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## Reducing Risk for Illicit Drug Use and Prescription Drug Misuse: High School Gay-Straight Alliances and Lesbian, Gay, Bisexual, and Transgender Youth

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### Abstract

Previous research suggests that lesbian, gay, bisexual, and transgender youth are at elevated risk for using illicit drugs and misusing prescription drugs relative to heterosexual youth. Previous research also indicates that LGBT youth who attend high schools with GSAs report having fewer alcohol problems and lower levels of cigarette smoking. The present study investigates whether the absence of a GSAs is associated with risk for illicit drug use and prescription drug misuse in a sample of 475 LGBT high school students ( $M$  age = 16.79) who completed an online survey. After controlling for demographic variables and risk factors associated with illicit drug use, the results of 12 logistic regression analyses revealed that LGBT youth attending a high school *without* a

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GSA evidenced increased risk for using cocaine (adjusted odds ratio [ $_{adj}OR$ ] = 3.11; 95% confidence interval [95% CI] = 1.23–7.86), hallucinogens ( $_{adj}OR$  = 2.59; 95% CI = 1.18–5.70), and marijuana ( $_{adj}OR$  = 2.22; 95% CI = 1.37–3.59) relative to peers attending a high school *with* a GSA. Youth *without* a GSA also evidenced increased risk for the misuse of ADHD medication ( $_{adj}OR$  = 2.00; 95% CI = 1.02–3.92), and prescription pain medication ( $_{adj}OR$  = 2.00; 95% CI = 1.10–3.65). These findings extend the research base related to GSAs and further demonstrate the importance of providing LGBT youth with opportunities for socialization and support within the school setting. Important limitations of the present study are reviewed.

## Keywords

drug use; gay-straight alliance; high school; LGBT youth; sexual minority youth

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## 1. Introduction

When compared to heterosexual youth, lesbian, gay, and bisexual (LGB) adolescents evidence increased risk for illicit drug use (Bontempo & D'Augelli, 2002; Marshal et al., 2008; McLaughlin, Hatzenbuehler, Xuan, & Conron, 2012). Specifically, LGB youth evidence increased risk for past-year amphetamine, cocaine, ecstasy, hallucinogen, heroin, and marijuana use, and prescription medication misuse (Corliss et al., 2010). Studies utilizing adult samples of transgender individuals indicate that this population may also be at risk for using illicit drugs and misusing prescription drugs (Benotsch et al., 2013; Herbst et al., 2008) and explanatory models (Meyer, 1995; 2003) for the elevated rates of mental health and substance use problems among LGB individuals may generalize to transgender populations (Hendricks & Testa, 2012).

Greater rates of substance use among lesbian, gay, bisexual, and transgender (LGBT) adolescents are often linked to minority-specific stressors, which are rooted in societal heterosexism (see Hendricks & Testa, 2012; Meyer, 1995, 2003). For example, LGB youth are more likely to experience victimization perpetrated by parents/caregivers and peers than heterosexual youth (Fedewa & Ahn, 2011; Friedman et al., 2011). Transgender youth are also likely to experience elevated rates of school-based victimization and parental rejection (Grossman, D'Augelli, Howell, & Hubbard, 2005; McGuire, Anderson, Toomey, & Russell, 2010). In turn, experiencing rejection and victimization is associated with increased illicit drug use and prescription drug misuse among LGBT youth (Bontempo & D'Augelli, 2002; Kecojevic et al., 2012; McLaughlin et al., 2012; Rosario, Schrimshaw, & Hunter, 2009; Ryan, Huebner, Diaz, & Sanchez, 2009).

One factor that appears to promote positive health outcomes for lesbian, gay, bisexual and transgender (LGBT) youth involves attending a high school with a gay-straight alliance (GSA). A GSA is a school-based club that works to create a supportive school environment for all students, regardless of sexual orientation and/or gender identity and expression. Research suggests that attending a high school with a GSA can reduce the burden of minority stressors (Goodenow, Szalacha, & Westheimer, 2006; Heck et al., 2013; Heck, Flentje, & Cochran, 2011). Specifically, LGBT youth attending schools with GSAs report

experiencing less school-based victimization, a greater sense of school belonging, and less concealment of their sexual minority statuses (Goodenow et al., 2006; Heck et al., 2011; 2013; Kosciw, Palmer, Kull, & Greytak, 2013). Goodenow and colleagues (2006) reported that GSAs were associated with lower risk for suicide in adolescence, while Toomey and colleagues (2011) found that this reduction in suicide risk also extended into young adulthood. Attending schools with GSAs also appears to be associated with lower levels of cigarette use, alcohol consumption, and alcohol-related problems among LGBT adolescents and young adults (Heck et al., 2011; Poteat et al., 2013).

The present study extends previous research by investigating the relationship between GSAs and drug use using a large sample of LGBT youth. It is hypothesized that after controlling for demographic and potential confounding variables, LGBT youth attending a high school without a GSA will evidence greater risk for lifetime illicit drug use and prescription drug misuse, relative to peers attending a school with a GSA.

## 2. Method

### 2.1 Participants and Inclusion Criteria

The sample included adolescents who completed an online survey about factors and experiences that contribute to mental health and substance use outcomes. Inclusion criteria specified that participants had to be at least 16 years old and attending a public or private high school. Participants also had to identify as LGBT, or with another sexual or gender minority identity (e.g., queer, pansexual, etc.). Participants who identified as heterosexual ( $n = 40$ ) were included in the sample if they endorsed having same-sex sexual attractions or engaging in same-sex sexual behavior.

Participants included 179 male, 257 female, and 39 transgender (male to female  $n = 7$ ; female to male  $n = 17$ ) or other ( $n = 15$ ) gender-identified high school students (mean age = 16.79;  $SD = 0.78$ ). Ethnic minorities represented approximately 30% of the sample; 51 participants identified as Hispanic, 36 identified as African American, 17 as Native American, 16 as Asian American, and 26 selected an “other” option to reflect their ethnicities. Using United States Census Bureau (1994) coding for regions, 165 participants were from Western states, while 147, 82, and 81 participants were from Southern, Northeastern, and Midwestern states, respectively. Additional demographic characteristics of the sample are included in Table 1.

### 2.2 Procedure

Data were collected between September 2011 and April 2012. The study was approved by the Institutional Review Board at the authors' home institution, and a waiver of parental permission was granted for 16 and 17 year olds. Participants were recruited using a recruitment message (for online recruitment via the social networking site Facebook) or flyers and business cards (for recruitment from LGBT community centers, LGBT community groups, and school-based LGBT groups). As an incentive, participants could enter into a raffle to win one of ten \$10 gift cards for agreeing to complete a five-item

screeener, and enter into a second raffle to win one of ten \$20 gift cards if they qualified for the study and agreed to participate.

### 2.3 Measures

Participants reported their age, grade in school, race/ethnicity, relationship status, gender, sexual orientation (both categorical: bisexual, gay or lesbian, straight or heterosexual, unsure, or other; and continuous: 1 [*Heterosexual or Straight*] to 9 [*Gay or Lesbian*]), the size of their city or town, and type of high school (i.e., public or private). GSA status was assessed using the item, “Does your high school have a gay-straight student alliance, queer alliance, or group for LGBT students and their allies?” with yes/no response options.

Childhood abuse was measured using the Childhood Trauma Questionnaire, Short-Form (CTQ-SF; Bernstein et al., 2003). Community climate for LGBT people was assessed using the average of two items, rated from 1 to 5 (lower scores representing safe and accepting communities), “Please rate how safe your community is for LGBT people” and “Please rate how accepting your community is of LGBT people.” Parental acceptance was assessed with two items measuring reactions to learning about their child's sexual identity (ranging from 1: Rejecting to 5: Accepting). A modified Olweus Bullying and Victimization Scale (Olweus, 1994) was used to assess school victimization.

Lifetime drug use was assessed with yes/no response options to having ever used: cocaine, ecstasy, GHB/ketamine/rohypnol, hallucinogens, heroin, inhalants, marijuana, methamphetamines, and steroids and “Recreational/Non-medical use” of: prescription stimulants, anti-anxiety medication or prescription pain medications (with examples given for the different drug classes).

### 2.4 Statistical Analysis

Chi-square tests of independence for categorical variables and independent samples t- tests for continuous variables were used to test for group differences on demographic variables and the selected covariates. Covariates (childhood trauma, community climate, parental acceptance, and school victimization) were included in our models based on their relationship with drug use among sexual minority populations. For each of our 12 logistic regressions, we entered demographic variables (ethnicity, population size, gender, continuous sexual orientation, and school type [private versus public]) at block one, covariates at block two, and GSA status in block three (with GSA as reference group). The analyses were carried out using IBM SPSS Statistics 20.0 (IBM Corp., 2011).

## 3. Results

Complete results of demographic and covariate comparisons by GSA status are reported in Table 1. Participants without a GSA were more likely to identify their gender as male, identify their sexual orientation as gay or lesbian, attend private school, attend high school in smaller communities, were older, and endorsed more exclusively gay or lesbian sexual orientations. Participants without a GSA reported experiencing more victimization perpetrated by parents/caregivers and peers at school, less acceptance from parents

regarding their sexual minority status, and that their communities were more hostile for LGBT people.

Table 2 contains frequencies of illicit drug use and recreational/non-medical use of prescription medications, as well as results from the logistic regression analyses comparing youth with and without GSAs on each drug use variable. Relative to participants with a GSA, those without a GSA reported more lifetime use/misuse of illicit substances overall, and specifically were at increased odds of reporting lifetime use of cocaine, hallucinogens, marijuana, and recreational or non-medical use of ADHD medication and prescription pain medication. There was no detectable difference between participants with and without a GSA on lifetime use of ecstasy, GHB/Rohypnol, inhalants, methamphetamine, steroids, or anti-anxiety medications. As only four participants endorsed lifetime heroin use, we did not test for group differences.

#### 4. Discussion

Previous research indicates that attending a high school with a GSA is associated with favorable outcomes with respect to alcohol and cigarette use among LGBT youth and young adults (Heck et al., 2011; Poteat et al., 2013). To our knowledge, this is the first study to detect an association between attending a high school with a GSA and reduced risk for use of illicit drugs. These important results extend previous research by further documenting the potential benefits associated with attending a high school with a GSA for a population that demonstrates increased risk for illicit drug use (Corliss et al., 2010; Marshall et al., 2008).

We anticipated that these results are achieved because GSAs help foster school environments where the burden of minority stressors is reduced. One mechanism to explain the association between GSAs and illicit drug use may involve school-based victimization. Given that LGBT youth attending high schools with GSAs tend to report experiencing lower levels of victimization (Goodenow et al., 2006; Heck et al., 2011; Kosciw et al., 2013) and school-based victimization, especially when experienced at high levels, is associated with illicit drug use among LGB youth (Bontempo & D'Augelli, 2002), the relationship between attending a school with a GSA and illicit drug use may be moderated by the effect of victimization. GSAs may also provide LGBT youth with an environment that is monitored by responsible adults and a place to socialize in the absence of alcohol and drugs. Both of these factors may contribute to lower levels of illicit drug use and non-medical use of prescription drugs for LGBT youth and should be evaluated with future research.

Attending a high school with a GSA is associated with favorable academic, mental health, and substance-related outcomes for LGB and LGBT youth (Goodenow et al., 2006; Heck et al., 2011; Poteat et al., 2013; Toomey et al., 2011; Walls, Kane, & Wisneski, 2010). The present findings underscore the importance of providing LGBT youth with school-based support groups and highlight the potential damaging effects of not having these resources in our nation's schools. In a recent study of 8,584 LGBT youth who participated in the 2011 National School Climate Survey (Kosciw et al., 2012), nearly 54% reported that their schools did not have a GSA or similar school-based support group. Clearly there is room to increase LGBT youths' access to school-based support groups within the United States.

Meyer and Bayer (2013) review the ethical and legal concerns that can arise when attempting to establish affirmative school-based interventions conflicts with religious beliefs. Undoubtedly, in some parts of the United States where LGBT youth do not have access to affirmative school-based support, these conflicts will (and have) come about. The establishment of affirmative school-based support groups for LGBT youth in communities where the acceptance of LGBT people is low may be best achieved when researchers utilize principles of community-based participatory research so that feedback and modification from key stakeholders can inform the implementation process (Meyer & Bayer, 2013).

Although the results of this study are important, they are not without limitations. First, causation cannot be inferred regarding GSAs and the substance use/misuse variables based on the present design. A second limitation involves the utilization of convenience sampling methodology. This could limit the generalizability of our findings due to self-selection bias. Future research with larger samples should examine whether the present findings hold true across levels of gender and ethnicity to further elucidate the potential benefits associated with attending a high school with a GSA. Researchers must continue to investigate the potential benefits of having GSAs in our nation's schools, which in turn may help improve the lives and health of LGBT youth in our nation.

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**Highlights**

- Assessed association between high school gay-straight alliances (GSA) and illicit drug use.
- LGBT youth evidence lower risk for illicit substance use when their school has a GSA.
- Inclusive school-based programs may be protective factors for LGBT youth.

**Table 1**

Demographic and psychosocial characteristics of participants and comparisons of participants by GSA status

Categorical Variables	Overall Sample (N = 475) %	With GSA (n = 333) %	Without GSA (n = 142) %	With and Without GSA Comparisons $\chi^2$
Gender				24.24***
Female	257 (54.1)	204 (61.3)	53 (37.3)	
Male	179 (37.7)	103 (30.9)	76 (53.5)	
Transgender/Other	39 (8.2)	26 (7.8)	13 (9.2)	
Race/Ethnicity				2.55
Non-white	146 (30.7)	95 (28.5)	51 (35.9)	
White	329 (69.3)	238 (71.5)	91 (64.1)	
Population				23.75***
Less than 5,000	107 (22.7)	57 (17.2)	50 (35.5)	
5,000–9,999	46 (9.7)	28 (8.5)	18 (12.8)	
10,000–49,999	137 (29.0)	106 (32.0)	31 (22.0)	
50,000–250,000	105 (22.2)	80 (24.2)	25 (17.7)	
Greater than 250,000	77 (16.3)	60 (18.1)	17 (12.1)	
Relationship Status				0.26
Single	313 (65.9)	217 (65.2)	96 (67.6)	
Dating/Committed Relationship	162 (34.1)	116 (34.8)	46 (32.4)	
School Type				10.94**
Private	55 (11.6)	28 (8.4)	27 (19.0)	
Public	420 (88.4)	305 (91.6)	115 (81.0)	
Sexual Orientation				41.02***
Bisexual	132 (27.8)	109 (32.7)	23 (16.2)	
Gay or Lesbian	213 (44.8)	121 (36.3)	92 (64.8)	
Heterosexual	40 (8.4)	35 (10.5)	5 (3.5)	
Queer	32 (6.7)	19 (5.7)	13 (9.2)	
Unsure or Other	58 (12.2)	49 (14.7)	9 (6.3)	
<b>Continuous Variables</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>t statistic</b>
Age	16.79 (0.77)	16.70 (.071)	16.98 (0.88)	-3.38**
Community climate	5.52 (2.02)	5.06 (1.87)	6.58 (1.95)	-7.97***
Childhood trauma	1.80 (0.69)	1.74 (0.64)	1.95 (0.78)	-2.73**
Parental acceptance	3.09 (0.88)	3.19 (0.86)	2.85 (0.87)	3.85***
Sexual orientation	6.26 (2.28)	5.98 (2.31)	6.90 (2.08)	-4.26***
Peer victimization	7.97 (5.54)	6.84 (4.74)	10.61 (6.36)	-6.35***

Note: Higher scores on the community climate variable reflect a more hostile climate for LGBT individuals.

\*\*  
p < .01.

\*\*\*  
 $p < .001$

**Table 2**

Logistic regression results predicting risk for illicit drug use and prescription drug misuse by GSA status

Substance	With GSA ( <i>n</i> = 333)	Without GSA ( <i>n</i> = 142)	Final Model	With and Without Comparisons	
	Endorse Use <i>n</i> (%)	Endorse Use <i>n</i> (%)	Omnibus $\chi^2$ ( <i>df</i> =12)	<i>adjOR</i>	95% CI
Any Use/Misuse	127 (38.1)	73 (54.1)	26.69**	1.89**	1.17 – 3.03
Cocaine	11 (3.3)	15 (10.6)	22.77*	3.11*	1.23 – 7.86
Ecstasy	19 (5.7)	15 (10.6)	24.88*	1.94	0.84 – 4.50
GHB/Rohypnol	5 (1.5)	4 (2.8)	17.35	1.16	0.24 – 5.70
Hallucinogens	18 (5.4)	21 (14.8)	31.51**	2.59*	1.18 – 5.70
Heroin	4 (1.2)	0 (0.0)	N/A	N/A	N/A
Inhalants	17 (5.1)	14 (9.9)	19.10	1.53	0.65 – 3.61
Marijuana	107 (32.1)	67 (47.2)	28.73**	2.22**	1.37 – 3.59
Methamphetamines	11 (3.3)	4 (2.8)	24.30*	0.30	0.07 – 1.21
Steroids	7 (2.1)	7 (4.9)	29.25**	1.08	0.30 – 3.93
ADHD Med Misuse	28 (8.4)	27 (19.0)	25.62*	2.00*	1.02 – 3.92
Anxiety Med Misuse	26 (7.8)	26 (18.3)	41.46***	1.76	0.88 – 3.52
Pain Med Misuse	43 (12.9)	34 (23.9)	36.78***	2.00*	1.10 – 3.65

Note: Reference group = participants attending a school with a GSA

\*  $p < .05$ ,\*\*  $p < .01$ ,\*\*\*  $p < .001$