of experiencing discrimination and related mental health and substance use problems.

Notably, only males attributed discrimination to their sexual orientation. Nationally representative data has shown that a greater proportion of sexual minority men reported experiencing discrimination because of their sexual orientation (57.4%) than sexual minority women (42.9%; Lee et al., 2016). Due to heteronormativity and the often hypermasculine expectations for men (Fields et al., 2015; Robinson, 2016), it is possible SGM men may be more vulnerable to discrimination. Alternatively, this finding may be attributed to the small sample size of women in the current study. Age was also only endorsed by male participants as a reason for major discrimination. Males in the current sample were older than females, and the reasons for seeking services at the day shelter may vary by sex. Further, women are more likely to experience "hidden homelessness" (e.g., staying with friends or family; Andermann et al., 2021; Bretherton, 2017) and are often eligible for other types of shelter services (e.g., family shelters, women's shelters); therefore, women were likely underrepresented in the current study.

A larger percentage of participants who identified as a sexual minority, compared to straight in our sample, attributed their discrimination experiences to homelessness, highlighting the importance of housing. While differences in the proportion of perceived reasons for discrimination were minimal between gender conforming and gender minority individuals, there were distinct differences in the types of discrimination experiences. Interestingly, a lower percentage of gender minority individuals reported many everyday discrimination experiences (e.g., called names or insulted, threatened or harassed). Perhaps gender minority individuals face few everyday discrimination experiences that were measured in the current study. In contrast, a greater proportion of gender minority individuals, as opposed to participants who were gender conforming, experienced major lifetime discrimination such as being fired from a job or denied a job promotion. Thus, gender minority individuals may experience more structural stigma than gender conforming adults. The specific discrimination events identified in the current study related to employment may directly impact the housing status of gender minority individuals. Indeed, prior research has shown that compared to their gender conforming counterparts, transgender adults were more likely to report employment discrimination (Kattari et al., 2016). Experiencing employment discrimination, such as being fired from a job or not hired, may lead to financial strain and possibly homelessness.

At the structural level, broad changes to the culture are needed to reduce discrimination and improve mental health among SGM individuals. Policies developed to prevent workplace discrimination related to one's sexual and gender identity and provide an inclusive work environment may be an important step toward reducing homelessness among gender minority individuals. Microaggressions toward SGM individuals are common in the workplace (Galupo & Resnick, 2016), though even when organizations have policies protecting SGM employees from discrimination, they are often broad and rarely enforced. It is imperative that these anti-discrimination policies are specific and enforced at all levels of the workplace (e.g., supervisors, coworkers, clients). Trainings that include specific

examples of discrimination and microaggressions may help employees recognize behaviors that they previously did not interpret as being offensive. Legal protections and equality for SGM individuals across domains must be implemented and enforced (e.g., marriage, housing, workplace, schools, healthcare settings). Recently, protections for SGM workers were upheld by the Supreme Court's ruling that an employer who fires or discriminates against an individual based on their sexual or gender identity is a violation of the Civil Rights Act of 1964 (Bostock vs. Clayton County, 2020). Similarly, research has documented that legalizing same-sex marriage improved mental health outcomes of sexual minority individuals (Chen & van Ours, 2022; Everett et al., 2016; Tatum, 2017), indicating the positive impact that nationwide policies can have for SGM individuals.

In addition to legal protections, more inclusive environments can be created for SGM individuals in a variety of settings (e.g., workplace, healthcare, educational settings) by making simple changes to the environment. For example, Knutson et al. (2019) provide recommendations such as inquiring about pronouns, avoiding biased language (e.g., not asking about *preferred* pronouns, instead remembering they are just pronouns), assessing gender as cisgender man, cisgender woman, transgender man, and transgender woman (as opposed to male, female, female-to-male, male-to-female, as a client may identify as multiple categories), and not including the use of "other, please specify" to avoid further stigmatizing and alienating a client. These recommendations can also be easily be implemented by employers. Policies such as those aimed at promoting inclusivity and creating safe community environments, may improve well-being and reduce victimization (Domínguez-Martínez & Robles, 2019; Flentje et al., 2021). Respectful and open acknowledgement of the identities and needs of SGM individuals may increase their comfort with sharing mental health and other concerns, and seeking the care that is required. Finally, socioeconomic disadvantage may limit access to basic necessities, including physical and mental health care, which may be beneficial for SGM individuals who have experienced discrimination. Each of these structural changes may individually contribute to a cultural shift toward acceptance, respect, and protection of SGM individuals.

Treatment programs may target discrimination-related mental health and substance use problems in several ways. One approach could be to address discrimination through traditional counseling to improve mental health. For instance, a prior discrimination-focused intervention centered on enhancing and reaffirming self-image by training participants to reflect on their values (Cook et al., 2012). This type of intervention may improve mental health outcomes by enhancing self-efficacy. Another approach could be to address mental health and substance use problems, either in combination or sequentially, by focusing on the most acute issue (mental health or substance use) and then moving on to secondary issues once mental health or substance use has stabilized. Face-to-face interventions may be beneficial for this group due to inconsistent internet access and a high likelihood of returning to the shelter for need-based services (e.g., meals). Group therapies could increase social support and are particularly beneficial for SGM individuals who experience discrimination (Lehavot & Simoni, 2011; Phillips II et al., 2020). Connecting members of the SGM community may offer social support and a sense of "belonging" within the community of adults experiencing homelessness (Frost et al., 2016; Kerman & Sylvestre, 2020).

Several limitations should be noted. This was a small sample of SGM individuals seeking services at a local day shelter, and thus, results must be replicated within larger samples. Also, all SGM individuals were combined into one group due to sample size limitations, and data was not collected about those who are intersex. Future research should include a separate demographic question about whether or not participants are intersex to develop a better understanding of the behaviors and experiences of this community, and raise awareness about those who are intersex. A total of four participants (4.6% of the total sample) had discrepant sex and gender identity reports. Although the current study measured sex by specifying "What is your biological sex", four participants who identified as being transgender, female-to-male, identified their biological sex as male. Due to the small sample size of this study, the low percentage of discrepant reports, and because it is unknown if participants incorrectly reported their sex or gender identity, participants' self-reported responses were retained for analyses. As sex and gender are complex identities, it is important for researchers to clarify with participants, when possible, that their sex and gender identities may be different. Prior research has found differences in substance use, mental health, and discrimination among subgroups of SGM adults (e.g., gay/lesbian vs. bisexual; Evans-Polce et al., 2020; Hughto et al., 2021; Ross et al., 2018). Along these lines, the current study did not include an in-depth examination of discrimination experiences that may be specific to transgender individuals (e.g., incorrectly gendered, physical threats or harassment due to gender expression). Similarly, discrimination experiences were not specific to sexual minority stressors which have been associated with poor mental health and substance use (Lehavot & Simoni, 2011; Slater et al., 2017; Wilson et al., 2016). In the current study, participants were only able to endorse one perceived reason for discrimination on each measure, and thus participants may not have reported all perceived reasons for discrimination. Additionally, all non-White racial identities were combined given sample size limitations, and findings did not capture the unique experiences of participants across racial/ethnic identities. The current study provides important descriptive findings of experiences and behaviors of SGM adults experiencing homelessness but may not have had adequate power to detect significant associations between the study variables. In order to capture a larger sample of women, future studies should include recruitment from other types of shelters (e.g., women's shelters, family shelters). It should also be noted that the compensation amount ($10) for this study was selected based on recommendations from the shelter staff and available research funds. Future research should consider higher compensation amounts for studies involving adults experiencing homelessness. Finally, this was a cross-sectional study, and thus, causal interpretations cannot be drawn.

Conclusions

SGM adults experiencing homelessness experienced frequent discrimination, which was associated with poor mental health. The most commonly endorsed reason for experiencing discrimination was homelessness, highlighting the importance of housing programs and the need for economic support to reduce this type of discrimination. At the individual level, the development of multifaceted interventions that target discrimination in the context of mental health and substance use interventions may be beneficial. In parallel, reducing structural discrimination and barriers to steady housing is imperative. Comprehensive approaches are

needed to address discrimination, poor mental health, and substance use in this extremely vulnerable population.

Acknowledgements

We thank the Homeless Alliance administration, staff, and guests in Oklahoma City, Oklahoma, for inviting us into their community and participating in our survey. Dan Straughan, Meghan Mueller, and Tom Knudsen of the Homeless Alliance provided their valuable insights and facilitated this research.

Funding

This work was supported by Oklahoma Tobacco Settlement Endowment Trust (TSET) grant R21-02; and the National Cancer Institute grant P30CA225520 awarded to the Stephenson Cancer Center.

References

Andermann A, Mott S, Mathew CM, Kendall C, Mendonca O, Harriott D, McLellan A, Riddle A, Saad A, Iqbal W, Magwood O, & Pottie K (2021). Evidence synthesis-Evidence-informed interventions and best practices for supporting women experiencing or at risk of homelessness: a scoping review with gender and equity analysis. Health Promotion and Chronic Disease Prevention in Canada: Research, Policy and Practice, 41(1), 1–13. 10.24095/hpcdp.41.1.01 [PubMed: 33439566]

Alexander AC, Waring JJ, Olurotimi O, Kurien J, Noble B, Businelle MS, Ra CK, Ehlke SJ, Boozary LK, Cohn AM, & Kendzor DE (2022). The relations between discrimination, stressful life events, and substance use among adults experiencing homelessness. Stress and Health, 38(1), 79–89. 10.1002/smi.3073 [PubMed: 34137166]

Baggett TP, & Rigotti NA (2010). Cigarette smoking and advice to quit in a national sample of homeless adults. American Journal of Preventive Medicine, 39(2), 164–172. 10.1016/j.amepre.2010.03.024 [PubMed: 20621264]

Barger BT, Obedin-Maliver J, Capriotti MR, Lunn MR, & Flentje A (2021). Characterization of substance use among underrepresented sexual and gender minority participants in The Population Research in Identity and Disparities for Equality (PRIDE) Study. Substance Abuse, 42(1), 104–112. 10.1080/08897077.2019.1702610 [PubMed: 32032500]

Baxter AJ, Tweed EJ, Katikireddi SV, & Thomson H (2019). Effects of Housing First approaches on health and well-being of adults who are homeless or at risk of homelessness: systematic review and meta-analysis of randomised controlled trials. Journal of Epidemiology and Community Health, 73(5), 379–387. 10.1136/jech-2018-210981 [PubMed: 30777888]

Bostwick WB, Boyd CJ, Hughes TL, West BT, & McCabe SE (2014). Discrimination and mental health among lesbian, gay, and bisexual adults in the United States. The American Journal of Orthopsychiatry, 84(1), 35–45. 10.1037/h0098851 [PubMed: 24826824]

Bretherton J (2017). Reconsidering gender in homelessness. European Journal of Homelessness, 11(1), 1–21.

17-1618 C.F.R. § 590. (2020).

Chen S, & van Ours JC (2022). Mental health effects of same-sex marriage legalization. Health Economics, 31(1), 42–56. 10.1002/hec.4441 [PubMed: 34628683]

Choi SK, Wilson BD, Shelton J, & Gates GJ (2015). Serving our youth 2015: The needs and experiences of lesbian, gay, bisexual, transgender, and questioning youth experiencing homelessness. The Williams Institute with True Colors Fund.

Clark TT (2014). Perceived discrimination, depressive symptoms, and substance use in young adulthood. Addictive Behaviors, 39(6), 1021–1025. 10.1016/j.addbeh.2014.01.013 [PubMed: 24629325]

Compton WM, Han B, Jones CM, & Blanco C (2019). Cannabis use disorders among adults in the United States during a time of increasing use of cannabis. Drug and Alcohol Dependence, 204, 107468. 10.1016/j.drugalcdep.2019.05.008 [PubMed: 31586809]

Cook JE, Purdie-Vaughns V, Garcia J, & Cohen GL (2012). Chronic threat and contingent belonging: protective benefits of values affirmation on identity development. Journal of Personality and Social Psychology, 102(3), 479–496. 10.1037/a0026312 [PubMed: 22082058]

Domínguez-Martínez T, & Robles R (2019). Preventing transphobic bullying and promoting inclusive educational environments: Literature review and implementing recommendations. Archives of Medical Research, 50(8), 543–555. 10.1016/j.arcmed.2019.10.009 [PubMed: 32036103]

Ecker J, Aubry T, & Sylvestre J (2019). A review of the literature on LGBTQ adults who experience homelessness. Journal of Homosexuality, 66(3), 297–323. 10.1080/00918369.2017.1413277 [PubMed: 29206576]

Eisenberg ME, Gower AL, McMorris BJ, Rider GN, Shea G, & Coleman E (2017). Risk and protective factors in the lives of transgender/gender nonconforming adolescents. Journal of Adolescent Health, 61(4), 521–526. 10.1016/j.jadohealth.2017.04.014

English D, Rendina HJ, & Parsons JT (2018). The effects of intersecting stigma: A longitudinal examination of minority stress, mental health, and substance use among Black, Latino, and multiracial gay and bisexual men. Psychology of Violence, 8(6), 669–679. 10.1037/vio0000218 [PubMed: 30881729]

Evans-Polce RJ, Veliz PT, Boyd CJ, Hughes TL, & McCabe SE (2020). Associations between sexual orientation discrimination and substance use disorders: differences by age in US adults. Social Psychiatry and Psychiatric Epidemiology, 55(1), 101–110. 10.1007/s00127-019-01694-x [PubMed: 30903234]

Everett BG, Hatzenbuehler ML, & Hughes TL (2016). The impact of civil union legislation on minority stress, depression, and hazardous drinking in a diverse sample of sexual-minority women: A quasi-natural experiment. Social Science & Medicine (1982), 169, 180–190. 10.1016/j.socscimed.2016.09.036 [PubMed: 27733300]

Famutimi O, & Thompson K (2018). Trends in substance use treatment admissions among the homeless in the United States: 2005-2015. Journal of Public Health Issues and Practices, 2(2), 118–126. 10.33790/jphip1100118

Fields EL, Bogart LM, Smith KC, Malebranche DJ, Ellen J, & Schuster MA (2015). "I Always Felt I Had to Prove My Manhood": Homosexuality, masculinity, gender role strain, and HIV risk among young black men who have sex with men. American Journal of Public Health, 105(1), 122–131. 10.2105/AJPH.2013.301866 [PubMed: 24832150]

Flentje A, Clark KD, Cicero E, Capriotti MR, Lubensky ME, Sauceda J, Neilands TB, Lunn MR, & Obedin-Maliver J (2021). Minority stress, structural stigma, and physical health among sexual and gender minority individuals: Examining the relative strength of the relationships. Annals of Behavioral Medicine. 10.1093/abm/kaab051

Flentje A, Leon A, Carrico A, Zheng D, & Dilley J (2016). Mental and physical health among homeless sexual and gender minorities in a major urban US city. Journal of Urban Health, 93(6), 997–1009. 10.1007/s11524-016-0084-3 [PubMed: 27699581]

Fraser B, Pierse N, Chisholm E, & Cook H (2019). LGBTIQ + homelessness: A review of the literature. International Journal of Environmental Research and Public Health, 16(15), 2677–2690. 10.3390/ijerph16152677 [PubMed: 31357432]

Frost DM, Meyer IH, & Schwartz S (2016). Social support networks among diverse sexual minority populations. The American Journal of Orthopsychiatry, 86(1), 91–102. 10.1037/ort0000117 [PubMed: 26752447]

Fuller-Rowell TE, Homandberg LK, Curtis DS, Tsenkova VK, Williams DR, & Ryff CD (2019). Disparities in insulin resistance between black and white adults in the United States: The role of lifespan stress exposure. Psychoneuroendocrinology, 107, 1–8. 10.1016/j.psyneuen.2019.04.020 [PubMed: 31055182]

Galupo MP, & Resnick CA (2016). Experiences of LGBT microaggressions in the workplace: Implications for policy. In Sexual orientation and transgender issues in organizations (pp. 271–287). Springer.

Ganz O, Johnson AL, Cohn AM, Rath J, Horn K, Vallone D, & Villanti AC (2018). Tobacco harm perceptions and use among sexual and gender minorities: Findings from a national sample of young adults in the United States. Addictive Behaviors, 81, 104–108. 10.1016/j.addbeh.2018.01.032 [PubMed: 29454177]

Gibbons FX, Kingsbury JH, Weng C-Y, Gerrard M, Cutrona C, Wills TA, & Stock M (2014). Effects of perceived racial discrimination on health status and health behavior: a differential mediation hypothesis. Health Psychology, 33(1), 11–19. 10.1037/a0033857 [PubMed: 24417690]

Grant JM, Mottet LA, Tanis J, Herman JL, Harrison J, & Keisling M (2010). National transgender discrimination survey report on health and health care (pp. 1–23). Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force.

Hahm HC, Ozonoff A, Gaumond J, & Sue S (2010). Perceived discrimination and health outcomes a gender comparison among Asian-Americans nationwide. Women's Health Issues: official Publication of the Jacobs Institute of Women's Health, 20(5), 350–358. 10.1016/j.whi.2010.05.002

Hasin DS, & Grant BF (2015). The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) Waves 1 and 2: Review and summary of findings. Social Psychiatry and Psychiatric Epidemiology, 50(11), 1609–1640. 10.1007/s00127-015-1088-0 [PubMed: 26210739]

Heatherton TF, Kozlowski LT, Frecker RC, Rickert W, & Robinson J (1989). Measuring the heaviness of smoking: Using self-reported time to the first cigarette of the day and number of cigarettes smoked per day. British Journal of Addiction, 84(7), 791–800. 10.1111/j.1360-0443.1989.tb03059.x [PubMed: 2758152]

Hughto JM, Quinn EK, Dunbar MS, Rose AJ, Shireman TI, & Jasuja GK (2021). Prevalence and co-occurrence of alcohol, nicotine, and other substance use disorder diagnoses among US transgender and cisgender adults. JAMA Network Open, 4(2), e2036512. 10.1001/jamanetworkopen.2020.36512 [PubMed: 33538824]

Institute of Behavioral Research. (2020). Texas Christian University drug screen 5. Texas Christian University:

Jones JM (2021). LGBT identification rises to 5.6% in latest U.S. estimate. https://news.gallup.com/poll/329708/lgbt-identification-rises-latest-estimate.aspx

Kattari SK, Whitfield DL, Walls NE, Langenderfer-Magruder L, & Ramos D (2016). Policing gender through housing and employment discrimination: Comparison of discrimination experiences of transgender and cisgender LGBQ individuals. Journal of the Society for Social Work and Research, 7(3), 427–447. 10.1086/686920

Kendzor DE, Businelle MS, Reitzel LR, Rios DM, Scheuermann TS, Pulvers K, & Ahluwalia JS (2014). Everyday discrimination is associated with nicotine dependence among African American, Latino, and White smokers. Nicotine & Tobacco Research, 16(6), 633–640. 10.1093/ntr/ntt198 [PubMed: 24302634]

Kerman N, & Sylvestre J (2020). Service use and recovery among currently and formerly homeless adults with mental illness. International Journal of Social Psychiatry, 66(4), 389–396. 10.1177/0020764020913324 [PubMed: 32207366]

Kessler RC, Mickelson KD, & Williams DR (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. Journal of Health and Social Behavior, 40(3), 208–230. 10.2307/2676349 [PubMed: 10513145]

Khantzian EJ (1985). The self-medication hypothesis of addictive disorders: Focus on heroin and cocaine dependence. The American Journal of Psychiatry, 142(11), 1259–1264. 10.1176/ajp.142.11.1259 [PubMed: 3904487]

Knutson D, Koch JM, & Goldbach C (2019). Recommended terminology, pronouns, and documentation for work with transgender and non-binary populations. Practice Innovations, 4(4), 214–224. 10.1037/pri0000098

Kroenke K, & Spitzer RL (2002). The PHQ-9: a new depression diagnostic and severity measure. Psychiatric Annals, 32(9), 509–515. 10.3928/0048-5713-20020901-06

Lee JH, Gamarel KE, Bryant KJ, Zaller ND, & Operario D (2016). Discrimination, mental health, and substance use disorders among sexual minority populations. LGBT Health, 3(4), 258–265. 10.1089/lgbt.2015.0135 [PubMed: 27383512]

Lee RT, Perez AD, Boykin CM, & Mendoza-Denton R (2019). On the prevalence of racial discrimination in the United States. PLoS One, 14(1), e0210698. 10.1371/journal.pone.0210698 [PubMed: 30629706]

Lehavot K, & Simoni JM (2011). The impact of minority stress on mental health and substance use among sexual minority women. Journal of Consulting and Clinical Psychology, 79(2), 159–170. 10.1037/a0022839 [PubMed: 21341888]

MacArthur. (2008). MacArthur Midlife Survey: Major experiences of discrimination. https://macses.ucsf.edu/research/psychosocial/midmac.php

McCabe SE, Hughes TL, Matthews AK, Lee JG, West BT, Boyd CJ, & Arslanian-Engoren C (2019). Sexual orientation discrimination and tobacco use disparities in the United States. Nicotine & Tobacco Research, 21(4), 523–531. 10.1093/ntr/ntx283 [PubMed: 29300994]

Meyer IH (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. Psychological Bulletin, 129(5), 674–697. 10.1037/0033-2909.129.5.674 [PubMed: 12956539]

National Institutes on Alcohol Abuse and Alcoholism [NIAAA] (n.d.). Drinking levels defined. https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking

North CS, Eyrich-Garg KM, Pollio DE, & Thirthalli J (2010). A prospective study of substance use and housing stability in a homeless population. Social Psychiatry and Psychiatric Epidemiology, 45(11), 1055–1062. 10.1007/s00127-009-0144-z [PubMed: 19816646]

Otiniano Verissimo AD, Gee GC, Ford CL, & Iguchi MY (2014). Racial discrimination, gender discrimination, and substance abuse among Latina/os nationwide. Cultural Diversity & Ethnic Minority Psychology, 20(1), 43–51. 10.1037/a0034674 [PubMed: 24491127]

Parker LJ, Kinlock BL, Chisolm D, Furr-Holden D, & Thorpe RJ Jr. (2016). Association between any major discrimination and current cigarette smoking among adult African American men. Substance Use & Misuse, 51(12), 1593–1599. 10.1080/10826084.2016.1188957 [PubMed: 27484877]

Peng Y, Hahn RA, Finnie RKC, Cobb J, Williams SP, Fielding JE, Johnson RL, Montgomery AE, Schwartz AF, Muntaner C, Garrison VH, Jean-Francois B, Truman BI, & Fullilove MT, Community Preventive Services Task Force. (2020). Permanent supportive housing with housing first to reduce homelessness and promote health among homeless populations with disability: A community guide systematic review. Journal of Public Health Management and Practice: JPHMP, 26(5), 404–411. 10.1097/PHH.0000000000001219 [PubMed: 32732712]

Phillips G II, Felt D, McCuskey DJ, Marro R, Broschart J, Newcomb ME, & Whitton SW (2020). Engagement with LGBTQ community moderates the association between victimization and substance use among a cohort of sexual and gender minority individuals assigned female at birth. Addictive Behaviors, 107, 106414. 10.1016/j.addbeh.2020.106414 [PubMed: 32247953]

Prins A, Ouimette P, Kimerling R, Camerond RP, Hugelshofer DS, Shaw-Hegwer J, Thrailkill A, Gusman FD, & Sheikh JI (2004). The primary care PTSD screen (PC-PTSD): development and operating characteristics. Primary Care Psychiatry, 9(1), 9–14. 10.1185/135525703125002360

Reifman A, & Keyton K (2010). Encyclopedia of research design. Sage.

Robinson BA (2016). Heteronormativity and homonormativity. In Naples NA (Ed.), The Wiley Blackwell encyclopedia of gender and sexuality studies. Hoboken, NJ: Wiley-Blackwell.

Ross LE, Salway T, Tarasoff LA, MacKay JM, Hawkins BW, & Fehr CP (2018). Prevalence of depression and anxiety among bisexual people compared to gay, lesbian, and heterosexual individuals: A systematic review and meta-analysis. Journal of Sex Research, 55(4–5), 435–456. 10.1080/00224499.2017.1387755 [PubMed: 29099625]

Shastri A (2014). Gender inequality and women discrimination. IOSR Journal of Humanities and Social Science, 19(11), 27–30. 10.9790/0837-191172730

Skosireva A, O'Campo P, Zerger S, Chambers C, Gapka S, & Stergiopoulos V (2014). Different faces of discrimination: perceived discrimination among homeless adults with mental illness in healthcare settings. BMC Health Services Research, 14(1), 376–387. 10.1186/1472-6963-14-376 [PubMed: 25196184]

Slater ME, Godette D, Huang B, Ruan WJ, & Kerridge BT (2017). Sexual orientation-based discrimination, excessive alcohol use, and substance use disorders among sexual minority adults. LGBT Health, 4(5), 337–344. 10.1089/lgbt.2016.0117 [PubMed: 28876167]

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(10), 1092–1097. 10.1001/archinte.166.10.1092 [PubMed: 16717171]

Stein JA, Dixon EL, & Nyamathi AM (2008). Effects of psychosocial and situational variables on substance abuse among homeless adults. Psychology of Addictive Behaviors, 22(3), 410–416. 10.1037/0893-164X.22.3.410 [PubMed: 18778134]

Stringfellow EJ, Kim TW, Gordon AJ, Pollio DE, Grucza RA, Austin EL, Johnson NK, & Kertesz SG (2016). Substance use among persons with homeless experience in primary care. Substance Abuse, 37(4), 534–541. 10.1080/08897077.2016.1145616 [PubMed: 26914448]

Substance Abuse and Mental Health Services Administration. (2020a). 2018-2019 National Survey on Drug Use and Health: Model-based prevalence estimates (50 states and the district of Columbia). https://www.samhsa.gov/data/sites/default/files/reports/rpt32805/2019NSDUHsaeExcelPercents/2019NSDUHsaeExcelPercents/-2019NSDUHsaePercents.pdf

Substance Abuse and Mental Health Services Administration. (2020b). Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health. https://www.samhsa.gov/data/

Sutter M, & Perrin PB (2016). Discrimination, mental health, and suicidal ideation among LGBTQ people of color. Journal of Counseling Psychology, 63(1), 98–105. 10.1037/cou0000126 [PubMed: 26751158]

Tatum AK (2017). The interaction of same-sex marriage access with sexual minority identity on mental health and subjective wellbeing. Journal of Homosexuality, 64(5), 638–653. 10.1080/00918369.2016.1196991 [PubMed: 27269121]

Torchalla I, Strehlau V, Okoli CT, Li K, Schuetz C, & Krausz M (2011). Smoking and predictors of nicotine dependence in a homeless population. Nicotine & Tobacco Research, 13(10), 934–942. 10.1093/ntr/ntr101 [PubMed: 21622493]

Tsai J, & Rosenheck RA (2012). Smoking among chronically homeless adults: Prevalence and correlates. Psychiatric Services (Washington, D.C.), 63(6), 569–576. 10.1176/appi.ps.201100398 [PubMed: 22476200]

Vargas SM, Huey SJ Jr., & Miranda J (2020). A critical review of current evidence on multiple types of discrimination and mental health. American Journal of Orthopsychiatry, 90(3), 374–390. 10.1037/ort0000441 [PubMed: 31999138]

Williams DR (2016). Measuring discrimination resource. https://scholar.harvard.edu/files/davidrwilliams/files/measuring_discrimination_resource_june_2016.pdf

Williams DR, Yu Y, Jackson JS, & Anderson NB (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. Journal of Health Psychology, 2(3), 335–351. 10.1177/135910539700200305 [PubMed: 22013026]

Wilson BD, Choi SK, Harper GW, Lightfoot M, Russell S, & Meyer IH (2020). Homelessness among LGBT Adults in the US. https://williamsinstitute.law.ucla.edu/wp-content/uploads/LGBT-Homelessness-May-2020.pdf

Wilson SM, Gilmore AK, Rhew IC, Hodge KA, & Kaysen DL (2016). Minority stress is longitudinally associated with alcohol-related problems among sexual minority women. Addictive Behaviors, 61, 80–83. 10.1016/j.addbeh.2016.05.017 [PubMed: 27249806]

Wrighting Q, Reitzel LR, Chen T-A, Kendzor DE, Hernandez DC, Obasi EM, Shree S, & Businelle MS (2019). Characterizing discrimination experiences by race among homeless adults. American Journal of Health Behavior, 43(3), 531–542. 10.5993/AJHB.43.3.8 [PubMed: 31046884]

Table 1.

Demographic characteristics of sexual and gender minority adults accessing day shelter services.

***N*=87**	***M (SD)* or *n* (%)**
Age	42.52 (11.66)
Sex[a]	
Male	49 (56.3%)
Female	38 (43.7%)
Race	
White	40 (46.0%)
Black/African American	21 (24.1%)
American Indian/Alaskan Native	14 (16.1%)
Other	12 (13.8%)
Hispanic (yes)	14 (16.1%)
Relationship Status	
Single	52 (59.8%)
Married/living with partner	21 (24.1%)
Separated/divorced/widowed	14 (16.1%)
Years of education completed	10.85 (3.92)
Employment status	
Employed full or part-time	16 (18.4%)
Unemployed	28 (32.2%)
Disabled	17 (19.5%)
Other	26 (29.9%)
Sexual identity	
Straight	21 (24.1%)
Lesbian/gay/queer	18 (20.7%)
Bisexual	28 (32.2%)
Other	7 (8.0%)
Don’t know/not sure	13 (14.9%)
Gender identity[a]	
Transgender man	9 (10.3%)
Transgender woman	7 (8.0%)
Gender nonconforming	3 (3.4%)
Don’t know/not sure	18 (20.7%)
Not transgender	50 (57.5%)

[a] *n*=4 people indicated that their sex was male but they were a transgender man (i.e., transgender, female-to-male). Their self-reported responses for biological sex and gender identity are reported.

Table 2.

Substance use and mental health characteristics.

Substance use	*M (SD)* or *n* (%)
Tobacco use	
Any cigarette/cigarillo use past 30 days	60 (69.0%)
Cigarettes/cigarillos per day[a]	12.65 (10.57)
Heaviness of smoking index[a]	2.60 (1.64)
Alternative tobacco product use past 30 days	41 (47.1%)
Alcohol use	
Any past 30-day alcohol use	31 (35.6%)
Past week drinking quantity[b]	16.17 (13.43)
Past week heavy alcohol use[b]	14 (58.3%)
Past week binge drinking[b]	9 (37.5%)
Marijuana use	
Any marijuana use in past 30 days	44 (50.6%)
Days used marijuana[a]	13.11 (11.43)
Daily/near daily use[a]	15 (34.1%)
Any SUD	40 (46.0%)
Mental health	
Depression	19 (21.8%)
Anxiety	31 (35.6%)
PTSD	33 (37.9%)

[a]Among past 30-day users.

[b]Among participants who reported at least one drink in the past week *(n*=24). Heavy alcohol use was >7/14 drinks per week for women/men, respectively. Binge drinking was 4+/5+ drinks for women/men on a single day. Daily/near daily marijuana use were participants who used ≥20 days in the past 30 days. SUD was measured using the TCU-V. Depression was measured using the PHQ-8, anxiety was measured using the GAD-7, PTSD was measured using the PC-PTSD.

Table 3.

Five most prevalent types of discrimination items experienced overall and by race and sex.

		Race		Sex		Sexual minority		Gender minority	
	Total sample	**White**	**Nonwhite**	**Female**	**Male**	**No**	**Yes**	**No**	**Yes**
	%	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Everyday discrimination	***n* = 46**	***n* = 25**	***n* = 21**	***n* = 21**	***n* = 25**	***n* = 9**	***n* = 37**	***n* = 30**	***n* = 16**
Called names or insulted	44.2%	55.0%	34.8%	45.9%	42.9%	38.1%	46.2%	49.0%	37.8%
People act as if they're better than you	43.0%	52.5%	34.8%	40.5%	44.9%	28.6%	47.7%	51.0%	32.4%
Threatened or harassed	38.4%	45.0%	32.6%	45.9%	32.7%	33.3%	40.0%	44.9%	29.7%
People act as if they think you are not smart	37.2%	42.5%	32.6%	45.9%	30.6%	28.6%	40.0%	46.9%	24.3%
Treated with less courtesy than other people	34.9%	37.5%	32.6%	45.9%	26.5%	23.8%	38.5%	42.9%	24.3%
Major discrimination	***n* = 77**	***n* = 34**	***n* = 43**	***n* = 33**	***n* = 44**	***n* = 18**	***n* = 59**	***n* = 44**	***n* = 33**
Not hired for a job	55.8%	52.5%	58.7%	59.5%	53.1%	47.6%	58.5%	59.2%	51.4%
Hassled by the police	55.8%	45.0%	65.2%	59.5%	53.1%	42.9%	60.0%	57.1%	54.1%
Fired	55.8%	57.5%	54.3%	51.4%	59.2%	61.9%	53.8%	49.0%	64.9%
Not given a job promotion	53.5%	55.0%	52.2%	59.5%	49.0%	52.4%	53.8%	49.0%	59.5%
Discouraged by teacher/advisor from seeking higher education	43.0%	32.5%	52.2%	40.5%	44.9%	57.1%	38.5%	34.7%	54.1%

Percent's for Everyday Discrimination items indicate experiencing the discrimination item ≥a few times a month. Percent's for Major Discrimination items indicate experiencing the discrimination item in their lifetime (ever). *n*'s reflect individuals who reported experiencing everyday discriminations ≥ a few times a month, and any lifetime major discrimination. *n* = 4 participants identified as male sex, and as transgender, female-to-male. Their self-reported responses for biological sex and gender identity are reported.

Table 4.

Primary perceived reason for everyday discrimination overall and by race and sex.

		Race		Sex		Sexual minority		Gender minority	
	Total sample	**White**	**Nonwhite**	**Female**	**Male**	**No**	**Yes**	**No**	**Yes**
	%	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Main reason for everyday discrimination	***n* = 46**	***n* = 25**	***n* = 21**	***n* = 21**	***n* = 25**	***n* = 9**	***n* = 37**	***n* = 16**	***n* = 30**
Homelessness	29.0%	32.4%	25.7%	40.6%	18.9%	25.0%	30.2%	33.3%	22.2%
Age	13.0%	17.6%	8.6%	9.4%	16.2%	25.0%	9.4%	9.5%	18.5%
Race	10.1%	0.0%	20.0%	9.4%	10.8%	6.3%	11.3%	9.5%	11.1%
Gender	8.7%	5.9%	11.4%	15.6%	2.7%	6.3%	9.4%	9.5%	7.4%
Sexual Orientation	7.2%	2.9%	11.4%	0.0%	13.5%	0.0%	9.4%	7.1%	7.4%
Main reason for major discrimination	***n* = 77**	***n* = 34**	***n* = 43**	***n* = 33**	***n* = 44**	***n* = 18**	***n* = 59**	***n* = 44**	***n* = 33**
Homeless	19.5%	23.5%	16.3%	30.3%	11.4%	11.1%	22.0%	25.0%	12.1%
Race	13.0%	0.0%	23.3%	12.1%	13.6%	11.1%	13.6%	13.6%	12.1%
Age	10.4%	8.8%	62.5%	0.0%	18.2%	22.2%	6.8%	9.1%	12.1%
Gender	9.1%	11.8%	7.0%	12.1%	6.8%	11.1%	8.5%	9.1%	9.1%
Sexual Orientation	6.5%	2.9%	9.3%	0.0%	6.5%	0.0%	8.5%	6.8%	6.1%

n's reflect individuals who reported experiencing everyday discrimination ≥ a few times a month, and any lifetime major discrimination. *n* = 4 participants identified as male sex, and as transgender, female-to-male. Their self-reported responses for biological sex and gender identity are reported.

Table 5.

Differences in substance use by depression, anxiety, and PTSD.

	Depression				Anxiety				PTSD			
	Yes	**No**	χ^2	***p***	**Yes**	**No**	χ^2	***p***	**Yes**	**No**	χ^2	***p***
Cigarette/cigarillo use			0.40	.402[a]			0.01	.941			1.41	.235
Yes	78.9%	65.2%			67.7%	68.5%			75.8%	63.5%		
No	21.1%	34.8%			32.3%	31.5%			24.2%	36.5%		
ATP			**5.01**	**.025**			0.12	.725			**5.52**	**.030**
Yes	68.4%	39.4%			48.4%	44.4%			60.6%	36.5%		
No	31.6%	60.6%			51.6%	55.6%			39.4%	63.5%		
Alcohol use			1.00	.318			**4.45**	**.035**			1.57	.210
Yes	47.1%	33.9%			51.7%	28.0%			45.2%	31.3%		
No	52.9%	66.1%			48.3%	72.0%			54.8%	68.8%		
Marijuana use			1.85	.174			0.58	.448			2.70	.100
Yes	63.2%	45.5%			54.8%	46.3%			60.6%	42.3%		
No	36.8%	54.5%			45.2%	53.7%			39.4%	57.7%		
SUD			**4.48**	**.034**			**3.97**	**.046**			**8.32**	**.004**
Yes	68.4%	40.9%			61.3%	38.9%			66.7%	34.6%		
No	31.6%	59.1%			38.7%	61.1%			33.3%	65.4%		

[a]Fisher's exact test was conducted because one cell had less than 5 individuals. Significant values were bolded for emphasis. The degree of freedom for all chi-square analyses was 1. ATP = alternative tobacco product use. Cigarette, ATP, alcohol, and marijuana use assessed past 30-day use. SUD was measured using the TCU-V. Depression was measured using the PHQ-8, anxiety was measured using the GAD-7, PTSD was measured using the PC-PTSD.

Table 6.

Differences in the frequency of discrimination experiences by substance use and mental health.

	Everyday discrimination				Major discrimination			
	***M* (*SD*)**	***t***	***df***	***p***	***M* (*SD*)**	***t***	***df***	***p***
Cigarette/cigarillo use		−0.72	84	.477		−0.77	84	.443
Yes	2.00 (1.66)				4.92 (3.74)			
No	1.73 (1.53)				4.26 (3.48)			
ATP Use		−1.07	84	.287		−0.63	84	.532
Yes	2.11 (1.63)				4.98 (3.81)			
No	1.74 (1.61)				4.48 (3.54)			
Alcohol Use		−1.84	78	.069		0.79	78	.432
Yes	2.38 (1.64)				4.23 (3.65)			
No	1.71 (1.54)				4.90 (3.67)			
Marijuana Use		−1.48	84	.142		−0.32	84	.747
Yes	2.17 (1.63)				4.84 (3.72)			
No	1.66 (1.59)				4.58 (3.62)			
SUD		−1.27	83	.209		−0.44	83	.661
Yes	2.11 (1.69)				4.95 (3.97)			
No	1.67 (1.49)				4.60 (3.35)			
Depression		**−4.05**	**83**	**< .001**		**−3.82**	**83**	**< .001**
Yes	3.08 (1.71)				7.37 (3.52)			
No	1.53 (1.39)				4.02 (3.34)			
Anxiety		**−4.24**	**83**	**< .001**		−0.88	83	.379
Yes	2.76 (1.60)				5.23 (3.73)			
No	1.37 (1.36)				4.50 (3.59)			
PTSD		**−3.92**	**83**	**< .001**		−1.21	83	.229
Yes	2.66 (1.72)				5.36 (3.82)			
No	1.38 (1.29)				4.38 (3.50)			

Significant values were bolded for emphasis. ATP = alternative tobacco product use. Cigarette, ATP, alcohol, and marijuana use assessed past 30-day use. SUD was measured using the TCU-V. Depression was measured using the PHQ-8, anxiety was measured using the GAD-7, PTSD was measured using the PC-PTSD.