The Relationship between State-Level Policy and Mental Health among Sexual Minority Youth in the United States

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ABSTRACT

This study sought to investigate the effect of state-level policies, pertaining to hate crimes and mental health care, on the association between sexual orientation and the prevalence of depression, suicidal ideation, suicide attempt, and bullying amongst adolescents. State-level policies included whether hate crime laws included sexual orientation as a protected category, and rates of follow-up care after hospital discharge amongst acutely mentally ill youth covered by public health insurance (Medicaid or the Children's Health Insurance Program; CHIP). Data were from the 2019 State-Level Youth Risk Behavior Survey (YRBS), completed by a representative sample (N = 153,215) of U.S. students in grades 9-12 across 44 states. The YRBS is one of the few population-based studies to gather sexual orientation data in a youth sample. Compared with living in states with hate crime laws extending protections to lesbian, gay, and bisexual (LGB) people, living in states without inclusive hate crime laws did not predict a significantly stronger association between LGB status and mental health. However, the association between LGB status and electronic (i.e., cyber) bullying was significantly greater in states with hate crime laws that excluded sexual orientation as a protected category than in states with inclusive hate crime laws. The association between LGB status and suicide attempt was significantly greater in states with lower rates of follow-up mental health care for acutely ill youth than in states with higher rates of follow-up care. This is the first known study to find an association between residing in a state with higher quality government-funded mental health care for acutely ill youth and reduced suicide attempt among LGB youth. These findings underscore the urgent need for state-level policies that increase legal protections and improve access to mental health care for sexual minority youth.

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GENERAL AUDIENCE ABSTRACT

This study investigated the relationship between state-level policies, mental health, and bullying among lesbian, gay, and bisexual (LGB) high school students. State-level policies included whether hate crime laws included sexual orientation as a protected category, and rates of follow-up care after hospital discharge amongst severely mentally ill youth enrolled in Medicaid or the Children's Health Insurance Program (CHIP). Data were from the 2019 State-Level Youth Risk Behavior Survey (YRBS), completed by 153,215 U.S. students in grades 9-12 across 44 states. The YRBS is one of the few large studies to gather information about sexual orientation in a youth sample. Participants were more likely to be cyber-bullied if they lived in states that didn't include sexual orientation as a protected category. LGB high school students living in these states were at even greater risk of being cyber-bullied than their heterosexual peers. Youth residing in states with better follow-up care were less likely to attempt suicide. LGB youth living in states with worse follow-up care were at even greater risk of attempting suicide than their heterosexual peers. This is the first known study to find a relationship between residing in a state with higher quality government-funded mental health care and reduced suicide attempt among LGB youth. These findings underscore the urgent need for state-level policies that increase legal protections and improve access to mental health care for sexual minority youth.

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Introduction

"… person's development is profoundly affected by events occurring in settings in which the person is not even present." (p. 3, Bronfenbrenner, 1979)

Approximately 10.5% of high school students in the United States identify as lesbian, gay, or bisexual (LGB; Kann et al., 2018). This estimate was derived from the Youth Risk Behavior Surveillance System (YRBSS), which administers one of the few population-based studies that gathers sexual orientation data among youth. This figure is suspected to underestimate the true prevalence of LGB adolescents due to methodological variation (e.g., sexual orientation may be measured by self-identification, behavior, attraction, and/or relationships), confidentiality concerns, and stigma (Gates, 2011). National rates of gender diversity have proven even more elusive. Each new generation has been more inclined to identify as something other than cisgender or heterosexual, with 1 in 6 Generation Z ("Gen Z") adults identifying as lesbian, gay, bisexual, or transgender (Jones, 2021). There is debate as to whether prevalence has truly increased, or rather if individuals have become increasingly comfortable disclosing their sexual orientation and gender identity due to sociocultural and political changes (e.g., the legalization of same-sex marriage in 2015). On March 31st, 2022, the Biden-Harris Administration announced their proposal to allocate $10 million to fund research regarding how best to add questions about sexual orientation and gender identity (SOGI) to the Census Bureau's American Community Survey. This commitment underscores the historical shortcomings and pressing need for SOGI data collection.

The Trevor Project's 2020 National Survey is the largest survey of lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth mental health ever conducted, including over 40,000 participants. Forty percent of surveyed youth endorsed seriously considering suicide within the past year (The Trevor Project, 2020). Although COVID-19 has had documented negative mental

health effects across populations, the pandemic alone cannot explain these high rates of suicidality; in 2019, 39% of LGBTQ youth reported that they had seriously considered suicide (The Trevor Project, 2019). Furthermore, sexual minority students are over three times as likely to attempt suicide relative to their heterosexual peers (Raifman et al., 2020). These figures underscore the urgent need for policy aimed at improving the mental health of LGBTQ youth.

The Minority Stress Model (Meyer, 2003; see Figure 1) proposes that stigma and discrimination damage mental health at three different levels: distal (e.g., discriminatory laws, physical assault), interactive proximal (e.g., expectation of rejection), and internalized proximal (e.g., internalized homophobia). This model was originally developed to explain the disproportionate mental health burden that sexual minority populations bear, and has since been expanded to include additional minorities including gender expansive populations, racial and ethnic minorities, and other minoritized populations.

Clinical psychological research regarding sexual minority populations has historically focused on variables in the proximal stressor domain. And yet, same-sex marriage was only legalized by the U.S. Supreme Court in 2015, and sexual minority Americans continue to face forms of institutional discrimination that qualify as distal stressors. As recently as March 28th, 2022, Florida's governor signed the Parental Rights and Education Act into law, which bans schools from teaching students about sexual orientation and gender identity prior to fourth grade.

Dr. Mark Hatzenbuehler has been a pioneer in studying the impact of institutional discrimination—and more specifically, state-level policies—on the mental health of lesbian, gay, and bisexual (LGB) people. In 2009, Hatzenbuehler et al. published a study linking a lack of state-level protections against employment discrimination and hate crimes based on sexuality to higher psychiatric morbidity among LGB adults as compared to heterosexual adults.

Hatzenbuehler et al. (2010) also found that psychiatric disorders increased significantly for LGB people living in states that instituted bans on same-sex marriage in 2004 and 2005 as compared to LGB people residing in states that that did not institute this ban. Similarly, Rostosky et al. (2009) found that LGB adults residing in states that implemented same-sex marriage bans experienced more psychological distress than LGB adults residing in states without the ban.

Regarding sexual minority youth, Hatzenbuehler (2011) found that social environmental variables (e.g., the proportion of same-sex couples residing in the county, school antibullying policies, etc.) were associated with suicide attempts among LGB 11th grade students residing in Oregon. Participants' risk of suicide attempt was 20% higher in unsupportive environments in comparison to supportive environments. An analysis of this same sample of students revealed that risk of suicide attempt amongst lesbian and gay adolescents doubled if they resided in counties with fewer districts with inclusive anti-bullying policies as compared to those living in counties in which more districts had enacted inclusive anti-bullying policies (Hatzenbuehler & Keyes, 2013).

The aim of the current study is to determine whether there is a relationship between state-level policy and the mental health of lesbian, gay, and bisexual high school students. In addition to attempting to replicate Hatzenbuehler's findings regarding the relationship between inclusive state-level hate crime laws and LGB mental health in a youth sample, this study will also investigate whether the quality of government-funded mental health care services has a disproportionate impact on LGB youth as compared to heterosexual youth.

Medicaid and Children's Health Insurance Program (CHIP)

Medicaid was signed into law in the United States in 1965 to provide healthcare coverage for low-income people. Each state administers Medicaid differently, resulting in state-level variation. In 1997, the Children's Health Insurance Program (CHIP) was signed into law to provide healthcare coverage to children in families with household incomes too high to qualify for Medicaid and who cannot afford private health insurance. These programs gather rich national data, including whether children and adolescents ages 6-17 who were hospitalized for mental illness and/or self-harm had a follow-up appointment with a mental health provider within 7 days after discharge (see Figure 2) and within 30 days after discharge (see Figure 3).

The weeks following discharge from inpatient psychiatric care are a critical period for suicide risk and rehospitalization. In a national population-based study of 238 psychiatric patients who died within 3 months of hospital discharge, 43% committed suicide within the first month of discharge and 47% committed suicide prior to their first follow-up appointment (Hunt et al., 2009).

The percentage of Medicaid/CHIP-insured youth who received mental health follow-up care (within 7, or within 30 days) following discharge will be used as an indicator of the quality of publicly available mental health care for acutely mentally ill youth within each state. Notably, this variable is not singularly relevant to LGB youth. However, LGB people are overrepresented in inpatient mental health care settings. According the 2015 National Survey on Drug Use and Health, LGB participants were over twice as likely to have received inpatient mental health treatment in the past year as compared to heterosexual participants (Medley et al., 2016). Given this overrepresentation in inpatient settings, this study will investigate whether mental health follow-up care is uniquely impactful for LGB youth as compared to heterosexual youth.

Hypotheses

1. At the state level, LGB youth will demonstrate significantly higher rates of depression, suicidal ideation, and suicide attempt as compared to heterosexual youth.

2. LGB youth residing in states with hate crime laws that do not include sexual orientation as a protected category will demonstrate higher rates of depression, suicidal ideation, and suicide attempt as compared to LGB youth residing in states with inclusive hate crime laws. Furthermore, the association between LGB status and mental health (depression, suicidal ideation, and suicide attempt) will be significantly greater in states without inclusive hate crime laws than in states with inclusive hate crime laws.

3. The association between LGB status and bullying will be significantly greater in states without inclusive hate crime laws than in states with inclusive hate crime laws.

4. LGB youth residing in states with lower rates of follow-up care for mentally ill youth (covered by Medicaid or CHIP) after hospital discharge will demonstrate higher rates of depression, suicidal ideation, and suicide attempt as compared to LGB youth residing in states with higher rates of follow-up care. Furthermore, the association between LGB status and mental health (depression, suicidal ideation, and suicide attempt) will be significantly greater in states with lower rates of follow-up care than in states with higher rates of follow-up care.

5. The association between LGB status and mental health (depression, suicidal ideation, and suicide attempt) will be significantly greater in states with a less supportive climate (as measured by policy interaction variables) than in states with a more supportive climate.

Method

Author Positionality

I acknowledge my standpoint as a white cisgender heterosexual adult woman, and that my positionality influenced this project to some extent. I believe the voices and lived experiences of LGBTQ+ individuals, people of color, and adolescents should be centered in decision-making processes impacting their lives.

Dataset and Participants

Within the Youth Risk Behavior Surveillance System (YRBSS), there are a number of Youth Risk Behavior Surveys (YRBS) designed to monitor health behaviors among high school students. At least 265 studies have made use of the YRBS data from 1990 to 2019 (Knight et al., 2019). The 2019 YRBS datasets are publicly available via the Centers for Disease Control and Prevention website (Centers for Disease Control and Prevention, 2019). The 2019 State-Level YRBS was used for this study, which consisted of a self-administered anonymous survey completed by a representative sample of U.S. students in grades 9-12 across 44 states. Following data cleaning and quality control, 182,491 usable surveys were included in the final published dataset; 153,215 respondents provided sexual orientation information and were included in this study. 10.7% of participants endorsed that they identified as gay, lesbian, or bisexual. All sites did not include a question about transgender identity and no sites included a question about nonbinary, genderfluid, or genderqueer identity; therefore, prevalence of gender minority students cannot be assessed with this dataset. With only binary sex options provided on the survey, 50.6% identified as male and 49.4% identified as female. Regarding race and ethnicity, 52.6% were white, 12.4% were Black/African American, 18.8% were Hispanic/Latino, 1.8% were American Indian/Alaska Native, 4.7% were Asian, 1.6% were Native Hawaiian/Other

Pacific Islander, and 5.5% were multiracial (non-Hispanic). Please see Underwood et al. (2020) for a more detailed overview of the 2019 YRBS methodology.

Variables

Sexual Orientation. Sexual orientation was dichotomized into youth who endorsed that they were gay, lesbian, or bisexual, and youth who endorsed that they were straight/heterosexual. Youth who endorsed that they were "not sure" about their sexual orientation were not included in this study.

Hate Crime Laws. In an effort to replicate Hatzenbuehler et al.'s (2009) findings in a youth sample, whether each state specified sexual orientation as a protected category in hate crime laws in 2019 were coded as a dichotomous variable. The number of years the inclusive hate crime law has been in place prior to 2019 was included as a covariate in relevant analyses, due to the possible delay between policy implementation and changes in lived experiences.

Medicaid and Children's Health Insurance Program (CHIP). Using the Mathematica analysis of Medicaid and CHIP Program System reports for the Child Core Set FFY 2019 reporting cycle, the percentage of discharged youth ages 6-17 covered by Medicaid or CHIP who received follow-up care from a mental health provider within 7 days after hospitalization for mental illness or self-harm was included as a state-level policy variable, as well as the percentage of these youth who received a follow-up care a mental health provider within 30 days after discharge. Higher rates on these measures are considered indicators of superior mental health care. Five states did not report 7-day follow-up or 30-day follow-up rate data to the Centers for Medicare & Medicaid Services (CMS): Colorado, Delaware, Georgia, Idaho, and Montana. Two states were excluded because they did not use Child Core Set specifications to calculate the measure: New York and Oregon.

Mental Health. Depression was measured using the item, "During the last 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?" 63.8% of LGB youth endorsed this item. Suicidal ideation was measured using the YRBS item "During the past 12 months, did you ever seriously consider attempting suicide?" 44.3% of LGB youth in the sample endorsed this item. Suicide attempts were measured using the YRBS item, "During the last 12 months, how many times did you actually attempt suicide?" 21.6% of LGB youth in the sample endorsed this item.

Supportive State Climate. In an attempt to capture the supportiveness of state-level climate, two interaction variables (inclusive hate crime laws x Medicaid/CHIP 7-day post-discharge follow-up rate; inclusive hate crime laws x Medicaid/CHIP 30-day post-discharge follow-up rate) were created.

Bullying. School-based bullying was measured using the YRBS item "During the past 12 months, have you ever been bullied on school property?" 27.9% of LGB youth in the sample endorsed this item. Electronic bullying was measured using the YRBS item, "During the past 12 months, have you ever been electronically bullied? (Count being bullied through texting, Instagram, Facebook, or other social media)." 26.3% of LGB youth in the sample endorsed this item.

Housing Stability. In an effort to include a proxy variable for socioeconomic status, the YRBS item regarding where the participant usually slept in the last 30 days was dichotomized into "stable" housing (e.g., in their parent or guardian's home) or "unstable" housing (e.g., in someone else's home because their guardian cannot afford housing, in a shelter, in a motel, in a campground, etc.). This variable was uniquely important due the documented disproportionate prevalence of housing instability amongst LGB people (Wilson et al., 2020).

Statistical Analysis

The analytic strategy was derived from Hatzenbuehler et al. (2009) in an attempt to replicate their findings in a youth sample, using SPSS Statistics 27.0.1.0 (IBM Corp., 2020). First, basic descriptive cross-tabulations were generated to determine whether there was a difference in depression, suicidal ideation, and suicide attempt prevalence between LGB youth and heterosexual youth. The Human Rights Campaign (Roberts, 2020) has already analyzed some of these data at the national level, and reported that 21% of gay and lesbian youth have attempted suicide as compared to 22% of bisexual youth and 7% of heterosexual youth. Chi-square tests were then conducted to determine whether these differences were statistically significant. Odds ratios (OR) were estimated to descriptively determine whether the effects differed qualitatively between sexual orientation groups, including within racial and ethnic groups. Next, it was tested whether differences in disorder prevalence were modified by the presence of state-level policy by using binomial logistic regression. The odds ratio (OR) in each state group was estimated to descriptively determine whether the effects differed qualitatively between groups. It was then examined whether the interaction between sexual orientation and state-level policy was significant. The interaction directly tested whether the association between sexual minority status, depression, and suicidal ideation differed across state-level policy. Control variables included sex, grade, race, ethnicity, and housing stability; age was not included due to multicollinearity concerns with the grade variable.

Results

Sociodemographic characteristics of the respondents are shown in Table 1. 72.6% of lesbian, gay, and bisexual youth endorsed that their sex was female as compared to 47% of heterosexual youth. Interpretability is limited given that this demographic item only included binary options (male or female). 7.7% of lesbian, gay, or bisexual youth experienced unstable housing as compared to only 3.1% of heterosexual youth. A lower percentage of LGB youth identified as white as compared to the heterosexual sample, and a higher percentage of LGB youth were multiracial as compared to the heterosexual cohort.

Consistent with Hypothesis 1, both at a national level (Table 2) and at the state level (Table 3), LGB high schoolers demonstrated significantly higher rates of depression, suicidal ideation, and suicide attempt as compared to heterosexual high schoolers. These differences held within racial and ethnic groups (Table 4), with white LGB youth experiencing the highest odds of endorsing depression as compared to their white heterosexual peers, and American Indian/Alaska Native LBG youth experiencing the highest odds of endorsing both suicidal ideation and of suicide attempt as compared to their heterosexual American Indian/Alaska Native peers.

Hypothesis 2 was only partially supported. Chi-square tests revealed that LGB youth residing in states without hate crime laws that include sexual orientation did not demonstrate higher rates of depression or suicidal ideation as compared to LGB youth residing in states with inclusive hate crime laws (see Table 5). LGB youth residing in states without hate crime laws that include sexual orientation did demonstrate higher rates of suicide attempt than LGB youth residing in states with inclusive hate crime laws $\chi^2(1) = 12.809$, $p < .001$. However, this association was very small $\varphi = 0.031$, $p < .001$.

A binary logistic regression was performed to ascertain the effects of sexual orientation and the presence of inclusive hate crime laws on the likelihood that participants experienced depression in the last year. The logistic regression model was statistically significant, $\chi 2(13) = 7394.962$, $p = .000$. The model explained 12% (Nagelkerke R^2) of the variance in depression and correctly classified 70% of cases. The Hosmer and Lemeshow test was not significant ($p = .320$) indicating that the model was not a poor fit. LGB youth were 3.627 times more likely to endorse depression than heterosexual youth. The absence of inclusive hate crime laws was associated with an increased likelihood of endorsing depression (1.077x) amongst all youth. When the interaction term between sexual orientation and state-level policy was included as a covariate, it did not add significantly to the model ($p = .739$); thus the association between sexual minority status and depression did not differ across state-level hate crime law policy.

A binary logistic regression was performed to ascertain the effects of sexual orientation and the presence of inclusive hate crime laws on the likelihood that participants experienced suicidal ideation in the last year. Although the logistic regression model was statistically significant overall, inclusive hate crimes did not significantly add to the model ($p = .770$), nor did interaction term between sexual orientation and state-level policy ($p = .167$).

A binary logistic regression was performed to ascertain the effects of sexual orientation and the presence of inclusive hate crime laws on the likelihood that participants attempted suicide at least once in the last year. The presence of inclusive hate crimes did not significantly add to the model ($p = .056$), nor did interaction term between sexual orientation and state-level policy ($p = .919$).

A binary logistic regression was performed to ascertain the effects of sexual orientation and the presence of inclusive hate crime laws on the likelihood that participants experienced

bullying in school within the last year. The number of years the inclusive hate crime law had been in place was included as a covariate, which met the assumption of linearity (i.e., linearity of the logit) in relationship to school-based bullying using the Box-Tidwell procedure. The logistic regression model was statistically significant, $\chi 2(14) = 2527.567$, $p < .001$. The model explained 4.9% (Nagelkerke R^2) of the variance in school-based bullying and correctly classified 80.4% of cases. However, the Hosmer and Lemeshow test was significant ($p < .005$) indicating a poor model fit. LGB youth were 2.148 times more likely to endorse depression than heterosexual youth. The absence of inclusive hate crime laws was associated with an increased likelihood of being bullied at school (1.587x). When the interaction term between sexual orientation and state-level policy was included as a covariate, it did not add significantly to the model ($p = .362$); thus the association between sexual minority status and school-based bullying did not differ across state-level hate crime law policy.

A binary logistic regression was performed to ascertain the effects of sexual orientation and the presence of inclusive hate crime laws on the likelihood that participants experienced electronic bullying within the last year. The number of years the inclusive hate crime law had been in place was included as a covariate, which met the assumption of linearity (i.e., linearity of the logit) in relationship to electronic bullying using the Box-Tidwell procedure. The logistic regression model was statistically significant, $\chi 2(14) = 2591.938$, $p < .001$. The model explained 5.4% (Nagelkerke R^2) of the variance in electronic bullying and correctly classified 84.5% of cases. However, the Hosmer and Lemeshow test was significant ($p < .001$) indicating a poor model fit. LGB youth were 1.934 times more likely to endorse electronic bullying than heterosexual youth. The absence of inclusive hate crime laws was associated with an increased likelihood of electronic bullying (1.682x). When the interaction term between sexual orientation

and state-level policy was included as a covariate, it added significantly to the model (p <.05). Thus the association between sexual minority status and electronic bullying differed across state-level hate crime law policy, partially supporting Hypothesis 3 (see Table 6).

Neither of the Medicaid variables met the assumption of linearity (i.e., linearity of the logit) in relationship to depression using the Box-Tidwell procedure. An attempt was made to correct the nonlinearity using a power transformation. Lambdas rendered were approximately equivalent to 1, suggesting that no transformation was required. Thus, binary logistic regressions could only be conducted with suicidal ideation and suicide attempt as the dependent variables in the Medicaid analyses. All other assumptions of logistic regression were met.

A binary logistic regression was performed to ascertain the effects of sexual orientation and state-level percentage of Medicaid follow-up care within 7 days following psychiatric discharge on the likelihood that participants experienced suicidal ideation in the last year. The percentage of Medicaid 7-day follow-up care did not significantly add to the model (p =.516), nor did the interaction term between sexual orientation and 7-day follow-up care (p =.104).

A binary logistic regression was performed to ascertain the effects of sexual orientation and state-level percentage of Medicaid follow-up care within 7 days following psychiatric discharge on the likelihood that participants attempted suicide at least once in the last year. The logistic regression model was statistically significant, $\chi 2(13) = 1661.690$, $p < .001$. The model explained 9.1% (Nagelkerke R^2) of the variance in suicide attempt and correctly classified 91.5% of cases. However, the Hosmer and Lemeshow test was significant ($p < .05$) indicating a poor model fit. LGB youth were 3.368 times more likely to have attempted suicide in the past year as compared to heterosexual youth. Higher rates of Medicaid 7-day follow-up psychiatric care were associated with a decreased likelihood of attempting suicide (.997x). When the interaction term

between sexual orientation and Medicaid 7 day follow-up rate was included as a covariate, it added significantly to the model (p <.05) and the Hosmer and Lemeshow Test was nonsignificant (p = .207), indicating that the model was no longer a poor fit. Thus the association between sexual minority status and suicide attempt differed across state-level variations in 7-day follow-up rate (see Table 7).

A binary logistic regression was performed to ascertain the effects of sexual orientation and state-level percentage of Medicaid follow-up care within 30 days following psychiatric discharge on the likelihood that participants experienced suicidal ideation in the last year. The percentage of Medicaid 30-day follow-up care did not significantly add to the model (p =.884), nor did interaction term between sexual orientation and 30-day follow-up care (p =.771).

A binary logistic regression was performed to ascertain the effects of sexual orientation and state-level percentage of Medicaid follow-up care within 30 days following psychiatric discharge on the likelihood that participants attempted suicide at least once in the last year. The logistic regression model was statistically significant, $\chi 2(13) = 1678.546$, $p < .001$. The model explained 9.2% (Nagelkerke R^2) of the variance in suicide attempt and correctly classified 91.5% of cases. However, the Hosmer and Lemeshow test was significant ($p < .05$) indicating a poor model fit. LGB youth were 3.379 times more likely to have attempted suicide in the past year as compared to heterosexual youth. Higher rates of Medicaid 30-day follow-up psychiatric care were associated with a decreased likelihood of attempting suicide (.993x). When the interaction term between sexual orientation and Medicaid 30-day follow-up rate was included as a covariate, it added significantly to the model (p <.005) and the Hosmer and Lemeshow Test was nonsignificant (p = .006), indicating that the model was no longer a poor fit. Thus the association between sexual minority status and suicide attempt differed across state-level variations in 30-

day follow-up rate. Hypothesis 4 was supported solely regarding suicide attempt, but not regarding depression or suicidal ideation (see Tables 7 and 8).

A binary logistic regression was performed to ascertain the effects of sexual orientation and the policy interaction variable (inclusive hate crime law x Medicaid 7-day follow-up) on the likelihood that participants experienced suicidal ideation in the last year. The policy interaction variable did not add significantly to the model ($p = .242$), nor did the 3-way interaction variable between sexual orientation, the inclusive hate crime law, and Medicaid 7-day follow-up ($p = .066$).

A binary logistic regression was performed to ascertain the effects of sexual orientation and the policy interaction variable (inclusive hate crime law x Medicaid 7-day follow-up) on the likelihood that participants attempted suicide in the last year. The logistic regression model was statistically significant, $\chi2(15) = 1683.204$, $p < .001$. The model explained 9.2% (Nagelkerke R^2) of the variance in suicide attempt and correctly classified 91.5% of cases. However, the Hosmer and Lemeshow test was significant ($p < .05$) indicating a poor model fit. LGB youth were 3.385 times more likely to have attempted suicide in the past year as compared to heterosexual youth. The policy interaction variable added significantly to the model ($p < .001$) but the Medicaid 7-day follow-up variable did not ($p = .170$). The 3-way interaction variable between sexual orientation, the inclusive hate crime law, and Medicaid 7-day follow-up also did not significantly contribute to the model ($p = .976$).

A binary logistic regression was performed to ascertain the effects of sexual orientation and the policy interaction variable (inclusive hate crime law x Medicaid 30-day follow-up) on the likelihood that participants experienced suicidal ideation in the last year. The logistic regression model was statistically significant, $\chi2(15) = 5645.336$, $p < .001$. The model explained

11.0% (Nagelkerke R^2) of the variance in suicide attempt and correctly classified 82.1% of cases. However, the Hosmer and Lemeshow test was significant ($p < .001$) indicating a poor model fit. LGB youth were 4.373 times more likely to have experienced suicidal ideation in the past year as compared to heterosexual youth. The policy interaction variable added significantly to the model ($p < .05$) but the Medicaid 30-day follow-up variable did not ($p = .053$). The 3-way interaction variable between sexual orientation, the inclusive hate crime law, and Medicaid 7-day follow-up also did not significantly contribute to the model ($p = .106$).

A binary logistic regression was performed to ascertain the effects of sexual orientation and the policy interaction variable (inclusive hate crime law x Medicaid 30-day follow-up) on the likelihood that participants attempted suicide at least once in the last year. The logistic regression model was statistically significant, $\chi 2(15) = 1701.676$, $p < .001$. The model explained 9.3% (Nagelkerke R^2) of the variance in suicide attempt and correctly classified 91.5% of cases. The Hosmer and Lemeshow test was not significant ($p = .133$) indicating that the model was not a poor fit. LGB youth were 3.395 times more likely to have experienced suicidal ideation in the past year as compared to heterosexual youth. The policy interaction variable added significantly to the model ($p < .001$) but the Medicaid 30-day follow-up variable did not ($p = .241$). The 3-way interaction variable between sexual orientation, the inclusive hate crime law, and Medicaid 30-day follow-up also did not significantly contribute to the model ($p = .367$). Thus, Hypothesis 5 was not supported.

Discussion

As predicted, LGB high schoolers demonstrated significantly higher rates of depression, suicidal ideation, and suicide attempt as compared to heterosexual high schoolers, at both the national and state levels, and within racial and ethnic groups. White (non-Hispanic) LGB youth experienced the highest odds of endorsing depression as compared to their white (non-Hispanic) heterosexual peers, adjusting for sex, grade, and housing stability. Perhaps given that heterosexual white youth are less likely to experience discrimination than their heterosexual peers of color, this then heightens the contrast in depression rates when a single marginalized identity (i.e., LGB) is introduced. And indeed, heterosexual white youth endorsed the lowest rates of depression amongst all racial and ethnic subgroups, second only to Asian heterosexual youth and tied with Black/African American heterosexual youth. American Indian/Alaska Native LBG youth experiencing the highest odds of endorsing both suicidal ideation and of suicide attempt as compared to their heterosexual American Indian/Alaska Native peers, and the highest rates of depression and suicide attempt of all racial and ethnic groups. These findings are consistent with other studies that American Indian/Alaska Native youth experience disproportionately high rates of suicide due to historical trauma, adverse childhood experiences, alcohol or drug misuse, chronic pain, and suicide amongst loved ones (O'Keefe et al., 2019).

Results showed the association between LGB status and mental health was not significantly greater in states without inclusive hate crime laws than in states with inclusive hate crime laws, controlling for demographic characteristics. It is possible that the mental health of high school students is more likely related to factors in their more immediate environment, including county- and school-based policies. This would be consistent with Hatzenbuehler's (2011) finding that the proportion of same-sex couples residing in the county and school

antibullying policies were associated with suicide attempts among LGB 11th grade students residing in Oregon.

The association between LGB status and electronic bullying was significantly greater in states with hate crime laws that excluded sexual orientation as a protected category than in states with inclusive hate crime laws, controlling for demographic characteristics and the number of years the inclusive law had been in place. This finding points to a possible trickle-down impact of state-level policy on the lived experiences of LGB high school students. Given that the perpetrators of electronic bullying may be over the age of 18 and beholden to state-level hate crime laws, this may explain why this effect was found for electronic bullying but not school-based bullying. In-person peer behavior is likely more sensitive to more immediate rules and consequences situated within their microsystem (Bronfenbrenner, 1979), such as school-based antibullying policies.

The association between LGB status and suicide attempt was significantly greater in states with lower rates of follow-up mental health care for acutely ill youth than in states with higher rates of follow-up care. This is the first known study to find an association between residing in a state with higher quality government-funded mental health care for acutely ill youth and reduced suicide attempt among LGB youth. While all sexual orientation groups benefit from superior follow-up mental health care, this index of publicly available mental health care quality was uniquely important for LGB youth. Conceptualizing the follow-up rate as a "policy" is perhaps a misnomer, and further investigation is required to determine what variables precipitate superior follow-up mental health care for psychiatrically discharged children and adolescents. Predictors of follow-up mental health appointments for Medicaid-enrolled adults recently discharged from psychiatric hospitalization include rurality, involuntary admission, race, co-

occurring substance use disorder diagnosis, utilizing outpatient public mental health services in the 6 months prior to hospitalization, and hospital discharge planning (Carson et al., 2014; Marino et al., 2015; Stein et al., 2007). Notably, telehealth visits have increased dramatically in the wake of COVID-19. It would be useful to evaluate whether telehealth follow-up care is associated with similar reductions in suicidality, as this may ease an access burden for youth and their families and maximize the number of possible appointments per workday.

Limitations

The 2019 YRBS only included the following options for sexual orientation: lesbian, gay, bisexual, heterosexual, or not sure; thus, this study will not be fully inclusive of all sexual minority youth (e.g., pansexual, asexual, demisexual, etc.). The survey only included binary (male/female) options for the demographic sex question, and a question regarding transgender identity was not administered across all sites. Therefore, students' biological sex and gender identity could not be fully captured or controlled for in analyses. The 2019 YRBS dataset also did not include Delaware, Indiana, Minnesota, Oregon, Washington, Wyoming, District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, or the U.S. Virgin Islands. Consequently, these states and U.S. territories were not included in analyses. The following states were excluded from the follow-up care analyses due to a lack of reported Medicaid/CHIP data: Colorado, Georgia, Idaho, Montana, and New York. The 2019 YRBS does not include a measure of household income; thus, a measure of housing stability was used as a proxy for socioeconomic status. Given that all participants were enrolled in high school, youth experiencing housing insecurity may have been underrepresented in this dataset. Mental health indices were measured via single yes-no questions, limiting the diagnostic accuracy of the depression item. Despite surveys being anonymized, it is also possible that students

underreported true rates of depression, suicidal ideation, and suicide attempt due to the YRBS being administered in their school setting.

Due to the non-experimental design of the YRBS dataset, causal inferences cannot be made. As noted by Hatzenbuehler et al. (2009), it is possible that an "unmeasured common factor" (p. 2278) may be responsible for the associations between state-level policy and the mental health of LGB youth. For example, states that include sexual orientation as a protected category in their hate crime laws may be more likely to implement other policies offering legal protections for sexual minority residents.

At this study's inception, data gathered pre-COVID-19 was selected under the assumption that this period would represent an aberration and the mental health of LGB youth would be more accurately captured prior to March 2020. As the pandemic has lingered on, it has precipitated a mental health crisis in the United States. In December 2021, U.S. Surgeon General Dr. Vivek Murthy issued an advisory underscoring the urgent need to address the national mental health crisis among children and adolescents. LGBTQ+ youth's suffering was uniquely exacerbated because some found themselves confined to homes where their identity was not supported or accepted (Department of Education Office of Civil Rights, 2021; Panchal et al., 2021). Thus, current and possibly forthcoming youth mental health challenges were underestimated by the use of data collected prior to COVID-19

A wave of anti-LGBTQ+ legislation was introduced in the course of this study. According to data gathered by The Trevor Project (2022), 66% of LGBTQ+ youth endorsed that their mental health had been negatively impacted by the recent debates about laws restricting the rights of transgender people. As a therapist providing affirming mental health care to LGBTQ+ youth in California during this pandemic, I witnessed firsthand how anti-LGBTQ+ legislation

damaged the mental health of LGBTQ+ adolescents and emerging adults, even if they resided in a state with affirming policies and would not suffer the direct consequences of the legislation. This raises questions about whether a state-specific approach captures the broader, national impact that policy can have on the wellbeing of sexual and gender minority youth.

Future Directions

In the future, I hope to utilize my YRBS-derived database to conduct additional analyses on the impact of state-level policies on the mental health of LGB youth. Specifically, I am eager to explore whether the association between LGB status and mental health (depression, suicidal ideation, and suicide attempt) will be significantly greater among youth who experience bullying as opposed to youth who do not experience bullying. I would then like to examine the impact of inclusive sex education and antibullying policies on these mental health indices.

Psychologists seeking to engage in evidence-based advocacy on behalf of sexual minority youth are encouraged to utilize the advocacy resources gathered by The American Psychological Association Division 44, Society for the Psychology of Sexual Orientation and Gender Diversity: https://www.apadivisions.org/division-44/resources/advocacy. To enrich that evidence base, it is essential that researchers comprehensively and accurately gather sexual orientation and gender identity (SOGI) data. The National LGBT Health Education Center published a toolkit for collecting SOGI data via electronic health records, which can be applied to demographic assessments in research studies: https://fenwayhealth.org/wp-content/uploads/4.-Collecting-SOGI-Data.pdf.

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Tables and Figures

Figure 1. Minority Stress Processes in LGB Populations (Meyer, 2003)

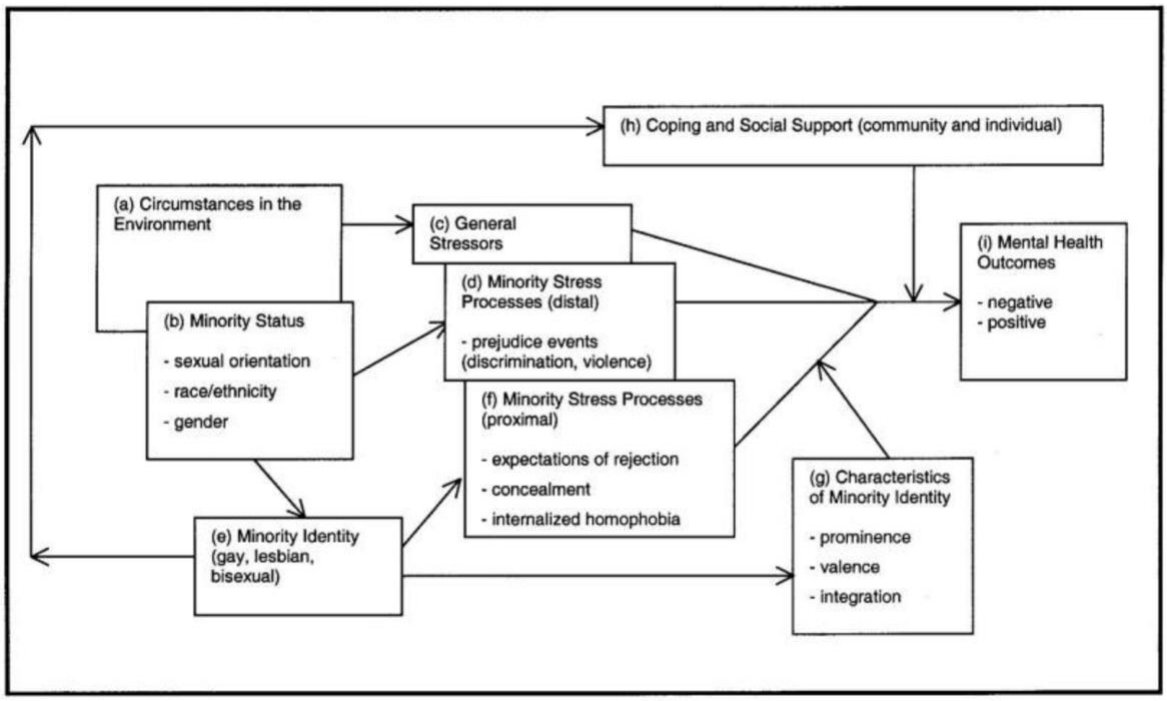

Figure 2. 7-Day Follow-Up after Hospitalization for Mental Illness, Ages 6-17

(Medicaid.gov, 2020)

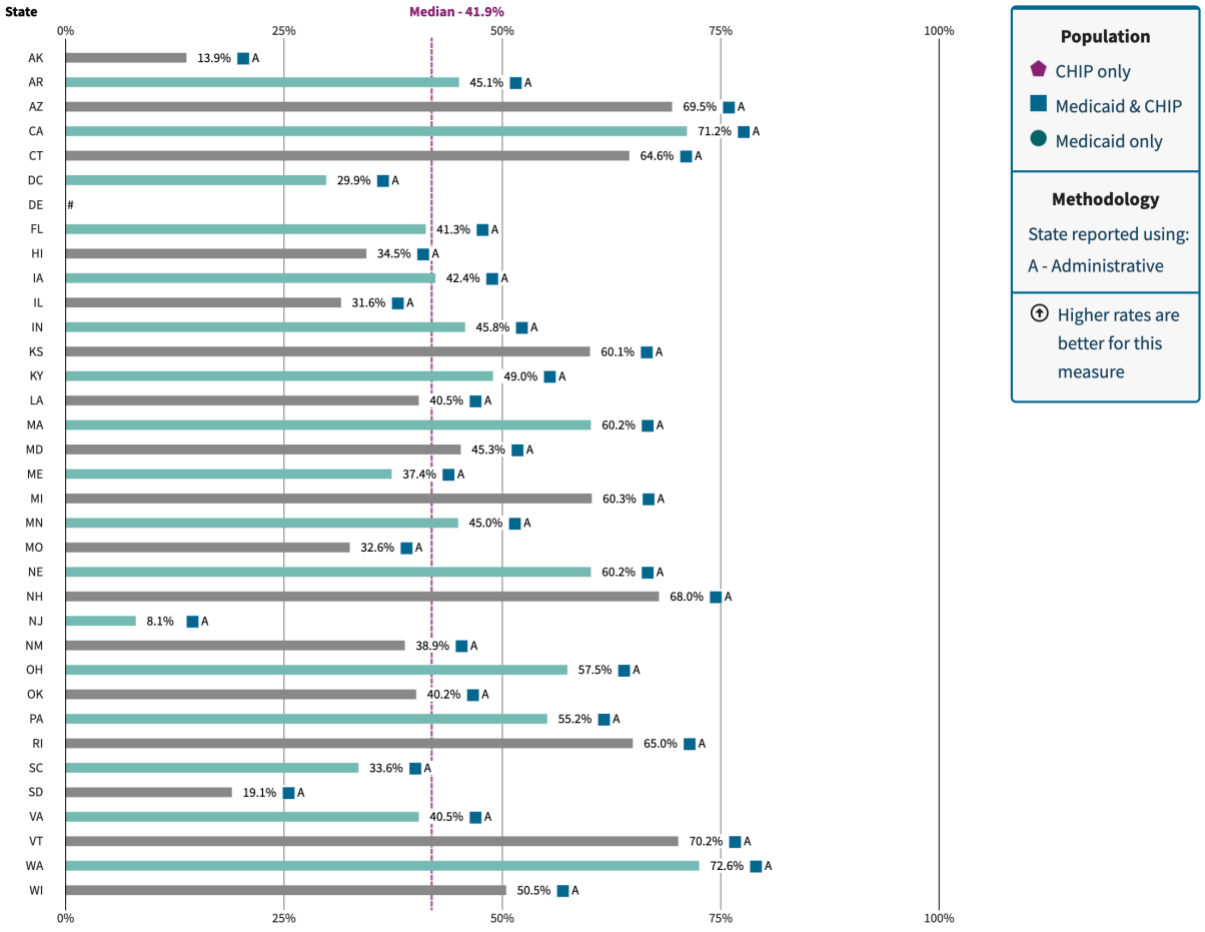

Figure 3. 30-Day Follow-Up after Hospitalization for Mental Illness, Ages 6-17

(Medicaid.gov, 2020)

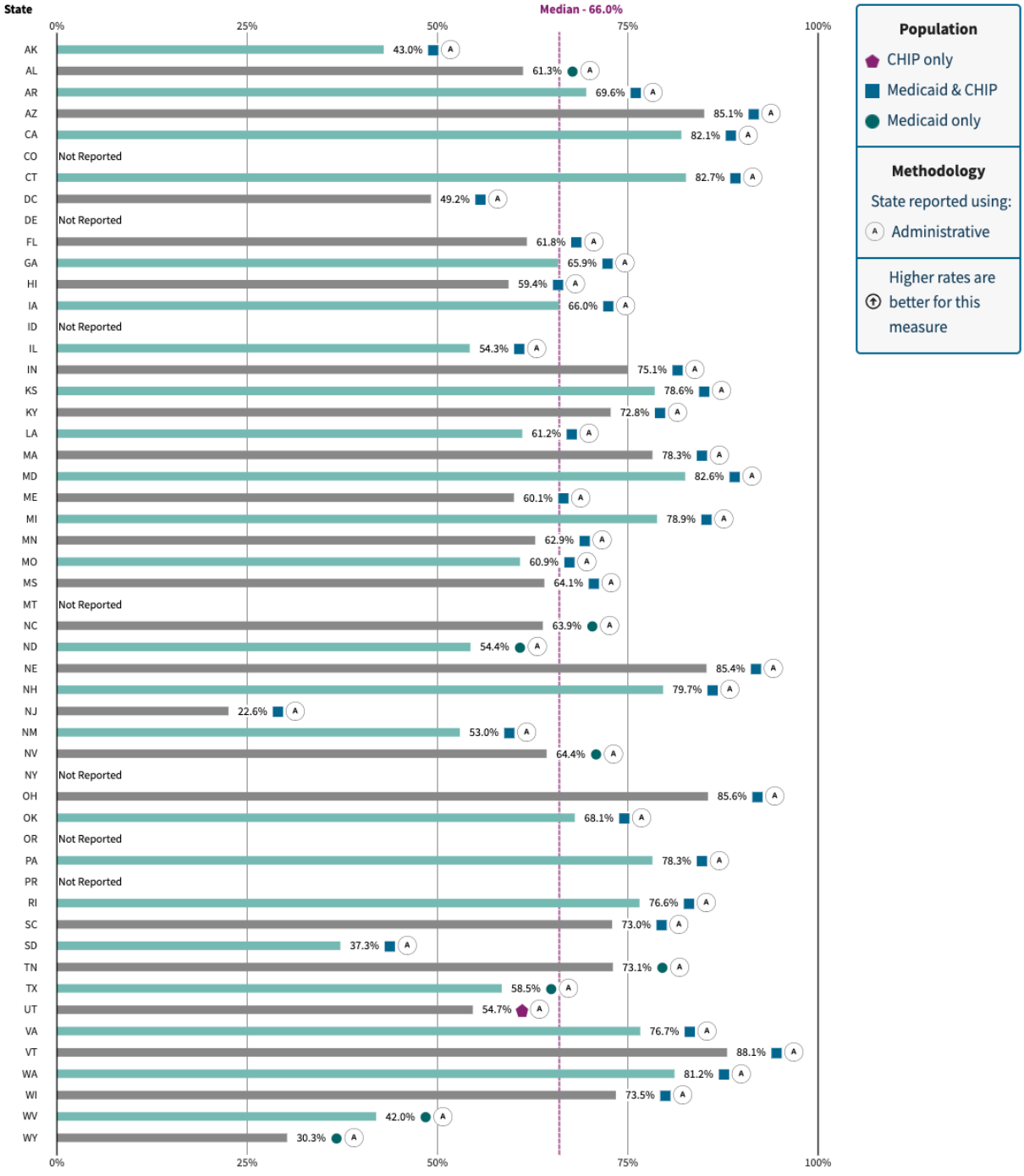

Table 1. Descriptive Statistics of Demographics (N=153,215)

Characteristics	LGB (N=19,576)	Heterosexual (N=133,639)
Sex (binary)		
Male	27.4%	53%
Female	72.6%	47%
Age		
<12	1.1%	.3%
13	.7%	.4%
14	14.2%	15.9%
15	26.1%	27.0%
16	25.7%	25.7%
17	22.8%	21.9%
18+	9.3%	8.8%
Grade		
9^{th}	26.6%	28.6%
10^{th}	27.1%	26.9%
11^{th}	25.0%	24.4%
12^{th}	21.4%	20.1%
Race		
American Indian/Alaska native	1.7%	1.5%
Asian	3.6%	5.1%
Black or African American	12.6%	12.1%
Hispanic/Latino	21.7%	19.1%
Native Hawaiian/other Pacific Islander	1.3%	1.7%
White	51.7%	55.1%
Multiple races (Non-Hispanic)	7.4%	5.3%
Housing		
stable	92.3%	96.9%
unstable	7.7%	3.1%

*Table 2***.** National-Level Association Between Self-Reported Sexual Orientation and Mental Health in the Past 12 Months: 2019 Youth Risk Behavior Survey

	Heterosexual	**Lesbian, Gay, and Bisexual**	**OR (95% CI)**
Depression	29.3%	63.8%	3.624 (3.462, 3.793)
Suicidal Ideation	14.1%	44.3%	4.371 (4.174, 4.578)
Suicide Attempt	6.4%	21.6%	3.361 (3.094, 3.650)

Note. OR = odds ratio; CI = Confidence Interval; Odds ratios adjusted for sex, grade, race, ethnicity, and housing stability.

Table 3. State-Level Prevalence of Depression, Suicidal Ideation, and Suicide Attempt in the Past 12 Months within Sexual Orientation Groups: 2019 Youth Risk Behavior Survey

STATE	Depression		Suicidal Ideation		Suicide Attempt	
	Hetero	LGB	Hetero	LGB	Hetero	LGB
Alabama	33.3%	55.2%	16.7%	38.0%	9.1%	23.9%
Arizona	36.3%	64.9%	16.6%	47.4%	7.4%	25.0%
Arkansas	33.0%	66.7%	15.6%	51.8%	8.8%	29.4%
California	40.6%	72.1%	22.0%	49.3%	6.8%	22.0%
Colorado	29.3%	63.9%	14.7%	45.8%	4.9%	18.5%
Connecticut	34.4%	65.6%	8.4%	38.0%	4.2%	20.0%
Florida	29.4%	59.8%	11.7%	36.2%	5.5%	20.3%
Hawaii	32.1%	61.0%	15.0%	42.5%	9.1%	22.9%
Illinois	32.9%	63.4%	14.7%	39.0%	6.5%	24.1%
Iowa	28.8%	65.3%	15.7%	49.7%	7.8%	26.0%
Kentucky	33.2%	63.3%	14.3%	44.3%	6.0%	22.9%
Maine	26.4%	63.9%	11.9%	43.3%	6.8%	20.8%
Maryland	27.3%	63.3%	14.3%	49.3%	-	-
Michigan	32.2%	65.6%	15.5%	41.6%	7.2%	23.5%
Mississippi	31.2%	62.9%	14.9%	41.7%	10.4%	29.1%
Missouri	28.8%	64.9%	13.4%	45.6%	5.5%	24.1%
Nebraska	28.9%	60.5%	16.3%	44.1%	7.0%	23.4%
Nevada	36.9%	71.9%	13.9%	47.7%	6.1%	25.4%
New Hampshire	29.5%	66.2%	15.2%	44.4%	5.2%	18.8%
New Jersey	31.3%	69.6%	11.1%	41.6%	4.4%	12.7%
New Mexico	35.2%	66.0%	14.1%	43.0%	6.8%	25.4%
New York	30.9%	60.7%	12.2%	34.0%	6.2%	19.6%
North Carolina	33.2%	66.9%	16.1%	46.0%	8.3%	23.3%
North Dakota	26.6%	65.5%	15.1%	49.2%	10.7%	25.1%
Oklahoma	33.9%	68.3%	17.2%	51.6%	8.7%	26.1%
Pennsylvania	30.0%	63.6%	13.8%	41.1%	6.0%	18.2%
Rhode Island	28.8%	64.7%	9.4%	38.6%	13.9%	24.7%
South Carolina	34.5%	62.3%	15.1%	46.4%	7.0%	21.0%
Texas	34.4%	65.7%	14.0%	46.7%	8.0%	22.1%
Utah	32.1%	73.7%	18.1%	60.2%	8.0%	19.8%
Vermont	25.6%	63.3%	-	-	4.3%	19.6%
Virginia	27.6%	61.4%	12.0%	41.8%	4.4%	21.1%
West Virginia	33.1%	64.2%	16.1%	51.5%	7.5%	34.4%
Wisconsin	24.5%	61.7%	12.8%	42.8%	6.0%	19.9%

Note. Hetero = heterosexual; LGB = lesbian, gay, or bisexual

Table 4. National-Level Association Between Self-Reported Sexual Orientation and Mental Health in the Past 12 Months within Racial and Ethnic Groups: 2019 Youth Risk Behavior Survey

RACE/ ETHNICITY	Depression			Suicidal Ideation			Suicide Attempt		
	Hetero	LGB	OR (95% CI)	Hetero	LGB	OR (95% CI)	Hetero	LGB	OR (95% CI)
American Indian/ Alaska Native	33.7%	69.0%	3.813 (2.632, 5.524)	16.7%	50.5%	5.103 (3.556, 7.325)	10.5%	34.4%	4.255 (2.621, 6.907)
Asian	26.9%	54.3%	2.850 (2.266, 3.584)	12.9%	38.6%	3.721 (2.915, 4.749)	5.7%	17.2%	2.329 (1.507, 3.599)
Black or African American	27.4%	55.9%	2.913 (2.585, 3.282)	13.1%	38.0%	3.646 (3.210, 4.141)	8.4%	25.9%	3.286 (2.501, 4.319)
Hispanic/ Latino	34.9%	65.5%	2.850 (2.569, 3.162)	14.5%	42.4%	3.681 (3.312, 4.091)	7.9%	25.2%	3.255 (2.773, 3.819)
Native Hawaiian/ Other Pacific Islander	33.4%	64.3%	2.818 (1.993, 3.985)	15.8%	40.3%	3.175 (2.233, 4.514)	10.7%	25.3%	2.060 (1.273, 3.336)
White	27.4%	65.2%	4.448 (4.171, 4.743)	13.8%	46.2%	4.930 (4.624, 5.256)	5.1%	18.3%	3.550 (3.142, 4.010)
Multiple Races (Non-Hispanic)	33.4%	66.4%	3.110 (2.649, 3.651)	18.0%	52.1%	4.654 (3.958, 5.471)	7.7%	23.9%	3.677 (2.728, 4.957)

Note. Hetero = heterosexual; LGB = lesbian, gay, or bisexual; OR = odds ratio; CI = Confidence Interval; Odds ratios adjusted for sex, grade, and housing stability.

Table 5. Rates of Depression, Suicidal Ideation, and Suicide Attempt in the Past 12 Months by State-Level Hate Crime Policy: 2019 Youth Risk Behavior Survey

	LGB		**Heterosexual**	
	Non-inclusive hate crime laws	**Inclusive hate crime laws**	**Non-inclusive hate crime laws**	**Inclusive hate crime laws**
Depression	64.2%	63.7%	31.3%	28.9%
Suicidal Ideation	45.1%	44.2%	15.2%	13.9%
Suicide Attempt	24.0%	20.9%	7.6%	6.0%

Note. LGB = lesbian, gay, or bisexual

Table 6. Logistic Regression Predicting Likelihood of Electronic Bullying based on LGB Status, Grade, Sex, Race/Ethnicity, Housing Stability, Hate Crime Law Inclusivity, Hate Crime Law Duration, and LGB Status x Hate Crime Law Inclusivity: 2019 Youth Risk Behavior Survey

	B	**SE**	**Wald**	***df***	***p***	**Odds Ratio**	**95% CI for OR**	
							Lower	**Upper**
LGB Status	.634	.029	480.067	1	<.001	1.885	1.781	1.995
Grade			80.548	3	<.001			
Sex	.618	.021	897.901	1	<.001	1.856	1.782	1.932
Race/Ethnicity			359.725	6	<.001			
Housing Stability	.846	.047	327.896	1	<.001	2.331	2.127	2.554
Hate Crime	.497	.114	18.898	1	<.001	1.644	1.314	2.057
Hate Crime Years	.036	.007	24.733	1	<.001	1.037	1.022	1.052
LGB x Hate Crime	.127	.064	4.017	1	.045	1.136	1.003	1.287

*Table 7***.** Logistic Regression Predicting Likelihood of Suicide Attempt based on LGB Status, Grade, Sex, Race/Ethnicity, Housing Stability, Rate of Medicaid 7-Day Follow-Up, and LGB Status x Rate of Medicaid 7-Day Follow-Up: 2019 Youth Risk Behavior Survey

	B	**SE**	**Wald**	***df***	***p***	**Odds Ratio**	**95% CI for OR**	
							Lower	**Upper**
LGB Status	.913	.145	39.659	1	<.001	2.491	1.875	3.309
Grade			64.170	3	<.001			
Sex	.326	.038	72.202	1	<.001	1.386	1.285	1.494
Race/Ethnicity			152.288	6	<.001			
Housing Stability	1.394	.064	468.937	1	<.001	4.030	3.553	4.572
7-Day Follow-Up	-.005	.001	10.638	1	.001	.995	.992	.998
LGB x 7-Day Follow-Up	.006	.003	4.768	1	.029	1.006	1.001	1.012

Table 8. Logistic Regression Predicting Likelihood of Suicide Attempt based on LGB Status, Grade, Sex, Race/Ethnicity, Housing Stability, Rate of Medicaid 30-Day Follow-Up, and LGB Status x Rate of Medicaid 30-Day Follow-Up: 2019 Youth Risk Behavior Survey

	B	**SE**	**Wald**	***df***	***p***	**Odds Ratio**	**95% CI for OR**	
							Lower	**Upper**
LGB Status	.543	.232	5.474	1	.019	1.722	1.092	2.714
Grade			63.703	3	<.001			
Sex	.326	.038	71.966	1	<.001	1.385	1.285	1.494
Race/Ethnicity			150.427	6	<.001			
Housing Stability	1.393	.064	467.822	1	<.001	4.026	3.548	4.567
30-Day Follow-Up	-.009	.002	33.370	1	<.001	.991	.988	.994
LGB x 30-Day Follow-Up	.010	.003	8.769	1	.003	1.010	1.003	1.016