Social Stress and Substance Use Disparities by Sexual Orientation Among High School Students

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Introduction: Sexual minority youth often experience increased social stress due to prejudice, discrimination, harassment, and victimization. Increased stress may help explain the disproportionate use of substances like tobacco, alcohol, marijuana, and other illicit drug use by sexual minority youth. This study examined the effect of social stress on substance use disparities by sexual orientation among U.S. high school students.

Methods: In 2016, data from the national 2015 Youth Risk Behavior Survey, conducted among a nationally representative sample of 15,624 U.S. high school students, were analyzed to examine the effect of school-related (threatened/injured at school, bullied at school, bullied electronically, felt unsafe at school) and non–school-related (forced sexual intercourse, early sexual debut) social stress on substance use disparities by sexual orientation, by comparing unadjusted prevalence ratios (PRs) and adjusted (for social stressors, age, sex, and race/ethnicity) prevalence ratios (APRs).

Results: Unadjusted PRs reflected significantly ($p<0.05$ or 95% CI did not include 1.0) greater substance use among students who identified as lesbian/gay or bisexual than students who identified as heterosexual. APRs for injection drug use decreased substantially among lesbian/gay (PR=12.02 vs APR=2.14) and bisexual (PR=2.62 vs APR=1.18) students; the APR for bisexual students became nonsignificant. In addition, APRs among both lesbian/gay and bisexual students decreased substantially and were no longer statistically significant for cocaine, methamphetamine, and heroin use.

Conclusions: School-based substance use prevention programs might appropriately include strategies to reduce social stress, including policies and practices designed to provide a safe school environment and improved access to social and mental health services.

INTRODUCTION

Sexual minority youth include adolescents and young adults who experience same-sex attraction, same-sex behavior, or who identify as lesbian, gay, or bisexual (LGB). They are more likely to use substances, such as alcohol, tobacco, and other illicit drugs, than their sexual nonminority peers.1-4 Substance use is linked to health consequences like unintentional and violence-related injury, mental disorders, HIV and sexually transmitted disease infection, and unintended pregnancy.5-7 Therefore, the disproportionate substance use found among sexual minority youth is cause for concern. Also alarming is the size of this disparity; a meta-analysis of 18 different studies of adolescents in the U.S. found that the odds of substance use for LGB youth was 190% higher than for heterosexual youth.2

A longitudinal analysis of Add Health data found that disparity in substance use between LGB and heterosexual youth appears to begin in early adolescence, with the size of the disparity growing throughout adolescence and into young adulthood.4 Social stress results from prejudicial and socially stigmatizing experiences that may occur for a variety of reasons (e.g., race, ethnicity, body weight/size, sex, age,
religion) and may affect both sexual minority and sexual nonminority youth. In addition, sexual minority youth often experience a unique form of social stress due to prejudice, discrimination, harassment, and victimization related to their sexual orientation. High levels of social stress may help explain the disproportionate use of substances like alcohol, tobacco, and other drugs by sexual minority adolescents. The minority stress model has been frequently used to explain the disproportionate impact of various health and behavioral outcomes among sexual minority individuals, such as depressive symptoms and suicidality, and sexual-risk-taking implicated in the spread of HIV. Derived from general psychological theories of stress and functioning, the minority stress model posits that LGB people encounter unique social stressors (known as minority stressors) as a result of social stigmatization of sexual minority identities, and these stressors erode mental and physical health over time.

Sexual minority youth contend with numerous social stressors in their daily lives, and many occur within school environments. Among U.S. high school students, LGB students are more likely than heterosexual students to be threatened or injured with a weapon at school (10.0% vs 5.1%); to be bullied at school (34.2% vs 18.8%); to be bullied electronically (28.0% vs 14.2%); and to feel unsafe at school (12.5% vs 4.6%).

Social stressors experienced by sexual minority youth are not limited to schools. Sexual minority adolescents are more likely than sexual nonminority adolescents to have experienced childhood sexual abuse, including forced sex or sexual intercourse. Other adverse childhood experiences may also result in increased social stress experienced by sexual minority youth. A national study found that adverse childhood experiences (ACEs) and a common correlate of ACEs, early sexual debut, were both more common among LGB than heterosexual adults. Generally, adults reporting early sexual debut also reported a variety of ACEs, including childhood exposure to neglect; physical, psychological, and sexual abuse; witnessing parental violence; and parental incarceration and psychopathology. The associations between early sexual debut and ACEs were stronger among LGB than heterosexual adults, indicating early sexual debut is a telling proxy for ACEs for sexual minority individuals.

Substance use may be a coping mechanism for the increased social stress experienced by sexual minority youth. The link between social stress and substance use is well established, and a growing body of evidence specifically connects minority stress to substance use among sexual minority adolescents. Among sexual minority adults, experiencing discrimination and harassment is associated with a greater likelihood of abusing substances and being diagnosed with substance use disorders. In research with sexual minority youth, experiences of victimization have predicted increased use and uptake over time of both tobacco and alcohol use. Local studies of middle and high school students found that a negative school climate amplified the size of the disparity in substance use between sexual minority and heterosexual adolescents.

This study is the first to examine the effect of school-related and non-school-related social stress on disparities in substance use by sexual orientation, among a nationally representative sample of U.S. high school students. Information on the effect of social stress on substance use disparities by sexual orientation is needed to inform substance use prevention programs that seek to reduce substance use among both sexual minority and sexual nonminority students. To address this gap, data from the 2015 national Youth Risk Behavior Survey (YRBS) were analyzed to achieve the following aims: (1) to estimate the size of the disparity in substance use between sexual minority (defined by either sexual identity or sex of sexual contacts) and sexual nonminority students, and (2) to examine the extent to which social stress may help explain disparities in substance use between sexual minority and sexual nonminority students.

**METHODS**

**Study Design**

The 2015 national YRBS collected cross-sectional data on sexual orientation (sexual identity and sex of sexual contacts) and a wide range of priority health risk behaviors from a nationally representative sample of public and private high school students in Grades 9 through 12. The survey used a three-stage probability sampling methodology that has been previously described. A weighting factor was applied to each student record to adjust for the varying probabilities of selection at each stage of sampling, student nonresponse, and the oversampling of black and Hispanic students. The questionnaire was administered in the classroom during a regular class period by trained data collectors. Responses were recorded directly on computer-scannable questionnaire booklets or answer sheets. Student participation in the survey was anonymous and voluntary, and local procedures were used to obtain parental consent. The national YRBS has been reviewed and approved by an IRB at the Centers for Disease Control and Prevention.

**Measures**

Sexual identity was assessed with the question *Which of the following best describes you?* Response options were *Heterosexual (straight); Gay or lesbian; Bisexual; and Not sure.* Students were categorized by sexual identity as either sexual minority (lesbian/gay; bisexual) or sexual nonminority (heterosexual) students. Students who responded “not sure” were excluded from...
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