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Sexual Orientation Disparities in Substance Use: Investigating Social Stress Mechanisms in a National Sample

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Abstract

Introduction—Sexual minorities are disproportionately more likely than heterosexuals to suffer from substance use disorders (SUDs), but relatively little is known about differences in SUDs across diverse sexual minority subgroups. There is also limited understanding of how different social stressors account for sexual orientation disparities in SUDs.

Methods—Using nationally representative data collected in 2012–2013 (N=34,597), differences in past-year DSM-V alcohol, cannabis, and tobacco use disorders were assessed across four sexual orientation groups (heterosexuals and three sexual minority subgroups: lesbian/gay-, bisexual-, and heterosexual-identified sexual minorities). This study assessed whether stressful life events (SLEs) mediated SUD disparities between heterosexuals and each sexual minority subgroup, and whether SLEs and lesbian, gay, bisexual (LGB) discrimination events mediated these SUD differences. Analyses were conducted in 2019.

Results—For both men and women, SUDs and stress experiences varied by sexual identity. For example, compared with heterosexual men, larger proportions of gay and bisexual men had a past-year alcohol use disorder. Among women, all sexual minority subgroups had higher rates of each SUD, compared with heterosexuals. For each SUD, SLEs mediated disparities between heterosexuals and sexual minority subgroups, except for heterosexual-identified sexual minority men. Both SLEs and LGB discrimination mediated SUD differences between sexual minority subgroups, with stronger indirect effects through LGB discrimination for lesbians/gay men and stronger indirect effects through SLEs for bisexual adults, generally.

Conclusions—Sexual minority subgroups have greater prevalence of SUDs, mediated through both SLEs and LGB discrimination. More research is needed to comprehensively assess the processes underlying sexual orientation substance use disparities.

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INTRODUCTION

Considerable substance use disparities exist on the basis of sexual orientation (e.g., between lesbian, gay, bisexual [LGB] and heterosexual people),^{1–5} with LGB people being disproportionately more likely than heterosexuals to report use of and dependence on alcohol,^{4,6} tobacco,^{7–10} marijuana, and other drugs.^{11–13} However, although substance use disparities are evident between sexual minority and heterosexual people broadly, sexual orientation is multidimensional, consisting of one's romantic attractions, sexual behaviors, and use of identity labels—dimensions that commonly do not overlap.^{14,15} Important social, behavioral, and relational differences exist between sexual minority subgroups at the intersections of these domains (e.g., between gay- and heterosexual-identified men who have sex with men), and further between different identity groups (e.g., between lesbian/gay and bisexual men and women).^{16–18}

Some research has shown that different sexual minority subgroups differ with respect to substance use behaviors.^{6,9,14,19–21} For instance, in an Australian national sample, “mainly heterosexual,” (but not lesbian) women were more likely to report at-risk drinking, and bisexual (but not lesbian) women were more likely to report marijuana use, compared with heterosexual women.²² In addition, compared with their heterosexual peers, young gay (but not bisexual) men reported greater odds of past-month cigarette smoking in a recent U.S. national sample.²³

Social stress has been linked to increased alcohol, tobacco, and other drug use,^{24,25} and chronic exposure to stress is associated with population disparities in substance use disorders (SUDs).^{26,27} For instance, increased job-, financial-, and family-derived stress are each associated with increased rates of coping through self-medication with alcohol and other drugs.^{28–30} Minority stress refers to the socially derived interpersonal stressors that sexual minorities face as a result of their real or perceived LGB identities, including stigma, discrimination, and victimization.³¹ Both minority stressors and more general stressors (e.g., financial burden) have been linked to substance use behaviors, and sexual minority people experience elevated rates of both types of stress.^{31–36}

Increasingly, research has indicated minority stress as a primary mechanism contributing to sexual minority disparities in substance use,^{37–41} with for instance, homophobic bullying mediating sexual minority alcohol use disparities.⁴² Bullying and other victimization events, not necessarily related to sexual orientation, are also associated with sexual minority disparities in alcohol and marijuana use.^{43–46} However, the degree to which general stressors (e.g., being a victim of theft or getting divorced) serve as mechanisms driving sexual minority disparities in substance use have been examined to a lesser extent. To the authors' knowledge, no studies have directly compared the effects of general and minority-specific stressors on sexual minority disparities in SUD. Further, to improve sexual minority population health, it is important to disentangle the mechanisms that contribute to differential health outcomes and behaviors, including substance use, among sexual minority subgroups.

This study assessed the prevalence of three past-year SUDs (alcohol, cannabis, tobacco) across four sexual orientation groups (heterosexuals and three sexual minority subgroups: lesbian/gay-, bisexual-, and heterosexual-identified sexual minorities [HSM]). The study also assessed whether stressful life events (SLEs) and LGB discrimination mediated sexual orientation differences in each SUD.

METHODS

Study Sample

Data were from the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III), a nationally representative sample of 36,309 U.S. adults collected in 2012–2013 that assessed various substance use, mental, and physical health issues. Respondents were recruited via a multistage address-based probability sampling design from >3,100 counties. Hispanic, black, and Asian respondents were oversampled to ensure sample diversity. Respondents were excluded if they could not be assigned to a sexual orientation group ($n=1,712$). The final analytic sample size was 34,597 (15,198 men, 19,399 women). The present study was approved by the University of California, Los Angeles, Office of the Human Research Protection Program.

Measures

Three dimensions of sexual orientation were assessed: identity, attraction, and behavior. Sexual identity was measured by respondents reporting the *category that best describes your sexual orientation*. Responses were *heterosexual*, *gay or lesbian*, and *bisexual*. Those selecting *not sure* ($n=199$) and *unknown* ($n=314$) were coded as missing for identity. Sexual attraction was measured by respondents reporting the *best description of your sexual attraction to other people*. Responses ranged from *only attracted to females* to *only attracted to males*; respondents were coded as experiencing same/both-sex attractions or opposite-sex attractions. Those selecting *unknown* ($n=335$) were coded as missing for the attraction variable. Sexual behavior was assessed across respondents' lifetimes (*gender of sexual partners in entire life*) and in the past 12 months (*during the last 12 months, had sex with only males, only females, or both*). Responses for both behavior questions were *only males*, *only females*, and *both males and females*; respondents were categorized as engaging in same/both-sex behaviors or opposite-sex behaviors only in their lifetimes, and in the past 12 months. Those reporting they had not had sex (lifetime, $n=908$; past 12 months, $n=10,570$) or who did not know whether they had sex (lifetime, $n=365$; past 12 months, $n=16$) were coded as missing for the behavior variables.

Respondents were then sorted into one of four sexual orientation groups, based on their responses to the identity, attraction, and behavior questions: (1) heterosexual (heterosexual identity, opposite-sex attractions, lifetime opposite-sex behaviors only), (2) lesbian/gay (lesbian/gay identity, regardless of attractions and behaviors), (3) bisexual (bisexual identity, regardless of attractions and behaviors), and (4) HSM (heterosexual identity plus same/both-sex attractions, same/both-sex behaviors in the prior 12 months, or both). In total, 1,712 respondents were missing the required identity, attraction, or behavior variables for assignment to a sexual orientation group and were excluded from analysis.

Respondents were coded as meeting DSM-5 criteria (versus not) for alcohol, cannabis, and tobacco use disorders in the prior 12 months.⁴⁷ Symptoms of each disorder were assessed (e.g., amount and duration of consumption, time spent seeking the substance, cravings), and determinations were made by the NESARC-III study team.

Two composite measures of social stress were included. All respondents completed the SLEs scale, a measure of the number of experiences of one or more of 16 common stressors ($\alpha=0.65$).⁴⁸ All items were dichotomized (occurred versus did not occur), and a sum score was created (range, 0–16; mean, 1.71; SD=1.91). Sexual minority respondents (lesbian/gay, bisexual, HSM) were additionally asked how often they experienced six LGB discrimination events in the past year, adapted from the Experiences of Discrimination scale ($\alpha=0.88$).^{48,49} All items were dichotomized (occurred versus did not occur), and a sum score was created (range, 0–6; mean, 0.46; SD=1.24). Table 1 provides the full set of items included in each scale.

Several sociodemographic covariates were included: sex (male, female), race/ethnicity (non-Hispanic white, non-Hispanic black, non-Hispanic American Indian/Alaska Native, non-Hispanic Asian/Native Hawaiian/Other Pacific Islander, or Hispanic), nativity status (born a U.S. citizen versus not), education (less than high school, completed high school, technical/trade school, completed college, or more than college), and household income (<\$25,000, \$25,000–\$49,999, \$50,000–\$79,999, \$80,000–\$99,999, or >\$100,000). Missing covariates were imputed by the NESARC-III study team.⁵⁰

Statistical Analysis

First, bivariate differences in past-year alcohol, cannabis, and tobacco use disorders (SUDs) and SLEs were assessed across all four sexual orientation groups (heterosexual, HSM lesbian/gay, bisexual); other descriptive characteristics of the sample were published previously.¹⁶ Differences in SUDs, SLEs, and LGB discrimination were also estimated across the sexual minority subgroups (HSM, lesbian/gay, bisexual). Design-adjusted *F* statistics were calculated for categorical variables. Adjusted Wald *F* statistics were calculated for continuous variables. Bonferroni-adjusted post-hoc comparisons assessed whether each sexual minority subgroup differed from heterosexuals, and whether lesbian/gay and bisexual respondents differed from HSM respondents for each characteristic. Bivariate analyses were performed with Stata, version 14.

Next, path analyses⁵¹ assessed whether SLEs mediated disparities in SUDs between heterosexuals (ref group) and each sexual minority subgroup. Then, SLEs and LGB discrimination were simultaneously assessed as mediators of differences in SUDs between HSM (ref group), gay/lesbian, and bisexual respondents. Indirect effects were calculated to assess the degree to which the associations between sexual orientation and SUDs were mediated by stress, and direct effects estimated the degree to which these associations were not mediated by stress. For adjusted estimates, covariates were included in the path analysis models. Path analyses were performed with MPlus, version 7. Analyses, performed in 2019, were sex-stratified, and applied survey weights, allowing for generalization to the U.S. population.

RESULTS

Table 2 presents sexual orientation differences in past-year SUDs (alcohol, cannabis, tobacco), SLEs, and LGB discrimination. Among men, greater proportions of gay (26.63%) and bisexual men (31.40%) met criteria for alcohol use disorder, compared with both heterosexuals (17.62%) and HSM men (14.83%). A greater proportion of bisexual men (40.80%) and a smaller proportion of HSM men (19.22%) met criteria for tobacco use disorder, compared with heterosexual men (23.56%), and greater proportions of both gay (29.99%) and bisexual men also met criteria for tobacco use disorder, compared with HSM men. Compared with both heterosexual (mean, 1.59) and HSM men (mean, 1.63), gay (mean, 2.17) and bisexual men (mean, 2.75) reported more SLEs. Among the sexual minority subgroups, gay (mean, 1.28) and bisexual men (mean, 0.71) reported more LGB discrimination events than HSM men (mean, 0.10).

Among women, greater proportions of HSM (19.25%, 4.53%, 21.57%), lesbian/gay (24.85%, 6.79%, 27.27%), and bisexual women (29.67%, 8.59%, 36.26%) met criteria for alcohol, cannabis, and tobacco use disorders, respectively, compared with heterosexual women (9.04%, 1.16%, 16.11%). Lesbian/gay women did not statistically differ from HSM women across any of these comparisons, but greater proportions of bisexual women met criteria for alcohol and tobacco use disorders, compared with HSM women. Compared with heterosexual women (mean, 1.54), HSM (mean, 2.04), lesbian/gay (mean, 2.50), and bisexual (mean, 3.20) women reported more SLEs. Lesbian/gay (mean, 1.31) and bisexual (mean, 0.61) women also reported more LGB discrimination events than HSM women (mean, 0.13).

Figure 1 presents path analyses that assessed whether SLEs mediated sexual minority SUD disparities. Gay/lesbian, bisexual, and HSM men and women were compared with heterosexuals in all models. Among men, gay and bisexual men, but not HSM men, reported more SLEs than heterosexual men, and more SLEs were associated with higher rates of each SUD. For gay and bisexual men, there were indirect effects through SLEs for each SUD, indicating SLEs mediated sexual orientation SUD disparities for these groups. When accounting for the indirect effect via SLEs, the direct effects between gay and bisexual identity and each SUD were null, except for alcohol use disorder among gay men ($B=0.322$, $p<0.05$), indicating that SLEs did not fully attenuate this disparity. For HSM men, there were no indirect effects through SLEs for any SUD, but there was an inverse direct effect between HSM status and tobacco use disorder ($B=-0.325$, $p<0.01$), indicating a lower rate of disordered use for HSM men, compared with heterosexual men.

Among women, all sexual minority subgroups reported more SLEs than heterosexuals, and more SLEs were associated with higher rates of each SUD. There were positive indirect effects through SLEs for all substance use outcomes among all sexual minority subgroups. However, with the exception of tobacco use disorder among bisexual women ($B=0.292$, $p>0.05$), the positive direct effects between each sexual minority group and each SUD remained after accounting for the mediating influence of SLEs.

Figure 2 presents path analyses that assessed whether SLEs and LGB discrimination events mediated SUD differences among sexual minority subgroups. Gay/lesbian and bisexual men and women were compared with HSM respondents in all models. Among men, gay and bisexual men reported more SLEs and LGB discrimination than HSM men. Higher rates of both SLEs and LGB discrimination were also associated with higher rates of several SUDs. There were indirect effects between sexual orientation and alcohol use disorder through both SLEs and LGB discrimination, for gay and bisexual men. For gay men, the magnitude of the indirect effect through LGB discrimination ($B=0.170$, $p<0.05$, 61.58% of the total effect [0.218/0.354]) was larger than through SLE ($B=0.072$, $p<0.05$, 20.34% of total effect). For bisexual men, the magnitude of the indirect effect was larger through SLE ($B=0.218$, $p<0.05$, 33.20% of total effect) than through LGB discrimination ($B=0.130$, $p<0.05$, 20.12% of total effect). There were no direct effects between gay or bisexual identity and alcohol use disorder, after accounting for SLEs and LGB discrimination. There was an indirect effect between gay identity and cannabis use disorder through LGB discrimination, and an inverse direct effect. There was an indirect effect between bisexual identity and tobacco use disorder through SLEs, and a positive direct effect.

Among women, lesbian/gay women reported more LGB discrimination and bisexual women reported more SLEs and LGB discrimination, compared with HSM women. However, although SLE was associated with higher rates of each SUD, LGB discrimination was not. There were indirect effects for bisexual women and each SUD through SLEs. Direct effects were null after accounting for SLEs. There were no direct or indirect effects through SLEs or LGB discrimination for gay/lesbian women, compared to HSM women.

DISCUSSION

Stark disparities were evident between heterosexual and sexual minority populations, across alcohol, cannabis, and tobacco use disorders. Indeed, among women, all sexual minority subgroups experienced each SUD at higher rates than heterosexuals. The results also suggest that higher rates of SLEs among sexual minorities mediated SUD disparities between heterosexuals and all sexual minority subgroups except HSM men. These findings are consistent with stress theories, which suggest increased exposure to stress is associated with detriments in health and related behaviors, including substance use^{24,25} and that minority groups experience health disparities resulting from increased stress exposure.^{31,36,39} These findings also highlight the importance of general life stressors, in addition to minority stressors, in contributing to SUD disparities for many sexual minorities.³¹

Several differences in substance use and stress experiences were also evident between sexual minority subgroups, providing insights into the mechanisms driving subgroup differences in SUDs. In multivariate analysis, gay men and bisexual men and women reported more SLEs, and gay/lesbian and bisexual men and women also reported more LGB discrimination events than HSM respondents. In many cases, group differences in SLE and LGB discrimination mediated group differences in SUDs, suggesting stress is a powerful correlate of substance use, and that reducing subgroup disparities in stress exposure would curb substance use disparities.

Different types of stress may underlie, or more strongly influence, subgroup differences in substance use. For instance, among both gay and bisexual men, SLEs and LGB discrimination were each associated with higher rates of alcohol use disorder, compared with HSM. However, the magnitudes of the indirect effects suggest LGB discrimination is a stronger mediator of the disparity for gay men, whereas SLEs are a stronger mediator of the disparity for bisexual men. Further, differences in disordered cannabis use between gay and HSM men were mediated through perceived LGB discrimination, whereas differences in disordered tobacco use between bisexual and HSM men were mediated through SLEs. Among women, elevated rates of disordered alcohol, cannabis, and tobacco use among bisexual women, compared with HSM, were mediated through SLEs. Although both SLE and LGB discrimination are important determinants of sexual minority health disparities, interventions designed to mitigate LGB discrimination (e.g., enactment of anti-LGBT bias trainings in substance abuse treatment facilities) may be particularly relevant for addressing disordered substance use among lesbian/gay populations.

In both bivariate and multivariate analyses, lesbian/gay and especially bisexual participants had the most pronounced disparities in SUDs. HSM women also had marked SUD disparities compared with heterosexual women, although the magnitudes of these differences were somewhat smaller than for LGB-identified women. Among men, HSM men had similar, and in some cases (tobacco), lower rates of SUD, compared with heterosexuals. There were also marked differences in stress exposure among sexual minority subgroups, with HSM men and women reporting fewer instances of both SLE and LGB discrimination events, compared with lesbian/gay and bisexual respondents. Together, these findings suggest that among sexual minorities, possessing an LGB identity confers additional vulnerability, especially among men, and that exposure to SLE versus LGB discrimination may vary on the basis of identity. For instance, LGB-based discrimination in healthcare settings may more directly impact sexual minorities who openly identify as LGB, compared with HSM, or those who present with traditional gender roles.⁵² However, these questions require further investigation.

Limitations

First, the LGB discrimination measure should be interpreted with caution; the original scale items may resonate more strongly with LGB- than heterosexual-identified sexual minorities (e.g., *how often were you called names because [you were] assumed to be gay, lesbian, or bisexual*). Thus, the resultant scale likely measured subgroup differences in perceived, rather than actual exposure to minority stress events. Second, this study considered how specific types of stressors (i.e., SLE versus LGB discrimination) mediated SUD disparities, but future studies should examine the prevalence and impact of specific stressors (e.g., death in the family versus job stress) on substance use behaviors in more detail. Third, roughly 5% of respondents were missing the sexual orientation items required for assignment to a sexual orientation group. Compared with those assigned, those not assigned were younger, more likely to be female and racial/ethnic minorities, and had lower SES (results not shown), characteristics that may predispose respondents to social stress. Future research may consider studying stress and substance use behaviors of this unique demographic subgroup. Fourth, the results highlight the need to examine alternate mechanisms driving sexual

orientation SUD disparities, possibly outside of stress frameworks—particularly among women, for whom direct effects between sexual identity and SUDs remained after accounting for indirect effects through stress. Finally, these data are cross-sectional, limiting the ability to draw inferences about the causal natures of the presented associations.

CONCLUSIONS

There are wide-ranging differences in rates of past-year alcohol, cannabis, and tobacco use disorders across four distinct sexual orientation groups, with important distinctions between sexual minority subgroups. Subgroups also varied appreciably in experiences of stress, and the associations between stress and SUDs. Future research should assess how specific stressors, and alternate mechanisms contribute to sexual orientation disparities in substance use.

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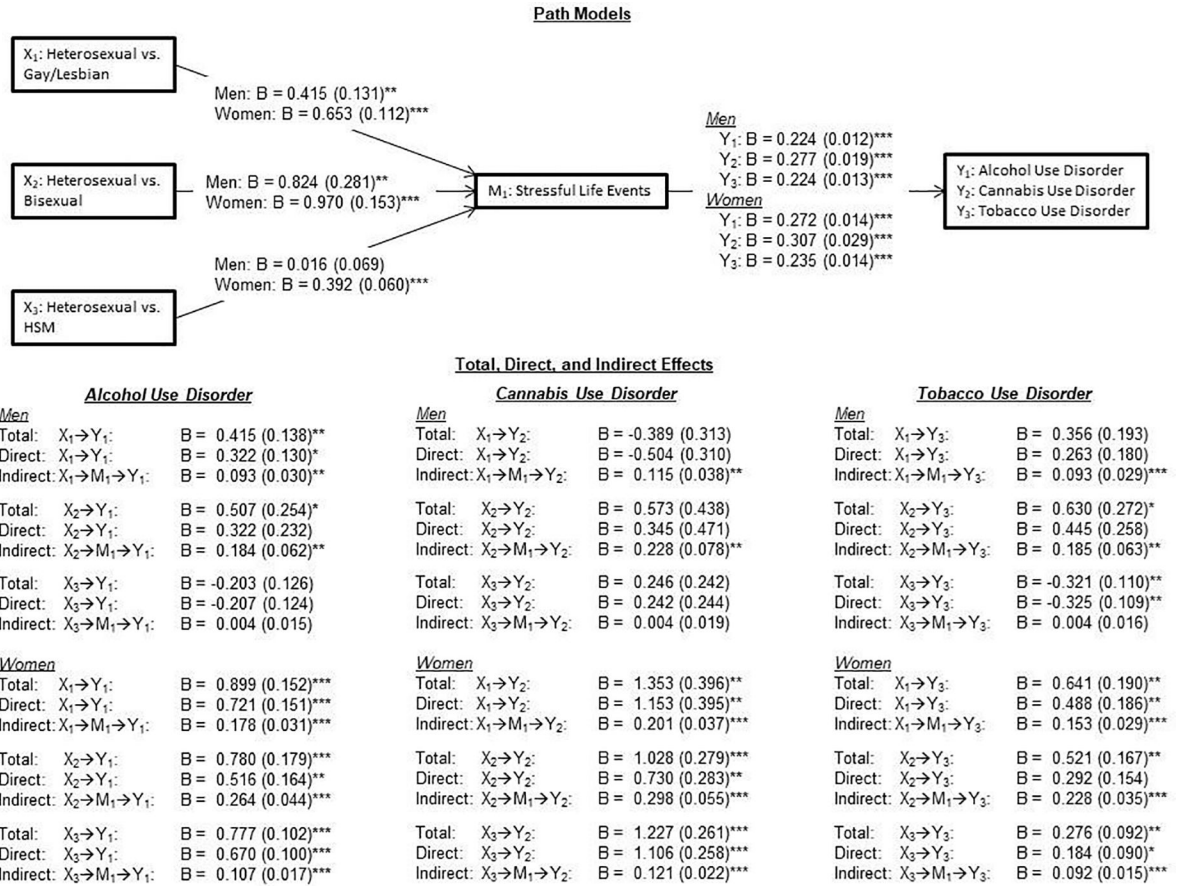


Figure 1. Mediating effect of stressful life events on the associations between sexual orientation group and substance use disorders, weighted path analyses, NESARC III, 2012–2013.
Notes: Path coefficients are reported in the path model. Direct and indirect effects are presented below the path model. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
 HSM, heterosexual-identified sexual minority; NESARC III, National Epidemiologic Survey on Alcohol and Related Conditions III.

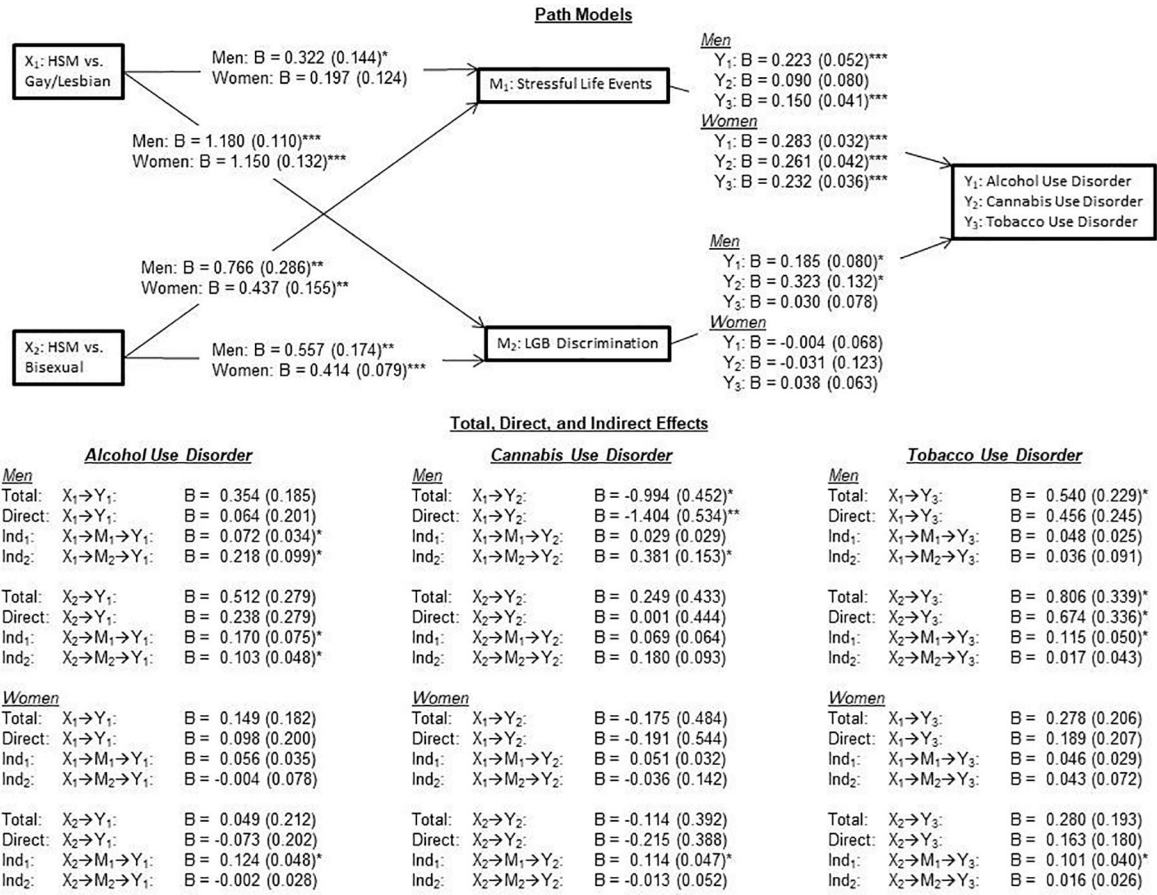


Figure 2. Mediating effect of stressful life events and LGB discrimination on the associations between sexual minority group and substance use disorders, weighted path analyses, NESARC III, 2012–2013.

Notes: Path coefficients are reported in the path model. Direct and indirect effects are presented below the path model. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

LGB, lesbian, gay, bisexual; HSM, heterosexual-identified sexual minority; NESARC III, National Epidemiologic Survey on Alcohol and Related Conditions III.

Table 1.

Individual Items Included in Stressful Life Events and LGB Discrimination Scales

Stressful life events (general stress)	LGB discrimination (minority stress)
1. Moved/anyone new came to live with you in last 12 months	1. How often [have you] experienced discrimination obtaining health care or health insurance coverage because [you were] assumed to be gay, lesbian, or bisexual during the last 12 months?
2. Fired or laid off from job in last 12 months	2. How often [have you] experienced discrimination in how treated when obtained health care because [you were] assumed to be gay, lesbian, or bisexual during the last 12 months?
3. Unemployed and looking for work for >1 month in last 12 months	3. How often [have you] experienced discrimination in public, like on the street, in stores, or in restaurants, because [you were] assumed to be gay, lesbian, or bisexual during the last 12 months?
4. Had trouble with boss or coworker in last 12 months	4. How often [have you] experienced discrimination in any other situation because [you were] assumed to be gay, lesbian, or bisexual during the last 12 months?
5. Changed jobs, job responsibilities or work hours in last 12 months	5. How often were you called names because [you were] assumed gay/bisexual in last 12 months?
6. Got separated or divorced or broke off steady relationship in last 12 months	6. How often were you made fun of, picked on shoved, hit, or threatened with harm because [you were] assumed gay/bisexual in last 12 months?
7. Had problems with neighbor, friend or relative in last 12 months	
8. Declared bankruptcy in last 12 months	
9. Had trouble with police or the law in last 12 months	
10. Were you a victim of theft in last 12 months	
11. You or family member victim of property destruction in last 12 months	
12. Any family members or close friends died in last 12 months	
13. Any family members or close friends physically assaulted in last 12 months	
14. Any family member or friend had trouble with police or the law in last 12 months	
15. Have you at any time been homeless in last 12 months?	
16. Have you had so much debt that you had no idea how to repay it in last 12 months?	
Scale range: 0–16	Scale range: 0–6
Scale mean: 1.71	Scale mean: 0.46
Scale SD: 1.91	Scale SD: 1.24

LGB, lesbian, gay, bisexual.

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Table 2.

Substance Use and Social Stress Characteristics by Sexual Identity Group, NESARC-III, 2012–2013

Variable	Heterosexual	HSM	Lesbian/Gay	Bisexual	Full sample (p-value)	Sexual minorities (p-value)
Men, N (weighted %)	13,951 (92.51)	782 (4.81)	321 (1.84)	144 (0.84)		
Women, N (Weighted %)	17,418 (90.24)	1,294 (6.58)	265 (1.24)	422 (1.94)		
Men						
Substance use						
Alcohol use disorder, % (SE)	17.62 (0.42)^{b,c}	14.83 (1.46)^{d,e}	26.63 (2.69)	31.40 (5.47)	<0.001	<0.001
Cannabis use disorder, % (SE)	3.44 (0.18)	4.29 (0.91)	3.10 (0.89)	9.65 (2.94)	0.004	0.011
Tobacco use disorder, % (SE)	23.56 (0.57)^{a,c}	19.22 (1.58)^{d,e}	29.99 (3.56)	40.80 (5.54)	<0.001	<0.001
Social stress						
Stressful life events, range 0–16, mean (SE)	1.59 (0.02)^{b,c}	1.63 (0.07)^{d,e}	2.17 (0.15)	2.75 (0.31)	<0.001	<0.001
LGB discrimination, range 0–6, mean (SE)	–	0.10 (0.03)^{d,e}	1.28 (0.10)	0.71 (0.16)	–	<0.001
Women						
Substance use						
Alcohol use disorder, % (SE)	9.04 (0.36)^{a,b,c}	19.25 (1.58)^e	24.85 (2.50)	29.67 (3.04)	<0.001	0.002
Cannabis use disorder, % (SE)	1.16 (0.11)^{a,b,c}	4.53 (1.02)	6.79 (2.29)	8.59 (1.79)	<0.001	0.100
Tobacco use disorder, % (SE)	16.11 (0.45)^{a,b,c}	21.57 (1.42)^e	27.27 (3.48)	36.26 (3.16)	<0.001	<0.001
Social stress						
Stressful life events, range 0–16, mean (SE)	1.54 (0.02)^{a,b,c}	2.04 (0.07)^{d,e}	2.50 (0.13)	3.20 (0.16)	<0.001	<0.001
LGB discrimination, range 0–6, mean (SE)	–	0.13 (0.04)^{d,e}	1.31 (0.12)	0.61 (0.08)	–	<0.001

Notes: Table presents weighted means and percentages. Design-adjusted F statistics were calculated for categorical variables, and adjusted Wald F statistics were calculated for continuous variables. Post-hoc comparisons assessed whether

- (a) HSM
- (b) lesbian/gay, and
- (c) bisexual respondents differed significantly from heterosexuals, and whether
- (d) lesbian/gay and
- (e) bisexual respondents differed significantly from HSM respondents, reported as superscripts. Boldface indicates statistically significant difference ($p < 0.05$) from the group(s) indicated in the corresponding superscript.

NESARC-III, National Epidemiologic Survey on Alcohol and Related Conditions III; HSM, heterosexual-identified sexual minority; LGB, lesbian, gay, bisexual.