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School-based Protective Factors Related to Suicide
for Lesbian, Gay, and Bisexual Adolescents

Abstract

Background: Research indicates that lesbian, gay, and bisexual (LGB) adolescents are three times more likely to consider suicide than their heterosexual peers. Although research has identified risk factors for suicide among this population, little is known about school-level protective factors among this population, which may buffer the impact of risk.

Purpose: This study aims to understand whether school-based protective factors (e.g., school safety, relationships with caring adults at school, school connectedness) are associated with decreased suicidal ideation for LGB adolescents.

Methodology: Logistic regression analyses were conducted on the data generated by the San Francisco Unified School District's 2011 California Healthy Kids Survey to examine the influence protective factors related to suicidal ideation for LGB adolescents (n=356).

Results: Results indicated that higher levels of school connectedness predicted less suicidal ideation (OR = 0.59, $P = .005$).

Significance: This study contributes to our understanding of predictors of suicidal ideation in ways that could inform the development of school-based preventative interventions related to suicide for LGB adolescents.

IMPLICATIONS AND CONCLUSIONS

Few empirical studies have examined school-level protective factors related to suicide prevention among lesbian, gay, and bisexual adolescents (LGB). Our study finds evidence that school connectedness may serve as a protective factor against suicide for this population of students. These findings may inform “selective” interventions specifically for LGB youth in schools.

Suicide is the 3rd leading cause of death among youth aged 15-24.¹ National Youth Risk Behavior Surveillance (YRBS) data indicate that 15.8% of all students in Grades 9-12 seriously considered suicide in the past 12 months.² However, lesbian, gay, and bisexual (LGB) adolescents¹ are at least three times more likely to have seriously considered suicide in the previous year compared to their heterosexual peers.³ The disproportional rate of suicidal behaviors among LGB adolescents warrants a better understanding of this problem.

Suicide is a preventable public health problem, yet the development of effective prevention strategies is contingent on the identification of causes and temporal predictors of suicidal behavior. Once predictors of suicidal behavior are identified, preventive intervention strategies can be designed and/or implemented to alter these predictors, rendering suicide behaviors less likely to occur. Additional research is needed to determine the predictors of suicidal ideation and suicide attempts among LGB adolescents to advance the development and implementation of preventative interventions for this population.⁴

Predictors of suicide can be broadly categorized as risk factors and protective factors. Risk factors are characteristics, situations, or circumstances that make health or mental health problems more likely. Some risk factors that have been identified for suicide among LGB youth are similar to risk factors for suicide within the general population of youth, including depression, substance use, lack of safety at school, and inadequate social support.⁵⁻⁷ On the other hand, it has been suggested that LGB adolescents may have LGB specific risk factors for suicide.⁸ Researchers have therefore begun to focus on the identification of LGB-specific predictors to better explain and target the disparity in LGB adolescent suicidal behaviors.⁷⁻⁹

¹ In this paper, LGB refers to adolescents who identify as gay, lesbian, bisexual. Most of the research on LGB adolescents uses self-reported identification as a means to affiliate individuals with this population. Some research uses self-reports of same-sex attraction or sexual behavior for identification, while other research uses some combination.

Given the elevated risk for suicide, LGB identity could be considered a risk factor for suicide. Research suggests that homonegative victimization and stress are more likely reasons for this disparity.^{5,10}

Most of the research identifying predictors of health outcomes for LGB youth has focused on risk factors, despite several calls in the literature to focus on protective factors.^{9,11} Protective factors are characteristics or resources that reduce the impact of risk, making it less likely that an individual will consider or attempt suicide in the context of risk. Due to the relatively small number of studies on protective factors inhibiting suicide among LGB adolescents, protective factors of LGB youth have not yet been clearly identified.¹² Protective factors inhibiting suicide for the general population of adolescents include: family connectedness,¹³ family cohesion, and religiosity.¹⁴ However, relationships with family and religious communities can be disrupted for some LGB youth, especially around the time of disclosure or discovery of sexual identity, due to perceived or actual rejection.¹⁵

Research that seeks to identify protective factors that inhibit suicide among LGB youth needs to consider the potential for protective factors to exist in other, frequently neglected, developmental contexts. Schools can play an important role in healthy adolescent development. Positive school climates, as well as programs and policies that aim to improve school climates, can moderate the impact of harassment, bullying, and victimization on the well-being of LGB adolescents.^{3,16,17} Research suggests that school-based programs and policies may have the potential to improve suicidal outcomes for this population of students. Surprisingly, only four studies have focused on the relationship between school-based protective factors and suicidal ideation among LGB youth.¹⁸⁻²¹

Findings from these four studies illuminate potential school-based protective factors that may be associated with reduced suicidality. Specifically, research from Massachusetts YRBS suggest that students in schools with LGB support groups report lower rates of victimization and suicide attempts than those in other schools.¹⁸ In addition, this study suggested that LGB adolescents who believe that there is a school staff member they could talk to about a problem are only about one third as likely to report victimization at school or suicide attempts.¹⁸ A state-level survey from Minnesota found adult caring relationships and school safety to be protective factors for inhibiting suicidal ideation and attempts for LGB adolescents.¹⁹ An analysis of YRBS data from New York City also found that LGB students without relationships with adults at school were more likely to report suicidal ideation.²⁰ Statewide data from Oregon found that LGB adolescents perceiving more supportive social environments reported fewer suicide attempts.²¹

Collectively, these studies identified support groups, relationships with adults, school safety, and supportive social environments as potential protective factors that inhibited LGB suicide. None of these studies, however, investigated the association between school connectedness and suicidal outcomes. School connectedness has been demonstrated to be an important construct related to desirable health, mental health, and education outcomes among adolescents.^{22,23} The Social Development Model, for example, proposes that schools providing opportunities for pro-social involvement, skill development programs to help youth make the most of those opportunities, and recognition for skillful engagement, will lead to youth feeling more connected and committed to school. If schools, in turn, communicate healthy beliefs and clear standards to youth, bonded youth will more likely adopt these beliefs and behave according to these standards.²⁴ Etiological studies and intervention research has demonstrated the key role

of connectedness in adolescent samples.²³ A descriptive study found evidence of school connectedness to be lower among bisexual adolescents compared to their non-bisexual peers.²⁵ This study provided evidence of fewer protective factors among LGB adolescents but these characteristics were not analyzed in relation to suicidal outcomes. In addition, lower connection to school due to absenteeism has been correlated to depression and anxiety among LGB adolescents.²⁶ Therefore a better understanding of school connectedness and its relationship to suicidal ideation among LGB students is warranted.

The empirical research on protective factors related to suicide for LGB adolescents indicates that aspects of the social and school climates (i.e., relationships to adults, school safety, and supportive social and school environments) are related to reduced suicidality.¹⁸⁻²¹ Building upon these previous findings, the current study will examine associations between relationships with adults at school, school safety, and suicidal ideation for LGB adolescents in the state of California. In addition, this study will investigate the theorized, but previously untested, relationships between school connectedness and suicidal ideation among LGB adolescents. Given the availability of effective preventive interventions to build school connectedness, this could be an important finding to guide approaches to reduce LGB adolescent suicidality.

Current Study

This study analyzed data generated from San Francisco Unified School District's (SFUSD) administration of the California Healthy Kids Survey (CHKS) during the 2010-2011 academic year. The study explored the extent to which school-based protective factors, controlling for risk factors, are negatively related to suicidal ideation among LGB adolescents. It is hypothesized that protective factors (safety at school, caring relationships with adults at school, and school-connectedness) are negatively related to suicidal ideation for LGB youth.

Methods

Sample and Setting

The CHKS is the largest statewide survey of risk factors, protective factors, and youth development behaviors in the United States. The survey was administered to all San Francisco high school 9th and 11th grade students in SFUSD during the 2010-2011 school year (detailed information about the CHKS survey and administration may be found elsewhere²⁷). The survey yielded a 70% response rate, which yielded a sample size of 5,425 students.

The SFUSD public high school student population includes adolescents from diverse socioeconomic and cultural backgrounds. The SFUSD population is primarily composed of Asian (42%), Latino (21%), African-American (8%), and Caucasian (8%) students, but also includes students from many other racial/ethnic backgrounds. Fifty-one percent of the student population is female and 49% is male. Students whose first language is not English are classified as English language learners (ELL) and make up 20% of high school students overall. Forty-three percent of district students receive free or reduced lunch, an indicator of lower socioeconomic status.

Demographic variables, including sexual orientation and sex were obtained through self-report. In regard to sexual orientation, participants were asked, “*Which of the following best describes you?*” Answer choices included heterosexual, gay or lesbian, bisexual, or unsure. This question was not part of the main survey module but was added to a supplemental module near the end of the survey by the school district. Of the students who took the survey, 16% did not complete this question. The reason that youth did not respond to this question is unclear, but it could be due to uncertainty, stigma, location of the question on the survey, etc. Regardless, this question was used to generate a sub-sample for this analysis to include only students who

identified as lesbian, gay, or bisexual, yielding a sample of 356 students or 7% of students who completed this survey and 8% of students who answered this question. This estimate is consistent with other estimates of LGB students in high schools, which has ranged from 3-10% of high school students, based on national Youth Risk Behavior Surveillance (YRBS).²⁸

Measures

Dependent variable. To assess suicidal ideation, a binary outcome variable measured whether a student considered suicide in the past twelve months. Students were asked, “*Did you ever seriously consider suicide in the past 12 months?*” Responses included either “Yes or No.”

Independent variables. To assess safety at school, the following question was asked, “How safe do you feel when you are at school?” Five item responses included, very safe, safe, neither safe nor unsafe, unsafe, and very unsafe.

The presence of caring relationships with adults at school was assessed based on student responses to the following question: “At my school there is a teacher or other adult who really cares about me.” Responses included very much true, pretty much true, a little true, and not at all true.

The independent variable used to assess school connectedness on the CHKS was adapted from the National Longitudinal Study of Adolescent Health’s School Connectedness Scale (SCS).²⁹ The average responses to 5 questions about students’ sense of connection to the school were used. Questions included: “*How strongly do you agree or disagree with the following statements about your school?*” 1) I feel close to people at this school; 2) I am happy to be at this school; 3) I feel like I am part of this school; 4) The teachers at this school treat students fairly; 5) I feel safe in my school. Five item Likert scale responses ranged from strongly disagree to strongly agree.

Control Variables. The following control variables from the CHKS survey have not undergone psychometric testing, but exhibit face validity related to the constructs they are intended to address. To assess substance abuse issues, the following variable was used: *“Has the use of alcohol, marijuana, or other drugs caused you any of the following problems?”* Dichotomous responses (yes or no) included “emotions, nerves, or mental health; get into trouble or have problems with the police; have money problems; get into trouble at school; have problems with school work; have a fight with other kids; damage a friendship; physically hurt or injure yourself; have unwanted or unprotected sex; forget what happened, pass out, or lose control; or any other problems.” The alpha for this scale based on the current sample was ($\alpha = .87$). Items were summed to create a scale from 0-11 indicating the number of problems experienced through the use of alcohol or drugs.

General bullying/victimization was assessed based on the following question (1) *“In the past twelve months, have you been pushed, shoved, slapped, hit or kicked by someone?”* Responses included, zero times, one time, two or three times, or four or more times.

To assess LGB specific victimization, one survey variable was used. Students were asked, *“In the past twelve months, were you harassed or bullied because you are gay or lesbian or because someone thought you were?”* Responses included, zero times, one time, two or three times, or four or more times.

One variable was used to assess whether a student showed symptoms of depression. Students were asked, *“During the past 12 months, did you ever feel so sad or hopeless almost everyday for two weeks or more that you stopped doing some usual activities?”* Answer choices were “Yes or No.”

Sex and gender identity were asked in two different questions on the CHKS survey. First, students were asked to describe their sex as either female or male. The majority of students (99%) responded to this question. This question was used to create the dichotomous variable sex (female=1). Second, there was an additional question added to a supplemental module at the end of the survey that asked respondents to report their sex as male, female, or transgender. The variable that included transgender students included 16% missing data for the entire sample but only 9.4% missing data for the LGB subsample. Seventeen percent (n=54) of the LGB subsample identified as transgender. This question was used to create the dichotomous variable transgender (yes=1, no=0).

Analysis Plan. STATA version 13 was used to conduct all analyses. Bivariate logistic regression of each predictor and control variable with the outcome variable were used to screen for variables to include in the final analysis. Only variables with *p*-values less than .05 were included in the final analysis. The final logistic regression models were conducted in a multilevel framework to account for the variation among individuals nested in schools and the variation across schools.

IRB Statement. The UC Berkeley Committee for the Protection of Human Subjects deemed this study exempt.

Results

The study sample included students in SFUSD who completed the CHKS, the LGB identity question, and endorsed an LGB identity. Among the LGB identified sample (Table 1) the racial/ethnic composition was 10% multiracial, 33% Asian, 39% Latino, 4% Caucasian, and 6% African American. Thus, the study sample included slightly more Latino (39% vs. 21%) and fewer Asian (33% vs. 42%) students, relative to the overall SFUSD population. Forty-six percent

of the study sample reported their sex as female and 54% reported their sex as male (when asked about male or female gender dichotomously). Seventeen percent of the study sample identified as transgender (when asked whether they ascribe to themselves a transgender identity—see measures section).

Thirty-one percent of the sample reported suicidal ideation. The sample reported moderate safety at school; 65% reported feeling safe or very safe. Twenty-seven percent of the sample reported one or more experiences of LGB specific victimization, and 41% reported symptoms of depression.

Unadjusted logistic regression analysis of protective factors related to suicidal ideation for LGB adolescents found students who reported less connection to school had higher odds of suicidal ideation (Table 2). None of the other protective factors were significantly associated with suicidal ideation for this population of adolescents. Transgender students were less likely than non-transgender students to report suicidal ideation. Students who reported problems with alcohol or drugs, bullying or victimization, symptoms of depression, or being female had higher odds of suicidal ideation than their respective reference groups.

Adjusted logistic regression analysis found a significant inverse relationship between school connectedness and suicidal ideation (Table 3). For every one unit increase in school connectedness, the odds of suicidal ideation decreased by 41%, controlling for demographics and risk factors. The multi-level models revealed there were no differences among schools.

Discussion

This study adds to the relatively thin literature on protective factors inhibiting suicide among LGB adolescents. All students in this sample identified as lesbian, gay, or bisexual and 17% identified as transgender. Few studies have had sufficient numbers of transgender students

to include in their analysis.³⁰ In this sample, 31.4% of LGB students reported suicidal ideation, which is similar to previous estimates for this population of adolescents.¹⁹ Similar to previous studies, this study found that transgender LGB students were less likely than their cisgendered LGB peers to report suicidal ideation.³⁰

This study provided evidence that school protective factors were related to reduced suicidal ideation, controlling for risk factors and demographic variables. There was some previous evidence that school and social support^{18,21} were related to reduced suicide risk, and that school connectedness predicted future emotional health in general youth populations.^{31,32} School connectedness as a protective factor for suicidal behaviors among LGB adolescents had not been previously explored. The relationship in this data between school connectedness and suicide ideation points to intervention opportunities to alter malleable factors that schools can influence. Research on school bonding for the general population of adolescents have found that relationships with school environments are related to lower substance abuse, depressive symptoms, and victimization.^{22,33} In addition, one study found that school supports and policies improved school connectedness for LGBT youth.³⁴ It is possible that enhancing school connectedness could be a promising component in school-based suicide preventive interventions for LGB youth.³⁵

Findings related to protective factors at the bivariate level were somewhat different from previous studies that compared LGB students to their heterosexual peers. For example, our study did not find that caring relationships with adults and feeling safe at school were significantly associated with suicidal ideation.¹⁸⁻²⁰ However, the school connectedness construct includes components of safety, relationships at school, and school belonging/bonding. Perhaps these constructs together that encompass school connectedness are all needed to predict reduced

suicidal ideation. This suggests that preventative interventions should address all components of connection to school, rather than singular components.

Limitations. Like all studies, this one has some noteworthy limitations. Perhaps the most noteworthy are the cross-sectional design and operationalization of LGB and transgender identity. The cross-sectional design utilized the measurement of each variable at one point in time. School-connectedness, depression, and suicidality are likely to change overtime, especially in the context of adolescent development. Also, protective factors are conceptualized as predictors in this study, but due to the cross-sectional data, they can only be considered correlates.

In addition, the sample only included students who have identified as lesbian, gay or bisexual at the time of this survey. Sexual orientation and gender identity evolve over the course of one's lifetime, with awareness changing in relation to stages of identity development.³⁶ The lifespan development of sexual orientation and gender identity pose a unique limitation to this study's cross sectional design, which is limited to one time point of data collection.

One of the unique challenges facing social science research on LGB populations are the different measures of sexuality that are operationalized based on attraction, behavior, and identity. In some studies sexual orientation is based on sexual behaviors or attraction while in others it is based on one's identification with a specific term or community.¹⁰ Ideally a multi-dimensional construct would be used that captures both identity and behaviors but only one item for sexual orientation and one item for gender identity were available in this dataset.

This study takes place in the San Francisco Unified School District and study findings may not be generalizable to other cities or school districts. SFUSD has a unique and diverse

student body including 42% Asian students. In addition, this school district has implemented LGB specific student services for more than two decades.

Standardized measures from validated assessment tools could enable a more comprehensive understanding of depression and suicide than the two self-report items on the CHKS survey. However, in districts that do not conduct comprehensive universal assessments of students' health and mental health, surveys of the general school population allow for the best estimates of student risk and protective factors at the population level. The indicator used to assess suicidal ideation in this study is widely used on national surveys of adolescent health.

Directions for future research

Additional research on suicide risk and protective factors are needed to further understand the role of protective factors for LGB youth.^{8,37} Large scale epidemiological studies that focus on discrimination, social stressors, and negative mental health outcomes in the LGB population will offer more information regarding the structural and societal forces that effect this population.¹⁰ Large scale, representative, surveillance efforts need to include sexual orientation and protective factors, including school-level protective factors such as Gay-Straight Alliance groups, so that it is possible to further understand the impact of risk and protective factors on suicidal outcomes for this population of adolescents.³⁸

In addition, more information is needed regarding the types of prevention interventions programs and policies that are effective in reducing suicidal behaviors for this group of youth. Interventions to prevent suicidality among LGB youth have largely been untested. There have been many suggestions to encourage awareness of early warning signs and risk factors for LGB suicide and to provide culturally appropriate intervention by school, health, and mental health care service providers.^{5,39} We are not aware of any published studies of the efficacy of suicide

prevention programs explicitly designed for LGB youth.^{4,5} The Suicide Prevention Research Center has called for expanded use of research to develop evidence-based programs to build protective factors and to prevent suicide among LGBT youth.⁴⁰ Thus far, research on the risk factors for LGB suicide has been explored, research on protective factors has begun, and intervention research needs to commence in order to effectively prevent suicide among LGB youth.

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