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RESEARCH ARTICLE

Sexual Orientation Discordance and Nonfatal Suicidal Behaviors in U.S. High School Students

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Introduction: Studies among adults have documented association between sexual orientation discordance and some suicide risk factors. However, studies examining sexual orientation discordance and nonfatal suicidal behaviors in youth are rare. This study examines the association between sexual orientation discordance and suicidal ideation/suicide attempts among a nationally representative sample of U.S. high school students.

Methods: Using sexual identity and sex of sexual contact measures from the 2015 national Youth Risk Behavior Survey (n=6,790), a sexual orientation discordance variable was constructed describing concordance and discordance (agreement and disagreement, respectively, between sexual identity and sex of sexual contacts). Three suicide-related questions (seriously considered attempting suicide, making a plan about how they would attempt suicide, and attempting suicide) were combined to create a two-level nonfatal suicide risk variable. Analyses were restricted to students who identified as heterosexual or gay/lesbian, who had sexual contact, and who had no missing data for sex or suicide variables. The association between sexual orientation discordance and nonfatal suicide risk was assessed using logistic regression. Analyses were performed in 2017.

Results: Approximately 4.0% of students experienced sexual orientation discordance. High suicide risk was significantly more common among discordant students compared with concordant students (46.3% vs 22.4%, $p < 0.0001$). In adjusted models, discordant students were 70% more likely to have had suicidal ideation/suicide attempts compared with concordant students (adjusted prevalence ratio=1.7, 95% CI=1.4, 2.0).

Conclusions: Sexual orientation discordance was associated with increased likelihood of nonfatal suicidal behaviors. Discordant adolescents may experience unique stressors that should be considered when developing and implementing suicide prevention programs.
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INTRODUCTION

Adolescence can be a period of turbulence because of the major physical, psychological, and cognitive changes that occur.[1] In addition to their developmental changes, sexual minority youth (e.g., those who identify as lesbian, gay, or bisexual [LGB]) are also at risk of discrimination and potential victimization because of their sexual identity.[1,2] Higher prevalence of health risks including substance misuse, violence victimization, suicidality, and mental health disorders have been found among sexual minority youth compared with their heterosexual counterparts.[3–5] These disparities have been linked to several complex issues affecting the LGB population, including stigma, discrimination, victimization, and social exclusion.[3,6] Previous studies have

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interpreted these disparities using theoretic frameworks, such as the minority stress theory,[7] and have demonstrated that discrimination and other forms of social intolerance that sexual minority youth experience may be associated with chronic stress and depression that may contribute to self-injurious behaviors, including suicidal ideation and suicide attempts.[1,8]

Several studies have documented a relationship between sexual orientation and suicidal ideation among youth.[9,10] Compared with their heterosexual counterparts, sexual minority youth are at a disproportionately greater risk for suicidal ideation and suicide attempts, with some studies suggesting that the disparity may persist into adulthood.[11–13] For example, Marshal et al.[3] reported that the rate of suicidality among sexual minority youth was about three times higher than the rate observed among heterosexual youth. Limitations in previous research including operational definitions of sexual orientation and the suggestion that sexual minority populations are more likely to report suicide attempts or interpret self-harm behaviors as suicide attempts have made some researchers interpret these disparities with caution.[14,15] However, Plöderl and colleagues[16] demonstrated that even after accounting for these limitations, evidence still exists of sexual minority individuals having higher risk of suicidal behaviors. The discriminatory behaviors experienced by sexual minority youth may increase the risk for depression and suicidal ideation.[14,17,18] Nonetheless, many sexual minority youth successfully transition from childhood to adulthood and become healthy and productive adults, but others do struggle because of the experience of discrimination, stigma, rejection, and sometimes physical aggression.[19]

Sexual orientation comprises three dimensions—sexual identity, sexual behavior, and sexual attraction.[18] Each dimension may assess a unique feature of sexual orientation that may be related to the reported disparity in health risk behaviors and health outcomes.[20,21] The majority of studies have used only one of these dimensions to categorize respondents by sexual orientation. Few studies have used multiple dimensions to assess sexual orientation, and in those studies discordance was noted between respondent sexual identity, behavior, and attraction.[22,23] Sexual orientation discordance (termed in this study as discordance) refers to the mismatch between the various dimensions of sexual orientation.[24] In this study, discordance refers to reporting sexual contact that is inconsistent with a respondent's sexual identity.[25] Discordance may occur for reasons such as homophobia, societal norms that endorse heterosexual relationships, a lack of opportunity to act on one's sexual identity, or the fluidity of sexual identity that describes sexual experience and desires.[26–28] Discrimination, stigma, prejudice, rejection, and societal norms may put pressure on sexual minorities to present a sexual identity inconsistent with their true sexual identity or to act in a manner inconsistent with their sexual identity.[29,30] Similarly, anticipation of rejection from sexual minority peers or the fear of others assuming "it's just a phase" may also cause some youth to present in a discordant manner.[31]

Studies examining discordance have mostly been conducted in adult populations, and these studies have found associations with some adverse health outcomes and risk behaviors for nonfatal suicidal behaviors, including depression, illicit drug and alcohol use, and risky sexual behaviors.[24,25,31] To the authors' knowledge, no study has examined the relationship between discordance and suicidal ideation or suicide attempt among high school students. Examining this relationship is important to identify the challenges and stressors that adolescents experiencing discordance may encounter and guide the development and implementation of effective suicide prevention strategies for this population. For the first time, the 2015 national Youth Risk Behavior Survey (YRBS) included two measures of sexual orientation—sexual identity and sex of sexual contacts[32]—providing an opportunity to examine discordance and how it relates to nonfatal suicidal behaviors among a nationally representative sample of U.S. high school students. The objective of this study is to address the dearth of knowledge on discordance among adolescents by examining the relationship between sexual orientation discordance and nonfatal suicidal behaviors.

METHODS

Study Population

The Centers for Disease Control and Prevention (CDC) has administered the YRBS (a nationally representative, cross-sectional, school-based survey) biennially since 1991. The national YRBS uses a three-stage probability sampling methodology to produce a nationally representative sample of students in ninth to 12th grades who attend public and private schools. Details about the sampling strategy and psychometric properties of the 2015 YRBS has been reported elsewhere.[5] In summary, the 2015 national YRBS sampling frame consisted of all regular public and private schools with students in at least one of ninth to 12th grades in the 50 states and the District of Columbia.[5] Participation of students in the YRBS is voluntary and anonymous and conducted in accordance with local procedures for parental permission. Students completed a self-administered 99-item questionnaire during a regular class period and recorded their responses on an answer sheet or a computer-scannable booklet. The data were weighted to adjust for school and student nonresponse, as well as the oversampling of black and Hispanic students and are representative of all public and private school students in ninth to 12th grades in the U.S.

The school response rate for the 2015 national YRBS was 69%, and the student response rate was 86%. The overall response rate, a product of the school and student response rates, was 60%.[5] The overall sample size was 15,624 students. Analyses were restricted to students who identified as heterosexual or gay/lesbian, who had sexual contact, and who did not have missing information for the sexual orientation and suicide variables, resulting in final analytic sample of 6,790 students. Missing data were not imputed. The national YRBS has been approved by CDC's IRB.

Measures

The discordance variable was created from the two measures of sexual orientation included on the 2015 national YRBS: sexual identity and sex of sexual contacts. Sexual identity was assessed through the question: *Which of the following best describes you?* Response options: *heterosexual (straight)*, *gay or lesbian*, *bisexual*, and *not sure*. Sex of sexual contacts was assessed by the question: *During your life, with whom have you had sexual contact?* Response options: *I have never had sexual contact*, *females*, *males*, *females and males*. Based on the sex of respondents, sex of sexual contacts was categorized as sexual contact with only the opposite sex, sexual contact with only the same sex, sexual contact with both sexes, or no sexual contact. The sexual identity variable was used as the basis against which the sex of sexual contact variable was compared because most students responded to this question. For students who identified as heterosexual, discordance was established if they had had sexual contact with only the same sex or with both sexes. For students who identified as gay/lesbian, discordance was established if they had had sexual contact with only the opposite sex or with both sexes. Respondents who identified as bisexual or not sure were excluded from this study because authors could not be sure that the sex of their sexual contacts was discordant with their sexual identity.

The outcome variable, nonfatal suicidal behaviors, was assessed using the following three questions: (1) *During the past 12 months, did you ever seriously consider attempting suicide?* Response options: *yes*, *no*. (2) *During the past 12 months, did you make a plan about how you would attempt suicide?* Response options: *yes*, *no*. (3) *During the past 12 months, how many times did you actually attempt suicide?* Response options: *0 times*, *1 time*, *2 or 3 times*, *4 or 5 times*, and *6 or more times*. In this study, respondents were considered as being at low risk for nonfatal suicidal behaviors if they had not seriously considered attempting suicide, made a plan about how they would attempt suicide, or attempted suicide during the past 12 months. Students who either seriously considered attempting suicide, made a plan about how they would attempt suicide, or made at least one suicide attempt during the past 12 months were considered as being at high risk for nonfatal suicidal behaviors.

Statistical Analysis

Descriptive statistics of demographic and main independent variables were assessed by discordance status and compared using the chi-square test. The prevalence of nonfatal suicidal behaviors was estimated for selected subpopulations of participants, although no formal statistical testing was done. The relationship between nonfatal suicidal behaviors and discordance was assessed using logistic regression analyses, which generated unadjusted and adjusted prevalence ratios. Multivariable model building was conducted in three stages: (1) crude association between discordance and nonfatal suicidal behaviors without inclusion of covariates; (2) added demographic characteristics, such as sex, race/ethnicity, grade, and sexual identity; and (3) added sexual identity because of the differential prevalence of discordance in those identifying as heterosexual compared with those identifying as gay/lesbian. In addition to the covariates in the second model, the third model included additional variables that have been identified from the literature to be associated with suicidal ideation or suicide attempts: ever drank alcohol; ever used marijuana; ever been physically forced to have sexual intercourse (i.e., raped); and bullied on school property during the past 12 months.[33–35] Because youth who experience forced sexual intercourse are at a greater risk for suicidal behaviors[33] and because forced sexual intercourse may have been the reason for discordance, a parallel model was run excluding this population. All analyses were performed in SAS, version 9.4, using SUDAAN, version 11.0.1, and taking into account the complex sample design of the national YRBS. Data analyses were conducted in 2017.

RESULTS

As shown in Table 1, more students were male than female (56.0% vs 44.0%), and most students were white non-Hispanic (54.8%), followed by Hispanic (22.1%) and black non-Hispanic (14.8%). Most students (97.8%) identified as heterosexual. Approximately 96.1% of students experienced sexual orientation concordance, with the remaining 3.9% experiencing discordance. The prevalence of discordance in gay/lesbian students was 31.9%, whereas the prevalence was 3.3% among heterosexual students. High risk for nonfatal suicidal behaviors were significantly more common in female students compared with male students, gay/lesbian students compared with heterosexual students, students with discordance compared with students with concordance, students who were bullied on school property compared with students who were not bullied on school property, students who ever drank alcohol or used marijuana compared with students who did not use those substances, and students who had ever been physically forced to have sexual intercourse compared with students who had not been physically forced to have sexual intercourse. High risk for nonfatal suicidal behaviors were more common in discordant students who were bullied on school property, who experienced forced sexual intercourse, or who were gay/lesbian than their analogous counterparts (Table 2).

As shown in Table 3, the prevalence of discordance was significantly greater among gay/lesbian students compared with heterosexual students, female students compared with male students, among black non-Hispanic students than white non-Hispanic students, students experiencing high risk for nonfatal suicidal behaviors compared with students experiencing low risk

Table 1. Demographic Characteristics and Other Selected Variables, Overall and by Low and High Risk for Non-fatal Suicidal Behaviors Among High School Students, National YRBS, 2015

Characteristics	Total		Low risk for non-fatal suicidal behaviors,[c] %[d] (95% CI)	High risk for non-fatal suicidal behaviors,[e] %[d] (95% CI)	*p*-value[f]
	n[a]	%[b] (95% CI)			
Sex					
Male	3,866	56.0 (53.3, 58.6)	81.6 (79.5, 83.6)	18.4 (16.4, 20.5)	**<0.001**
Female	3,104	44.0 (41.4, 46.7)	70.5 (67.8, 73.1)	29.5 (26.9, 32.2)	
Race/ethnicity					
White, non-Hispanic	3,103	54.8 (49.2, 60.2)	76.8 (73.6, 79.8)	23.2 (20.2, 26.4)	0.221
Black, non-Hispanic	827	14.8 (12.3, 17.7)	79.9 (73.5, 85.1)	20.1 (14.9, 26.5)	
Hispanic	2,273	22.1 (17.9, 27.0)	76.1 (73.3, 78.7)	23.9 (21.3, 26.7)	
Grade					
9 and 10	2,827	41.8 (39.6, 43.9)	75.3 (72.8, 77.7)	24.7 (22.3, 27.2)	0.082
11 and12	4,105	58.2 (56.1, 60.4)	77.7 (75.6, 79.8)	22.3 (20.2, 24.4)	
Sexual identity					
Heterosexual	6,776	97.8 (97.3, 98.2)	77.2 (75.4, 79.0)	22.8 (21.0, 24.6)	**0.007**
Gay/lesbian	194	2.2 (1.8, 2.7)	54.1 (40.7, 66.9)	45.9 (33.1, 59.3)	
Sexual orientation discordance					
Yes	311	3.9 (3.1, 4.9)	53.7 (46.8, 60.4)	46.3 (39.6, 53.2)	**<0.001**
No	6,659	96.1 (95.1, 96.9)	77.6 (75.9, 79.3)	22.4 (20.7, 24.1)	
Bullied on school property[f]					
Yes	1,337	20.7 (19.1, 22.4)	57.8 (52.5, 62.9)	42.2 (37.1, 47.5)	**<0.001**
No	5,599	79.3 (77.6, 80.9)	81.8 (80.4, 83.2)	18.2 (16.8, 19.6)	
Ever drank alcohol					
Yes	5,457	80.9 (78.9, 82.6)	75.4 (73.8, 77.0)	24.6 (23.0, 26.2)	**0.002**
No	1,281	19.1 (17.3, 21.1)	82.3 (77.5, 86.3)	17.7 (13.7, 22.5)	
Ever used marijuana					
Yes	3,949	57.7 (54.3, 60.9)	73.7 (71.5, 75.7)	26.3 (24.3, 28.5)	**<0.001**
No	2,814	42.3 (39.1, 45.7)	80.9 (77.6, 83.9)	19.1 (16.1, 22.4)	
Ever physically forced to have sexual intercourse					
Yes	666	9.0 (7.8, 10.3)	48.6 (43.0, 54.3)	51.4 (45.7, 57.0)	**<0.001**
No	6,239	91.0 (89.7, 92.2)	79.7 (77.9, 81.4)	20.3 (18.6, 22.1)	

Note: Boldface indicates statistical significance ($p < 0.05$).
[a]Sample *n* are unweighted.
[b]Percentages are weighted.
[c]Did not seriously consider attempting suicide, did not make a plan about how they would attempt suicide, and did not attempt suicide during the past 12 months.
[d]During the past 12 months.
[e]Seriously considered attempting suicide, made a plan about how they would attempt suicide, or attempted suicide during the past 12 months.
[f]*p*-value is comparing characteristics by low versus high risk for non-fatal suicidal behaviors using χ^2 test.
YRBS, Youth Risk Behavior Survey.

for nonfatal suicidal behaviors, students who were bullied on school property compared with students who were not bullied on school property, students who ever used marijuana compared with students who did not use marijuana, and students who had ever been physically forced to have sexual intercourse compared with students who had never been physically forced to have sexual intercourse.

The logistic regression analyses indicated that discordance was significantly associated with high risk for nonfatal suicidal behaviors. In the final adjusted model, discordant students were 70% (60% after excluding students who experienced forced sexual intercourse) more likely to have experienced high risk for nonfatal suicidal behaviors during the past 12 months compared with concordant students (adjusted prevalence ratio=1.7, 95% CI=1.4, 2.0; Table 4).

DISCUSSION

To the authors' knowledge, this is the first nationally representative study to examine discordance and nonfatal suicidal behaviors among high school students. In this study, a significant likelihood of high risk for

Table 2. Prevalence[a] of Non-fatal Suicidal Behaviors Among Selected Sub-populations of High School Students, National YRBS, 2015

	Low risk for non-fatal suicidal behaviors[b]		High risk for non-fatal suicidal behaviors[c]	
Characteristics	*n*	% (95% CI)	*n*	% (95% CI)
Total	5,341	76.7 (74.9, 78.4)	1,629	23.3 (21.6, 25.1)
Bullied on school property[d]				
Sexual orientation concordant[e]				
Bullied on school property	698	59.8 (54.5, 64.8)	547	40.2 (35.2, 45.5)
Not bullied on school property	4,463	82.4 (81.0, 83.7)	923	17.6 (16.3, 19.0)
Sexual orientation discordant[f]				
Bullied on school property	26	19.4 (11.4, 31.1)	66	80.6 (68.9, 88.6)
Not bullied on school property	135	66.2 (58.4, 73.3)	78	33.8 (26.7, 41.6)
Ever physically forced to have sexual intercourse				
Sexual orientation concordant[e]				
Forced sexual intercourse	308	50.9 (45.3, 56.5)	289	49.1 (43.5, 54.7)
No forced sexual intercourse	4,831	80.4 (78.6, 82.1)	1,171	19.6 (17.9, 21.4)
Sexual orientation discordant[f]				
Forced sexual intercourse	24	25.3 (12.8, 43.8)	45	74.7 (56.2, 87.2)
No forced sexual intercourse	137	60.2 (52.8, 67.2)	100	39.8 (32.8, 47.2)
Sexual identity				
Sexual orientation concordant[e]				
Gay/lesbian	80	57.6 (42.3, 71.5)	50	42.4 (28.5, 57.7)
Heterosexual	5,098	78.0 (76.2, 79.6)	1,431	22.0 (20.4, 23.8)
Sexual orientation discordant[f]				
Gay/lesbian	27	46.6 (27.5, 66.8)	37	53.4 (33.2, 72.5)
Heterosexual	136	55.2 (45.8, 64.3)	111	44.8 (35.7, 54.2)

[a]No statistical testing was performed.
[b]Did not seriously consider attempting suicide, did not make a plan about how they would attempt suicide, and did not attempt suicide during the past 12 months.
[c]Seriously considered attempting suicide, made a plan about how they would attempt suicide, or attempted suicide during the past 12 months.
[d]During the past 12 months.
[e]Agreement between sexual identity and sex of sexual contacts.
[f]Disagreement between sexual identity and sex of sexual contacts.
YRBS, Youth Risk Behavior Survey.

nonfatal suicidal behaviors among discordant students compared with concordant students was observed after controlling for covariates. This finding persisted even after excluding students who experienced forced sexual intercourse. The finding is consistent with previous studies conducted among adult populations that reported associations between discordance and depression and drug and alcohol use, factors that are also known to be associated with suicidal ideation and suicide attempts.[24,25,31]

Self-discrepancy theory may provide an explanation for the observed association between discordance and high suicide risk among high school students. The self-discrepancy theory posits that individuals compare their situation or state (i.e., self-concept) to a set of internalized standards (i.e., self-guides), and if discrepancy occurs between the two, psychological discomfort, such as stress, anxiety, and depression, may occur.[24,36] Given the conflict of different sexual orientation dimensions within the individual, it is possible that the sense of conflict could confer risk for psychological distress and other mental health problems, such as depression.[24] Many adolescents experience stress associated with the developmental changes taking place at this life stage, so these typical stressors coupled with the additional psychological stress from self-conflict could have significant health consequences. Consistent with this theory, Laurie and Needham[24] noted that discordance was a significant predictor of higher depressive symptomology in adults, a recognized risk factor for suicidal ideation/suicide attempts among adults and adolescents.[37]

Another theory that may also provide insight into these results is the minority stress theory, which addresses external stressors that have a negative impact on health outcomes. The minority stress theory suggests that stigma experienced by sexual minorities

Table 3. Sexual Orientation Discordance, by Demographic Characteristics and Other Selected Variables Among High School Students, National YRBS, 2015

	Sexual orientation discordance				
	No		Yes		
Characteristics	***n*[a]**	**%[b] (95% CI)**	***n*[a]**	**%[b] (95% CI)**	***p*-value[c]**
Sexual identity					
Heterosexual	6,529	96.7 (95.9, 97.4)	247	3.3 (2.6, 4.1)	**<0.001**
Gay/lesbian	130	68.1 (57.4, 77.1)	64	31.9 (22.9, 42.6)	
Sex					
Males	3,771	98.0 (97.2, 98.6)	95	2.0 (1.4, 2.8)	**<0.001**
Females	2,888	93.6 (91.8, 95.1)	216	6.4 (4.9, 8.2)	
Race/ethnicity					
White, non-Hispanic	2,981	97.2 (95.9, 98.0)	122	2.8 (2.0, 4.1)	**0.047**
Black, non-Hispanic	771	94.0 (90.6, 96.2)	56	6.0 (3.8, 9.4)	
Hispanic	2,173	95.4 (94.1, 96.4)	100	4.6 (3.6, 5.9)	
Grade					
9 and 10	2,693	95.7 (94.2, 96.8)	134	4.3 (3.2, 5.8)	0.198
11 and 12	3,935	96.5 (95.6, 97.2)	170	3.5 (2.8, 4.4)	
High risk for non-fatal suicidal behaviors[d]					
Yes	1,481	92.2 (90.2, 93.9)	148	7.8 (6.1, 9.8)	**<0.001**
No	5,178	97.3 (96.4, 97.9)	163	2.7 (2.1, 3.6)	
Bullied on school property[e]					
Yes	1,245	95.1 (93.4, 96.3)	92	4.9 (3.7, 6.6)	**0.044**
No	5,386	96.4 (95.4, 97.2)	213	3.6 (2.8, 4.6)	
Ever drank alcohol					
Yes	5,197	95.9 (94.8, 96.8)	260	4.1 (3.2, 5.2)	0.064
No	1,242	97.1 (95.7, 98.1)	39	2.9 (1.9, 4.3)	
Ever used marijuana					
Yes	3,751	95.6 (94.3, 96.5)	198	4.4 (3.5, 5.7)	**0.003**
No	2,724	97.3 (96.2, 98.0)	90	2.7 (2.0, 3.8)	
Ever physically forced to have sexual intercourse					
Yes	597	91.0 (86.5, 94.0)	69	9.0 (6.0, 13.5)	**0.004**
No	6,002	96.7 (95.8, 97.4)	237	3.3 (2.6, 4.2)	

Note: Boldface indicates statistical significance ($p < 0.05$).
[a]Sample *n* is unweighted.
[b]Percentage is weighted.
[c]*p*-value is comparing characteristics by no versus yes of sexual orientation discordance using χ^2 test.
[d]Seriously considered attempting suicide, made a plan about how they would attempt suicide, or attempted suicide during the past 12 months.
[e]During the past 12 months.
YRBS, Youth Risk Behavior Survey.

may cause chronic, cumulative stress that may negatively impact both mental and physical health.[7] Minority stress has been associated with increased depression, overall poor physical health, and increased risk of chronic disease diagnosis.[38–40] It is possible that discordant individuals, regardless of how they self-identify, may experience stress that predisposes them to self-harm behaviors. For example, individuals identifying as heterosexuals but who are experiencing discordance may also be vulnerable to this stress and associated health outcomes in a similar manner as sexual minorities.

The study findings highlight the complex relationship between sexual orientation and mental health outcomes including nonfatal suicidal behaviors in sexual minorities as noted by Hatzenbuehler and Pachankis.[41] The factors influencing this relationship may come from different levels of the socioecological framework—individual, interpersonal, and structural. Therefore, a multicomponent public health approach is likely needed to reduce nonfatal suicidal behaviors.[41] The implementation of the strategies in the CDC's technical package to prevent suicide, a resource to help states and communities to identify strategies and approaches with the best available

Table 4. Association Between Sexual Orientation Discordance and High Suicide Risk[a] Among High School Students, National YRBS, 2015

Sexual orientation discordance	Low risk for non-fatal suicidal behaviors[b]	High risk for non-fatal suicidal behaviors[a]		
		Model 1, PR (95% CI)	Model 2, APR (95% CI)	Model 3, APR (95% CI)
Concordant[c]	ref	ref	ref	ref
Discordant[d]—all respondents	ref	2.1 (1.8, 2.4)	1.8 (1.5, 2.1)	1.7 (1.4, 2.0)
Discordant[d]—excluding students who have ever been forced to have sexual intercourse	ref	2.0 (1.7, 2.4)	1.7 (1.4, 2.2)	1.6 (1.3, 2.0)

Note: Model 1: Crude association between sexual concordance status and high suicide risk. Model 2: Adjusted for demographic characteristics such as sex, race/ethnicity, grade, and sexual identity. Model 3: Adjusted for demographic characteristics (sex, race/ethnicity, grade, and sexual identity) and the following covariates: ever drank alcohol, ever used marijuana, bullied on school property during the past 12 months, and ever been physically forced to have sexual intercourse.
[a]Seriously considered attempting suicide, made a plan about how they would attempt suicide, or attempted suicide during the past 12 months.
[b]Did not seriously consider attempting suicide, did not make a plan about how they would attempt suicide, and did not attempt suicide during the past 12 months.
[c]Agreement between sexual identity and sex of sexual contacts.
[d]Disagreement between sexual identity and sex of sexual contacts.
APR, adjusted prevalence ratio; PR, prevalence ratio; YRBS, Youth Risk Behavior Survey.

evidence to prevent suicide, may be important for reducing suicidal behaviors in this population.[42] For example, given the documented evidence of social rejection, discrimination, and stigma in this population, the strategies of promoting connectedness and teaching coping and problem-solving skills may be useful to addressing some of the risk factors in this population. Creating safe environments, such as Gay Straight Alliances and inclusive policies in the school environment, may also help improve the health of sexual minority youth.[43,44] Prevention efforts could also be strengthened by future studies examining risk and protective factors among adolescents experiencing discordance that may influence the vulnerability to nonfatal suicidal behaviors and exploring some of the reasons for discordance. Future studies also need to recognize the importance of using multiple sexual orientation measures to identify sexual minority youth, an approach that may increase the identification of individuals who may potentially be at increased risk for health risk behaviors or poor health outcomes because of their experience of direct and indirect forms of discrimination.[45]

Limitations

Some limitations of the study need to be noted. First, discordance was assessed using only two of the three sexual orientation dimensions (sexual identity and sex of sexual contacts) because information on the third dimension, sexual attraction, was not available. A previous study using Wave I and II data from National Longitudinal Study in Adolescents to Adult Health also used two dimensions to determine discordance and demonstrated a relationship between discordance and depressive symptomology.[24] It is therefore believed that the use of two dimensions in determining discordance is appropriate when using existing data that measured only two. However, it may be more appropriate for future research to consider measuring all three dimensions to assess discordance. Second, the YRBS data are cross-sectional; therefore, temporality in the examined associations cannot be determined. Third, the YRBS data include only high school students who attend school; therefore, these study are not representative of all adolescents in this age group. It is also possible that a disproportionately greater proportion of high school dropouts may be LGB students than heterosexual students or youth with other suicide risk factors. A 2015 report indicates only about 3% of individuals aged 16–17 years nationwide were not enrolled in a high school program; thus, assessment of high school students is likely a reliable indicator of most youth behaviors.[46] Fourth, no definition of sexual contact was provided, so it is possible students might have considered a range of sexual activities when responding to this question. Fifth, some students might not be fully aware of their sexual identity at this age, might have been unwilling to disclose it on the survey, might have been unwilling to identify themselves as heterosexual or LGB, or might not have understood the sexual identity question. Sixth, the use of dichotomous measure of nonfatal suicidal behaviors may have introduced an error in describing the outcome variable.[16] Finally, it is important to recognize that out of initial sexual curiosity and experimentation, some youth may engage in sexual activity with same, the opposite, or both sexes as part of the developmental process in exploring their sexual identity and this exploration may not be associated with distress.

CONCLUSIONS

The current study highlights another potential risk factor for youth suicide. In considering the health and well-being of youth, sexual identity and sexual behavior and their intersection should be considered for their association with the mental health and well-being of adolescents. Some adolescents reporting discordance may have needs that should be considered when developing and implementing suicide prevention programs.

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