



## At the crossroads: Tobacco use, adverse childhood experiences and other risk factors among lesbian, gay and bisexual youth

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### Background

Research has shown that youth who identify as lesbian, gay or bisexual (LGB), use tobacco at significantly higher rates than those who identify as heterosexual.<sup>1</sup> Evidence suggests that these disparities in tobacco use are driven by factors including social stigma and discrimination, tobacco industry marketing and limited access to effective tobacco treatment. This has provided evidence for researchers to advocate recognizing the LGBTQ population as a priority for tobacco prevention and cessation services.

In addition, smoking and tobacco use is associated with other mental and behavioral issues, such as an increased risk of suicidal behaviors and substance abuse.<sup>2</sup> Until recently, there has been a lack of national data for LGBTQ youth on this topic. As a result, there is little information available on the association between sexual orientation, tobacco use, adverse childhood experiences and other risk factors among adolescents. This is a critical gap in knowledge that has potentially devastating consequences for the long-term health of LGBTQ youth and others that use tobacco.

### Methods

Using data from the 2017 national Youth Risk Behavior (YRBS) survey, an analysis was conducted comparing tobacco use rates and other risk factors (such as sexual abuse, bullying, depression, suicide, and illicit drug use) among high school students who identified as lesbian, gay or bisexual to those identifying as heterosexual. There was no significant difference in tobacco use between lesbian, gay and bisexual students, so they were combined to increase the sample size for analysis ( $n = 1,447$  overall;  $n = 327$  for LGB youth who currently used tobacco). Current tobacco use is defined as use of any tobacco product (including cigarettes, cigars, smokeless tobacco and electronic nicotine devices) for at least one day out of the previous 30.

Logistic regression models were run to compare student behaviors, experiences and risk factors by 1) sexual orientation of the student among students who currently used tobacco products; and 2) current

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<sup>1</sup> Dai H. Tobacco Product Use Among Lesbian, Gay, and Bisexual Adolescents. *Pediatrics*. 2017;139(4):e20163276

<sup>2</sup> Poorolajal J, Darvishi N (2016) Smoking and Suicide: A Meta-Analysis. *PLoS ONE* 11(7): e0156348. doi:10.1371/journal.pone.0156348

tobacco use among lesbian, gay or bisexual (LGB) students The logistic regression models controlled for the gender, age and race of the student.

## Results

Figure 1 displays use of tobacco products by sexual orientation. Results show that LGB students were significantly more likely to currently use any tobacco product (27.2% compared to 19.2%). They were also significantly more likely to currently smoke cigarettes (16.2% to 8.1%) or use an electronic vapor product (17.5% to 13.2%).

Table 1 displays the logistic regression results for the two models. High school students who currently used tobacco and identified as LGB were:

- More than 5 times more likely to have serious difficulty concentrating, remembering, or making decisions [OR = 5.5,  $p < 0.001$ ]
- Nearly five times more likely to have attempted suicide [OR = 4.5,  $p < 0.001$ ]
- Nearly five times more likely to have been forced to have sexual intercourse [OR = 4.5,  $p < 0.001$ ]
- Four times as likely to have experienced sexual violence [OR = 4.2,  $p < 0.001$ ]
- Three times more likely to have been bullied at school [OR = 3.2,  $p < 0.001$ ]

Compared to non-LGB youth who also used tobacco. [Model 1]

In addition, students who currently used tobacco and identified as LGB were:

- Over 20 times more likely to have ever used illegal drugs [OR = 20.5,  $p < 0.001$ ]
- 13 times more likely to have driven under the influence of alcohol or marijuana [OR = 13.1,  $p < 0.001$ ]
- 16 times more likely to have had a weapon at school [OR = 16.0,  $p < 0.001$ ]
- More than three times more likely to have experienced sexual violence [OR = 3.5,  $p < 0.001$ ]
- Three times more likely to have been threatened or injured with a weapon on school property [OR = 3.3,  $p < 0.001$ ]

Compared to LGB students who did not use tobacco. [Model 2]

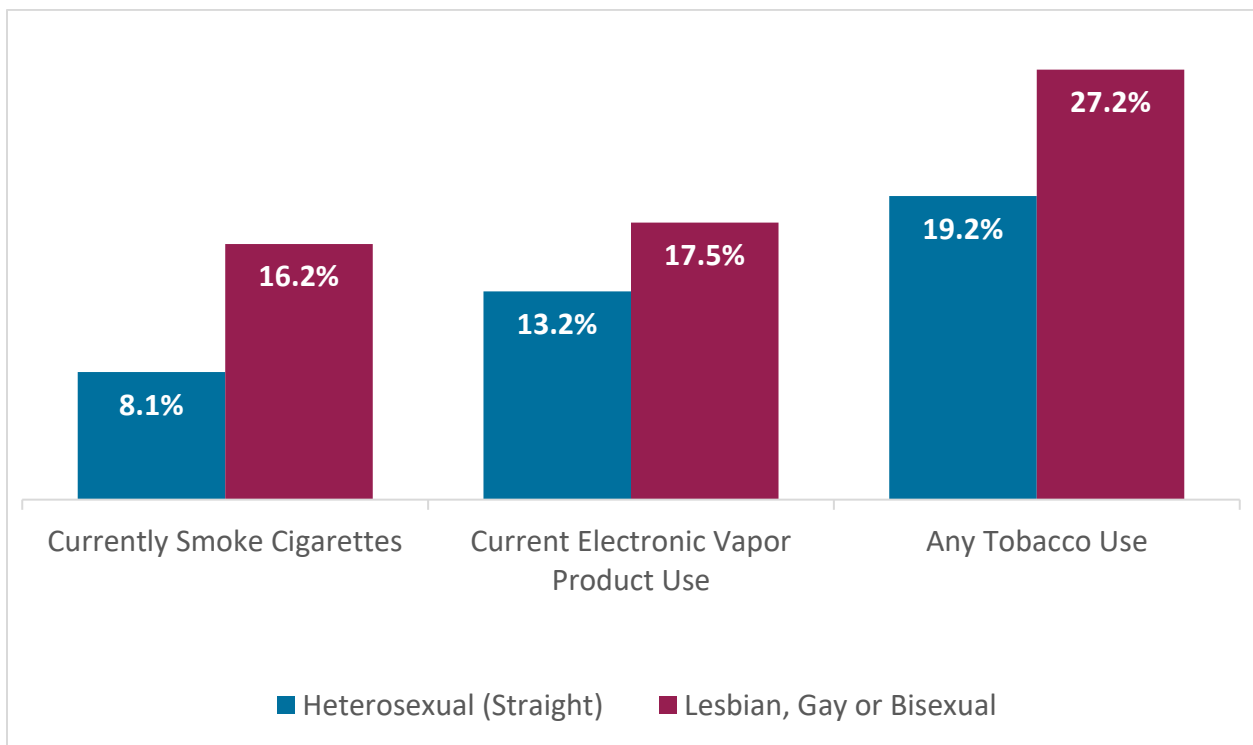
## Discussion

This study provides evidence showing the disparities in tobacco use among lesbian, gay and bisexual youth at a national level. LGB youth who use tobacco also have significantly higher levels of adverse childhood experiences and other risk factors that can lead to a wide range of health problems throughout one's life. This has implications for tobacco prevention and cessation practitioners, especially in school environments. More comprehensive school-based tobacco programs tailored to the needs of the LGBTQ population are needed, including comprehensive counseling and support to help with co-occurring issues that include substance abuse, sexual assault, violence, bullying and mental health.

There are a number of youth-focused prevention education and training models available to address these issues. One example is Lifeskills training, a classroom-based program which can be used to address tobacco, alcohol, substance use, sexual violence and other topics in middle and high schools. Lifeskills training and the implementation strategies can be tailored for the programs comfort and fit in individual sites. Linking the Interests of Families and Teachers is a program focused on younger students to help reduce and prevent the development of aggressive and antisocial behaviors later in adolescent.

Regardless of the approach, this work highlights the need to infuse youth-based tobacco prevention programming with more comprehensive mental health and counseling services focused on a wide-range of issues that impact the health of youth. Programming that focuses on the prevention, treatment and enforcement of tobacco use alone is not enough and won't help to LGBTQ youth deal with the many other adverse behaviors and experiences that are associated with tobacco use among this population.

**Figure 1. Tobacco Use Rates by Sexual Orientation**



**Table 1. Logistic Regression Results**

	Odds Ratios for LGB Tobacco Users	
	Model 1 Sexual Orientation (Among Tobacco Users)	Model 2 Tobacco Use (Among LGB Students)
<b>Drug and Alcohol Use</b>		
Ever used illegal drugs	2.3	20.5
Drove under influence of alcohol or marijuana	N.S.	13.1
Currently use marijuana	2.5	9.9
Currently drink alcohol	N.S.	9.5
Use prescription pain medicine without a prescription	2.1	6.4
<b>Depression and Suicide</b>		
Attempted suicide	4.5	2.2
Made a plan to attempt suicide	5.6	2.0
Serious difficulty concentrating, remembering, or making decisions	5.5	2.6
Felt sad or hopeless	3.2	1.3*
<b>Sexual Violence</b>		
Physically forced to have sexual intercourse	4.5	3.0
Experienced sexual violence	4.2	3.5
<b>Bullying</b>		
Were electronically bullied	3.2	2.5
Were bullied on school property	2.9	1.5
<b>School Violence</b>		
Carried a weapon on school property	1.7	16.0
Were threatened or injured with a weapon on school property	1.6	3.3
<b>Health and Wellness</b>		
Were physically active at least 60 minutes per day on 5 or more days	0.3	N.S.
Played on at least one sports team	0.4	N.S.

N.S. = not significant ( $p > .05$ ); \* significant at  $p < .10$ ; all other factors significant at  $p < .001$ .

\* Reference categories:

Model 1: Heterosexual students who currently use tobacco

Model 2: LGB students who currently do not use tobacco