

Trends in Suicidality and Bullying among New York City Adolescents across Race and Sexual Identity: 2009–2019

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Introduction

Although lesbian, gay, bisexual (LGB), and other sexual minority youth aged 13–17 years comprise 9% of the total U.S. population [1], they account for 36% of suicide attempts, a rate over three times higher than heterosexual adolescents [2]. From 2009 to 2017, LGB youth accounted for an increasing proportion of suicide attempts over time [2]. Over this same period, Black adolescents were the only adolescent racial group for which suicide attempts increased [3]. Despite these indicators of rising suicidality among LGB and Black adolescents, there is scant research on suicide risk trajectories among youth groups across both racial and sexual identities over this period. However, research does suggest Black and Latina/o/x LGB adolescents may experience disproportionate suicidality due to bullying [4]. Thus, the present study examined trajectories of suicidal ideation and attempt among New York City high school students across racial identity and sexual identity from 2009 to 2019, and whether these trajectories were associated with bullying.

Studies consistently find vast suicide inequities between LGB youth and their heterosexual counterparts [5–9]. Data from the Youth Risk Behavior Surveillance System (YRBSS) [9, 10] indicate LGB high school students are 2.9 times more likely to have suicidal ideation and 4.6 times more likely to attempt suicide than their heterosexual peers [11]. Analysis of suicide trends suggests these inequities have worsened over recent years [2]. Although early suicidality research suggested that White communities may be at higher risk than other racial/ethnic communities [12], more recent studies indicate youth suicide rates are the highest, and increasing, among Black children [13–16]. Moreover, research examining suicide trends among adolescents found that although suicidal ideation decreased for all racial/ethnic groups, attempts increased only among Black adolescents [3]. This is critical since research suggests Black and Latina/o/x LGB adults may be at higher risk for suicide attempt than their White peers [17], and Black and Latina/o/x bisexual boys and Black lesbian girls may be at higher risk of suicidal ideation compared to their White peers [18]. However, we are unaware of any research examining recent trends in suicidal ideation, suicide attempt, and bullying among adolescents across both racial and sexual identity groups (e.g.,

Black heterosexual, Black LGB, Latina/o/x heterosexual, Latina/o/x LGB).

Studies conceptualizing drivers of increasing suicide rates among Black and LGB adolescents have posited that Black LGB youth may be at high risk for suicidal ideation and attempt because they face racist and heterosexist bullying, among other forms of oppression [19, 20]. This is consistent with interpersonal theories that suggest perceived burdensomeness and thwarted belongingness linked to interpersonal rejection are critical contributors to suicide risk [20–22]. Public health applications of intersectionality frameworks posit that health inequities at the intersection of racial and sexual minority identities reflect the effects of interlocking systems of oppression (e.g., racism, heterosexism) [23–27]. Thus, documentation of suicide rates across racial and sexual identity, and the examination of bullying as a manifestation of the intersecting oppression driving those rates, is necessary to identify and eliminate suicide inequities.

Evidence shows bullying predicts suicide risk among adolescents [18, 28–31]. Bullying in schools and on the internet (i.e., e-bullying) is 1.5 to 2.24 times more likely to target LGB adolescents than their heterosexual peers [30, 32–34]. Additionally, suicide attempt rates among Black and Latina/o/x LGB late adolescents and young adults may be inequitably increased by heterosexist discrimination [4]. However, other research with YRBSS data does not show differences in the effects of bullying across race and ethnicity among LGB youth [18]. Thus, it is important to examine bullying as a form of discrimination that may be contributing to recent increases in adolescent suicide inequities across race and sexual identity.

To assess recent suicidality trends across racial and sexual identity groups and test bullying as a potential contributor to these trends, we examined trajectories of suicidal ideation and attempt across racial and sexual identity groups and their associations with school-based bullying and e-bullying among NYC public and charter high school students. We used the Youth Risk Behavior Survey (YRBS), which has shown rates of suicide attempt and bullying that are comparable to national estimates [30]. We focused on years 2009 through 2019 because measurement of e-bullying started in 2009 and the 2021 data were biased by COVID-19-related school-based data col-

we did not test specific hypotheses for each subgroup. However, given recent evidence that suicide attempt rates are increasing among LGB [2] and Black [3] youth, we expected that Black LGB adolescents would show significant increases in suicide attempt across the study period. Given the wealth of evidence linking bullying to suicidal ideation and attempts [18, 28–31], we expected bullying to be positively associated with ideation and attempt over this period for all groups.

Methods

We analyzed data from the NYC YRBS. As part of the Centers for Disease Control and Prevention's nationwide YRBSS, the NYC YRBS is a biennial, school-based survey conducted by the NYC Department of Health and Mental Hygiene in collaboration with the NYC Department of Education. As a self-administered, anonymous survey, it employs a stratified, two-stage, cluster design to produce a representative sample of students in grades 9–12 attending NYC public, charter, or vocational schools. In the first stage, schools are randomly sampled with probability proportional to schools' enrollment sizes. In the second stage, classrooms are randomly sampled, excluding English as a Second Language and special education classes. The survey includes questions specific to six areas of health-related risk behaviors that contribute to leading causes of mortality and morbidity. Our study includes data from a weighted sample of 228,626 participants across six surveys conducted from 2009 to 2019.

There was a greater proportion of White and Asian participants in the heterosexual than LGB group.

Figure 1 shows the trends in past-year suicidal ideation and attempt from 2009 to 2019 across race/ethnicity and sexual identity. During this period, the

Table 2 Logistic regression testing for trends in suicide ideation and attempt

Adjusted Odds Ratios (AORs) pertain to the 10-year study period

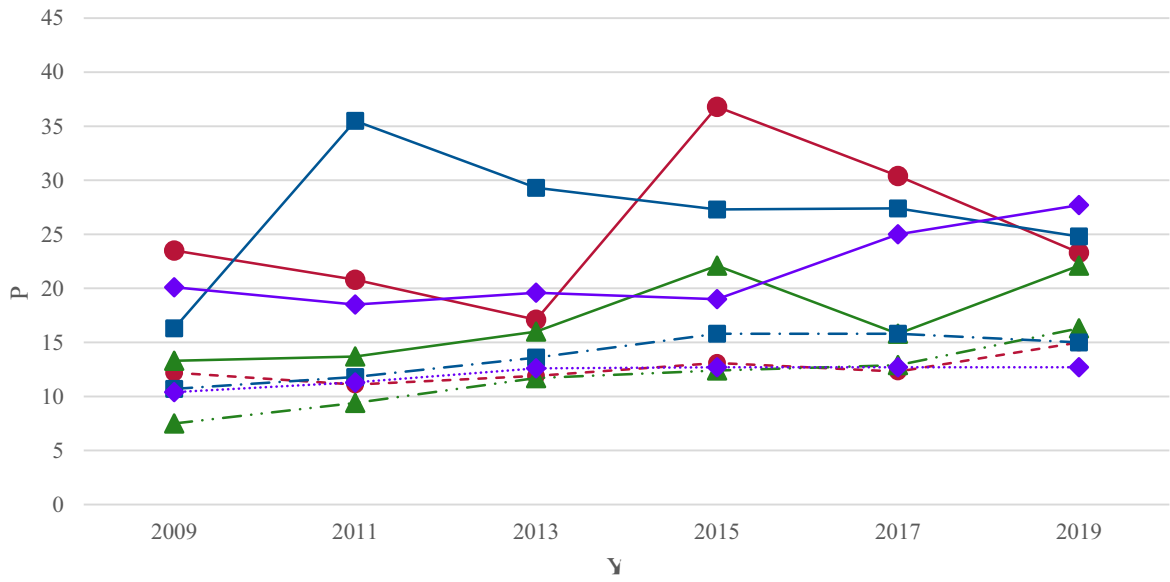
and nonsignificant quadratic change, respectively. White LGB participants showed a significant linear decrease with a quadratic increase. Asian LGB participants showed a nonsignificant linear change. For suicide attempts among LGB participants, all racial/ethnic groups showed a significant linear decrease except for Black LGB participants, for whom there was a linear and quadratic increase. Latina/o/x and White LGB participants showed quadratic decreases.

For suicidal ideation among heterosexual participants, all ethnic/racial heterosexual groups showed linear increases, though linear increases among Black and Asian heterosexual participants were 4–5 times greater than those for White and Latina/o/x heterosexual participants. Increases among Asian and Latina/o/x heterosexual participants showed a quadratic increase, while

those among White heterosexual participants showed a quadratic decrease. For suicide attempts among heterosexual participants, all racial/ethnic heterosexual groups showed significant linear increases except for Latina/o/x heterosexual participants, for whom there was a decrease. All heterosexual groups showed significant quadratic increases except for White heterosexual participants, for whom there was a quadratic decrease.

The weighted overall prevalence for bullying at school and e-bullying among LGB participants was 22% and 21%, respectively, and 12.5% and 10.7% among heterosexual participants, respectively. The disaggregated mean trends for bullying at school and e-bullying are depicted in Fig. 2.

For bullying at school among LGB participants, Black (AOR = 1.06, SE = 0.004, $p < 0.001$)



and Latina/o/x (AOR = 1.01, SE = 0.001, $p < 0.001$) LGB participants showed significant linear increases with a quadratic increase (AOR = 0.996, SE = 0.00, $p = 0.007$) and decrease (AOR = 1.01, SE = 0.001, $p < 0.001$), respectively. White LGB participants showed a significant linear decrease (AOR = 0.98, SE = 0.007, $p < 0.001$) with a quadratic decrease (AOR = 0.99, SE = 0.001, $p = 0.001$). Asian LGB participants showed a nonsignificant linear change (AOR = 1.00, SE = 0.008, $p = 0.78$). For e-bullying among LGB participants, Black (AOR = 1.04, SE = 0.004, $p < 0.001$) and Latina/o/x (AOR = 1.01, SE = 0.003, $p < 0.001$) LGB participants showed significant linear increases with a quadratic increase (AOR = 0.99, SE = 0.001, $p < 0.001$) and decrease (AOR = 1.01, SE = 0.001, $p < 0.001$), respectively. White LGB participants (AOR = 0.94, SE = 0.007, $p < 0.001$) and Asian LGB participants (AOR = 0.91, SE = 0.008, $p < 0.001$) showed significant linear decreases with a nonsignificant quadratic change (AOR = 1.01, SE = 0.003, $p = 0.08$) and a quadratic decrease (AOR = 0.97, SE = 0.002, $p < 0.001$), respectively.

For bullying at school among heterosexual participants, Black (AOR = 1.08, SE = 0.002, $p < 0.001$), Latina/o/x (AOR = 1.02, SE = 0.001, $p < 0.001$), and White (AOR = 1.05, SE = 0.002, $p < 0.001$) heterosexual participants showed significant linear increases. Black (AOR = 0.997, SE = 0.001, $p < 0.001$), Latina/o/x (AOR = 0.995, SE = 0.001, $p < 0.001$), and White (AOR = 0.993, SE = 0.001, $p < 0.001$) heterosexual participants also showed significant quadratic decreases. Asian heterosexual participants showed linear (AOR = 1.03, SE = 0.002, $p < 0.001$) and quadratic (AOR = 1.01, SE = 0.001, $p < 0.001$) increases. For e-bullying among heterosexual participants, Black (AOR = 1.04, SE = 0.002, $p < 0.001$), Latina/o/x (AOR = 1.01, SE = 0.001, $p < 0.001$), White (AOR = 1.01, SE = 0.002, $p < 0.001$), and Asian (AOR = 1.06, SE = 0.002, $p < 0.001$) heterosexual participants showed significant linear increases. Black (AOR = 1.01, SE = 0.001, $p < 0.001$), Latina/o/x (AOR = 1.01, SE = 0.001, $p < 0.001$), and Asian (AOR = 1.01, SE = 0.001, $p < 0.001$) heterosexual participants showed quadratic increases, but White (AOR = 0.998, SE = 0.002, $p = 0.23$) heterosexual participants showed a nonsignificant quadratic change. For the models that examined associations between suicidal ideation and attempt and bullying at school

and e-bullying, both forms of bullying were positively associated with suicidal ideation and attempt across all groups (Table 3).

Discussion

This study examined suicidal ideation, suicide attempt, and bullying trajectories across racial and sexual identity groups among a NYC YRBS sample from 2009 to 2019. Among LGB students, for whom suicidal ideation and attempt were twice and five times more likely than for heterosexual students, respectively, Black LGB participants were the only group for which both suicidal ideation and attempt increased. Bullying at school and e-bullying were each about two times more likely among LGB than heterosexual students, and Black LGB participants were the only LGB group for which both forms of bullying were increasing at increasing rates. For all students, we found that bullying was positively associated with suicidal ideation and attempt across time. These results suggest that research and intervention resources should prioritize identifying and rectifying drivers of suicide inequities for Black LGB adolescents, including preventing and combatting the negative impacts of bullying.

The findings that LGB students were twice as likely to experience suicidal ideation and five times more likely to attempt suicide were consistent with past studies showing vast suicide inequities between LGB and heterosexual adolescents [5–8, 11]. The fact that Black LGB students were the only LGB group for which suicidal ideation and attempt increased during 2009 to 2019 extends past research that has shown recent increases in suicide attempts among LGB [2] and Black communities [3, 13–15], separately. This result supports research that suggests that Black LGB adolescents, who face oppressive conditions at the intersection of racism and heterosexism [23], may be at heightened risk for suicidality compared to their heterosexual and non-Black peers [37]. As such, efforts to curb rising rates of suicidality among LGB [38] and Black [39, 40] adolescents will likely be most effective by focusing on supporting and protecting Black LGB adolescents.

We also found Latina/o/x LGB students showed a significant increase in suicidal ideation across the study period. This is consistent with research indicating that

suicidality may be increasing among Latina adolescents [41] and indicates that Latina/o/x LGB youth

While there was no significant change in suicidal

LGB adolescents, Black LGB youth were the only group for whom suicidal ideation and attempt were both increasing, rates that were linked to increases in both forms of bullying. Overall, our findings indicate that calls to address increasing suicide among Black youth [39, 40] should focus research and intervention resources on averting suicidality among Black LGB youth.

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Data Availability Data and study materials from this study are available from the New York City Department of Health and Mental Hygiene on reasonable request. Study analysis code is available from the corresponding author on reasonable request.

Declarations

Ethics Approval All procedures were approved by the New York City Department of Health and Mental Hygiene Institutional Review Board.

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