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Inclusive Anti-bullying Policies and Reduced Risk of Suicide Attempts in Lesbian and Gay Youth

Mark L. Hatzenbuehler, Ph.D.^{a,*}, and Katherine M. Keyes, Ph.D.^b^a Department of Sociomedical Sciences, Columbia University, New York, New York^b Department of Epidemiology, Columbia University, New York, New York

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 A B S T R A C T

Purpose: To evaluate whether anti-bullying policies that are inclusive of sexual orientation are associated with a reduced prevalence of suicide attempts among lesbian, gay, and bisexual youths.

Methods: A total of 31,852 11th-grade public school students (1,413 lesbian, gay, and bisexual individuals; 4.4%) in Oregon completed the Oregon Healthy Teens survey in 2006–2008. The independent variable was the proportion of school districts in the 34 counties participating in the Oregon Healthy Teens survey that adopted anti-bullying policies inclusive of sexual orientation. The outcome measure was any self-reported suicide attempt in the past 12 months. We stratified results by sexual orientation.

Results: Lesbian and gay youths living in counties with fewer school districts with inclusive anti-bullying policies were 2.25 times (95% confidence interval [CI], 1.13–4.49) more likely to have attempted suicide in the past year compared with those living in counties where more districts had these policies. Inclusive anti-bullying policies were significantly associated with a reduced risk for suicide attempts among lesbian and gay youths, even after controlling for sociodemographic characteristics (sex, race/ethnicity) and exposure to peer victimization (odds ratio, .18; 95% CI, .03–.92). In contrast, anti-bullying policies that did not include sexual orientation were not associated with lower suicide attempts among lesbian and gay youths (odds ratio, .38; 95% CI, .02–7.33).

Conclusions: Inclusive anti-bullying policies may exert protective effects for the mental health of lesbian and gay youths, including reducing their risk for suicide attempts.

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Amidst several widely publicized suicides among adolescents with a minority sexual orientation in the past year and a half [1], there has been a national conversation about what can be done to reduce and prevent suicides among lesbian, gay, and bisexual (LGB) youths. Within this context, several individuals have initiated court cases against school districts whose policies may

have harmed LGB students by their failure to adopt policies that protect LGB youths [2], including inclusive anti-bullying policies [3]. Although social science data are frequently used in court cases involving issues related to sexual orientation [4,5], there is currently a paucity of research examining the associations between anti-bullying policies and mental health outcomes for LGB students upon which to inform policy recommendations. The goal of the present study was to address this gap in the literature.

Evaluating the associations between anti-bullying policies and LGB youths' mental health has important implications for etiologic and prevention research. Population-based studies of adolescents in the United States have consistently shown that LGB youths' rates of suicide attempts are between two and seven times higher than those of their heterosexual peers [6]. Although

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* Address correspondence to: Mark L. Hatzenbuehler, Ph.D., Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, 722 West 168th Street, Room 549.B, New York, NY 10032.

E-mail address: mlh2101@columbia.edu (M.L. Hatzenbuehler).

these disparities are well-documented, there is comparably less research on the processes that create risk for, or protection against, suicide attempts among LGB youths. Consequently, establishing associations between anti-bullying policies and reduced risk of suicide attempts among LGB youths would provide critical information on social and contextual protective factors within this population and aid in public health intervention efforts.

Recent research has shown that social policies negatively targeting gays and lesbians, including constitutional amendments banning same-sex marriage [7] and the absence of employment nondiscrimination acts [8], are robust predictors of psychiatric morbidity among LGB adults. Whereas negative social policies appear to increase risk for psychopathology in LGB populations, supportive policies and programs may protect LGB individuals against the development of mental health problems [9,10]. For instance, LGB youths who attend schools with Gay-Straight Alliances report less suicidality than youths who attend schools without these programs [11]. These empirical findings are consistent with ecosocial [12] and ecological systems [13] theories, both of which highlight the importance of broad social and contextual influences, including family, school, and neighborhood factors, on health and development. Thus, several lines of evidence suggest that inclusive anti-bullying policies may be associated with reduced prevalence of suicide attempts among LGB youths [7–11]. The current study tested this hypothesis by evaluating whether LGB students living in counties with a greater proportion of school districts with inclusive anti-bullying policies have a lower risk of suicide attempts.

Methods

Sample and setting

We obtained data from the Oregon Healthy Teens (OHT) study. Annual OHT surveys are administered to more than one third of Oregon's eighth- and 11th-grade students attending public schools. Each year, a random sample of districts within counties and schools within districts is selected. Participating students came from 34 counties (no respondents were sampled in the remaining two counties in Oregon). The questionnaire was available in both English and Spanish. All participants were assured that the survey is anonymous and voluntary, and parents provided passive consent for their children to participate. For the current study, we pooled data from the years 2006 (when sexual orientation was first assessed) to 2008 (the most recently available data), to increase the sample size of LGB participants. Sampling for the 2007–2008 years was conducted so that each school would be asked to participate as part of the state sample once in the 2-year period, minimizing the likelihood that the same schools were sampled in multiple years. In 2008, 75.4% of the eighth- and 11th-grade students in participating schools completed the OHT survey.

Measures

Demographic variables including sex and race/ethnicity were obtained via self-report. Sexual orientation, which is only assessed in the survey of 11th graders, was measured with a single item asking respondents to indicate "which of the following best describes you." Four response options were given: (1) heterosexual (straight); (2) gay or lesbian;

(3) bisexual, and (4) not sure. Of the 33,714 original OHT respondents, 30,439 (90.3%) self-identified as heterosexual, 301 (.9%) self-identified as gay or lesbian, and 1,112 (3.3%) self-identified as bisexual. We excluded from analyses participants who indicated that they were "not sure" about their sexual orientation ($n = 653$; 1.9%), which is consistent with previous studies [14]. An additional 1,209 respondents did not complete the sexual orientation item, and were also excluded. Consequently, the final sample size was 31,852. The sociodemographic characteristics of the LGB sample in the OHT study are provided in a previous report [9].

Independent variable

We obtained data on school anti-bullying policies at the district level from the Oregon Department of Education. We analyzed school district websites and high school student handbooks for 197 school districts. If we were not able to obtain policy information from this search (31 school districts), we contacted the individual school district to request this information. Of the 197 districts in Oregon, we were not able to obtain information for 18 districts, which we coded as missing. The missing data were largely clustered within four counties: Of the 36 counties in Oregon, 60% (21 counties) had no missing district data, 31% (11 counties) had only one or two districts with missing data, and 11% (four counties) had more than half of districts with missing data. We conducted sensitivity analyses by removing respondents from the four counties with the most missing data. The magnitude of the results remained unchanged when we removed these counties from the analyses, so the current report included all counties in the analyses.

We first coded school district websites and student handbooks for whether the districts had any anti-bullying policies (these policies had to specifically mention bullying; harassment and antidiscrimination policies were not included in this category). Next, we coded the policies to indicate whether they contained an enumerated list of groups specifically covered by the policy, and finally, whether the enumerated list included sexual orientation. Policies had to include the phrase "sexual orientation" (e.g., in a list of protected class statuses) to be considered to protect LGB youth. Thus, these data made it possible to differentiate among (1) the absence of anti-bullying policies; (2) the presence of anti-bullying policies including specific categories (e.g., gender, race, religion), but not sexual orientation (which are hereafter referred to as "restrictive anti-bullying policies" [This category includes districts with anti-bullying policies but no enumeration of specific protected groups, as well as districts with anti-bullying policies with enumeration of groups, but no mention of sexual orientation]); and (3) anti-bullying policies that were inclusive of sexual orientation (which are hereafter referred to as "inclusive anti-bullying policies").

Because information on location of residence was available only at the county level, we aggregated the measures of anti-bullying policies from the district to the county level by dividing the number of school districts with anti-bullying policies by the total number of school districts in the county. We created variables of the proportion of school districts that had restrictive and inclusive anti-bullying policies within each of the Oregon counties. Of the school districts with available data, 7% had no anti-bullying policies; among districts with anti-bullying policies, 37% did not include sexual orientation as a protected

class status. Of the counties with available data, 15% had no districts with inclusive anti-bullying policies; 18% had fewer than half of their school districts with inclusive policies; and only 15% of the counties had 100% of their school districts with inclusive policies.

Outcome variable

Participants were asked the number of times they attempted suicide during the past 12 months. Given the non-normal distribution, we examined suicide attempts as a dichotomous outcome. The suicide question used in the OHT was based on a measure from the Youth Risk Behavior Surveillance Survey, which showed excellent test–retest reliability ($\kappa = 76.4$) [15,16].

Covariates

We were interested in examining whether anti-bullying policies were associated with reduced risk of suicide attempts after controlling for exposure to peer victimization, a risk factor for suicide attempts among sexual minority adolescents [17,18]. Exposure to peer victimization was assessed by asking participants, “During the last 30 days, have you been harassed at school (or on the way to or from school)?” This item had a “yes” or “no” response option.

Statistical analysis

The analytic strategy consisted of four steps corresponding to the four study aims. First, we calculated differences in suicide attempts and risk factors between LGB and heterosexual youth using basic descriptive cross-tabulations. Second, we tested whether the effect of inclusive anti-bullying policies on suicide attempts varies by sexual orientation. For this aim, we divided the inclusive anti-bullying policy into tertiles based on the distribution in the data. Third, we examined whether inclusive anti-bullying policies were significantly associated with suicide attempts among LGB youth after adjusting for individual-level risk factors (sociodemographic characteristics and peer victimization). For this aim, we entered inclusive anti-bullying policies as a continuous variable, with larger values indicating a higher proportion of districts with inclusive anti-bullying policies within the county. For the second and third study aims, we used Generalized Estimating Equations, a method developed for handling clustered data, in which the observations within each cluster are correlated with each other [19]. Given that OHT respondents were nested within their county of residence, we used Generalized Estimating Equations to account for the correlations among observations from each individual within the same county. Fourth, we repeated the second and third study

aims to determine whether the presence of any anti-bullying policies (i.e., restrictive policies) buffered LGB youth against risk of suicide attempts, or whether these protective effects were only observed for policies that specifically include sexual orientation (i.e., inclusive policies). These analyses therefore tested the specificity of the protective effects of inclusive anti-bullying policies on rates of suicide attempts among LGB youth.

Recent research that has disaggregated bisexuals from gay and lesbian youths has shown that bisexual adolescents are more likely to attempt suicide than gay and lesbian youths [20]; consequently, we separated these groups in all analyses. Given the relatively small number of lesbian and gay participants, we did not stratify analyses by sex. Statistical significance was set at $\alpha = .05$.

Results

Lesbian, gay, and bisexual respondents were significantly more likely to have attempted suicide in the past 12 months than heterosexuals ($\chi^2 = 109.1$; degrees of freedom = 2; $p < .001$). Approximately 21% of lesbian and gay youths and 23% of bisexual youths reported attempting suicide at least once in the previous 12 months, compared with 4.3% of their heterosexual peers. Lesbian, gay, and bisexual adolescents were also more likely to report past-30-day peer victimization (lesbian and gay: 60.2%; bisexual: 56.7%; heterosexual: 28.8%), compared with heterosexual youths. These group differences in peer victimization were statistically significant: $\chi^2 = 175.4$; degrees of freedom = 2; $p < .001$.

Associations between inclusive anti-bullying policies and suicide attempts

We divided the inclusive anti-bullying policies into tertiles ranging from least inclusive (i.e., counties with the smallest proportion of school districts with inclusive policies) to most inclusive (i.e., counties with the largest proportion of school districts with inclusive policies). We examined the prevalence of suicide attempts within each tertile for the three different sexual orientation groups (lesbian/gay, bisexual, and heterosexual).

Among lesbian and gay youths, the risk of suicide attempts was lowest in counties that had the greatest proportion of school districts with inclusive policies (Table 1). The proportion of lesbian and gay respondents attempting past-year suicide within the tertiles was as follows: most inclusive (16.67%); medium (19.05%); and least inclusive (31.08%). Lesbian and gay youths living in the least inclusive counties were 2.25 times (95% confidence interval [CI], 1.13–4.49) more likely to have attempted suicide in the past year compared with those in the most inclusive counties.

Table 1
Inclusive anti-bullying policies and suicide attempts, by sexual orientation

Inclusive anti-bullying policy tertile	Lesbian and gay youths (N = 301)		Bisexual youths (N = 1,112)		Heterosexual youths (N = 30,439)	
	Attempting (%)	OR (95% CI)	Attempting (%)	OR (95% CI)	Attempting (%)	OR (95% CI)
Least Inclusive	31.08	2.25 (1.13–4.49)	22.11	1.08 (.75–1.56)	4.72	1.06 (.93–1.22)
Medium Inclusive	19.05	1.18 (0.57–2.43)	25.65	1.32 (.94–1.84)	3.77	.84 (.73–.96)
Most Inclusive	16.67	1.00	20.76	1.00	4.45	1.00

We divided the inclusive anti-bullying policy variable into tertiles ranging from least inclusive (i.e., counties with the smallest proportion of school districts with inclusive policies) to most inclusive (i.e., counties with the largest proportion of school districts with inclusive policies). Data presented are the proportions of respondents who attempted suicide in each tertile, with results stratified by sexual orientation.

CI = confidence interval; OR = odds ratio.

In contrast, we did not observe this pattern for the bisexual or heterosexual youths. Among bisexual youths living in the most inclusive counties, 20.76% attempted suicide in the past year, compared with 25.65% in the medium and 22.11% in the least inclusive counties. Bisexual youths living in the least inclusive counties were not more likely to attempt suicide than those living in the most inclusive counties (odds ratio [OR] = 1.08; 95% CI, .75–1.56). Similarly, the proportion of heterosexual respondents attempting suicide was nearly identical across tertiles: least inclusive (4.72%); medium (3.77%); and most inclusive (4.45%). Heterosexual youths were no more likely to attempt suicide in the least inclusive compared with the most inclusive counties (OR = 1.06; 95% CI, .93–1.22).

Having documented a protective effect of inclusive anti-bullying policies only among lesbian and gay youths, we next tested whether there was an association between inclusive anti-bullying policies and suicide attempts over and above peer victimization experiences (Table 2). In the full sample, peer victimization was significantly more likely to occur in the least inclusive (31.59%) compared with the most inclusive (29.69%) counties (Wald $F = 4.44$; $p = .01$). Even after adjusting for peer victimization and sociodemographic characteristics (sex and race/ethnicity), a higher proportion of districts with inclusive anti-bullying policies was associated with reduced risk for suicide attempts among lesbian and gay youths (OR = 0.18; 95% CI, .03–.92).

Tests of specificity

We conducted follow-up analyses to determine whether these effects were specific to inclusive anti-bullying policies. Results indicated that having any anti-bullying policy (i.e., restrictive policies that did not include sexual orientation as a protected class status) did not protect lesbian and gay youths from attempting suicide. The proportion of gay and lesbian respondents attempting suicide did not differ between the low- and high-inclusion categories: 21.56% and 20.00%, respectively. Moreover, after controlling for other established risk factors for suicide attempts (Table 3), restrictive anti-bullying policies did not buffer lesbian and gay youths against attempting suicide (OR = .38; 95% CI, .02–7.33).

Discussion

Suicide is the third leading cause of death among youths aged 15–24 years [21], and studies have consistently documented

sexual orientation–related disparities in suicide attempts among adolescents [6,22]. However, the prevalence of suicide attempts among LGB youths does not appear to be invariant across social context. For instance, a recent study found that the risk of suicide attempts was 20% higher among LGB youths living in communities characterized by lower support for gays and lesbians (e.g., counties with a lower density of same-sex couples and fewer schools with protective policies), compared with LGB youths living in more supportive communities [9]. In addition, data from the pooled 2001–2009 Youth Risk Behavior Surveillance Survey studies showed that, across 13 states and cities that included a measure of sexual identity, rates of past-year suicide attempts among gay and lesbian youths ranged from a low of 15.1% to a high of 34.3%, over a twofold difference [23]. This geographic variation in the prevalence of suicide attempts among lesbian and gay adolescents suggests that social and contextual factors likely contribute to sexual orientation disparities in suicide attempts. The current study examined school policies, and in particular inclusive anti-bullying policies, as one social/contextual factor that may lower the risk of suicide attempts among LGB adolescents. We highlight four key findings below.

First, as the proportion of school districts that adopted inclusive anti-bullying policies increased, rates of past-year suicide attempts among lesbian and gay youths decreased. Whereas 31% of lesbian and gay adolescents attempted suicide in counties where school districts were the least likely to adopt inclusive anti-bullying policies, only 17% attempted suicide in counties with the greatest proportion of school districts with inclusive policies. In models adjusted for established risk factors at the individual level (sex, race/ethnicity, and peer victimization), inclusive anti-bullying policies remained significantly associated with lower rates of suicide attempts among lesbian and gay youths.

Second, peer victimization of all youth was also less likely to occur in counties with inclusive anti-bullying policies. These results not only suggest one potential mechanism linking inclusive anti-bullying policies to reduced risk of suicide attempts in lesbian and gay youth, but also demonstrate that policies protecting sexual minority adolescents may confer benefits for heterosexual youths as well [9].

Third, the results documented specificity of the protective effects of inclusive anti-bullying policies to lesbian and gay youths. Inclusive anti-bullying policies did not reduce the risk of suicide attempts among bisexual youths. Recent studies that have disaggregated gay and lesbian from bisexual youths suggest one possible explanation for these results. This research has

Table 2
Association between inclusive anti-bullying policies and suicide attempts, by sexual orientation, in the Oregon Healthy Teens Study (2006–2008)

	Lesbian and gay youths (N = 301)	95% CI	Bisexual youths (N = 1,112)	95% CI	Heterosexual youths (N = 30,439)	95% CI
	OR		OR		OR	
Model 1: unadjusted model						
Inclusive anti-bullying policy	.16	(.04–.64)	.89	(0.43–1.83)	.81	(.61–1.07)
Model 2: adjusted model						
Inclusive anti-bullying policy	.18	(.03–.92)	.83	(.35–1.71)	.81	(.60–1.09)
Sex	1.95	(1.01–3.79)	1.47	(1.02–2.12)	1.63	(1.44–1.84)
Race/ethnicity	2.55	(1.21–5.38)	1.44	(1.03–2.03)	1.57	(1.38–1.79)
Peer harassment	7.72	(3.12–19.13)	2.98	(2.14–4.16)	3.18	(2.82–3.59)

Data represent the Generalized Estimating Equations model predicting suicide attempts in the past 12 months. We entered inclusive anti-bullying policies as a continuous variable, ranging from 0 to 1.0. Higher values indicate a greater proportion of districts with inclusive anti-bullying policies. Sex: male = 0; female = 1. Race/ethnicity: non-white = 0; white = 1. Peer harassment (0 = no peer victimization in past 30 days).

Abbreviations as in Table 1.

Table 3

Associations between restrictive anti-bullying policies and suicide attempts among lesbian and gay youth, in Oregon Healthy Teens Study (2006–2008)

Parameters	OR	95% CI
Restrictive anti-bullying policies	.38	(.02–7.33)
Sex	1.99	(1.03–3.83)
Race/ethnicity	2.66	(1.30–5.24)
Peer harassment	8.12	(3.25–30.31)

Data represent the Generalized Estimating Equations model predicting suicide attempts in the past 12 months. We entered restrictive anti-bullying policy policies as a continuous variable, ranging from 0 to 1.0. Higher values indicate a greater proportion of districts with inclusive anti-bullying policies. Sex: male = 0; female = 1. Race/ethnicity: non-white = 0; white = 1. Peer harassment (0 = no peer victimization in past 30 days).

Abbreviations as in Table 1.

illustrated that risk factors for mental health problems among bisexual youths are somewhat distinct from those for individuals with same-sex sexual orientations [24], which suggests that factors benefiting gay and lesbian youths do not always generalize to bisexual youths. Given the high rates of suicide attempts among bisexual youths observed in this study and others [20], the identification of social and contextual factors that protect bisexual youths from engaging in suicidal behaviors represents an important avenue for future inquiry. In addition, inclusive anti-bullying policies were not associated with a decreased risk for suicide attempts in the heterosexual sample. It is likely that these policies are more relevant to subgroups of heterosexual youths that are targets of bullying, such as the overweight or obese [25]. However, we did not code for other groups that were protected in these inclusive policies, which was beyond the scope of this study. This remains an important topic that can be examined in subsequent research with this sample.

Fourth, the results documented specificity of the effects to inclusive anti-bullying policies. That is, policies had to include sexual orientation in the list of protected class statuses to be associated with significantly lower rates of suicide attempts among lesbian and gay youths. There was not sufficient evidence to indicate that restrictive anti-bullying policies (which did not enumerate sexual orientation) exerted a mental health benefit for lesbian and gay students. These results therefore suggest the importance of specifically including sexual orientation in anti-bullying policies that enumerate protected groups, to signal supportive and inclusive school environments for lesbian and gay youths. However, over three quarters of the school districts had restrictive anti-bullying policies; thus, most students, both LGB and heterosexual, were in districts with at least some anti-bullying policies. The limited range for this variable may have reduced our ability to detect significant results for the restrictive anti-bullying policies.

This study had several limitations. The OHT survey assesses youths attending public schools. Results are therefore not generalizable to students attending private or alternative schools, or to adolescents who do not attend school. In addition, a quarter of school districts that were randomly selected declined to participate in the study. The OHT does not provide information on these school districts. Consequently, we cannot determine to what extent differential nonresponse by school district might affect the study's results.

In addition to issues of sampling, there are measurement limitations. In particular, the number of questions that can be included in large-scale surveys such as the OHT is necessarily limited, especially given the time constraints involved in

administering questionnaires in classroom settings. Thus, in many cases, the OHT survey relied on single-item questions, including those for suicide attempts and peer victimization. Although the reliability of these measures has been well validated [15,16], future studies examining similar research questions would benefit from more detailed assessments of suicide attempts and associated risk factors.

Our measure of school policies is also subject to a number of limitations. First, because the OHT study does not release information on the individual schools participating in the survey, it was not possible to obtain data on whether these policies were enforced in the schools. An important direction for future studies is to conduct detailed assessments of the extent to which school policies are consistent with daily practices. Second, school policies on bullying are determined at the district level; however, data had to be aggregated to the county, because participants' residence was available only at this level of analysis. This approach could introduce potential error in the county variable; however, this would likely bias us toward the null, because we would not expect that misclassification is related to the proportion of students attempting suicide within the county. Consequently, these results are likely a conservative estimate of the association between anti-bullying policies and suicide attempts among lesbian and youth.

A final study limitation is that the data are cross-sectional. Consequently, we are unable to determine whether anti-bullying policies are causally related to decreases in suicide attempts among lesbian and gay youth, or whether such policies are merely a marker of more supportive environments known to protect LGB youth [9]. Future studies with stronger research designs are needed to strengthen causal inferences regarding the effect of anti-bullying policies on LGB health. For instance, quasi-experimental designs can be used to compare rates of suicide attempts among LGB youth before and after inclusive anti-bullying policies are implemented.

Despite these limitations, the current study has several methodological advantages for testing relationships between anti-bullying policies and suicide attempts. The large, population-based sample increases generalizability of the results and minimizes biases that may occur with convenience samples of LGB youths [26]. Moreover, unlike many previous studies [27], the LGB and heterosexual participants in the OHT study were recruited using identical sampling methods (i.e., through schools), which further diminished sampling biases [28]. An additional strength was the ability to document associations between social policies and mental health at geographic scales below the state level. Most studies that have examined the health consequences of policies targeting gays and lesbians have been conducted at the state level [7,8]. Because the OHT study released data at the county level, we were able to use measures of ecological environments that are more proximal to LGB youth.

This study provides a significant contribution to the literature on social determinants of suicide attempts among sexual minority youths. In particular, the results indicate that the social environments in which lesbian and gay adolescents are embedded can shape their mental health, independent of individual-level characteristics. Schools are key social contexts in which important health and developmental processes unfold for adolescents [29]. In documenting associations between inclusive anti-bullying policies in schools and reduced risk of suicide attempts among lesbian and gay youth, this study lends further empirical support to the argument that social policies exert

downstream health effects [30,31]. Consequently, altering negative social environments surrounding LGB youths through policy-level changes may ultimately lead to reductions in sexual orientation–related disparities in suicide attempts, an important public health priority [32].

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