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Disparities in substance use behaviors and disorders among adult sexual minorities by age, gender, and sexual identity

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ABSTRACT

Background: Sexual minorities (SMs) experience elevated rates of substance use behaviors and disorders relative to heterosexuals; minority stress is theorized to contribute to these disparities. As SMs are not a homogenous group, analyses that aggregate SMs across sexual identity, age, or gender obscure important variation among this population. To date, age- and gender-specific disparities have not been rigorously examined using a large national sample.

Methods: Using data on 67,354 adults (ages 18–49) from the 2015 and 2016 National Survey of Drug Use and Health we examined age- and gender-specific disparities in smoking, heavy episodic drinking, marijuana use, illicit drug use, and alcohol/substance use disorder. Age groups were ages 18–25, 26–34, and 35–49. Using logistic regression, we estimated age- and gender-specific odds ratios for gay/lesbian and bisexual individuals, relative to heterosexuals; analyses adjusted for demographic characteristics.

Results: Bisexual women had significantly elevated odds of all outcomes at all ages, relative to heterosexual women. Gay/lesbian individuals had significantly elevated odds for nearly all outcomes compared to same-gender heterosexuals at ages 18–25, but not consistently at older ages. For bisexual men, significant disparities compared to heterosexual men were only observed at ages 35–49 for marijuana use and alcohol/substance use disorder.

Conclusions: We found notable within-group differences regarding SM disparities. While disparities were most pronounced in young adulthood for gay/lesbian individuals and mid-adulthood for bisexual men, bisexual women uniquely experienced disparities across all ages. Minority stress experiences may vary with respect to gender, age/cohort, and sexual identity, resulting in differential risk for substance use.

1. Introduction

Individuals who identify as gay, lesbian, or bisexual experience significantly elevated rates of substance use and substance use disorders (SUD) relative to heterosexuals. Disparities are present at initiation, as sexual minority (SM) youth report younger ages of first use than heterosexual youth (Institute of Medicine, 2011). A meta-analysis of 18 school-based surveys reported that US SM youth had nearly three times the odds of any substance use relative to heterosexual youth, smoking rates 2–3 times higher those of heterosexuals and approximately 1.5 times the odds of marijuana use (Marshall et al., 2008). These disparities persist in adulthood: in national surveys in the US and Canada, SM adults report more alcohol use and heavy episodic drinking (HED) than heterosexual adults (Allen and Mowbray, 2016; McCabe et al., 2009; Pakula et al., 2016), and national surveys in the US and Australia have found SM adults to have significantly elevated marijuana use (Demant et al., 2017; McCabe et al., 2009). Similarly, national surveys find SM youth and adults have elevated cigarette smoking rates and higher odds of moderate or heavy smoking, especially women (Cochran et al., 2013; Corliss et al., 2014; Gonzales et al., 2016). Disparities also have been consistently observed with regard to SUDs: a recent study of the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III) found that SM adults have nearly twice the odds of any past-year SUD relative to heterosexuals (Kerridge et al., 2017). SMs are more likely to have an alcohol use disorder (AUD) and experience greater AUD severity (Allen and Mowbray, 2016; Amadio, 2006; McCabe et al., 2009). Notably, while heterosexual women have significantly lower rates of substance use than heterosexual men, SM

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women have similar or higher rates of substance use behaviors and disorders compared to SM men (Demant et al., 2017; Kerridge et al., 2017; McCabe et al., 2013; Operario et al., 2015).

Evidence suggests that bisexuals have particularly elevated rates of substance use relative to both heterosexuals and gay/lesbian individuals. Rates of heavy drinking among bisexual adults are nearly double those among heterosexuals as well as significantly higher than among gays/lesbians (Gonzales et al., 2016), and bisexual adults are more likely to have an AUD compared to gay, lesbian, or heterosexual adults (Kerridge et al., 2017; McCabe et al., 2013). National surveys find the highest smoking rates among bisexuals (Cochran et al., 2013; Demant et al., 2017). Furthermore, many studies have found gender effects, with pronounced disparities among bisexual females. A study of Youth Risk Behavior Study respondents found that female bisexual young adults had higher rates of lifetime drinking than bisexual males and both heterosexual males and females (Talley et al., 2014). Using national data, McCabe et al. (2009) found that bisexual women had higher rates of heavy drinking, alcohol dependence, marijuana use, and illicit drug use than both heterosexual and gay/lesbian women. While bisexual men had higher rates of illicit drug use and alcohol/substance use dependence than heterosexual men, rates were similar between bisexual and gay men (McCabe et al., 2009).

A predominant theory for the observed disparities among SMs is minority stress, namely the excess chronic stress experienced due to membership in a marginalized social group (Meyer, 2003). Experiences of objective prejudice and discrimination may contribute to internal stressors, such as low self-esteem, shame, guilt, and internalized stigma, which may elevate the risk of substance use, mental health problems, or social isolation (Meyer, 2003). Additionally, structural stigma, defined as "societal-level conditions, cultural norms, and institutional policies that constrain opportunities, resources, and well-being," has been identified as a significant factor that may lead to or magnify individual-level discrimination (Hatzenbuehler, 2014; Hatzenbuehler and Link, 2014). Salient structural stigma contributors include lack of legal recognition for same-sex marriages, prohibitions on same-sex couple adoption, lack of non-discrimination policies that protect LBGT individuals, and lack of health insurance parity for mental health and physical conditions (Hatzenbuehler, 2014). Prior work has demonstrated a link between living in a state with same-sex marriage prohibition and increased AUD and mood disorders among SM adults (Hatzenbuehler et al., 2010), while a recent study offered compelling evidence that legalization of same-sex marriage significantly reduced suicide attempts among SM adolescents (Raifman et al., 2017).

The extent to which substance use disparities may vary by age has not been rigorously examined in national samples, yet substance use risk factors and minority stress experiences are likely to differ both across life stage and birth cohort. Contextual factors associated with substance use (e.g., education, employment, family structure, social support) may vary in both frequency and timing across the life-course for SMs compared to heterosexuals, and may differentially influence substance use among SMs (Fredriksen-Goldsen et al., 2017a; Gonzales, 2014). Different generations of SMs had distinct experiences of societal acceptance/discrimination, as well as different generational perceptions of substance use (Hammack et al., 2018). A limited number of studies have examined age trends in substance use disparities to date. One longitudinal study found that the disparity in heavy drinking among SMs adolescents increased into young adulthood (Dermody et al., 2014); another found that SM reported higher initial rates of substance use and more rapid escalation of use compared to their heterosexual peers (Marshal et al., 2009). Similarly, a longitudinal study of young adults found that both sexual minority males and females are at elevated risk for heavier alcohol use trajectories than their heterosexual peers (Coulter et al., 2018). Relatedly, physical health disparities among SMs have been found to vary by age, with larger disparities among adolescents and young adults than older adults. Gender moderated this relationship, as disparities were present for older ages among women but not men (Branstrom et al., 2016).

To further the literature regarding heterogeneity among SMs, this study examines how substance use behavior and disorder disparities among SMs differ by age and gender, using a national sample of adults ages 18 to 49 from the 2015 and 2016 National Survey of Drug Use and Health (NSDUH). As substance use risk factors and minority stress experiences are likely to vary both with respect to life stage and birth cohort, we estimate age- and gender-specific disparities in substance use behaviors (smoking, heavy episodic drinking, marijuana use, and illicit drug use) and disorders (AUD or SUD) among individuals who identify as gay/lesbian or bisexual, relative to heterosexuals. While substance use disparities among SM adults are well-established, this study is novel in that it examines how the magnitudes of these disparities differ across age and gender for multiple substance use behaviors and disorders. Strengthening our understanding of how disparities in substance use behaviors and disorders among SMs varies by age among adults can help us to understand better and address the factors that contribute to these differences and inform screening and treatment initiatives for this population with elevated and underserved need.

2. Methods

2.1. Study population

Starting in 2015, the NSDUH assessed sexual identity among respondents 18 and older. Data were from the 2015 and 2016 NSDUH, a nationally representative study of drug use among the civilian, non-institutionalized US population ages 12 and older. Data were collected using both computer-assisted personal interviewing and audio computer-assisted self-interviewing to facilitate accurate reporting of sensitive behaviors. The public use NSDUH sample comprised 57,146 individuals (70% interview response rate) in 2015 and 56,897 individuals (68% response rate) in 2016. The NSDUH survey is sponsored by Substance Abuse and Mental Health Services Administration (SAMHSA) and fielded by the Research Triangle Institute; all survey respondents gave informed consent and were compensated $30. Our analytic sample was restricted to individuals ages 18 to 49 who self-identified as either heterosexual, lesbian or gay, or bisexual; individuals ages 12 to 17 were not asked the sexual identity question, and SM sample sizes were too small for accurate estimates among those 50 or older, so these groups were excluded, as were those who either did not respond to the sexual identity item or responded "don't know," resulting in a total sample of 67,354 individuals, including 4,868 SMs.

2.2. Measures

SM status can be defined with respect to identity, behavior, or attraction; identity has been shown to generally have the strongest association with substance use (Corliss et al., 2014; McCabe et al., 2013) and hence is our focus. Sexual identity was assessed by an item that asked, "Which one of the following do you consider yourself to be?" with response choices of "Heterosexual, that is, straight," "Lesbian or gay," "Bisexual," and "Don't know."

The substance use outcomes of interest were: past month cigarette use, past month heavy episodic drinking (HED), past year marijuana use, past year other illicit drug use (not including marijuana), and past year alcohol or other substance use disorder (AUD/SUD). Individuals who smoked cigarettes at least once in the past 30 days were defined as having past month cigarette use. Past month HED was defined as at least one occurrence of HED, namely 4+ drinks in a day for women and 5+ drinks in a day for men, in the past 30 days. Past year marijuana use was defined as at least one episode of marijuana use in the past 12 months. Past year other illicit drug use was defined as at least one episode of using hallucinogens, inhalants, methamphetamine, tranquilizers, cocaine, heroin, stimulants, sedatives, or nonmedical use of prescription pain relievers in the past 12 months. The AUD and SUD