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Application of an Intersectional Lens to Bias-Based Bullying Among LGBTQ+ Youth of Color in the United States

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Bias-based bullying influences health, academic success, and social well-being. However, little quantitative work takes an intersectional perspective to understand bias-based bullying among youth with marginalized social positions, which is critical to prevention. This article describes the application of exhaustive chi-square automatic interaction detection (CHAID) to understand how the prevalence of race-, gender-, and sexual orientation-based bullying varies for youth with different intersecting social positions. We used two data sets—the 2019 Minnesota Student Survey (MSS; $N = 80{,}456$) and the 2017–2019 California Healthy Kids Survey (CHKS; $N = 512{,}067$). Students self-reported sex assigned at birth, sexual orientation, gender identity, race/ethnicity, and presence of any race-, gender-, and sexual orientation-based bullying (MSS: past 30 days, CHKS: past 12 months). Exhaustive CHAID with a Bonferroni correction, a recommended approach for large, quantitative intersectionality research, was used for analyses. Exhaustive CHAID analyses identified a number of nodes of intersecting social positions with particularly high prevalences of bias-based bullying. Across both data sets, with varying timeframes and question wording, and all three forms of bias-based bullying, youth who identified as transgender, gender diverse, or were questioning their gender and also held other marginalized social positions were frequent targets of all forms of bias-based bullying. More work is needed to understand how systems of oppression work together to influence school-based bullying experiences. Effective prevention programs to improve the health of youth with marginalized social positions must acknowledge the complex and overlapping ways bias and stigma interact.

Keywords: bias-based bullying, intersectionality, adolescence, sexual orientation, gender identity

Bullying and harassment based on identity and personal characteristics such as race, sexual orientation, and gender identity are common experiences among youth with marginalized social positions and are associated with compromised physical, social, and academic well-being (Bucchianeri, et al., 2014, 2016; Earnshaw et al., 2016; Lessard et al., 2020). Because adolescents spend a significant portion of their time in schools, preventing bias-based bullying in schools has the potential to improve health, well-being, and academic achievement for youth with marginalized identities, who are far more likely to be the targets of such bias. Yet, the burden of bias-based bullying does not fall equally across groups. For example, girls who identify as gay/lesbian are more likely to be bullied about their race, weight, ability, and gender as well as their sexual orientation compared to straight girls, regardless of their other social positions (Bucchianeri et al., 2016). Few evidence-based interventions exist that address the complex realities of bias-based youth experiences (Earnshaw et al., 2018). More information is needed from an intersectional perspective, acknowledging the ways youth's intersecting social positions come together, to understand the unique ways bias operates on diverse youth to inform bias-based bullying and harassment prevention priorities and to more adequately address the ways racism, sexism, transphobia, and homophobia operate simultaneously in the context of school bullying.

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Bullying, teasing, and harassment based on bias are stressors experienced by youth with marginalized social positions that influence physical and mental health, academic success, and social well-being (Gower, Rider, McMorris, et al., 2018; Rosenthal et al., 2015; Russell et al., 2012). From the minority stress model and its adaptations, experiences of bias—including bias-based bullying and harassment—are considered distal minority stress processes for individuals with stigmatized identities. These distal stressors combine with both the general stressors of adolescence and proximal minority stressors (e.g., internalized homophobia or transphobia, expectations of rejection), to contribute to health (Hendricks & Testa, 2012; Meyer, 2003). Understanding the intersecting social positions related to different forms of bias-based bullying can inform both our understanding of and efforts to bolster protective factors and reduce risk factors among youth bearing the greatest burden.

Rooted in Black feminist activism and coined by a legal scholar, Kimberlé Crenshaw, intersectionality posits that multiple social identity categories (e.g., race, gender, sexuality) intersect at the individual level and are reflected in the interconnected systems of privilege and oppression at the structural level (e.g., racism, sexism, heterosexism) that create social inequalities, particularly among historically marginalized groups (Bowleg, 2012; Collins & Bilge, 2016; Crenshaw, 1994; Moradi & Grzanka, 2017). At the structural level, applying an intersectionality perspective focuses on recognizing and critically analyzing social inequities that produce health disparities, placing emphasis on social change efforts that further health-equity promoting activities among marginalized groups (see Bowleg, 2012; Collins & Bilge, 2016).

Several lines of research underscore the need to consider the ways intersecting identities and systems of power and oppression interact. Although traditional regression methods are very widely used (Bauer, 2014) and have begun to identify important relationships, such approaches have also been criticized for reducing intersectional analyses to main and interaction effects of demographic variables (Bauer, 2014; del río-gonzález et al., 2021). New quantitative approaches can expand this literature and advance our understanding of how adolescents with overlapping marginalized social positions uniquely experience bias-based bullying in school. Previous research that examined general bullying victimization using the Youth Risk Behavior Surveillance Survey identified a higher prevalence of bullying and violence victimization among Latina/x/o[1] youth with a lesbian, gay, bisexual, or questioning (LGBQ+) sexual orientation, with some evidence suggesting Latina/x/o bisexual youth report the highest levels (Mueller et al., 2015; Russell et al., 2014). Shramko et al. (2018) further examined the complexity of these associations, noting that among Latina/x/o LGBQ+ youth and young adults, victimization and discrimination, including bias-based bullying, were higher for those who were also gender nonconforming.

Articulating the ways in which intersecting social positions are related to multiple forms of bias-based bullying is important given that preliminary research has begun to indicate schools can take steps, such as the formation of gay–straight alliances or gender–sexuality alliances (GSAs), to reduce multiple forms of bias-based bullying and that GSAs might buffer the effects of bias-based bullying on feelings of unsafety and odds of suspension among lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ+) youth (Lessard et al., 2020). Additional insight into the overlapping social positions most likely to report bias-based bullying will inform further relevant targeting of school-level policies, practices, and programs for prevention.

This study capitalizes on two very large epidemiological, school-based data sets that allow the use of exhaustive chi-square automatic interaction detection (CHAID), a decision tree approach recommended for analyzing large quantitative data sets with an intersectionality framework (Bauer et al., 2021). We investigate two primary research questions: (a) How do experiences of bullying based on race/ethnicity, gender, and sexual orientation vary among youth with varying social positions (i.e., race/ethnicity, sexual orientation, gender identity, and sex assigned at birth)? (b) What similarities and differences exist between analyses of two distinct data sets? Given some concerns that CHAID models are prone to yielding estimates that are sample specific, similarities in patterns of findings across two data sets can improve confidence in and generalizability of CHAID findings. Better knowledge of the way systems of oppression work together to influence school-based bullying and harassment experiences can inform priorities for bullying prevention program development and improve the health of youth with marginalized social positions.

Method

Data come from two sources—the 2019 Minnesota Student Survey (MSS) and the 2017–2019 waves of the California Healthy Kids Survey (CHKS). The MSS is conducted every 3 years with public and charter school students in 5th, 8th, 9th, and 11th grades. All districts in the state are invited to participate. In 2019, 81% of districts contributed data in at least one grade, representing 66% of enrolled 9th graders and 54% of enrolled 11th graders statewide. The CHKS is conducted in 2-year waves. For the subset of schools that participated in both years, data were only included for the 2018–2019 school years to avoid duplication. Participation ranged by grade from 56% to 77% of enrolled students. In both states, surveys are conducted online, and approximately 2% of surveys are removed due to patterns of exaggerated or implausible responses, or admission of untruthful responses (i.e., answer to, "How many questions in this survey did you answer honestly?"). Parents provide passive consent. Due to availability of survey questions by grade and for consistency in comparison across data sets, the sample was restricted to 9th through 12th graders. The institutional review board at the University of Minnesota deemed this study exempt due to the use of existing, anonymous data.

Measures

Bias-Based Bullying

Both data sets included questions on experiences of bias-based bullying. In the MSS, students reported how often "other students harassed or bullied you" in the past 30 days due to (a) "race, ethnicity, or national origin"; (b) "your gender (being male, female, transgender, etc.)"; (c) "because you are gay, lesbian, or bisexual or because someone thought you were." The CHKS assessed past 12 months experiences with being harassed or bullied on school property due to (a) "your race, ethnicity, or national origin"; (b) "your gender"; (c) "because you are gay or lesbian or someone thought you were." The CHKS bullying item includes a definition:

[1] In this article, we use Latina/x/o to visibilize gender diverse youth of Latin American origin or descent (del Río-González, 2021).

being "shoved, hit, threatened, called mean names, teased or had other unpleasant physical or verbal things done to you repeatedly in a severe way. It is not bullying when two students of about the same strength or power quarrel or fight." Student responses were dichotomized into any/none for each measure of bias-based bullying.

Social Positions

Four social positions were assessed. Students indicated their sex assigned at birth (male/female; MSS: "What is your biological sex?" CHKS: "What is your sex?"). Race and ethnicity were assessed with one item on the MSS (select all that apply of American Indian or Alaskan Native; Asian or Asian American; Black, African, or African American; Hispanic or Latino/Latina; Native Hawaiian or other Pacific Islander; White). The CHKS assessed Hispanic or Latino origin (yes/no) in one question and race in a second question (select one: American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Pacific Islander; White; mixed [two or more] races). Items and responses were combined such that anyone indicating a Latina/x/o ethnicity (del Río-González, 2021), regardless of other race options, would be considered Latina/x/o.

Sexual orientation was assessed with one item on each survey. In the MSS, verbatim response options included: heterosexual (straight), gay or lesbian, bisexual, questioning/not sure, pansexual, queer, I do not describe myself in any of these ways, and I am not sure what this question means. Options in the CHKS included: straight (not gay), gay or lesbian, bisexual, I am not sure yet, something else, and decline to respond.

Each survey assessed gender identity and/or modality differently. The CHKS asked if students identified as transgender (yes/no/not sure/decline to respond). We use the term transgender and gender diverse (TGD) to describe youth who indicated yes on this question and questioning for those who selected "not sure." The MSS included two items: the first asked if students identified as transgender, genderqueer, or genderfluid (yes/no/not sure/do not know what this question means). Those who selected "I'm not sure of my gender identity" were considered questioning. For youth selecting yes, a follow-up question allowed for more specificity with four additional descriptors: male, trans male, trans man, or trans masculine (abbreviated here as trans masculine); female, trans female, trans woman, or trans feminine (abbv: trans feminine); nonbinary, genderqueer, or genderfluid (abbv: nonbinary); I prefer to describe my gender as something else (abbv: else). These two questions were combined in the MSS to yield a gender identity variable with six categories in the MSS: cisgender, trans masculine, trans feminine, nonbinary, questioning gender, and something else not listed. Responses of "not sure what the question means" (MSS) and "decline to respond" (CHKS) for sexual orientation and/or gender identity were recoded to missing.

Analysis Plan

Descriptive statistics were conducted by data set for study variables. Missing data were included in the following analyses. Six exhaustive CHAID models were run with Bonferroni corrections (three forms of bias-based bullying for each data set). Exhaustive CHAID is a decision tree approach recommended for analysis with quantitative data in intersectionality research (Bauer et al., 2021). In this approach, every interaction between predictors (i.e., the four social position variables in this analysis) is examined, and tree "branches" are formed using successive chi-square tests to maximize the identification of groups with similar rates of the dependent variable (in this case, each type of bias-based bullying). The 10 highest terminal nodes (e.g., final groups that cannot be further split by social position) are presented in the tables to describe youth with specific overlapping social positions that experience the highest prevalence of each form of bias-based bullying. Models were constrained to a maximum depth of 5, and minimum terminal node size was set to 20 for each tree to avoid deductive disclosure and overfitting. Exhaustive CHAID accommodates missing data in the predictors by including missing responses as an additional category. All analyses were conducted in SPSS Version 27.

Results

Both samples are described in Table 1. The vast majority of students were in 9th or 11th grades, and approximately equal proportions of students assigned male and female at birth completed the survey. Samples reflected the racial and ethnic makeup of the

Table 1
Sample Descriptive Statistics by Data Set

Independent variable	MSS (N = 80,456)	CHKS (N = 512,067)
Grade		
9th	45,232 (56.2)	238,565 (46.6)
10th	—	33,047 (6.5)
11th	35,224 (43.8)	207,338 (40.5)
12th	—	33,117 (6.5)
Birth-assigned sex		
Male	40,121 (50.0)	244,825 (50.4)
Female	40,163 (50.0)	240,956 (49.6)
Missing	172 (0.21)	26,286 (5.1)
Race and ethnicity		
NH Native American	941 (1.2)	3,812 (0.8)
NH Asian/PI	5,390 (6.7)	63,717 (12.6)
NH Black	5,966 (7.5)	17,712 (3.7)
Latina/x/o	6,826 (8.5)	260,602 (51.5)
NH White	56,163 (70.3)	114,905 (22.7)
NH multiracial	4,625 (5.8)	44,224 (8.7)
Missing	545 (0.7)	6,095 (1.2)
Sexual orientation		
Straight	62,799 (79.9)	390,525 (85.6)
Gay or lesbian	1,253 (1.6)	9,119 (2.0)
Bisexual	4,515 (5.7)	30,477 (6.7)
Questioning	1,662 (2.1)	18,280 (4.0)
Pansexual	1,350 (1.7)	—
Queer	351 (0.4)	—
Something else	6,671 (8.5)	7,843 (1.7)
Missing	1,855 (2.3)	55,823 (10.9)
Gender identity		
Cisgender	75,220 (97.0)	446,453 (97.6)
Transgender	—	4,724 (1.0)
Trans masculine	429 (0.6)	—
Trans feminine	136 (0.2)	—
Nonbinary	469 (0.6)	—
Another identity	96 (0.1)	—
Questioning	1,179 (1.5)	6,369 (1.4)
Missing	2,927 (3.6)	54,521 (10.6)

Note. Percent missing calculated for full N. Percent for all valid response options is the valid percent. NH = non-Hispanic; MSS = Minnesota Student Survey; CHKS = California Healthy Kids Survey.

states, with Latina/x/o as the most prevalent identity in California (51.5%) and non-Hispanic White as the most common in Minnesota (70.3%). Over 10% of students indicated an LGBQ+ sexual orientation, with bisexual emerging as the most commonly listed LGBQ+ sexual orientation in both surveys (5.7% in MSS, 6.7% in CHKS). In California, 1.0% of students identified as transgender, whereas in Minnesota, where the question explicitly lists genderqueer and genderfluid along with transgender, 1.5% of students indicated a gender diverse identity. The proportion of youth questioning their gender identity was consistent across surveys (1.4% in CHKS, 1.5% in MSS).

Race-Based Bullying

As presented in Table 2, in Minnesota, where 11.6% of youth overall reported race-based bullying victimization, multiracial youth who indicated their sexual orientation as lesbian, gay, bisexual, or pansexual and their gender identity as trans feminine, an option not listed, or did not answer the question had the highest prevalence of race-based bullying (65.0%). Multiracial youth with these gender identities (e.g., trans feminine, an option not listed, did not answer the question) but who identified as straight, queer, questioning their sexual orientation, something else or missing (28.7%) or whose gender identity was trans masculine, nonbinary, questioning, or cisgender, regardless of sexual orientation (23.5%) were also represented within the 10 highest prevalence nodes. Across the 10 nodes, Asian and Pacific Islander youth comprised three, split by sexual orientation: queer (61.5%), bisexual (31.7%), and all other options (25.1%). Similarly, Black youth reported high rates of race-based bullying, with the magnitude varying by sexual orientation (lesbian, gay, bisexual, pansexual, queer, questioning, and did not answer 31.6%; straight or something else 24.0%).

In California (13.0% overall prevalence), the 10 highest prevalence terminal nodes were all occupied by youth of color youth who were transgender or questioning their gender identity. Asian and Pacific Islander youth comprised three high-prevalence terminal nodes: missing sexual orientation, questioning gender identity, assigned female at birth or did not answer the sex question (39.1%); bisexual or another sexual orientation not listed, TGD, or missing gender identity (30.4%); and lesbian, gay, questioning, straight, or missing sexual orientation, and TGD (27.7%). Latina/x/o TGD youth who were straight or did not indicate a sexual orientation (38.3%), lesbian, gay, or questioning their sexual orientation (29.3%), or bisexual or another sexual orientation not listed (26.7%) were also likely to report race-based bullying.

Gender-Based Bullying

Gender-based bullying (Table 3) was uncommon in Minnesota on average (6.8%); however, gender diverse youth disproportionately experienced this form of bullying, with trans masculine youth assigned male at birth who were lesbian, gay, pansexual, queer, or questioning their sexual orientation (64.1%) and trans masculine youth assigned female at birth or not indicating their sex (62.2%) reporting over nine times higher rates of gender-based bullying. Nonbinary youth, regardless of other social positions (49.3%) and trans feminine youth assigned male or missing (52.0%) or assigned female (18.9%) also experienced a high prevalence of gender-based bullying. Finally, youth who were questioning their gender identity

Table 2
Results From Top 10 Highest Prevalence Nodes From Exhaustive CHAID for Race-Based Bullying

MSS (11.6% overall)					CHKS (13.0% overall)				
Prev %	Race	Sexual orientation	Gender identity	Sex	Prev %	Race	Sexual orientation	Gender identity	Sex
65.0	Multiracial	LG; B; P	Transfemme; else; missing	—	39.1	API	Missing	?	AFAB; missing
61.5	API	Q	—	—	38.3	Latina/x/o	Straight; missing	TGD	Missing
45.7	Missing	LG; P; Q; straight	Transmasc; NB; ?; else; missing	—	36.5	Native American	—	TGD	—
40.9	White	—	Else	AMAB; missing	34.3	Black	—	TGD; ?	—
31.7	API	B	—	—	33.0	Multiracial	LG	TGD; ?; missing	—
31.6	Black	LG; B; P; Q; ?; missing	—	—	30.4	API	B; else	TGD; missing	—
28.7	Multiracial	Straight; ?; Q; else; missing	Transfemme; else; missing	—	30.3	Missing	—	TGD	—
25.1	API	LG; P; ?; else; straight; missing	—	—	29.3	Latina/x/o	LG; ?	TGD	—
24.0	Black	Straight; else	—	—	27.7	API	LG; ?; straight; missing	TGD	—
23.5	Multiracial	—	Transmasc; NB; ?; cis	—	26.7	Latina/x/o	B; else	TGD; ?	—

Note. — Within this intersection of identities, there were no significant differences by the column variable. Missing appears in the table to indicate youth who did not answer a specific social position question, as they are retained in exhaustive CHAID for analysis rather than dropped. Race: Asian and Pacific Islander (API), Black, Latina/x/o, Multiracial, Native American (NA), White. Sexual orientation: straight, lesbian/gay (LG), bisexual (B), pansexual (P), queer (Q), questioning (?), "I don't describe myself in any of these ways" (else). Gender: cisgender (cis), trans feminine (Transfemme); trans masculine (Transmasc); nonbinary (NB); questioning gender (?), "Prefer to describe my gender as something else" (else); transgender and gender diverse (TGD). Sex assigned at birth: assigned female at birth (AFAB), assigned male at birth (AMAB). CHAID = chi-square automatic interaction detection; MSS = Minnesota Student Survey; CHKS = California Healthy Kids Survey.

were represented in three of the highest prevalence nodes, with those whose sexual orientation was queer, questioning, or an identity not listed split by race and ethnicity: multiracial, Black, and Native American (46.2%) and Latina/x/o, Asian and Pacific Islander, White, and missing (19.2%).

In California (6.7% prevalence), gender-based bullying was most prevalent among TGD youth who were lesbian, gay, bisexual, or another sexual identity (56.7% among Native American, White, multiracial, and missing race and 48.9% among Asian or Pacific Islander, Latina/x/o, or Black). Youth questioning their gender identity, across various intersections with race/ethnicity, sexual orientation and assigned sex were represented in half of the top 10 prevalence groups. Native American youth with diverse sexual and gender identities were also among the highest prevalence groups.

Sexual Orientation-Based Bullying

While sexual orientation-based bullying (Table 4) was reported by only 7% of students overall in Minnesota, several groups of youth with specific intersections of sexual and gender identities had over 50% prevalence, primarily youth with emerging sexual identities ("I don't describe myself in any of these ways," pansexual, queer) who identified as nonbinary, trans masculine, or another gender identity not listed. In fact, nonbinary youth of all sexual orientations except those who identified as straight and were assigned male at birth were included in the seven highest terminal nodes. All bisexual youth except cisgender youth assigned female at birth were also in the highest prevalence social positions.

In California (overall prevalence of 7.4%), sexual orientation-based bullying was most common among youth who indicated a marginalized sexual identity and were transgender or questioning their gender identity. Among youth who were cisgender or did not indicate a gender identity and who indicated their sexual orientation as lesbian or gay, some differences emerged for race and ethnicity. Specifically among that intersection of sexual and gender identities, Latina/x/o and multiracial youth assigned male at birth (51.8%) and Native American and White youth (51.7%) had similar prevalence of sexual orientation-based bullying. While still significantly elevated compared to overall rates, Asian/Pacific Islander and Black youth assigned male at birth (45.4%) had slightly lower prevalence of sexual orientation-based bullying at that intersection of sexual and gender identity.

Discussion

Harassment, bullying, and discrimination based on identity have been identified as barriers to health equity among people with marginalized identities. We aimed to understand experiences of racial/ethnic-, gender-, and sexual orientation-based bullying among youth in two states to understand how unique intersections among social positions were related to bias-based bullying. While there were some differences in the highest prevalence groups by state and by the type of bullying being examined, two primary themes emerged across analyses. Youth who were transgender, gender diverse, or questioning their gender were particularly likely to be the targets of bias-based bullying, especially in combination with other marginalized social positions. Across analyses, the relative influence of each of the social positions varied, pointing to the

Table 3
Results From Top 10 Highest Prevalence Nodes From Exhaustive CHAID for Gender-Based Bullying

MSS (6.8% overall)					CHKS (6.7% overall)				
Prev %	Race	Sexual orientation	Gender identity	Sex	Prev %	Race	Sexual orientation	Gender identity	Sex
64.1	—	LG; P; Q; ?	Transmasc	AMAB	56.7	White; multiracial; NA; missing	LG; B; else	TGD	—
62.2	—	—	Transmasc	AFAB; missing	48.9	API; Latina/x/o; Black	LG; B; else	TGD	—
52.0	—	—	Transfemme	AMAB; missing	38.9	White; multiracial; NA	LG; B; else	Missing	AFAB
49.3	—	—	NB	—	38.2	White; multiracial; NA; missing	LG; B; else	?	AFAB; missing
46.2	Multiracial; Black; NA	Q; ?; else	?	—	36.9	—	?	TGD	—
37.5	—	P; Q	Missing	—	34.4	—	LG	?	AMAB
35.6	—	—	Else	—	33.9	Latina/x/o; Black	LG; B; else	?	AFAB; missing
32.7	—	LG; B; P	?	—	33.3	Black; missing	Straight; ?; missing	?	
19.2	Latina/x/o; API; White; missing	Q; ?; else	?	—	33.3	Missing	LG; B; else	Cis	Missing
18.9	—	—	Transfemme	AFAB	31.6	Latina/x/o; NA	Straight; ?; missing	?	Missing

Note. — Within this intersection of identities, there were no significant differences by the column variable. Missing appears in the table to indicate youth who did not answer a specific social position question, as they are retained in exhaustive CHAID for analysis rather than dropped. Race: Asian and Pacific Islander (API), Black, Latina/x/o, Multiracial, Native American (NA), White. Sexual orientation: straight, lesbian/gay (LG), bisexual (B), pansexual (P), queer (Q), questioning (?), "I don't describe myself in any of these ways" (else). Gender: cisgender (cis), trans feminine (Transfemme); trans masculine (Transmasc); nonbinary (NB); questioning gender (?), "Prefer to describe my gender as something else" (else); transgender and gender diverse (TGD). Sex assigned at birth: assigned female at birth (AFAB), assigned male at birth (AMAB). CHAID = chi-square automatic interaction detection.

Table 4
Results From Top 10 Highest Prevalence Nodes From Exhaustive CHAID for Sexual Orientation-Based Bullying

MSS (7.0% overall)					CHKS (7.4% overall)				
Prev %	Race	Sexual orientation	Gender identity	Sex	Prev %	Race	Sexual orientation	Gender identity	Sex
56.4	—	Else	NB; else	—	60.1	—	LG	TGD; ?	AFAB; missing
53.8	—	P	NB; Transmasc; else; ?	—	58.4	—	B	TGD	—
52.8	—	?	NB; Transmasc	—	56.1	White; NA; multiracial	B	Missing	—
50.0	—	Q	All TGD; missing	—	53.9	—	LG	TGD; ?	AMAB
48.4	—	LG	—	—	52.1	Latina/x/o; NA; multiracial	B	?	
42.3	—	Straight	NB; Transmasc	AFAB	51.9	—	Else	TGD	
41.7	—	B	All TGD; missing	—	51.8	Latina/x/o; multiracial	LG	Cis; missing	AMAB
34.8	—	P	Cis; Transfemme; missing	—	51.7	White; NA	LG	Cis; missing	—
33.8	—	B	Cis	AMAB; missing	45.4	API; Black; missing	LG	Cis; missing	AMAB

Note. — Within this intersection of identities, there were no significant differences by the column variable. Missing appears in the table to indicate youth who did not answer a specific social position question, as they are retained in exhaustive CHAID for analysis rather than dropped. Race: Asian and Pacific Islander (API), Black, Latina/x/o, multiracial, Native American (NA), White. Sexual orientation: straight, lesbian/gay (LG), bisexual (B), pansexual (P), queer (Q), questioning (?), "I don't describe myself in any of these ways" (else). Gender: cisgender (cis), trans feminine (Transfemme); trans masculine (Transmasc); nonbinary (NB); questioning gender (?), "Prefer to describe my gender as something else" (else); all transgender and gender diverse identities together (All TGD). Sex assigned at birth: assigned female at birth (AFAB), assigned male at birth (AMAB). CHAID = chi-square automatic interaction detection.

importance of intersectional frameworks for understanding bias among adolescents.

Transgender, gender diverse, and gender questioning youth experienced high levels of all forms of bias-based bullying, particularly when they held other stigmatized identities as well. This finding was consistent across both Minnesota and California data sets, despite differences in the timeframe of the question (past 30 days vs. past 12 months, respectively) and the wording of the bias-based bullying questions (i.e., both questions asked how many times students were "harassed or bullied" on school property; the CHKS survey also included a definition of bullying). Further, these findings are consistent with the literature on large disparities in discrimination, violence, and harassment for TGD individuals, particularly TGD youth of color (Chan, 2018; Messinger et al., 2021). When combined with microaggressions and other frequent forms of bias that occur at school, in the community, and sometimes at home for TGD youth of color (Sadika et al., 2020), these findings add to our understanding that experiences of victimization among TGD youth of color occur across locations in the United States, with significant frequency, and are motivated by multiple forms of bias.

Our study extends these findings to demonstrate important variation within TGD youth of color. For example, among Minnesota students, the prevalence of sexual orientation-based bullying was more than twice as high among Black, Native American, and multiracial youth who were questioning their gender and indicated a sexual orientation of queer, questioning, or something else when compared to Latina/x/o, Asian or Pacific Islander, and White youth of the same sexual and gender identities. In California, over half of lesbian, gay, bisexual youth who were Latina/x/o, Native American, or multiracial reported sexual orientation-based bullying, which varied by gender identity. Effective prevention programming will need to incorporate antiracist efforts that address sexual and gender identity as well.

In addition, evidence-based prevention strategies are needed that help guide students, staff, and administrators to recognize bias-based bullying among groups of youth who may be invisible in current antiracism prevention programming efforts. For instance, we found that multiracial LGBTQ+ youth experienced the highest rates of race-based bullying. Considering research indicates that people from multiracial and mixed-cultural backgrounds have unique experiences with racialized oppression (Jackson, 2012; Kawaii-Bogue et al., 2018) and report high rates of negative health outcomes (Jackson et al., 2012) relative to monoracial people, schools should prioritize addressing antiracism efforts for multiracial students from diverse backgrounds who may experience race-based harassment and bullying. Antiracism prevention may begin with education around the complexities of multiracial and mixed-cultural experiences across various intersecting social positions as well as how to recognize racialized oppression among multiracial students. This will require schools to not only focus on monoracial bias prevention (e.g., anti-Black racism prevention) but also attend to multiraciality.

While the pattern of findings was generally consistent across data sets, some differences emerged between decision trees for Minnesota and California. In particular, among California adolescents, race, ethnicity, and assigned sex were important in intersections with sexual and gender identity in predicting high prevalence of gender-based bullying. However, in Minnesota, race, ethnicity, and assigned sex were less apparent in the high-prevalence terminal nodes for gender-based bullying. One concern when using exhaustive CHAID is model overfitting such that the tree produced might rely

on sample-specific idiosyncrasies and not be generalizable to other samples. By comparing results across two states and decision trees, even with variations in question wording, we add confidence to the reproducibility of these findings and their conclusions.

Overall prevalence of bias-based bullying was low across forms in both states, which might lead resource-scarce school administrators to conclude that bias-based bullying is not a big problem at their schools. However, this intersectional analysis identified groups of youth with specific social positions who reported three to nine times the prevalence of experiencing bias-based bullying. Many school districts participate in larger, epidemiologic data collection efforts, and nearly all states are engaged in these efforts in some ways as well. Yet, few school districts have statisticians with time and experience to analyze these data comprehensively. Providing data support to school districts would be a tangible way to make use of these data to inform school prevention and response. Exhaustive CHAID analysis, in particular, is amenable to these kinds of approaches, as the resulting decision trees are relatively easy to understand, interpret, and present with minimal training compared to other methods (e.g., multivariable regression with interaction terms).

The inclusion of missing data with exhaustive CHAID provides an interesting challenge for interpretation of findings. Youth's motivations for skipping a question are likely diverse and range from unintentionally skipping it to having difficulty answering the questions because one's own identity, or the response options may not be clear. For example, some youth may have skipped the sexual and/or gender identity questions due to their own evolving understanding or fear about disclosure. Youth who are intersex may not answer the sex assigned at birth question because no intersex option was provided, and sexual orientations and gender identities not included, particularly for California, where nonbinary identities are not included in the question, may similarly limit responses (Frohard-Dourlent et al., 2017). These reasons are speculative and cannot be determined from the current data, which limits conclusions that can be drawn. However, it is instructive that youth who did not answer certain questions—for whatever reason—were represented in these high-prevalence groups. Additional research is needed to explicate these findings.

Strengths and Limitations

This study has a number of strengths, including the very large samples in two states and the inclusion of measures of sexual and gender identity along with race, ethnicity, and sex assigned at birth. Further, the very large sample sizes allow for robust analysis of these quantitative data using exhaustive CHAID, a method well suited for analyses of intersectional research questions. Given these strengths, we were able to examine small groups that are often aggregated or hard to identify in traditional survey research. Even still, there are limitations that must be considered.

These data are cross-sectional, descriptive, and student level; we were unable to examine structural, contextual, or causal factors. Data were collected in school, which may be considered a strength as there is a clear avenue for prevention. However, youth who are frequent targets of bullying and harassment as well as youth with marginalized identities are more likely to miss school or drop out due to feeling unsafe (Russell et al., 2014), and thus may be underrepresented in these analyses. Several limitations exist due to the wording of survey items used in this secondary data analysis. For example, the CHKS's question on gender identity does not include an option for nonbinary or genderqueer youth. Similarly, the wording of the question assessing sex in Minnesota ("what is your biological sex?") is problematic and considered offensive by many trans people (Trans Student Educational Resources, n.d.). The way each survey assessed race and ethnicity also differed; it is likely that heterogeneity in the Latina/x/o group in this recoding has been missed. Future research is needed to examine this issue empirically. While the wording of the bullying items (30 days vs. past year) and the timeframes for data collection in the two data sets do not perfectly overlap, and there were differences in the broader sociopolitical context between 2017 and 2019, the consistency of findings across these timepoints strengthens the conclusions.

Implications

There are a number of protective factors at both the individual and community levels that may buffer the effects of bias-based bullying on health, such as caring adults and supportive policies, and social and political climates (Chan, 2018; Espelage et al., 2018; Gower, Rider, Brown, et al., 2018; Hatzenbuehler et al., 2014; Poteat et al., 2019; Saewyc et al., 2020; Veale et al., 2017). Conversely, living in unsupportive or rejecting contexts may exacerbate both bias-based bullying and health disparities for youth with marginalized identities (Hall, 2018; Hatzenbuehler et al., 2019; Huang & Cornell, 2019). Findings from this study demonstrate the need to bolster these protective factors on behalf of youth with intersecting social positions and call for more research that incorporates the voices of youth with multiply marginalized identities to understand their needs for specific supports and structural change.

In the school context, adolescents live out and reproduce the systems of power and oppression they experience outside the school community. Because these data were collected in schools, findings have direct applications to the school context, including policies and programs to recognize, prevent, and respond to biased-based bullying. In particular, schools and prevention program developers must address the multiple forms of bias that operate in their learning communities. Given the many demands on school administrator and staff time, particularly in light of the coronavirus 2019 pandemic and associated response, there is a need for clear, actionable best practices and policies and evidence-based prevention to guide school efforts to eliminate bias and create school communities that do not allow racism, sexism, homophobia, transphobia, and their associated intersections. While best practice guides are often comprised of high-level takeaways, these findings highlight why granular, actionable practices that incorporate an intersectionality lens and center youth with marginalized identities is necessary for bias-prevention efforts that target specific intersections of power and stigma (e.g., anti-Asian homophobia and transphobia). Effective prevention will require educating students and staff about these kinds of intersecting oppressions and ways to intentionally improve school climate and belonging for youth with marginalized identities.

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