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Do bisexual girls report higher rates of substance use than heterosexual girls? A failure to replicate with incarcerated and detained youth

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Abstract

Prior research suggests that sexual minority females, particularly bisexuals, report greater rates of substance use than heterosexuals. However, to our knowledge, no study has compared alcohol/drug use between bisexual and heterosexual incarcerated or detained female youth. The current study pools data from three prior treatment studies with incarcerated or detained adolescent girls that self-identify as bisexual or heterosexual ($N=86$). Hierarchical regression models were conducted to determine whether 12-month prevalence of alcohol, cigarettes, marijuana, or other drug use differed between bisexual and heterosexual participants. In contrast to most prior work, no differences were observed. Findings are considered in light of the recruitment setting, which drew a sample with high levels of substance use prevalence.

Keywords

Substance use; bisexual; sexual minority; incarceration; youth

Incarcerated/Detained Juveniles and Substance Use

Incarcerated and detained youth represent one population highly vulnerable to substance use and abuse. In a large descriptive study of incarcerated 11–18 year olds, 77.8% and 79.5% reported lifetime alcohol and marijuana use, respectively (Braithwaite, Conerly, Robillard, Stephens, & Woodring, 2003). Teplin and colleagues (2002) interviewed over 1,800 (response rate of 95.8%) 10–18 year old detainees in the Cook County Juvenile detention center. Approximately one-half met criteria for any Substance Use Disorder (SUD), and one-fifth met criteria for both an alcohol and a drug use disorder. While these studies found more drug use among boys than girls, there was an alarming prevalence rate for both genders, and the current investigation focuses on girls only.

Sexual Orientation and Substance Use

Sexual minorities are at increased risk for a broad spectrum of mental health disorders, such as depression, anxiety, and substance use (Mustanski, Garofalo, & Emerson, 2010; Meyer, 2003). In one meta-analysis, Meyer (2003) concluded that SUDs among lesbian or bisexual females are 3.47 times more prevalent than among heterosexual females. Meyer attributes this discrepancy to the fact that individuals from stigmatized groups (i.e. LGB) experience higher stress. Along these lines, other work has shown that stressful life events during adolescence or young adulthood are associated with an increased risk of developing SUDs (Jackson & Sher, 2003; King & Chassin, 2008). As such, if LGB individuals are typically exposed to more life stressors, such as stigmatization, it is reasonable to suspect they may be more likely to abuse alcohol or drugs.

Much of the research comparing rates of substance use by sexual orientation status is with adults (see Green & Feinstein, 2012 for a review). However, because LGB identity frequently emerges during adolescence (Savin-Williams & Diamond, 2000), it is critical to consider potential drug use disparities according to sexual orientation during this important developmental period. Research has generally supported the notion that sexual minority youth are more drug involved than their heterosexual counterparts, and this discrepancy is greater for girls than boys (Marshal et al., 2008). In support of the minority stress theory discussed above, the differential rates of substance use is greater in geographical regions with high structural stigma (e.g. fewer gay-straight alliances, lack of same-sex marriage) than in regions with low structural stigma (Hatzenbuehler, Jun, Corliss, & Austin, 2015). In one meta-analysis of 18 studies and 125 effect sizes, Marshal et al. (2008) observed that drug use was substantially higher among LGB versus heterosexual adolescents, $d=.59$. More recent large-scale, prospective health studies have found that sexual minorities girls (around 14–17 years old) have greater rates of initial use and growth in alcohol, tobacco, and marijuana (Dermody et al., 2014; Marshal et al., 2009; 2012; Oshri et al., 2014). Other work has demonstrated that lesbian or bisexual female youth report earlier initiation of alcohol (Corliss, Rosario, Wypij, Fisher, & Austin, 2008; Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998), cocaine, and marijuana use (Garofalo et al., 1998). In a study of more than 16,000 children of nurses, Corliss et al (2010) observed that lesbian adolescents, relative to heterosexual girls, reported a nearly five-fold increase in past-year use of any illicit drug other than marijuana.

Much of the work discussed above treats sexual minorities as one group. However, there is some evidence to suggest that bisexual girls are more vulnerable to substance use than lesbians (for an exception, see Marshal et al., 2012, who observed no differences on tobacco and alcohol use). Corliss et al (2010) found that bisexual girls, relative to lesbian youth, reported a higher prevalence of past-year use for every substance examined (marijuana, ecstasy, cocaine, heroin, amphetamines, LSD/mushrooms, misuse of prescription drugs). Similarly, using data from the Youth Risk Behavior Survey, Newcomb and colleagues (2014) observed that girls who reported having sex partners of both genders had a higher lifetime prevalence of marijuana, cocaine, inhalants, methamphetamines, heroin, and MDMA, than girls who reported having only same-sex partners. More convincingly, in the Marshal et al (2008) meta-analysis, a Q statistic found that bisexuality status moderated the LGB-

substance use relation. Specifically, substance use was significantly greater among bisexuals as compared to heterosexuals, but the difference between gays/lesbians and heterosexuals was non-significant.

Current Study

Although prior work has shown that sexual minority girls, particularly bisexuals, experience high rates of drug involvement, no study has examined this disparity among incarcerated or detained youth, even though juvenile offenders are disproportionately LGB (Hunt & Moodie-Mills, 2012). In fact, one study of 10–21 year old incarcerated Ohio youth who were convicted of a felony found that 22.4% and 4.6% of female participants were bisexual and lesbian, respectively (Belknap, Holsinger, & Little, 2012). By comparison, American data from the 2010 census indicate that only 2.2% of women identified as bisexual and 1.1% identified as lesbian (Gates, 2011). As such, this study examines possible substance use disparities between heterosexual and bisexual incarcerated and detained girls. We hypothesized that the latter would score higher on all outcomes. Findings have potential implications for programming needs of sexual minority juvenile offenders.

Method

Procedure

Data for the current project were pooled across baseline assessments from three prior studies with substance-using adolescent offenders in a New England state correctional facility. More detail from these projects is provided elsewhere (Stein et al., 2015). In brief, participants from studies one and two were alcohol and marijuana using incarcerated juveniles sentenced for 4–12 months. Participants from study three were detained or incarcerated adolescents who smoked daily prior to entering a facility and were within 4–21 days of release. These data have been pooled in a similar manner previously (Stein et al., 2015), and was done here to increase sample size.

Participants

In total, $N=657$ youth participated in one of these studies in exchange for up to \$35 at baseline. However, since only 4/569 boys reported being LGBT, we chose to focus on girls only. Of the 88 total girls, 65 (73.9%) reported being heterosexual, 21 (23.9%) reported being bisexual, and two (2.3%) were unsure. No one identified as lesbian. We excluded the two unsure participants, leaving a sample of $N=86$ heterosexual or bisexual girls ($n=27$ from study one, $n=21$ from study two, $n=38$ from study three). Regarding demographics, participants from the three studies were similar on sexual orientation, $\chi^2(2, N=86)=1.43, p>.4$, but differed with respect to age $F(2, 83)=3.59, p=.032, d=0.59$ and had a trend-level effect towards differing in Race (white v. non-white), $\chi^2(2, N=86)=5.16, p=.076$. Using Tukey's LSD, participants in study one ($M=16.94, SD=0.95$) were significantly older than those in study three ($M=16.28, SD=1.02$), while participants in study two ($M=16.42, SD=0.90$) were comparable to both groups. Study three contained 91.2% detainees, while studies one and two were exclusively incarcerated adolescents, which could explain the age disparity. However, the difference between 16.94 and 16.28 represents approximately eight months,

and is considered relatively minor. Regarding substance use, participants from these studies were comparable on alcohol, $F(2, 82)=0.412$, $p>.6$, $d=.20$ and marijuana, $F(2, 82)=1.42$, $p>.2$, $d=0.37$, but different on cigarettes, $F(2, 83)=4.28$, $p=.017$, $d=0.64$ with a trend-level effect on other drugs, $F(2, 83)=2.56$, $p=.083$, $d=.50$. Using Tukey's LSD, participants in study three reported more cigarette use than those in study two. Participants in study one were comparable to both groups. Participants in study one reported more other drug use than those in study three, with youth in study two comparable to both.

Measures

All measures were collected as part of a 60–90 minute interview conducted by a bachelor, masters, or doctoral level researcher who received 20 hours of training and weekly supervision by a Ph.D. level staff member.

Demographics—Participants indicated their race, age, sexual orientation, and number of previous times detained or incarcerated. In addition, participants were asked whether they “Dropped out without finishing High School or getting a GED,” and whether their “father/mother (biological) [was] ever incarcerated or put in detention.” Finally, we calculated the percent of friends arrested with two questions: “About how many friends do you have?” and “About how many of your friends have been arrested?”

Substance Use—Participants were asked to indicate the number of days in the 12 months before incarceration/detention that they used: alcohol, cigarettes, marijuana, cocaine/crack, speed/methamphetamine, depressants (downers, tranks, barbs), narcotics (heroin), inhalants, hallucinogens (PCP, X, psilocybin), and GHB. Alcohol, cigarettes, and marijuana were each treated as an independent outcome. Due to low-base rates, the 12-month prevalence of all other substances were added to create an “other drug” outcome.

Results

Frequencies distributions were calculated for demographic variables (Table 1). Results suggest that participants were predominantly 15–17 years old, had been previously detained, and had friends and parents involved in the criminal justice system.

A series of two-step hierarchical regressions were conducted to determine whether sexual orientation was related to alcohol, cigarettes, marijuana, or other drugs. In each regression, age and race (operationalized as White v. non-White) were entered as covariates in step 1, and sexual orientation (operationalized as heterosexual versus bisexual) was entered in step 2. “Other drugs” was log-transformed to correct for positive skew, but no adjustments or transformations were needed for the other outcomes. Counter to our hypothesis, sexual orientation was not a significant predictor of alcohol (Beta=−.12), cigarettes (Beta=.01), marijuana (Beta=−.22), or other drugs (Beta=.04), as shown in Table 2, all $ps>.05$.

Discussion

While we hypothesized that bisexual girls would report higher rates of substance use than their heterosexual counterparts, no between-group differences were observed. This stands in

contrast to prior work showing high rates of alcohol and drug use among bisexual female youth (Marshal et al., 2008; Corliss et al., 2010). However, it is noteworthy that in the Marshal et al. meta-analysis, sexual minority status was only modestly associated with increased marijuana use (larger differences were observed for most other substances), and the trend towards greater drug use in LGBT populations was higher in non-U.S., versus U.S., samples. By comparison, the (non-significant) direction of effect in the present study was generally indicative of more substance use among heterosexual than bisexual participants.

Previous research showing that sexual minorities report more substance use than heterosexuals has typically applied the minority stress framework, which suggests the disparity is a result of LGB(T) individuals facing greater stressors than heterosexuals (e.g. Meyer, 2003; Lehavot & Simoni, 2011). It is possible that the current study did not observe a difference between groups since criminally involved adolescents probably experience significant levels of stress regardless of sexual orientation. If true, then any added stress of being LGBT may be inconsequential compared to the levels of stress typically experienced.

Limitations & Future Directions

Limitations of the present study are related to our measurement of substance use and sexual orientation. Regarding substance use, participants were asked to indicate how many days they used a variety of substances over a 12 month period, which is a substantial time-lag for a retrospective report. Also, this does not account for potential differences in the **amount** of drug consumed, which is particularly problematic for alcohol, where most surveys assess both frequency and quantity. This being said, it appears that 9 – 18 year old youth generally can report days they have used alcohol over the last year, and that responses seem to meaningfully predict adverse consequences (Chung et al., 2012). Furthermore, many prior studies assessing differences in substance use between heterosexual and sexual minority participants have also used frequency (as opposed to quantity or quantity/frequency) as the outcome (e.g. Bontempo & D'Augelli, 2002¹; Robin et al., 2002). Regarding sexual orientation, we only classified participants as bisexual or heterosexual based on self-reported identity, rather than other measures. That said, a common alternative approach is to ask about sexual behavior, which may not be useful for young populations where many people are sexually inexperienced.

Another limitation is that all participants were alcohol, marijuana, or tobacco users who consented to a substance use treatment study, so base rates were very high. As such, more research is needed to determine whether these results generalize to a broader population of incarcerated and detained youth. Similarly, future work could assess whether substance use differs by sexual orientation in other specialty settings, such as drug treatment, inpatient, and hospital settings. One recent study suggests it may not. Among substance abuse treatment clients, Flentje, Heck, and Sorensen (2015) found that lesbian/bisexual women were similar to heterosexual women on age of substance use initiation and past 30 day use of their

¹Excluding cigarettes, which uses a quantity/frequency measure

“primary” substance. More work is needed to further elucidate populations in which LGB orientation conveys risk of drug use, since there appears to be some level of specificity.

Larger samples should be recruited to address substance use in lesbian and gay youth, and bisexual boys in justice settings, as this preliminary study relied on a very small sample. In particular, given the low rates of self-reported sexual minority status among boys in this setting, it may be important to educate boys regarding the range of sexuality to reduce stigma. Future research could also analyze a wider range of racial backgrounds, since a limitation of the present study is that we only classify people as White or non-White.

Findings have several implications. First, as mentioned above, replication in other settings and samples is important. More information is needed regarding the settings in which differences in substance use occur, why such differences occur, and how to best address the needs of youth. These questions would best be answered with longitudinal data; we did not collect consistent measures of substance use at follow-up points across the three parent studies in the present investigation. Settings must make decisions about whether and how to tailor interventions. High rates of substance use and bisexuality indicate attention be given to these salient factors in incarcerated/detained adolescents. However, the current study does not support a greater need to address substance among bisexual girls.

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Biographies

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Table 1

Sample Demographics

Demographic	Percent of Sample
Race/Ethnicity	
White	36.0
Hispanic	22.1
Black	20.9
American Indian	7.0
Asian	4.7
Other/Pacific Islander	9.3
Age	
14	8.2
15	22.1
16	34.9
17	27.9
18	7.0
Dropped Out of School	
No	81.4
Yes	18.6
Sexual Orientation	
Heterosexual	75.6
Bisexual	24.4
Percent of Friends Arrested	
0	13.4
1–20	9.7
21–40	9.8
41–60	14.6
61–80	13.4
81–99	2.4
100	32.9
Incoherent Reply	3.6
Number of Previous Times Detained	
0	27.9
1	19.8
2	25.6
3+	26.7
Number of Parents Previously Incarcerated	
0	23.3
1	40.7
2	32.6
Unknown	3.5

Table 2

Relation between Sexual Orientation and Substance Use

Step	Variable	Alcohol			Cigarettes			Marijuana			Other Drugs ^a		
		B	Beta	R ²	B	Beta	R ²	B	Beta	R ²	B	Beta	R ²
Step 1				.018			.042			.002			.123**
	Age	4.14	0.05		12.17	0.09		0.38	<.01		0.15	.017	
	Race ^b	-19.37	-0.12		-45.19	-0.17		-10.75	-.04		-0.51	-0.29**	
Step 2				.013			.000			.056			<.01
	Sexual Orientation ^c	-21.98	-.12		3.32	0.01		-69.95	-.22		0.08	0.04	

^aLog-transformed

^b1=White, 2=non-White

^c1=heterosexual, 2=bisexual

***p*<.01, two-tailed