Published in final edited form as:

J Adolesc Health. 2020 February ; 66(2): 202–209. doi:10.1016/j.jadohealth.2019.08.009.

Changes in Victimization Risk and Disparities for Heterosexual and Sexual Minority Youth: Trends from 2009 to 2017

V. Paul Poteat, PhD^a, Michelle Birkett, PhD^b, Blair Turner, MPH^b, Xinzi Wang, MA^c, Gregory Phillips II, MS, PhD^b

^aBoston College, Department of Counseling, Developmental, and Educational Psychology, Campion Hall 307, 140 Commonwealth Ave., Chestnut Hill, MA 02467, USA

^bNorthwestern University, Department of Medical Social Sciences & Institute for Sexual and Gender Minority Health and Wellbeing, Northwestern University Feinberg School of Medicine, 625 N Michigan Ave, Suite 1400, Chicago, IL 60611, USA

^cUniversity of Chicago, Division of the Social Sciences, 5730 S. Woodlawn Ave. Chicago, IL, 60637

Abstract

Purpose: To identify sex-stratified trends in victimization risk specific to heterosexual, lesbian, gay, bisexual, and questioning youth, while considering changes in sexual orientation-disparities from 2009 to 2017.

Methods: Youth Risk Behavior Survey (YRBS) data collected biennially (5 waves; 2009-2017) were pooled across 56 jurisdictions and 454,715 students for one of the most nationally representative samples of heterosexual and sexual minority youth to date. We analyzed a 7-item victimization risk assessment using the CDC's recommended trend analysis approach. We used logistic regression with year-by-identity interactions to test whether sexual orientation-based disparities widened, narrowed, or were maintained over time.

Results: Victimization risk declined significantly for male and female bisexual and questioning youth, lesbian, gay, and heterosexual youth. Disparities narrowed between bisexual, questioning, and lesbian females and heterosexual females, and between bisexual and heterosexual males. Nevertheless, sexual orientation-based disparities remained significant for all sexual minority youth in 2017.

Conclusions: Distinct patterns of change in victimization risk for specific groups of sexual minority youth underscore the need to consider variability within sexual minority youth

corresponding author: PoteatP@bc.edu, phone: 617-552-4234, fax: 617-552-1981.

Author Contributions

VP Poteat co-conceptualized the study, led in the writing of the article and contributed to interpretation of the data analyses. M Birkett co-conceptualized the study and contributed to drafting and editing the article and interpreting the data analyses. B Turner and X Wang conducted all statistical analyses and created the corresponding tables of results. G Phillips II reviewed and edited the manuscript. All authors approved the final version of the article.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

communities; treating them as a singular group could mask nuanced disparities. Some of the relatively small decreases in victimization risk also suggest the need for interventions to address a more comprehensive set of victimization-related risks beyond bullying and needed efforts that are not limited to the immediate school context.

Keywords

Lesbian; gay; bisexual; questioning youth; Sexual orientation; Victimization; Disparities; Trends

There have now been close to two decades of research showing that a large number of sexual minority youth (SMY) experience forms of violence and victimization at school and in their larger communities.^{1,2} Significant disparities exist between SMY and heterosexual youth on multiple indicators of victimization, including bullying, being involved in fights, being threatened with a weapon, carrying weapons, and truancy due to safety concerns.^{3–5} Over these same years there has been a corresponding growth in efforts to promote SMY safety, principally in schools (e.g., through social-emotional learning programs or establishing Gender-Sexuality Alliances [GSAs])^{6,7} but with some attention to community-based protective factors (e.g., support for SMY in out-of-school time settings).^{8,9} Still, few studies have considered any overarching trends of improvement in the victimization experiences of SMY over this period.

Levels of victimization can fluctuate for SMY. One recent study found that whereas SMY and heterosexual youth experienced comparable victimization at age 5, SMY experienced greater victimization by age 9 and 15.¹⁰ Other findings from adolescence through adulthood suggest that rates of victimization for SMY generally decrease over these later developmental periods.^{11,12} Apart from the decline in victimization which youth might eventually experience as they grow older or exit the school system, we have little indication of whether conditions in or out of schools have improved for SMY as a whole over the past decade. We address this question in the current study by focusing on students' risk of victimization. As in other studies, we consider victimization risk indicated by involvement in physical fights, being threatened with a weapon, and weapon carriage.^{4,5} We use data collected biennially from the Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Survey (YRBS)—a large geographically diverse sample of youth—from the years 2009 to 2017 to consider trends in victimization risk over these years. Further, we consider whether trends may vary for specific groups of SMY and heterosexual youth as well as whether disparities between specific groups of SMY and heterosexual youth have narrowed, widened, or remained consistent over this time period.

We expect to identify a decrease in victimization for youth in general. Over the past decade, states have come to pass anti-bullying laws, school districts have developed protocols to address bullying, and more schools have implemented anti-bullying and social-emotional learning programs.^{7,13,14} Studies have shown some support for the effectiveness of these efforts in reducing bullying and aggression.^{13,15}

Although we expect to find decreased victimization for youth in general, it is less clear whether SMY specifically will have experienced a similar reduction in victimization risk over this same period as heterosexual youth, and whether sexual orientation-based

disparities have narrowed in size between heterosexual and SMY. Although more schools have come to adopt anti-bullying policies, fewer have adopted policies that extend explicit protection on the basis of sexual orientation.¹⁶ Also, many SMY continue to hear homophobic epithets at school and experience physical assault from other students.^{1,5} Further, SMY can experience violence and victimization beyond the school context in their neighborhood and broader community.¹⁷ Still, notwithstanding these ongoing concerns, other data suggest a potential decrease in victimization risk for SMY. For example, there has been increased positive representation of sexual minorities in social media, and GSAs—which provide support and advocate for SMY—are now in over 37% of U.S. high schools.^{6,16,18} Students attending schools with GSAs report lower victimization than students in schools without GSAs.¹⁹ It is possible, then, that these collective efforts have made a measurable larger-scale impact such that SMY also have experienced a decrease in victimization risk similar to their heterosexual peers.

At the same time, studies have tended to consider SMY as a singular group, often due to limited representation of youth from specific sexual minority groups. This approach can mask importance variance in risk within the SMY community.^{20–22} In the case of victimization risk, conditions may have improved for some SMY more than for others.

As one indication of the need to differentiate among SMY, bisexual individuals face stigma within both sexual minority and heterosexual communities.^{23,24} Some data suggest that bisexual youth report mental health concerns and indicators of victimization at higher levels than lesbian or gay youth.^{5,21,22} Further, a study in Massachusetts indicated that school safety had improved less for bisexual youth than lesbian or gay youth.²⁵

Adolescence also is a period of identity formation and sexuality development.^{26,27} Yet, studies rarely have highlighted the experiences of youth who are questioning or not sure of their sexual orientation as a distinct group within the SMY community. There is some evidence that questioning youth experience even more health risks relative to other SMY.^{20,21,28}

In the current study, we examine trends in victimization risk specific to heterosexual, lesbian, gay, bisexual, and questioning youth, with further disaggregation by sex within each group. We consider this additional specificity based on sex because other studies have documented sex differences in SMY victimization.¹ We test whether victimization risks have changed significantly over time for each group of youth, whether changes have been greater for some groups than others, and consequently whether sexual orientation-based disparities have narrowed or widened in size. This specificity could provide a more exact indication of where targeted outreach and intervention efforts may be needed for SMY.

Method

Data Source

The YRBS is a biennial national survey conducted by the CDC since 1991 to collect health data on students in grades 9 through 12.²⁹ The YRBS monitors priority health-related behaviors such as substance use, experiences with violence, and suicidal ideation, among

others.³⁰ We used data from local versions of the YRBS, which are administered at the state, large urban school district, or county level by departments of education or health; in this implementation, jurisdictions use a two-stage cluster sample design to identify a sample of students.²⁵ In the first stage, schools are selected with a probability proportional to their enrollment; in the second stage, classes of a required subject or during a required period are randomly selected, and all students within these classes are eligible to participate. A new sample or cohort is selected in this manner each year that the survey is administered; the same students are not followed over time. Thus, we consider trends for groups of SMY and heterosexual youth over time (e.g., whether victimization risk reported among bisexual females decreased between 2009 and 2017), but not trajectories of change for individual youth (e.g., whether an individual bisexual female student has reported decreases in their own victimization from 2009 to 2017) because the data for each individual were cross-sectional. The project was reviewed by the IRB of the host institution and was deemed exempt due to its use of de-identified secondary data.

Analytic Sample

Local YRBS data were pooled across multiple jurisdictions (city and state) and years (biennially from 2009 to 2017). The entire dataset consists of 56 jurisdictions across 5 time points, and 524,473 students. There were a total of 136 jurisdiction-years (distinct surveys administered by a particular jurisdiction in a specific year) that assessed sexual identity (459,643 students). To our knowledge, this dataset includes the largest sample of SMY of its kind. For the present analysis of 2009 to 2017 data, students were excluded if they were missing any of the primary demographic variables of interest (race/ethnicity: 3.51%; sex: 0.78%; age 0.78%; and sexual orientation identity: 4.87%; not mutually exclusive) resulting in a sample size of 454,715 students.

Measures

Sexual orientation identity.—Sexual orientation identity was assessed by a question asking, “Which of the following best describes you?” Response options were “Heterosexual (straight)”, “Gay or lesbian”, “Bisexual”, and “Unsure.”

Indicators of victimization.—A YRBS-based scale developed by Russell and colleagues⁵ was used to measure indicators of victimization. The scale comprises 7 items related to indicators of victimization: (a) “During the past 12 months, how many times were you in a physical fight on school property?” (b) “During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?” (c) “During the past 12 months, how many times were you in a physical fight?” (d) “During the past 12 months, how many times were you in a physical fight in which you were injured and had to be treated by a doctor or nurse?” (e) “During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?” (f) “During the past 30 days, on how many days did you carry a gun?” and (g) “During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?” Response options for the first three items range from 1 (0 times) to 8 (12 or more times) and response options for the last four items ranged from 1 (0 times) to 5 (six or more times). An exploratory factor analysis with the items supported a unidimensional factor

(eigenvalue = 2.63, factor loadings from .54 to .67). All item-total correlations were above .30 and the internal consistency estimate was $\alpha = .82$ for the pooled sample. We used a total scale score from the items in our analyses (range = 0 to 44).

Demographic Covariates

Race/Ethnicity.—Participants were asked if they identified as Hispanic or Latino. Additionally, participants could select all races that applied from the list of “American Indian or Alaska Native,” “Asian,” “Black or African American,” “Native Hawaiian or Other Pacific Islander,” and “White.” These variables were combined into racial/ethnic groups: (1) “White,” (2) “Black or African American,” (3) “Hispanic/Latino,” (4) “Asian,” and (5) “Other races.”

Sex.—Participants were asked to identify their sex with the item “What is your sex?” Response options were “Female” and “Male.”

Age.—Participants were asked, “How old are you?” The seven response options ranged from 12 years old or younger to 18 years old or older. Due to the small percentage of students 12 and younger (0.29%) and students 13 years old (0.55%), three of the items for age were collapsed into a single category resulting in an age variable with five categories: “14 or younger”, “15 years old”, “16 years old”, “17 years old”, and “18 and older.”

Statistical Analysis

We conducted all data cleaning and recoding in SAS 9.4 (SAS Institute, Cary, NC) and analyses using SAS-Callable SUDAAN Version 11.0.1 (RTI International, Research Triangle Park, NC) to appropriately weight estimates and to account for the complex sampling design of the YRBS. The YRBS data weights adjust for student non-response and distribution of students by grade, sex, and race/ethnicity in each jurisdiction.²⁹

We computed descriptive statistics for sexual orientation identity, race/ethnicity, age, and victimization risk scores, stratified by sex. Then, sex-stratified trends in victimization risk by sexual identity from 2009 to 2017 were assessed using the CDC’s recommended approach to trend analysis. Time was modeled as a continuous variable using orthogonal coefficients to reflect the biennial spacing of the surveys.^{31,32} These analyses were stratified by sex, controlled for age and race/ethnicity, and assessed linear, quadratic, and cubic trends. The linear time component was significant at $p < 0.05$; there were no significant quadratic or cubic trends. The linear regression slope serves as a measure of the average increase or decrease over the 8-year period, and whether the slope was significantly different from 0 is a measure of whether the average trend in victimization risk was upward or downward. Next, to examine the relationship between sexual identity and victimization, we conducted sex-stratified, linear regression models with demographic variables and interaction of survey year as a linear variable and sexual orientation identity. These models allowed us to determine if the trends in victimization were different among SMY, compared to their heterosexual peers.

Finally, we used linear regression with year-by-sexual orientation identity interaction terms to test whether disparities between heterosexual youth and SMY changed (i.e., widened, narrowed, or were maintained) from 2009 to 2017. Given that beta estimates cannot be compared directly across different samples,³³ an interaction term between survey year and sexual orientation identity in a linear regression framework allowed us to test whether disparities changed over time. The year-by-sexual orientation identity interaction term calculates a ratio of beta estimates which compare the age and race/ethnicity adjusted beta for a victimization risk score for a particular subgroup (e.g., lesbian girls) to the referent group (heterosexual girls) in a given year (e.g., 2009) to the odds of those with the same identity in 2017 (the reference year).

For ease of interpretation, we inverted estimated interaction beta estimates to reflect changes from past to present. Therefore, a beta estimate for the interaction term above 0 indicates a widening disparity from the comparison year to 2017, and a beta estimate below 0 indicates a narrowing disparity. A more detailed explanation of this approach is available elsewhere.^{34,35}

Results

Sample Demographics

Table 1 contains sex-stratified descriptive statistics for sexual orientation identity, race/ethnicity, age, and victimization risk scores. Representation within specific sexual orientation groups by survey year are provided in the supplemental materials. About one-half of youth identified as male (50.4%), they were primarily non-Hispanic White students (46.6%), and most identified as heterosexual (87.5%). Overall, youth had a total score of 6.50 on victimization risk; males had a total score of 6.97, whereas females had a total score of 6.01.

Prevalence and Trends by Sexual Orientation Identity

From 2009 to 2017 victimization risk scores ranged from 4.68 (heterosexual females in 2017) to 11.17 (males not sure of their sexual orientation in 2009). Trends in victimization risk stratified by sex and sexual orientation are presented in Figures 1a and 1b. Results from the adjusted linear trend comparisons revealed that victimization risk scores significantly declined for youth in general from 2009 to 2017 (Table 2; $\beta = -2.36$, $p < .001$). However, further analyses stratified by sex and sexual orientation identity revealed that victimization risk scores declined greater for some SMY populations than others. The greatest victimization risk decline was among bisexual males ($\beta = -4.54$, $p < .001$) and the smallest victimization risk decrease was among heterosexual females ($\beta = -2.10$, $p < .001$).

Comparing Trends for SMY and Heterosexual Youth over Time

Sexual orientation identity disparities are displayed in Table 3. For both males and females, victimization risk scores were significantly higher among SMY compared to their heterosexual peers, as indicated by the main effects displayed in Model 1. As seen in Model 2 (the interaction model) for both males and females the *survey year* $\times$ *sexual orientation identity* interaction term was significant for bisexual youth and youth unsure of their sexual

orientation. Victimization risk decreased to a greater extent for these youth than their heterosexual peers. There was no significant difference in victimization trends between lesbian or gay youth and their heterosexual peers.

Changes in the Size of Sexual Orientation-Based Disparities over Time

Finally, out of the possible six disparity combinations between subgroups of SMY and their heterosexual peers, some remained stable and some narrowed; there was no evidence for victimization risk disparities widening over time. Among females, from 2009 to 2017 disparities narrowed between bisexual youth, youth unsure of their sexual orientation, lesbian youth, and their heterosexual peers. More specifically, the disparity in victimization between female bisexual youth and their female heterosexual peers was smaller in 2017 than it was in 2009 ($\beta = -0.97$, 95% confidence interval [CI] = $[-1.40, -0.54]$, $p < .001$). The disparity between female youth unsure of their sexual orientation and their heterosexual female peers was smaller in 2017 than in 2009 ($\beta = -1.11$, 95% CI = $[-2.07, -0.16]$, $p = 0.022$). The size of disparities between lesbian female youth and their heterosexual female peers was also smaller in 2017 than in 2009 ($\beta = -1.39$, 95% CI = $[-2.55, -0.22]$, $p = 0.020$; Table 4).

Among males, there was evidence of disparities narrowing between bisexual youth and their heterosexual peers from 2009 to 2017 ($\beta = -1.91$, 95% CI = $[-3.14, -0.69]$, $p = 0.002$). Disparities in victimization scores did not change for male youth not sure of their sexual orientation identity and their heterosexual male peers or for gay male youth and their heterosexual male peers.

Discussion

Using one of the most comprehensive and nationally representative datasets in the U.S. to date for SMY, we identified a significant decrease in victimization risk for all SMY between 2009 and 2017. These results come from YRBS data gathered over an eight-year period from locations across the U.S. By compiling these data from multiple time points, we moved beyond cross-sectional comparisons to document trends over time. The average change in victimization risk for the overall sample was statistically significant, but relatively small in size. These trends run parallel to the passage of anti-bullying laws and reporting protocols and the implementation of anti-bullying and social-emotional learning programs in schools throughout this same period.^{7,13,14} At the same time, the relatively small effect could suggest that these types of efforts may need to expand in scope in order to address a more comprehensive set of victimization-related risks faced by youth at school in addition to bullying as well as out-of-school experiences that contribute to victimization risk.

The decrease in victimization risk for some SMY was greater than for heterosexual youth. Beyond the general momentum to counteract bullying in schools,^{7,13,14} concerted and targeted efforts for SMY (e.g., through GSAs, passage of enumerated anti-bullying policies, greater positive representation of SMY in social media)^{6,16,18} may explain why the decrease in victimization risk was more pronounced for a number of SMY relative to heterosexual youth. As we note below, however, these trends varied for specific SMY groups.

The decrease in victimization risk was greater for bisexual and questioning females than heterosexual females. Emerging findings have begun to show that bisexual and questioning youth report greater health risks than other SMY groups.^{5,20–22,25,28} Still, our results add to these cross-sectional findings by showing that conditions for bisexual and questioning females appear to have improved more over time than for heterosexual females. Disparities between bisexual, questioning, and lesbian females and their heterosexual female peers each had narrowed significantly by 2017. Nevertheless, all groups of female SMY remained at greater overall risk of victimization than heterosexual females at the end of the eight-year period in 2017.

The significant decline in victimization risk was most apparent for bisexual and questioning male youth. There has been a tendency for research to focus on victimization and violence against male SMY and factors that perpetuate violence against them (e.g., masculine norms).^{36,37} There has been less focus on documenting and counteracting factors that underlie violence against female SMY, which could partly account for why the trend was relatively more apparent for male than female SMY. Although there was a greater downward trend in risk for questioning males than heterosexual males over time, the difference was not large enough to narrow the size of the disparity between questioning and heterosexual males by 2017 to an extent that was statistically significant. The disparity between bisexual and heterosexual males, however, did narrow to a statistically significant degree. Thus, these data suggest a particularly encouraging trend for bisexual males, who often report greater victimization and health disparities than their gay-identified male peers.³⁸ In contrast to bisexual and questioning males, the downward trend in victimization risk for gay males did not differ significantly from heterosexual males over this period and the size of the disparity between gay and heterosexual males did not narrow. As with female SMY, each group of male SMY still remained at greater risk of victimization than heterosexual male youth in 2017.

Although our findings showed that there was reduction in victimization risk for some SMY over time, these findings are tempered by the case that sexual orientation-based disparities in risk remained significant for both males and females. Indeed, SMY continue to report greater victimization than heterosexual youth.^{1,5} There continues to be a need for targeted interventions and resources for SMY to further attenuate these disparities. Our findings suggest a particular need to focus on disparities faced by males questioning, unsure of, or exploring their sexual orientation identity, as they tended to report the most elevated risk of victimization across SMY and heterosexual youth. These findings further underscore the need for interventions inclusive of and intended for these youth. The need for such tailored interventions is relevant particularly during adolescence, as this is a primary period of identity and sexuality development.^{26,27} Youth who are questioning, unsure of, or exploring their sexual orientation identity more often may be overlooked in existing intervention efforts and outreach to the broader SMY community.

These distinct patterns for specific SMY underscore that treating SMY as a uniform population not only could mask elevated risks of victimization faced by youth within specific sexual minority groups but also mask which groups have experienced less improvement over time than others. Given the serious indicators of victimization risk that we

examined in the current study, this could significantly impair efforts to promote safety for specific groups of SMY. The greater specificity in the current findings could assist in efforts to identify youth who have benefited less from existing programs or policies in school or out of school and could lead to more targeted outreach efforts or policies for these youth.

In some ways our findings align with one of the few other studies to consider such trends in victimization risk among SMY in Massachusetts from 1999 to 2013.²⁵ As with our findings, that study also found that, despite significant decreasing trends in victimization risk for lesbian/gay and bisexual males and females over that time period, disparities between each of these groups of SMY and their heterosexual peers remained significant at the end of that period in 2013. As part of continued monitoring of youth's victimization risk and attention to changes in disparities for SMY, it will be important to consider not only larger national trends but also potential regional trends which could vary on account of changes in the local sociopolitical context and the changing characteristics of youth's immediate communities.

We also note some limitations and needs for ongoing research. Although our findings demonstrate significant downward trends in victimization risk, our data cannot connect these trends to specific interventions or policies. A constellation of factors likely has contributed to these trends,³⁹ and future studies should consider the relative impact of specific efforts. Also, although we looked at specific groups of SMY while further disaggregating the data for each group by sex, we were unable to make comparisons based on additional intersecting identities (e.g., to compare trends for bisexual males from specific racial or ethnic minority groups to heterosexual males from specific racial or ethnic minority groups). Similarly, while we considered several specific groups of SMY, future research should recognize the expanding number of sexual orientation identities held by youth and consider how youth's understanding and defining of these identities may be evolving. For example, the proportion of bisexual female youth in our sample was larger in later years, and the YRBS did not include a number of other identities that SMY might have selected instead of the existing categories. In addition, although we used a measure of multiple victimization risk indicators as in prior YRBS-based studies,⁵ it would be important for ongoing population-based research to include more comprehensive assessments of various forms of victimization (e.g., verbal, relational, physical, or bias-based), as some may have been more likely to have changed than others. Furthermore, future iterations of the YRBS may seek to develop screeners or include validity-check items to identify potential mischievous responders, as this topic has been raised with other similar population-based datasets.⁴⁰ Finally, we considered trends based on data from 2009 to 2017; however, since this time there have been major social and political shifts in—and in some cases retractions of—public health policies that carry substantial implications for sexual minority youth and adults. It will be critical for research to continue monitoring trends for victimization and health risks faced by SMY during these times.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

This study was supported by a grant from the National Institute on Alcohol Abuse and Alcoholism (R01 AA024409; PI: G Philips II) as well as the National Institute on Drug Abuse (K08 DA037825; PI: M Birkett).

References

1. Kosciw JG, Greytak EA, Zongrone AD, Clark CM, Truong NL. The 2017 National School Climate Survey: The experiences of lesbian, gay, bisexual, transgender, and queer youth in our nation's schools. New York, NY: GLSEN; 2018.
2. Russell ST, Fish JN. Mental health in lesbian, gay, bisexual, and transgender (LGBT) youth. *Annu Rev Clin Psychol* 2016;12:465–487. [PubMed: 26772206]
3. Katz-Wise SL, Hyde JS. Victimization experiences of lesbian, gay, and bisexual individuals: A meta-analysis. *J Sex Res* 2012;49(2-3):142–167. [PubMed: 22380586]
4. Olsen EOM, Kann L, Vivolo-Kantor A, Kinchen S, McManus T. School violence and bullying among sexual minority high school students, 2009–2011. *J Adolesc Health*. 2014;55(3):432–438. [PubMed: 24768163]
5. Russell ST, Everett BG, Rosario M, Birkett M. Indicators of victimization and sexual orientation among adolescents: analyses from Youth Risk Behavior Surveys. *Am J Public Health*. 2014;104(2):255–261. [PubMed: 24328633]
6. Centers for Disease Control and Prevention (CDC). Results from the School Health Policies and Practices Study 2014 2015 <https://www.cdc.gov/healthyyouth/data/shpps/results.htm>
7. Durlak JA, Weissberg RP, Dymnicki AB, Taylor RD, Schellinger KB. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Dev* 2011;82(1):405–432. [PubMed: 21291449]
8. Wagaman MA. (2014). Understanding service experiences of LGBTQ young people through an intersectional lens. *J Gay Lesbian Soc Serv* 2014;26(1):111–145.
9. Theriault D Out-of-school time programs and resistance to LGBT oppression In Witt PA, Caldwell LL, eds. Youth development principles and practices in out-of-school time settings. 2nd ed. Urbana, IL: Sagamore-Venture Publishing; 2018.
10. Mittleman J Sexual minority bullying and mental health from early childhood through adolescence. *J Adolesc Health*. 2019;64(2):172–178. [PubMed: 30392862]
11. Birkett M, Newcomb ME, Mustanski B. Does it get better? A longitudinal analysis of psychological distress and victimization in lesbian, gay, bisexual, transgender, and questioning youth. *J Adolesc Health*. 2015;56(3):280–285. [PubMed: 25586226]
12. Robinson JP, Espelage DL, Rivers I. Developmental trends in peer victimization and emotional distress in LGB and heterosexual youth. *Pediatrics*. 2013;131(3):423–430. [PubMed: 23382442]
13. Flannery DJ, Todres J, Bradshaw CP, et al. Bullying prevention: a summary of the report of the national academies of sciences, engineering, and medicine. *Prev Sci* 2016;17(8):1044–1053. [PubMed: 27722816]
14. Puhl RM, Luedicke J, King KM. Public attitudes about different types of anti-bullying laws: Results from a national survey. *J Public Health Policy*. 2015;36(1):95–109. [PubMed: 25393213]
15. Ttofi MM, Farrington DP. Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *J Exp Criminol* 2011;7(1):27–56.
16. Kull RM, Greytak EA, Kosciw JG, Villenas C. Effectiveness of school district antibullying policies in improving LGBT youths' school climate. *Psychol Sex Orientat Gen Divers* 2016;3(4):407–415.
17. Hatzenbuehler ML, Duncan D, Johnson R. Neighborhood-level LGBT hate crimes and bullying among sexual minority youths: A geospatial analysis. *Violence Vict* 2015;30(4):663–675. [PubMed: 26160063]
18. Gomillion SC, Giuliano TA. The influence of media role models on gay, lesbian, and bisexual identity. *J Homosex*. 2011;58(3):330–354. [PubMed: 21360390]
19. Marx RA, Kettrey HH. Gay-straight alliances are associated with lower levels of school-based victimization of LGBTQ+ youth: A systematic review and meta-analysis. *J Youth Adolesc* 2016;45(7):1269–1282. [PubMed: 27221632]

20. Poteat VP, Aragon SR, Espelage DL, Koenig BW. Psychosocial concerns of sexual minority youth: Complexity and caution in group differences. *J Consult Clin Psychol* 2009;77(1):196–201. [PubMed: 19170465]
21. Shearer A, Herres J, Kodish T, et al. Differences in mental health symptoms across lesbian, gay, bisexual, and questioning youth in primary care settings. *J Adolesc Health*. 2016;59(1):38–43. [PubMed: 27053400]
22. Taliaferro LA, Muehlenkamp JJ. Nonsuicidal self-injury and suicidality among sexual minority youth: risk factors and protective connectedness factors. *Acad Pediatr* 2017;17(7):715–722. [PubMed: 28865597]
23. Pollitt AM, Muraco JA, Grossman AH, Russell ST. Disclosure stress, social support, and depressive symptoms among cisgender bisexual youth. *J Marriage Fam*. 2017;79(5):1278–1294. [PubMed: 29056758]
24. Taliaferro LA, Gloppen KM, Muehlenkamp JJ, Eisenberg ME. Depression and suicidality among bisexual youth: A nationally representative sample. *J LGBT Youth*. 2018;15(1):16–31.
25. Goodenow C, Watson RJ, Adjei J, Homma Y, Saewyc E. Sexual orientation trends and disparities in school bullying and violence-related experiences, 1999–2013. *Psychol Sex Orientat Gen Divers* 2016;3(4):386–396.
26. Ott MQ, Corliss HL, Wypij D, Rosario M, Austin SB. Stability and change in self-reported sexual orientation identity in young people: Application of mobility metrics. *Arch Sex Behav* 2011;40:519–532. [PubMed: 21125325]
27. Tolman DL, McClelland SI. Normative sexuality development in adolescence: A decade in review, 2000–2009. *J Res Adolesc* 2011;21:242–255.
28. Birkett M, Espelage DL, Koenig B. LGB and questioning students in schools: The moderating effects of homophobic bullying and school climate on negative outcomes. *J Youth Adolesc* 2009;38(7):989–1000. [PubMed: 19636741]
29. Brener ND, Kann L, Shanklin S, et al. Methodology of the youth risk behavior surveillance system —2013. *MMWR Morb Mortal Wkly Rep* 2013;62:1–20. [PubMed: 23302815]
30. Kann L Sexual identity, sex of sexual contacts, and health-related behaviors among students in grades 9–12—United States and selected sites, 2015. *MMWR Surveill Summ* 2016;65:1–202.
31. Centers for Disease Control and Prevention (CDC). Conducting trend analyses of YRBS data 2018 https://www.cdc.gov/healthyyouth/data/yrbs/pdf/2015/2015_yrbs_conducting_trend_analyses.pdf
32. Esser MB. Current and Binge Drinking Among High School Students — United States, 1991–2015. *MMWR Morb Mortal Wkly Rep* 2017;66:474–478. [PubMed: 28493857]
33. Altman DG, Bland JM. Interaction revisited: the difference between two estimates. *BMJ*. 2003;326:219. [PubMed: 12543843]
34. Fish JN, Watson RJ, Porta CM, Russell ST, Saewyc EM. Are alcohol-related disparities between sexual minority and heterosexual youth decreasing? *Addiction*. 2017;112:1931–1941. [PubMed: 28678415]
35. Homma Y, Saewyc E, Zumbo BD. Is it getting better? An analytical method to test trends in health disparities, with tobacco use among sexual minority vs. heterosexual youth as an example. *Int J Equity Health*. 2016;15:1–8. [PubMed: 26728322]
36. Pascoe CJ. *Dude, you're a fag: Masculinity and sexuality in high school*. Los Angeles, C.A.: University of California Press; 2007.
37. Reigeluth CS, Addis ME. Adolescent boys' experiences with policing of masculinity: Forms, functions, and consequences. *Psychol Men Masc* 2016;17(1):74–83.
38. Phillips G II, Turner B, Salamanca P, et al. Victimization as a mediator of alcohol use disparities between sexual minority subgroups and sexual majority youth using the 2015 National Youth Risk Behavior Survey. *Drug Alcohol Depend* 2017;178:355–362. [PubMed: 28692946]
39. Hatzenbuehler ML, Keyes KM, Hasin DS. State-level policies and psychiatric morbidity in lesbian, gay, and bisexual populations. *Am J Public Health*. 2009;99(12):2275–2281. [PubMed: 19833997]
40. Li G, Katz-Wise SL, Calzo JP. The unjustified doubt of Add Health studies on the health disparities of non-heterosexual adolescents: Comment on Savin-Williams and Joyner (2014). *Arch Sex Behav* 2014;43(6):1023–1026. [PubMed: 24867181]

Implications and Contributions

Victimization risk decreased among all SMY males and females between 2009 and 2017, but at distinct rates. Significant sexual orientation-based disparities remained for all SMY relative to their heterosexual peers. Given the enduring sexual orientation-based disparities, interventions for specific SMY are needed.

Figure 1.

- a.* Trends of victimization risk for gay, bisexual, questioning/not sure, and heterosexual males from pooled 2009 to 2017 YRBS dataset.
- b.* Trends of victimization risk for lesbian, bisexual, questioning/not sure, and heterosexual females from pooled 2009 to 2017 YRBS dataset.

Table 1

Demographics and Victimization Risk Scores by Sex across all YRBS Time Points

	Total		Male		Female	
	#	%	#	%	#	%
Sexual Orientation Identity						
Heterosexual	394,904	87.47	201,082	91.66	193,822	83.22
Gay/Lesbian	10,937	2.35	5,479	2.50	5,458	2.20
Bisexual	29,852	6.32	6,286	2.80	23,566	9.87
Not Sure	19,022	3.87	7,773	3.03	11,249	4.72
Race/Ethnicity						
White	193,765	46.63	95,094	46.79	98,671	46.46
Black	67,700	15.55	31,985	15.22	35,715	15.88
Hispanic	121,228	27.66	57,886	27.51	63,342	27.81
Asian	31,466	5.17	15,658	5.36	15,808	4.98
Other	40,556	4.99	19,997	5.12	20,559	4.87
Age						
14 or younger	65,000	12.39	29,511	11.68	35,489	13.10
15	116,314	25.28	55,203	25.09	61,111	25.48
16	116,745	25.33	56,660	25.37	60,085	25.28
17	104,754	23.49	51,371	23.38	53,383	23.59
18 or older	20,141	13.52	27,017	14.47	23,124	12.54
Sex						
Female	234,095	49.63				
Male	220,620	50.37				
Victimization Score						
	6.50		6.97		6.01	
Mean (95% CI)	(6.56, 6.54)		(6.91, 7.03)		(5.97, 6.06)	

Note. The demographic information and total scores for the victimization risk scale are from the full sample of participants from 2009 to 2017 ($N=454,715$).

Table 2

Trends in Victimization Risk Scores by Sex and Sexual Orientation Identity

	2009			2011			2013			2015			2017			Linear Change 2009-2017	
	M	95% CI	M	95% CI	M	95% CI	M	95% CI	M	95% CI	M	95% CI	M	95% CI	M	β	p-value
All Participants																	
Total	8.07	(7.96, 8.19)	7.52	(7.44, 7.60)	7.08	(7.02, 7.13)	7.32	(7.25, 7.39)	5.22	(5.15, 5.29)						-2.36	<0.001
Heterosexual	7.94	(7.83, 8.04)	7.41	(7.34, 7.49)	6.94	(6.89, 6.99)	7.25	(7.18, 7.31)	5.16	(5.09, 5.22)						-2.26	<0.001
Lesbian/Gay	9.91	(8.74, 11.07)	8.69	(8.17, 9.21)	8.36	(7.77, 8.95)	7.63	(7.33, 7.93)	5.77	(5.45, 6.10)						-3.47	<0.001
Bisexual	9.29	(8.85, 9.73)	8.49	(8.15, 8.84)	7.94	(7.65, 8.24)	7.74	(7.51, 7.96)	5.42	(5.28, 5.56)						-3.42	<0.001
Not Sure	9.89	(8.77, 11.01)	8.34	(7.86, 8.82)	8.60	(8.18, 9.01)	8.09	(7.73, 8.45)	5.67	(5.50, 5.83)						-3.60	<0.001
Females																	
Total	7.39	(7.30, 7.48)	7.01	(6.94, 7.08)	6.53	(6.48, 6.58)	6.83	(6.77, 6.89)	4.80	(4.73, 4.87)						-2.18	<0.001
Heterosexual	7.21	(7.14, 7.29)	6.86	(6.79, 6.94)	6.38	(6.34, 6.43)	6.69	(6.63, 6.74)	4.68	(4.61, 4.75)						-2.10	<0.001
Lesbian	9.48	(8.41, 10.55)	8.85	(8.09, 9.61)	7.53	(7.08, 7.97)	7.53	(7.17, 7.88)	5.57	(5.12, 6.03)						-3.36	<0.001
Bisexual	8.75	(8.33, 9.17)	8.02	(7.77, 8.27)	7.49	(7.23, 7.76)	7.42	(7.24, 7.60)	5.25	(5.10, 5.40)						-3.07	<0.001
Not Sure	8.83	(7.90, 9.76)	7.46	(7.15, 7.77)	7.37	(6.99, 7.76)	7.69	(7.18, 8.21)	5.17	(4.98, 5.36)						-3.02	<0.001
Males																	
Total	8.76	(8.60, 8.93)	8.03	(7.92, 8.15)	7.61	(7.53, 7.69)	7.81	(7.71, 7.91)	5.62	(5.54, 5.71)						-2.54	<0.001
Heterosexual	8.63	(8.47, 8.79)	7.93	(7.82, 8.04)	7.46	(7.38, 7.53)	7.75	(7.65, 7.85)	5.57	(5.48, 5.65)						-2.44	<0.001
Gay	10.20	(8.57, 11.84)	8.56	(7.90, 9.22)	9.17	(8.14, 10.20)	7.72	(7.23, 8.20)	5.95	(5.52, 6.38)						-3.53	<0.001
Bisexual	10.99	(9.82, 12.15)	10.17	(8.98, 11.36)	9.51	(8.63, 10.39)	8.80	(8.23, 9.36)	6.03	(5.76, 6.31)						-4.54	<0.001
Not Sure	11.17	(8.98, 13.376)	9.69	(8.65, 10.73)	9.92	(9.12, 10.72)	8.80	(8.29, 9.30)	6.45	(6.19, 6.71)						-4.13	<0.001

Note. Linear trend is based on trend analyses using logistic regression modeling while controlling for race/ethnicity and age.

Table 3
Significant Differences in Trends for Sexual Minority and Heterosexual Youth from 2009 to 2017

	Model 1				Model 2			
	β	SE	95% CI	p-value	β	SE	95% CI	p-value
Females								
Sexual Orientation Identity								
Heterosexual			1				1	
Lesbian	0.97	0.13	(0.72, 1.23)	<0.001	2.44	0.42	(1.62, 3.26)	<0.001
Bisexual	0.73	0.05	(0.63, 0.83)	<0.001	1.99	0.17	(1.65, 2.32)	<0.001
Not Sure	0.77	0.12	(0.53, 1.02)	<0.001	1.97	0.31	(1.36, 2.57)	<0.001
Survey Year	-0.71	0.01	(-0.74, -0.68)	<0.001	-0.66	0.01	(-0.69, -0.64)	<0.001
Interaction Effects								
Survey Year $\times$ Heterosexual							1	
Survey Year $\times$ Lesbian					-0.36	0.11	(-0.58, -0.14)	0.001
Survey Year $\times$ Bisexual					-0.31	0.04	(-0.39, -0.23)	<0.001
Survey Year $\times$ Not Sure					-0.29	0.07	(-0.42, -0.16)	<0.001
Males								
Sexual Orientation Identity								
Heterosexual			1				1	
Gay	0.50	0.15	(0.20, 0.80)	<0.001	1.93	0.59	(0.77, 3.08)	0.001
Bisexual	1.02	0.14	(0.75, 1.29)	<0.001	3.68	0.53	(2.64, 4.72)	<0.001
Not Sure	1.33	0.13	(1.07, 1.59)	<0.001	3.46	0.67	(2.15, 4.78)	<0.001
Survey Year	-0.81	0.02	(-0.85, -0.7)	<0.001	-0.77	0.02	(-0.81, -0.74)	<0.001
Interaction Effects								
Survey Year $\times$ Heterosexual							1	
Survey Year $\times$ Gay					-0.36	0.14	(-0.63, -0.09)	0.010
Survey Year $\times$ Bisexual					-0.65	0.12	(-0.88, -0.42)	<0.001
Survey Year $\times$ Not Sure					-0.53	0.15	(-0.82, -0.24)	<0.001

Note. Linear trend is based on trend analyses using logistic regression modeling while controlling for race/ethnicity and age. Heterosexual youth served as the referent group for sexual orientation-based main and interaction effects.

Table 4

Regression Analyses to Test for Widening, Lessening, or Non-Significant Change in the Size of Disparities between Sexual Minority and Heterosexual Youth over Time

	Females			Males		
	β	(95% CI)	<i>p</i> -value	β	(95% CI)	<i>p</i> -value
Heterosexual by 2017	referent group			referent group		
Gay/Lesbian by 2009	-1.39	(-2.55, -0.22)	0.020	-1.18	(-2.87, 0.52)	0.175
Bisexual by 2009	-0.97	(-1.40, -0.54)	<0.001	-1.91	(-3.14, -0.69)	0.002
Not Sure by 2009	-1.11	(-2.07, -0.16)	0.022	-1.63	(-3.86, 0.60)	0.151

Note. Heterosexual by 2017 served as the referent group in the comparisons. Adjusted models included sexual orientation identity, survey year, age, race, and sexual orientation $\times$ year interaction terms. Betas are inverted to reflect change from past to present.