



HHS Public Access

Author manuscript

J Am Acad Child Adolesc Psychiatry. Author manuscript; available in PMC 2018 September 01.

Published in final edited form as:

J Am Acad Child Adolesc Psychiatry. 2017 September ; 56(9): 739–746. doi:10.1016/j.jaac.2017.06.010.

Prevalence and Correlates of Suicidal Ideation Among Transgender Youth in California: Findings From a Representative, Population-Based Sample of High School Students

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Abstract

Objective—No representative population-based studies of youth in the US exist on gender identity-related disparities in suicidal ideation or on factors that underlie this disparity. To address this, we: (1) examined gender identity-related disparities in the prevalence of suicidal ideation; (2) evaluated whether established psychosocial factors explained these disparities; and (3) identified correlates of suicidal ideation among all youth and stratified by gender identity.

Method—Data were derived from the 2013–2015 California Healthy Kids Survey (CHKS; $N=621,189$) and a weighted subsample representative of the Californian student population (Biennial Statewide California Student Survey [CSS; $N= 28,856$]).

Results—Prevalence of past 12-month self-reported suicidal ideation was nearly twice as high for transgender compared to non-transgender youth (33.73% versus 18.85%; $\chi^2 = 35.48$, $p < .001$). In fully adjusted models within the representative sample, transgender youth had 2.99 higher odds (95% CI: 2.25, 3.98) of reporting past-year suicidal ideation compared to non-transgender youth. Among transgender youth, only depressive symptoms (AOR: 5.44, 95% CI: 1.81, 16.38) and victimization (AOR: 2.66, 95% CI: 1.26, 5.65) remained significantly associated with higher odds of suicidal ideation in fully adjusted models. In multiple mediation analyses, depression attenuated

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Disclosure: Drs. Day, Russell, Hatzenbuehler, and Ms. Perez-Brumer report no biomedical financial interests or potential conflicts of interest.

the association between gender identity and suicidal ideation by 17.95%, and victimization by 14.71%.

Conclusion—This study uses the first representative population-based sample of youth in the US that includes a measure of gender identity to report on gender identity-related disparities in suicidal ideation and to identify potential mechanisms underlying this disparity in a representative sample.

Keywords

Suicide; gender-identity disparities; youth mental health; LGBT

INTRODUCTION

Suicide was the second leading cause of death for adolescents between 12 and 24 years of age in the United States in 2014.^{1,2} Importantly, the prevalence of suicide differs across key demographic groups, including lesbian, gay, and bisexual (LGB) youth.^{3,4} Emerging research also suggests that gender minority (i.e., transgender and gender-nonconforming) youth may be particularly vulnerable to suicidal behavior.^{5–7} For instance, one recent study reported that, compared to cisgender (gender identity aligns with sex assigned at birth) youth, transgender youth had more than 3.6 times the risk of suicidal ideation and 3.2 times the risk of suicide attempts.⁶ Another study found that, based on parental reports, transgender youth were 5.1 times more likely than their cisgender siblings to talk about suicide and 8.6 times more likely to attempt suicide.⁸ Using nationally representative high school data from New Zealand, Clark et al. found that transgender youth had substantially higher rates of attempted suicide in the past 12 months when compared to cisgender youth (20% versus 4%).⁹ Furthermore, among transgender adults, the lifetime prevalence of suicide attempts is estimated to be as high as 41%,^{10,11} compared to less than 9% in the general US population.¹²

Despite the apparent elevated risk of suicidality among transgender adults and youth, there are notable limitations in existing studies. Until recently, the available literature typically combined gender and sexual minority youth, limiting the ability to independently assess prevalence and pathways that contribute to suicidal behaviors by gender identity. Additionally, the existing data on transgender youth in the United States are drawn from community- and clinic-based convenience samples,^{5–7,13,14} which limits the generalizability of the results.

This study addresses three specific aims. First, we examine gender identity-related disparities in the prevalence of past-year suicidal ideation among youth. We do so using the largest school-based sample of transgender youth to date (over 7,000) and the first representative population-based sample in the US to include a measure of gender identity. We provide the first representative estimates of suicide ideation among transgender youth in the US and examine whether prevalence estimates of this outcome are comparable for probability and non-probability samples.

Second, we evaluate whether established psychosocial factors for suicidal ideation explain these disparities. We focus on two such mechanisms: depression and school-based victimization. These were chosen because emerging evidence suggests that both are elevated among transgender people (relative to cisgender people)^{6,9,15,16} and are associated with suicide risk among transgender populations.^{3,17–20} For instance, school-based data from New Zealand shows that transgender youth compared to their cisgender peers reported an increased prevalence of depressive symptoms (OR, 5.7), suicide attempts (OR, 5.0), and school bullying (OR, 4.5).⁹ A Canadian study using data from a nonprobability online sample of transgender youth aged 19–25 years of age reported that transgender youth had 9 times increased risk of a major depressive episode in the past year, and more than 16 times increased risk of attempting suicide in the past year compared to their non-transgender peers (from age-equivalent large-scale population surveys of cisgender youth).¹⁵ In the US, a matched retrospective cohort study reported that transgender youth compared to cisgender youth had an elevated probability of depression (51% versus 21%; RR: 3.95) and suicide ideation (31% versus 11%; RR: 3.20).⁶ Further, studies from the Virginia Transgender Health Initiative highlight that transgender adults who experienced victimization reported more lifetime suicidal ideation compared with those who have not experienced victimization, and that the marginal probability of attempting suicide was highest for those who were physically victimized because of their gender identity.^{21,22} Notably, the probability of attempting suicide was almost 30 percent higher among transgender adults who experienced discriminatory victimization compared to those who did not.²² To our knowledge, however, there are no existing studies on the association between suicidal ideation and school-based victimization among transgender youth. Further, we are unaware of any study that has assessed depression and school-based victimization as mediators of the relationship between gender identity and suicidal ideation in a representative population-based sample of youth.

Third, we identify demographic and psychosocial correlates of suicidal ideation specifically among transgender youth. Addressing these aims will provide essential representative data on prevalence and correlates of suicidal ideation by gender identity.

METHOD

Sample

Data were derived from high school students who participated in the 2013–2015 California Healthy Kids Survey (CHKS; $n = 910,885$) and a weighted subsample representative of the Californian student population (Biennial Statewide California Student Survey [CSS]; $n = 35,849$). The CHKS is administered biennially by WestEd with support from the California Department of Education.^{23,24} To obtain a representative subsample, every survey cycle, WestEd randomly selects schools a priori whose data are weighted to generalize the sample to the student population of California (CSS). Following recommendations from WestEd, we excluded 1.72% of student data from the CHKS and 1.32% from the CSS that demonstrated questionable response validity.²³ Response validity was deemed questionable if responses met two or more criteria related to inconsistent responses, including: (1) reporting both never using a drug and also reporting drug use in the past 30 days; (2) exaggerated drug use

(i.e., reported alcohol and other drug [AOD] use 20–30 days in the last month, a level or pattern considered to be improbably high); (3) reporting use of a fake drug (i.e., selecting a fake drug from the list of real drugs provided); and (4) self-report of answering dishonestly to all or most of the questions on the survey (“How many questions on this survey did you answer honestly?”). Prior research indicates that failing to identify and remove questionable responses in survey data can inflate the size of gender identity-related health disparities.²⁵ Also, we only included youth from schools that administered items assessing suicidal ideation, sexual orientation, and gender identity. These inclusion criteria resulted in a loss of an additional 7.21% from the CHKS sample ($n = 44,809$) and 11.65% ($n = 3,363$) from CSS. The final analytic samples included 576,380 youth from the CHKS and 25,493 youth from the CSS.

Measures

Outcome—Suicidal ideation was measured by a single dichotomous item that asked, “Was attempted suicide seriously considered in the past 12 months?” (0 = no, 1 = yes).

Sexual orientation and gender identity—A single item was used to assess both sexual orientation and gender identity. Youth were asked, “Which of the following best describes you?” and instructed to mark all applicable options, which included: heterosexual (straight); gay, lesbian, or bisexual; transgender; not sure; and decline to respond. From these response options, gender identity was constructed as a dichotomous item (0 = non-transgender; 1 = transgender). We use the term “non-transgender” over the preferred term of “cisgender” because respondents were not specifically asked about their natal sex. For sexual orientation, dichotomous variables were created for youth who identified as heterosexual (0 = non-heterosexual; 1 = heterosexual), LGB (0 = non-LGB; 1 = LGB), and unsure (0 = non-unsure; 1 = unsure). Additionally, because youth could select multiple responses, there was no discrete reference category (e.g., youth who indicated they were heterosexual and LGB were coded as 1 for both the “heterosexual” and “LGB” variables). Each item related to sexual and gender identity is therefore included in the models to account for complex responses. “Heterosexual” was not included in models due to issues of multicollinearity. For models that include all youth, we created sexual orientation variables that did not include transgender youth because of high multicollinearity between sexual orientation and gender identity. These variables are coded “LGB, not transgender” = 1, and “unsure, not transgender” = 1. For analyses among transgender youth only, we include sexual orientation variables for “LGB,” “unsure,” and “not reported” (which accounted for transgender youth who otherwise did not report a sexual orientation).

Demographic covariates—Established demographic covariates for suicidal ideation included reported sex,²⁶ age,²⁷ race,^{28,29} ethnicity,^{28–30} and living arrangement.^{31,32} Reported sex was measured by asking, “What is your sex?” (1 = female; 0 = male). Youth were asked to identify as one of the following races (“What is your race”): White or Caucasian; Black or African American; Asian or Asian American; American Indian or Alaska Native; Native Hawaiian or Pacific Islander; or Mixed (two of more races). Ethnicity was measured separately by asking, “Are you of Hispanic or Latino origin?” (0 = no, 1 = yes). Youth could select one of eight categories assessing current living arrangement. This

variable was recoded and dichotomized to assess whether youth resided in a home with one or both parents versus an alternative living arrangement defined as: other relative's home; a home with more than one family; friend's home; foster home, group home, or awaiting placement; hotel or motel; shelter, car, campground, or other transitional or temporary housing; or another living arrangement.

Psychosocial mediators—Established psychological covariates included depressive symptoms and experiences of school-based victimization.^{10,20,21,27,31,33,34} Depressive symptoms were assessed with an item asking: “In the past 12 months, have you ever felt so sad or hopeless almost every day for two weeks or more that you stopped doing some usual activities?” (0 = no; 1 = yes). School-based victimization was assessed via a 9-item scale.²³ The count variable was created based on responses to the question: “During the past 12 months, how many times on school property have you...”: (1) “been pushed, shoved, slapped, hit, or kicked by someone who wasn't just kidding around”; (2) “been afraid of being beaten up”; (3) “had mean rumors or lies spread about you”; (4) “had sexual jokes, comments, or gestures made to you”; (5) “been made fun of because of your looks or the way you talk”; (6) “had your property stolen or deliberately damaged”; (7) “been threatened or injured with a weapon”; (8) “been threatened with harm or injury”; and (9) “been made fun of, insulted, or called a name.” Responses to these items were dichotomized and summed (0 = no victimization, 9 = high victimization).

Statistical Analysis

Findings reported are from the representative population-based subsample (CSS); differences between the CHKS and CSS are noted when present. Results from the full sample (CHKS) are available upon request. Proportions for categorical variables and standard deviations for continuous variables were calculated overall and by youth's gender identity and analyzed using chi-square or Kruskal-Wallis tests. To account for clustering of youth within schools, multivariate mixed effects logistic regression was used to assess (1) gender identity-related disparities in the prevalence of past-year suicidal ideation among all youth and (2) associations between demographic and psychosocial factors and suicide ideation, stratified by gender identity.

Potential mediators (i.e., depressive symptoms and school-based victimization) were assessed among all youth in the representative population-based subsample (CSS) to determine whether they accounted for (i.e., statistically explained) the relationship between gender identity and suicidal ideation. A multiple mediation approach was selected because it reduces the likelihood of parameter bias due to omitted variables,³⁵ a strength over simple mediation models (i.e., testing one mediator at a time). We used bootstrapping with 5000 iterations³⁶ and adjusted standard errors for the nested data structure (school) to assess the proportion of the relationship between gender identity and suicidal ideation accounted for by the two mediators. While this method does not produce a single statistic with a *p*-value, analyses do produce a 95% confidence interval; statistical significance (*p* < .05) can be inferred when the confidence interval does not include zero.

Cases with missing data were listwise deleted for all analyses, which were conducted in Stata 14.2 (StataCorp, College Station, TX).

RESULTS

Sample Demographics

Demographic characteristics are summarized in Table 1. Across the full sample (CHKS), 1.33% of youth ($n = 7,653$) identified as transgender, and across the representative subsample (CSS), 1.10% of youth ($n=280$) identified as transgender. Among transgender youth in the CSS, the mean age was 15.29 years ($SD = 1.16$), and 49.29% identified as heterosexual. A substantial proportion of transgender youth reported being multiracial (41.90%), and nearly half (47.75%) reported being Hispanic or Latino/a. Compared to non-transgender youth, transgender youth were significantly more likely to report depressive symptoms ($\chi^2 = 15.90$, $p < .001$) and school-based victimization ($\chi^2 = 78.10$, $p < 0.001$) in the past year.

Gender Identity-Related Disparities in the Prevalence of Past-Year Suicidal Ideation

The prevalence of self-reported suicidal ideation in the past year was nearly twice as high for transgender youth compared to non-transgender youth (33.73% versus 18.85%; $\chi^2 = 35.48$, $p < .001$). Among non-transgender LGB youth, 15.06% reported past 12-month suicide ideation. In the representative sample, controlling only for demographic factors, transgender youth had 2.99 higher odds (95% CI: 2.25, 3.98) of suicidal ideation compared to non-transgender youth. Furthermore, the gender identity disparity in suicidal ideation was attenuated when accounting for depression symptoms and victimization (AOR was reduced from 2.99 to 1.88). In the full sample (CHKS), the magnitude of the association between gender identity and suicide ideation was stronger than it was in the representative sample: controlling only for demographic factors, transgender youth had 3.48 higher odds (95% CI: 3.29, 3.69) of suicidal ideation compared to non-transgender youth. Additionally, the gender identity disparity was attenuated when accounting for depression symptoms and victimization (AOR decreased from 3.48 to 2.14).

Mediation Analysis

We conducted multiple mediation with the representative sample (CSS) to evaluate whether depression and school-based victimization explained the gender identity-related disparity in suicidal ideation. Depressive symptoms ($b: 0.02$, $SE: 0.004$, 95% CI: 0.01, 0.03) and school-based victimization ($b: 0.02$, $SE: 0.003$, 95% CI: 0.01, 0.02) significantly mediated the relationship between gender identity and suicidal ideation. Depression attenuated the association between gender identity and suicidal ideation by 17.95%, and victimization attenuated the association by 14.71%.

Correlates of Past-Year Suicidal Ideation Among Transgender Youth

Table 2 summarizes results from multivariate models assessing factors associated with suicidal ideation among transgender youth from the representative sample (CSS). When adjusting for demographic characteristics and risk factors, only depressive symptoms (AOR: 5.44, 95% CI: 1.81, 16.38) and school-based victimization (AOR: 2.66, 95% CI: 1.26, 5.65)

were significantly associated with higher odds of suicidal ideation among transgender youth. However, among transgender youth in the full sample (CHKS), identifying as LGB (AOR: 1.53, 95% CI: 1.20, 1.96), reporting depressive symptoms (AOR: 5.54, 95% CI: 4.80, 6.38), and experiencing school-based victimization (AOR: 1.72, 95% CI: 1.59, 1.86) were each independently associated with higher odds of suicidal ideation. Furthermore, transgender youth who identified as unsure (AOR: 0.62, 95% CI: 0.52, 0.74) and as Asian (AOR: 0.75, 95% CI: 0.59, 0.95) had lower odds of suicidal ideation in the full sample (CHKS).

DISCUSSION

This study used the largest sample of transgender youth, and the first representative population-based sample in the US, to include a measure of gender identity, to report on gender identity-related disparities in suicidal ideation, and to identify mechanisms underlying this relationship, as well as the correlates of suicidal ideation among transgender youth. First, we found significant gender identity-related disparities in past-year suicidal ideation: nearly 35% of transgender youth in California reported suicidal ideation in the past year, nearly double that of non-transgender youth. Notably, this finding is more than twice as high as the national estimate of past 12-month suicidal ideation among youth in grades 9–12 (17%).²

Second, mediation analyses demonstrated that established psychosocial factors—including depression and school-based victimization^{6,17,20,37,38}—partially explained the association between gender identity and suicidal ideation. These findings suggest that interventions that address depression and school-based victimization could reduce gender identity-based disparities in suicidal ideation. At the same time, these factors only explained approximately 14–17% of the association between gender identity and suicidal ideation. This underscores the need for future scholarship to assess additional social and structural factors—such as state-level legislation that promulgates stigma against transgender youth³⁹—that may explain why transgender youth are at heightened risk for suicidal ideation relative to non-transgender youth. Additionally, although school-based policies and programs (e.g., gay-straight alliances) have been shown to be a protective factor for LGB adolescents by improving their experiences of school safety and well-being,^{40,41} less is known about whether these school-based interventions provide protections for gender minority youth.⁴²

Third, drawing on previous literature regarding risk factors for suicidal ideation among general samples of youth,^{26–30} we examined whether these risk factors were associated with suicidal ideation among transgender youth. Among transgender youth in the representative sample (CSS), no demographic risk factors were associated with suicidal ideation. Among transgender youth in the full sample (CHKS), however, sexual orientation (i.e., identifying as LGB) was associated with suicidal ideation. An important implication of our research is that transgender youth who endorsed sexual minority identity categories, compared to those that did not, may be at heightened risk for suicidal ideation. Future inquiry should consider emergent evidence among transgender adults that highlights the complexity, and inadequacy, of sexual identity categories to better assess the relationship between sexual identity labels and suicidal behaviors among transgender youth.⁴³

While more research is needed, these findings begin to suggest implications for clinical practice. Consistent with clinic and community-based samples,^{5-8,44} our representative sample of high school youth in California underscores the high rates of suicidal ideation among transgender youth and identifies depression and victimization as potential mechanisms underlying gender identity-related disparities in suicidal ideation. Therefore, our data underscore the importance of assessing suicidal ideation among transgender youth and also suggest that depression and experiences of victimization may represent critical targets for intervention in clinical practice and care. Notably, for practicing child psychiatrists, these results should be understood as a first step to understanding suicidal ideation among transgender youth, as other co-occurring psychosocial risk factors (e.g., anxiety, substance abuse) were not measured in this study. Considering such risk factors may be important to include in clinical treatment as they have been reported in the literature as contributing to suicidal ideation.^{16-18,45,46} Finally, transgender-specific mental health services are scarce and often inaccessible.^{47,48} Our results further support the need to address this service gap by providing accessible gender-affirming healthcare to transgender youth.

There are several limitations to consider when interpreting these findings. The study assessed sexual orientation and gender identity by prompting students to mark “all that applied” to a question that included both domains. The item documenting sex included vague language as students were only asked about their sex and not about their natal sex (i.e., sex assigned at birth), raising the potential for misclassification bias. Furthermore, this limits our ability to draw comparisons between male-to-female and female-to-male transgender youth. Future population-based studies should employ a two-step method to assess both natal sex and gender identity⁴⁹ alongside separate measures for sexual orientation.

Our sample is also limited to youth who were currently attending school in California. It is possible that transgender youth are over-represented among youth who have been expelled or dropped out of school.⁵⁰ If non-school-attending transgender youth are at higher risk for suicidal ideation compared to those who do attend school, our results may represent an underestimate of the gender identity-related disparity. Finally, differences in findings between the full sample and representative subsample may be due to restrictions in the size of the representative sample.

Despite these limitations, the present study is drawn from the largest sample of transgender youth and the first representative population-based sample in the US to include a measure of gender identity. We document substantial disparities in suicidal ideation between transgender and non-transgender youth in California. While school-based mental health services are urgently needed to protect against suicidal ideation and associated risk factors among all youth, special attention is needed to ensure that these programs are responsive to the needs of transgender individuals. These findings have implications for public health providers and school-based staff regarding programs to monitor vulnerability for suicidal ideation among transgender youth. Furthermore, given the magnitude of the health burden posed by suicidal ideation, it is imperative that future studies measure gender identity and

sexual orientation as separate domains to better understand the prevalence and correlates of suicidality among US youth.

Acknowledgments

Funding: APB is supported by Eunice Kennedy Shriver National Institute of Child Health and Human Development T32 HD049339 (PI: Nathanson). The California Healthy Kids Survey and California School Climate Survey were developed by WestEd under contract to the California Department of Education. Administrative support for this research was also provided by grant, R24HD042849, Population Research Center, awarded to the Population Research Center at The University of Texas at Austin by the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The authors acknowledge generous support from the Communities for Just Schools Fund Project at the New Venture Fund.

Ms. Perez-Brumer and Dr. Day served as the statistical experts for this research.

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Table 1

Demographic and Descriptive Characteristics by Gender Identity

	Full sample, CHKS (n=7,653)		Representative population-based sample, CSS (n=25,213)	
	n / Mean (% / SD)	n / Mean (% / SD)	n / Mean (% / SD)	n / Mean (% / SD)
Reported sex				
Female	2,670	37.36	2,78,090	50.52
Male	4,476	62.64	2,72,371	49.48
Age	15.23	1.70	15.41	1.31
Sexual orientation ^a				
Lesbian, gay, and bisexual, not transgender youth ^b	--	--	32,165	5.67
Unsure, not transgender youth ^c	--	--	24,352	4.29
Lesbian, gay, and bisexual ^d	3,949	51.60	--	--
Unsure ^e	2,715	35.48	--	--
Transgender, no reported sexual orientation	3,225	42.14	--	--
Race				
White/Caucasian	2,036	29.71	1,52,389	32.01
Black/African American	775	11.31	28,028	5.89
Asian/ Asian American	840	12.26	66,387	13.94
American Indian/Alaska Native	431	6.29	22,279	4.68
Native Hawaiian/Pacific Islander	254	3.71	12,818	2.69
Multirace (two of more races)	2,514	36.72	1,94,192	40.79
Ethnicity				
Hispanic or Latino/Latina	3,530	49.15	2,88,962	52.39
Alternative living arrangement ^f	1,820	24.62	55,153	10.06
Past 12 months, feelings of sadness or hopeless lasting for two or more weeks	3,000	45.82	1,69,606	32.03
Victimization ^g	0.93	0.89	0.42	0.57
Past 12-month suicide ideation	2,467	38.08	94,881	18.22

Note: CHKS = California Healthy Kids Survey; CSS = California Student Survey; LGB = lesbian, gay, and bisexual.

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^gFor sexual orientation, dichotomous variables were created for students who identified as heterosexual (0 = non-heterosexual; 1 = heterosexual), LGB (0 = non-LGB; 1 = LGB), and unsure (0 = non-unsure; 1 = unsure). Additionally, because youth could select multiple responses, there was not a discrete reference category (e.g., youth who indicated they were heterosexual and LGB were coded as 1 for both the "heterosexual" and "LGB" variables. Each item related to sexual and gender identity is therefore included in the models to account for complex responses. "Heterosexual" was not included in models due to issues of multicollinearity

^hLesbian, gay, and bisexual, not transgender=1; Non-lesbian, gay, and bisexual identities, not transgender=0

ⁱUnsure, not transgender=1; Non-unsure, not transgender=0

^jLesbian, gay, and bisexual, including transgender=1; Non-lesbian, gay, and bisexual, including transgender=0

^kUnsure, including transgender=1; Non-unsure, including transgender=0

^lAlternative living arrangement defined as: other relative's home; a home with more than one family; friend's home; Foster home, group home, or waiting placement; hotel or motel; shelter, car, campground or other transitional or temporary housing; other living arrangement=1. A home with one or both parents=0.

^mSchool-based victimization is a count variable created based on responses to a 9-item scale (0 = no victimization, 9 = high victimization). Table 1 reports mean and standard deviation.

Table 2
Risk Factors Associated With Past-Year Suicide Ideation Among Representative Population-Based Sample (CSS)

	All students			Transgender students			Non-transgender students							
	AOR	95% CI	Psychosocial risk factors	AOR	95% CI	Demographic	AOR	95% CI	Demographic	AOR	95% CI	Psychosocial risk factors	AOR	95% CI
Gender Identity														
Transgender	2.99	(2.25, 3.98)	1.88	(1.27, 1.76)	--	--	--	--	--	--	--	--	--	--
Reported sex														
Female ^a	2.18	(2.00, 2.38)	1.63	(1.49, 1.79)	1.10	(0.42, 2.86)	0.86	(0.26, 2.81)	2.21	(2.03, 2.41)	1.65	(1.51, 1.81)		
Age	0.99	(0.95, 1.03)	0.99	(0.95, 1.03)	0.85	(0.53, 1.36)	0.95	(0.55, 1.65)	0.99	(0.95, 1.03)	0.99	(0.95, 1.03)		
Sexual orientation ^b														
LGB, not transgender youth ^c	3.92	(3.38, 4.54)	2.49	(2.12, 2.94)	--	--	--	--	3.91	(3.37, 4.54)	2.48	(2.11, 2.93)		
Unsure, not transgender youth ^d	2.04	(1.73, 2.41)	1.59	(1.34, 1.88)	--	--	--	--	2.04	(1.73, 2.41)	1.59	(1.34, 1.88)		
Lesbian, gay, and bisexual ^e	--	--	--	--	1.57	(0.35, 7.12)	1.07	(0.20, 5.86)	--	--	--	--		
Unsure ^f	--	--	--	--	1.02	(0.26, 4.03)	1.34	(0.35, 5.15)	--	--	--	--		
Transgender, no reported sexual orientation	--	--	--	--	0.44	(0.07, 2.87)	0.46	(0.05, 4.59)	--	--	--	--		
Race														
White/Caucasian	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-	-ref-
Black /African American	0.87	(0.68, 1.09)	0.94	(0.76, 1.15)	0.65	(0.12, 3.48)	0.73	(0.08, 6.10)	0.87	(0.69, 1.09)	0.94	(0.78, 1.14)		
Asian	0.86	(0.74, 0.99)	0.93	(0.80, 1.10)	0.46	(0.06, 3.29)	0.46	(0.10, 2.10)	0.86	(0.74, 0.99)	0.94	(0.80, 1.12)		
American Indian/Alaska native	1.05	(0.87, 1.28)	1.13	(0.91, 1.39)	1.00 [†]	(1.00, 1.00) [†]	1.00 [†]	(1.00, 1.00) [†]	1.08	(0.89, 1.31)	1.15	(0.93, 1.43)		
Native Hawaiian/Pacific Islander	1.26	(1.03, 1.56)	1.19	(0.96, 1.47)	0.03	(0.00, 7.73)	0.26	(0.02, 4.70)	1.30	(1.06, 1.60)	1.25	(1.01, 1.54)		
Multirace (two or more races)	1.17	(1.05, 1.30)	1.11	(0.98, 1.27)	0.38	(0.09, 1.60)	0.42	(0.08, 2.12)	1.18	(1.06, 1.31)	1.12	(0.99, 1.28)		
Ethnicity														
Hispanic/Latino/a	0.952	(0.85, 1.07)	0.96	(0.83, 1.10)	0.85	(0.27, 2.64)	0.63	(0.13, 3.13)	0.96	(0.85, 1.08)	0.97	(0.84, 1.11)		
Alternative living arrangement ^g	1.40	(1.24, 1.58)	1.13	(0.96, 1.32)	1.74	(0.59, 5.13)	0.71	(0.17, 2.96)	1.38	(1.22, 1.56)	1.14	(0.97, 1.33)		
Depression	--	--	7.88	(7.12, 8.73)	--	--	5.44	(1.81, 16.38)	--	--	7.94	(7.15, 8.81)		
Victimization ^h	--	--	2.20	(2.06, 2.35)	--	--	2.66	(1.26, 5.65)	--	--	2.22	(2.06, 2.39)		

Note: Boldface type indicates statistical significance. AOR = adjusted odds ratio; LGB = lesbian, gay, bisexual.

^gSex (Female = 1, Male = 0)

^hFor sexual orientation, dichotomous variables were created for students who identified as heterosexual (0 = non-heterosexual; 1 = heterosexual), LGB (0 = non-LGB; 1 = LGB), and unsure (0 = non-unsure; 1 = unsure). Additionally, because youth could select multiple responses, there was not a discrete reference category (e.g., youth who indicated they were heterosexual and LGB were coded as 1 for both the “heterosexual” and “LGB” variables). Each item related to sexual and gender identity is therefore included in the models to

^cLesbian, gay, bisexual, not transgender=1; Non-lesbian, gay, and bisexual identities, not transgender=0

^dUnsure, not transgender=1; All other non-unsure identities, not transgender=0

^eLesbian, gay, and bisexual, including transgender youth=1; Non-Lesbian, gay, and bisexual, including transgender youth=0

^fUnsure, including transgender youth=1; Non-unsure, including transgender youth=0

^gAlternative living arrangement defined as: other relative’s home; a home with more than one family; friend’s home; Foster home, group home, or awaiting placement; hotel or motel; shelter, car, campground or other transitional or temporary housing; other living arrangement. Reference=a home with one or both parents.

^hSchool-based victimization is a count variable created based on responses to a 9-item scale (0 = no victimization, 9 = high victimization)

ⁱConvergence not achieved in multivariate models due to small sample of transgender youth that identified as American Indian and/or Alaska Native.