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RESEARCH ARTICLE

Examining Suicidal Thoughts and Behaviors Among Ohio Youth with Oppressed Identities Using the 2019 Ohio Youth Risk Behavior Survey

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ABSTRACT

Background: Suicide is the second leading cause of death among youth aged 10 to 14 years and third for those aged 15 to 24 years in the United States and in Ohio. Suicidal thoughts and behaviors disparately affect youth with oppressed identities, including those with oppressed racial, ethnic, gender, and sexual minority identities. The purpose of this study was to examine the relationship between self-reports of suicidal thoughts and behaviors among Ohio youth with oppressed identities. This research also contextualizes relationships between these indicators through the context of intersectionality.

Methods: This cross-sectional descriptive study used responses from the 2019 Ohio Youth Risk Behavior Survey (YRBS; n = 1263) to examine the relationships between identity variables and suicidal thoughts and behaviors through a series of logistic regression models.

Results: Female youth have higher odds of reporting persistent feelings of sadness and hopelessness and seriously considering suicide than male youth. Lesbian, gay, or bisexual (LGB) youth have higher odds of reporting all outcome measures of suicidal thoughts and behaviors (STBs), and youth with oppressed racial and ethnic identities were in general more likely to report higher odds of STBs when compared to White youth.

Conclusion: Suicidal thoughts and behaviors disparately affect youth with these oppressed identities. Our findings suggest further examination of these youth nationally may influence public health suicide prevention strategies. Implications also suggest that researchers, practitioners, and organizations across the spectrum of youth suicide prevention in Ohio should understand the increased risk that youth with multiple, intersectional oppressed identities face for suicide.

Keywords: Suicide; Youth Risk Behavior Survey; YRBS; Intersectionality; Ohio youth; Oppressed identities

INTRODUCTION

In 2020, over 45 000 people died by suicide in the United States.[1] Suicide is largely considered to be a public health crisis, especially among those with oppressed gender, sexual, or racial identities[2-5]—identities that have been minoritized and historically excluded.[6] Suicide has emerged as the second leading cause of death for those aged 10 to 14 years and the third leading cause of death for those aged 15 to 24 years; between 2011 and 2020, the number and rate of suicide deaths among youth increased overall.[7-9] Researchers and practitioners in the field of suicidology have acknowledged that, despite strides in identifying risk and predictive factors related to suicide, the increase in these deaths is cause for alarm: suicide research receives far less funding than other leading preventable causes of death.[10] Less attention has been paid to the social and cultural contexts that may influence suicide risk at the population level, as well as the influence of the confluence of these factors for communities holding oppressed gender, sexual, and racial identities.[10-15] The historical emphasis on identifying individuals at risk of suicide through assessment and screening leads to a shift toward investigation opportunities into public health and population-based approaches to understanding suicide

risk and protective factors.[12] Additionally, suicide presents as an increasingly more prevalent phenomenon among those with oppressed gender, sexual, and racial identities, and, as such, unique consideration and continued research are needed to examine the intersection of these identities as it pertains to suicide risk, particularly from a social justice, intersectional, or critical lens.[11,14-17]

Ohio's suicide rate among youth and adults is commensurate with the national average.[7,18] It is important to note that among both youth and adults, suicidal thoughts, attempts, and deaths are rarely caused by any single factor, yet the confluence of environmental, systemic, and contextual factors that elevate one's risk of suicide disparately impact those with oppressed racial, ethnic, gender, and sexual identities.[15,19-23] There are unique differences in the prevalence of suicidal thoughts and behaviors (STBs) between youth and adults; suicidal behaviors, such as a suicide attempt, commonly develop over time, whereas the prevalence of thoughts of suicide are more common at the beginning of adolescence, with researchers identifying the ages of 12 to 17 years as critical periods.[24-26] In the United States, youth with oppressed identities, including those who identify as lesbian, gay, or bisexual (LGB),[15,23,27] youth with oppressed racial and ethnic identities,[19,28] and girls,[21,27] are found to be at an increased risk for suicidal thoughts and behaviors (STBs).

Adolescence is a stage of life marked by a combination of psychological development and, at times, increased impulsivity and risk-taking behaviors.[25,29] As such, adolescence is associated with higher age-adjusted rates of mental health concerns and suicide, especially for youth who are predisposed to multiple risk factors.[30,31] Engaging in risky health behaviors ultimately shapes the morbidity and mortality of the country's youth across racial, ethnic, and other oppressed identity groups.[32,33] Yet, these risk behaviors and potential protective factors do not affect all cultural and identity groups in the same manner. Oppressed identity groups, including those with shared racial, ethnic, gender, or sexual identities, are disparately affected by poorer health outcomes.[34]

Significant gender differences in both suicidal thoughts and suicidal behaviors have been noted between male and female-identifying youth, as well as gender nonbinary and gender nonconforming youth; these variations also exist around diagnosis of psychiatric disorders.[13,35] Girls are more likely than boys to have developed plans for suicide (18.1% and 15%, respectively) and tend to develop suicidal ideation earlier than their male peers.[36] Researchers have posited that the disparity in deaths may be attributed to the lethality of means used in suicide attempts, such as firearms or intentional overdose for male and female youth, respectively.[25]

Much of the research that does exist on youth suicide has predominantly involved White youth with sparse examination among other cultural groups.[15] Nearly 3000 Black Americans die by suicide each year, and suicide is the third leading cause of death for Black adolescents and young adults aged 15 to 24 years.[7] Black and African American youth are more likely to face racial discrimination, especially multigenerational discrimination which has been found to play a factor in the development of STBs.[37,38] Among Hispanic youth, attempts and behaviors are more common among females; responses from the 2013 national YRBS indicated that Hispanic female youth, as well as Black and White female youth, were more likely to consider suicide than their male counterparts, respectively. Of Hispanic female youth who responded, 26% had seriously considered attempting suicide in the last 12 months. Hispanic female youth were also more likely to make a suicide plan and attempt suicide than Black and White female youth, and all male youth who responded.[27]

Mueller and colleagues[15] found that sexual minority youth were much more likely to report suicidal ideation regardless of their race, ethnicity, gender, or whether or not they had been bullied. Moreover, the prevalence of endorsed suicidal ideation varied among heterosexual and LGB youth at the intersection of race and ethnicity; they found that White and Hispanic gay and bisexual male youth among others were more likely to be bullied than White heterosexual adolescents.[15] Despite these alarming findings, our understanding of suicidal thoughts and behaviors in LGB youth is limited.[39]

The purpose of this study was to examine race, sexual orientation, and sex as predictors of STBs among Ohio youth using responses to the 2019 Ohio YRBS. We discuss our findings through an intersectional lens to contextualize the implications for public health practice and to inform subsequent research. It is less common to contextualize epidemiological research, including STBs among youth with oppressed racial, gender, and sexual identities, through a critical or intersectional lens. Given the consistent loss of lives to suicide in the United States, it is essential to understand the nuances of suicide risk and related mental health concerns and the impact of living within intersecting structures of oppression and discrimination.

Intersectionality Theory

Intersectionality theory is the deliberate focus on multiple identities of privilege and oppression a person may experience throughout their lifetime.[40,41] Intersectionality theory appreciates that unique historical, social, cultural, and political factors inform the intersections of gender, race, sexual identity, as well as other identities, and therefore differentially influence life experiences, including health.[42] Each identity jointly contributes to consequences of systemic and social oppression that place those with intersectional oppressed identities at a greater risk of negative health outcomes, including death by suicide.[13,16,43] Intersectionality can be used to contextualize methodology in health behavior and social science research as well as the interpretation of quantitative analyses, especially in supporting that the integration of 2 or more unique, often oppressed, identities is not generalizable; there may be the common association of increased discrimination and negative health outcomes, but beliefs, values, and behaviors vary as

widely within identity groups as between identity groups.[44] Intersectionality theory provides promising opportunities for those involved in population health research, particularly with a quantitative focus, to challenge notions of additive effects when examining race, ethnicity, sex, gender identity, sexual orientation, and disability.[44-47] It is with tenets of intersectional theory that population health and similar researchers may communicate the vitality and nuance of the contexts in which these people live.[45]

METHODS

Participants and Procedures

The current study employed responses to the 2019 Ohio Youth Risk Behavior Survey (YRBS). The YRBS monitors health-risk behaviors and environmental factors that impact youth health and safety in the United States.[48] The YRBS employs a 2-stage, cluster sample design to reflect a representative sample of students in the 9th through 12th grades.[49] The first sampling stage identifies schools in the state of Ohio with probability proportional to school enrollment size, and the second sampling stage selects required classes at random. Surveys with response rates over 70% are weighted based on characteristics of other students in the jurisdiction, such as grade, race, and gender identity. These data were provided by the Ohio Department of Health. The Ohio Department of Health specifically disclaims responsibility for any analyses, interpretations, or conclusions. This secondary data analysis was exempt from institutional review board approval due to the use of publicly available, deidentified data.

Measures

Students responded to 4 demographic questions relating to sex, sexual orientation, race, and ethnicity which were used as predictors in examining the 4 STB outcome items. The sample was 50.6% (n = 635) male and 49.4% (n = 620) female. Most participants were between 14 and 18 years of age (86.9%). Most participants identified as heterosexual or straight (n = 1017; 86%) with approximately 8% identifying as bisexual (n = 94). Approximately 3% of students identified as either gay or lesbian (2.7%; n = 32), or not sure (3.3%, n = 39). Most participants identified as White, non-Hispanic (56%; n = 690) with nearly a quarter of youth identifying as Black or African American, non-Hispanic (24%; n = 291) and 10% (n = 124) identifying as Hispanic. Descriptive statistics of the sample can be found in Table 1.

Suicidal Thoughts and Behaviors.

Three items directly address STBs within the past 12 months including "Did you ever seriously consider attempting suicide?," "Did you make a suicide plan?," and "How many times did you actually attempt suicide?" Additionally, participants were asked if, 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?" Participants were asked to indicate either "yes" or "no" for each question or to indicate the number of times they attempted suicide from 5 potential options. For this study, and as consistent with previous research on STBs items from the YRBS,[21] youth who reported at least 1 suicide attempt were coded as "yes" and those without a history of suicide attempts were coded as "no."

Statistical Analysis

Our statistical analyses accounted for both the sample and survey design, including the parameters used for weighted sampling techniques by the Centers for Disease Control and Prevention (CDC) and the Ohio Department of Health. All analyses were conducted using Stata IC 16.0.[50] Data edits to responses that were logically inconsistent with other items were conducted with such conflicting responses set to blank. We first examined our predictor and outcome variables using descriptive statistics, including frequencies and proportions. Next, we used bivariate logistic regression analyses to examine odds ratios for youth with oppressed racial

Table 1. Unweighted Frequencies and Weighted Proportions of Participant Demographics

N = 1263	Frequency (n)[a]	Proportion
Sexual orientation		
Heterosexual/straight	1017	0.88
Lesbian, gay, or bisexual (LGB)	165	0.12
Not sure		
Sex		
Male	635	0.51
Female	620	0.49
Race/Ethnicity		
White, non-Hispanic	690	0.73
Black, non-Hispanic	291	0.15
Hispanic	124	0.05
Other	122	0.07
Felt sad or hopeless	430	0.33
Suicidal thoughts and behaviors (STBs)		
Considered suicide	216	0.16
Made a suicide plan	150	0.11
Attempted suicide	86	0.07

[a]Frequencies will not total to the entire sample size due to missing item responses.

and sexual identities in reporting STBs. Lastly, we ran several stepwise multivariate logistic regression analyses to examine potential moderating characteristics for STBs, however, these were not included. Goodness of fit of the final bivariate models was assessed using the Archer-Lemeshow statistic, which is used to estimate the F-adjusted mean residual test to ensure the fit of logistic regression models using survey data.[51] Logistic regression analyses yield odds ratios, with which we used 95% confidence intervals, which demonstrate the odds of youth experiencing the outcome variable of interest while controlling for predictor variables.[52]

RESULTS

Each model was examined using the Archer-Lemeshow (2006) goodness of fit test statistic to assess for model fit, which yielded an F-adjusted test statistic, all of which yielded *P* values greater than our critical alpha of .05. Our results indicate that each model met our assumptions of logistic regression models using survey data. Goodness of fit statistics are available upon request from the corresponding author.

Felt Sad or Hopeless

Results for each of our regression analyses examining STBs as an outcome are reported in Table 2. There were differences between male and female youth, with female youth twice as likely to report feeling so sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities as compared to male youth (OR = 2.70; 95% CI, 1.99-2.66). The results of our bivariate logistic regression revealed that LGB youth, as compared to their heterosexual/straight counterparts, had more than 7 times the odds of feeling sad or hopeless (OR = 7.33; 95% CI, 4.47- 12.1), and youth who reported "not sure" had about 2.5 higher odds of reporting feeling sad or hopeless (OR = 2.47; 95% CI, 0.99- 6.13). Hispanic youth had twice the odds of reporting feeling sad or hopeless (OR = 2.07; 95% CI, 1.33-3.22) and those who were considered "other," all of whom reported an oppressed racial identity, had 1.6 higher odds of feeling sad or hopeless when compared to White youth (OR = 1.60; 95% CI, 1.12-2.28). In our bivariate model examining sadness/hopelessness as an outcome variable, we did not find a statistically significant difference among Black youth when compared to White youth (OR = 1.36; 95% CI, 0.82-2.26).

Considering Suicide

The results of our logistic regression analyses for seriously considering suicide are presented in Table 2. There were differences between male and female youth in reporting seriously considering suicide within the past 12 months, with female youth almost twice as likely to report as compared to male youth (OR = 1.87; 95% CI, 1.36-2.58). The results of our multinomial logistic regression revealed that LGB youth, as compared to their heterosexual/straight counterparts, had more than 8 times the odds of reporting strongly considering suicide (OR = 8.49; 95% CI, 5.18-13.9) and youth who reported "not sure" regarding their sexual orientation had about 5.5 times higher odds of reporting seriously considering suicide (OR = 5.54; 95% CI, 2.88-10.6). Hispanic youth had more than twice the odds of reporting seriously considering suicide (OR = 2.70; 95% CI, 1.76-4.14) and Black youth had approximately 1.6 higher odds of seriously considering suicide, compared to White youth, respectively (OR = 1.55; 95% CI, 1.04-2.30). In our bivariate model examining considering suicide as an outcome variable, we did not find a statistically significant difference among youth categorized as "other" when compared to White youth (OR = 1.12; 95% CI, 0.66-1.90).

Table 2. Bivariate Logistic Regression Analyses of Identity Characteristics Associated with Hopelessness and Suicidal Thoughts and Behaviors Among Ohio Youth, Weighted

	Feeling sad/hopeless		Considered suicide		Made a suicide plan		Attempted suicide	
Identity characteristics	n, (%)	OR [95% CI]	n, (%)	OR [95% CI]	n, (%)	OR [95% CI]	n, (%)	OR [95% CI]
Sex								
Male	154 (36.1)	--	78 (36.3)	--	68 (45.6)	--	42 (48.8)	--
Female	273 (63.9)	2.70 [1.99-2.66]***	137 (63.7)	1.87 [1.36-2.58]***	81 (54.4)	1.28 [0.82-1.97]	44 (51.2)	0.83 [0.45-1.51]
Race/Ethnicity								
White	216 (51.2)	--	101 (47.9)	--	61 (42.1)	--	26 (32.9)	--
Black, non-Hispanic	102 (24.2)	1.36 [0.82-2.26]	54 (25.6)	1.55 [1.04-2.30]*	42 (29.0)	1.99 [1.30-3.05]**	26 (32.9)	4.40 [1.5-10.5]**
Hispanic	54 (12.8)	2.07 [1.33-3.22]**	31 (14.7)	2.70 [1.76-4.14]***	23 (15.9)	3.09 [2.18-4.38]***	15 (19.0)	5.03 [2.72-9.33]***
Other	50 (11.9)	1.60 [1.12-2.28]*	25 (11.9)	1.12 [0.66-1.90]	19 (13.1)	1.46 [0.80-2.65]	12 (15.2)	2.09 [0.70-6.24]
Sexual orientation								
Heterosexual/straight	315 (75.4)	--	127 (62.9)	--	94 (63.1)	--	57 (68.7)	
Lesbian, gay, or bisexual	86 (20.6)	7.33 [4.47-12.1]	61 (30.2)	8.49 [5.18-13.9]***	49 (32.9)	8.08 [4.50-14.5]***	23 (27.7)	5.19 [2.71-9.97]***
Not sure	17 (4.1)	2.47 [0.99-6.13]*	14 (6.9)	5.54 [2.88-10.6]***	--	--	--	--

Notes: Statistically significant associations are notated as * <0.05, ** is <.01, *** is <0.001.

Making a Suicide Plan

The logistic regression results for making a suicide plan are presented in Table 2. There was no statistically significant difference between male and female youth in making a suicide plan within the past 12 months (OR = 1.28; 95% CI, 0.82-1.97). The results of our multinomial logistic regression revealed that LGB youth, as compared to their heterosexual/straight counterparts, had approximately 8 times the odds of making a suicide plan (OR = 8.08; 95% CI, 4.50-14.5). We did not report our results when including youth who reported "not sure" to the question asking to report sexual orientation given the small number of respondents in this category.

Hispanic youth had more than 3 times the odds of reporting making a suicide plan (OR = 3.09; 95% CI, 2.18-4.38) and Black youth had approximately twice the odds of making a suicide plan, compared to White youth, respectively (OR = 1.99; 95% CI, 1.30-3.05). In this bivariate model examining making a suicide plan as an outcome variable, we did not find a statistically significant difference among youth categorized as "other" when compared to White youth (OR = 1.46; 95% CI, 0.80-2.65).

Attempted Suicide

The results of our logistic regression analyses for attempting suicide are presented in Table 2. There was no statistically significant difference between male and female youth in reporting attempting suicide within the past 12 months (OR = 0.83; 95% CI, 0.45-1.51). The results of our multinomial logistic regression revealed that LGB youth, as compared to their heterosexual/straight counterparts, had approximately 5 times the odds of reporting a suicide attempt (OR = 5.19; 95% CI, 2.71-9.97). Again, we did not report our results when including youth who reported "not sure" to the question asking to report sexual orientation given the small number of respondents in this category.

Hispanic youth had more than 5 times the odds of reporting a suicide attempt within the past 12 months (OR = 5.03; 95% CI, 2.72-9.33). Black youth had approximately 4.5 times the odds of reporting a suicide attempt compared to White youth, respectively (OR = 4.40; 95% CI, 1.50-10.5). In this multinomial model examining suicide attempts as an outcome variable, we did not find a statistically significant difference among youth categorized as "other" when compared to White youth (OR = 2.09; 95% CI, 0.70-6.24).

DISCUSSION

The purpose of this study was to examine race, sexual orientation, and sex as predictors of STBs among Ohio youth using responses to the 2019 Ohio YRBS. We discuss our findings through an intersectional lens to contextualize the implications for public health practice and to inform subsequent research. The results of our analyses predominantly supported our first hypothesis for this study; identifying as LGB, holding an oppressed or minoritized racial or ethnic identity, as compared to White youth, being female, would present with increased odds of reporting STBs, specifically, feeling sad or hopeless, considering suicide, making a suicide plan, and attempting suicide, with few exceptions.

Many of the findings from both the descriptive and univariate analyses of the 2019 Ohio YRBS were consistent with national profiles.[19,20] First, the odds of reporting persistent feelings of sadness and hopelessness and considering suicide were significantly higher among female youth as compared to male youth, however, there was no difference between male and female youth in reports of making a suicide plan or attempting suicide. Results from the national YRBS[19] also demonstrated a significant difference between male and female youth for all STBs, including making a suicide plan or attempting suicide. It was not anticipated that suicide attempts would be similar among female and male youth in Ohio. Of those youth sampled, the number who attempted suicide at least once in the past 12 months was nearly identical and proportionate between male (7.8%) and female (8.3%) youth. This contrasts with findings from the national 2019 YRBS, where male youth (6%) were less likely to attempt suicide than their female counterparts.[19]

Second, prevalence rates of persistent feelings of sadness or hopelessness were somewhat similar among Ohio LGB youth and youth nationally; as we examined LGB and youth who reported "not sure" when reporting sexual orientation, there are differences in the elevated reported odds among both samples.[19] Youth who indicated "not sure" were significantly more likely to report persistent sadness and hopelessness. As this group is comprised of a heterogeneous sample of youth, these elevated odds may be explained similarly to those among LGB youth and gender and sexual minority youth. The odds of seriously considering suicide for LGB youth and those who reported "not sure" were both significantly higher than heterosexual/straight youth. Elevated odds of reporting STBs was consistent when examining odds of making a suicide plan or attempting suicide between LGB youth and heterosexual/straight youth, which was similar to the national sample.[20] However, given the exclusion of youth who reported "not sure" in our reported results leads to limits in the generalizability of our findings in examining this group of youth.

Finally, Black and Hispanic youth and those with other oppressed racial identities had generally higher odds of persistent feelings of sadness or hopelessness, considering suicide, making a suicide plan, and attempting suicide; there were no significant differences among Black youth and those considered as "other" when compared to White youth reporting persistent feelings of sadness or hopelessness.

PUBLIC HEALTH IMPLICATIONS

The identification of youth with higher odds of experiencing and reporting STBs is fundamental in formulating appropriate prevention, assessment, and management of these behaviors. Public health strategies for robust suicide prevention must acknowledge

structures that disparately impact youth with oppressed identities through an intersectional lens, including social determinants of health, access to health care, and health literacy around help-seeking for mental health concerns and suicide. Such examples include empowering schools and administrators to take an active role in engaging youth on supporting the social and emotional needs of students, especially among youth with single and multiple oppressed identities.[53]

There are significant implications for public health and the evaluation and implementation of effective systemic strategies across the spectrum of primary, secondary, and tertiary prevention. First, primary prevention across systems can improve the manifestation of mental health concerns through education and addressing risk factors that moderate STBs, including discrimination and other social determinants of health. Secondary prevention may present opportunities for improved screening and identification of youth who are already experiencing mental health concerns and other risk factors. Tertiary prevention may serve to identify crucial strategies in preventing both suicide attempts and deaths, such as those through crisis support services and through lethal means counseling.

Limitations

There are several limitations to the YRBS and this study. Notably, the first is the absence of youth with transgender and gender-expansive identities within the sample. The Ohio YRBS offers limited items related to gender and sexual orientation, and as such those with minority gender and sexual identities may not be accurately captured in this dataset. This reduces generalizability to an otherwise at-risk population. However, given our findings, it may be that STBs among Ohio youth with minority gender identities share similar prevalence rates as youth nationally.

Second, the YRBS is administered once every 2 years and cannot lend information as to causal factors related to suicidal thoughts and behaviors. However, the YRBS and cross-sectional data, when examined carefully, can provide crucial information around health behaviors such as suicidal thoughts and behaviors. Third, the YRBS relies upon students to self-report the health behaviors of interest. Responses may be impacted by recall bias or response fatigue, as the YRBS in Ohio has historically been administered by "pen and paper." The 2021 Ohio YRBS will be distributed electronically. The YRBS requests responses regarding sensitive behaviors, including substance use, suicide, and sexual health practices. There is the risk that students' responses may be impacted by social desirability, which may cause students to under- or over-report behaviors. Given this limitation, however, the survey questions have demonstrated good test-retest reliability. Lastly, it should be noted that limitations in specificity and generalizability do not sacrifice the significance of findings based on population-based survey data. As the CDC and the Ohio Department of Health both employ stratified sampling methods to increase the meaningfulness of findings, we can more confidently report that these results are intended to be from a representative sample.

Conclusion

Suicide, especially youth suicide, is a devastating loss for families, friends, and communities. The findings of our research reiterate the disparate impact of STBs among youth with oppressed sexual, racial, and ethnic identities. The magnitude of these differences impacts all Ohioans; it is incumbent upon researchers and practitioners to share such findings to improve outcomes for all Ohio youth.

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