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School Climate & Sexual and Gender Minority Adolescent Mental Health

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Abstract

Sexual/gender minority (Sexual/gender minority people are also referred to as Lesbian, Gay, Bisexual, Transgender, Queer) youth are more likely than cisgender heterosexual youth to exhibit depressive symptoms and be victimized. School climate research indicates that the presence of a Gay–Straight Alliance (a Gay–Straight Alliance or Gender-Sexuality Alliance is also referred to as a GSA and is a youth group to support sexual/gender minority youth), a supportive school climate, and seeking help from teachers are associated with more positive mental health outcomes; however, they are not typically measured together. This study uses a survey that measures all four measures of school environment with a national sample of 240 sexual/gender minority high school students ages 14–18 (mean age 15.77) where 53% of participants had a Gay–Straight Alliance in their school. The sample is 53% cisgender, 100% sexual minority and 62% white. Adjusting for demographics and presence of a Gay–Straight Alliance, fewer depressive symptoms were associated with lower help-seeking intentions for suicidal thoughts. The presence of Gay–Straight Alliance was not statistically associated with past-month help-seeking intentions or behaviors. Additionally, a more supportive school climate was associated with lower anxiety and depressive symptoms. However, the presence of a Gay–Straight Alliance was not statistically associated with anxiety or depressive symptoms. These findings suggest that a supportive school climate and supportive school personnel may be important for supporting the mental health of sexual/gender minority students.

Keywords

Adolescent mental health; School climate; Health disparities; Sexual and gender minority youth

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Authors' Contributions SC conceived of the study, performed the statistical analyses and drafted the manuscript; RWSC helped conceive of the study, perform the statistical analysis and draft the manuscript; JE was the principal investigator for the original study where the data was collected and he also helped to draft the manuscript. All authors read and approved of the final manuscript.

Conflict of Interest The authors declare that they have no conflict of interest.

Compliance with Ethical Standards

Ethical Approval The University of Pittsburgh Institutional Review Board approved this project as an analysis of de-identified data and therefore not human subjects research.

Informed Consent This was a secondary data analysis of a de-identified data set so did not require consent.

Introduction

Sexual/gender minority[1] youth are more likely than their non-sexual/gender minority peers to exhibit anxiety and depressive symptoms, to consider suicide, and to be victimized because of their identities (Denny et al. 2016; Greytak et al. 2016; Kosciw et al. 2016). Sexual/gender minority youth (both in the U.S. and internationally) are also more likely to report that school is unwelcoming or unsafe because of unsupportive people and policies (Day and Russell 2018; Poteat et al. 2017). The Institute of Medicine's 2011 report suggests that the wellbeing of sexual/gender minority youth can be better understood using approaches including a social-ecological approach (Bronfenbrenner 1979) that considers the many people and organizations that affect the life of youth (Institute of Medicine of the National Academies 2011). Schools are one location where youth spend ample amounts of time. Thus, investigating the effects of supportive teachers and school environment could help identify areas for intervention and improvement.

School climate research indicates that higher school connectedness and connections with supportive adults are associated with improved mental health outcomes, but marginalized students do not always have the benefit of these relationships (Marraccini and Brier 2017). Gay–Straight Alliances[2], spaces where sexual/gender minority youth can find social support and advocacy, and sexual/gender minority-inclusive policies are among the ways that U.S. public schools have tried to improve their climates with mixed effects for sexual/gender minority youth (Gay Lesbian and Straight Education Network 2007; Ioverno et al. 2016; Mayberry 2013; Poteat et al. 2016). While the presence of Gay–Straight Alliances and school policies are external measures of school climate, student perceptions are even more important because they reflect the perceived culture and supportiveness of the school and teachers. This study explores the extent to which sexual/gender minority adolescents are supported by a positive school environment; specifically, how perceptions of the supportiveness of their high school is associated with their mental health.

Mental Health Risk for Sexual/Gender Minority Youth

Sexual/gender minority students are more likely to report having anxiety and depressive symptoms and having suicidal thoughts than their heterosexual and cisgender peers (Russell and Fish 2016). In the 2015 Youth Behavior Risk Survey, 60% of sexual minority youth reported feeling sad or hopeless compared to 26% of straight peers and 43% of sexual minority youth seriously considered suicide compared to 15% of straight peers (Zaza et al. 2016). In school, sexual/gender minority youth are more likely to experience homophobic and transphobic victimization and bullying which are associated with poor mental health outcomes (Coulter et al. 2018; Day and Russell 2018; Zaza et al. 2016). A study with transgender youth found that one in three experienced victimization and that this victimization significantly correlated with poor mental health and feelings of school belonging (Hatchel et al. 2019). Transgender students are also more likely to be truant, have lower grades and experience their school climate as unsupportive; feeling unsafe at school

[1]Sexual/gender minority people are also referred to as Lesbian, Gay, Bisexual, Transgender, Queer.
[2]A Gay–Straight Alliance or Gender-Sexuality Alliance is also referred to as a GSA and is a youth group to support sexual/gender minority youth.

and substance abuse were among the top reasons for truancy (Day and Russell 2018). In fact, Heck et al. (2014) found that victimization mediates the relationship between school climate and mental health for sexual/gender minority students. These experiences of victimization can have long lasting effects on the wellbeing of students (Toomey and Russell 2013). The Gay Lesbian and Straight Education Network (GLSEN) 2015 climate survey (89.6% public schools; 28.1% urban; 44.5% suburban) found that both discrimination and victimization were associated with decreased wellbeing and increased anxiety and depressive symptoms in sexual/gender minority youth (Kosciw et al. 2016). Health disparities among sexual/gender minority students have been well established and highlight the need to identify.

School Climate

Studies done in California and Virginia have found that positive school climate included safety, connectedness, relationships with adults, opportunities for participation (Voight et al. 2015) as well as defined disciplinary structure, supportive teacher–student relationships, and high academic expectations (Konold et al. 2017). The California Healthy Kids Survey, an anonymous statewide survey asks questions about respect, fairness and participation (California Department of Education 2015, 2018; Furlong et al. 2005). In addition, many studies chose to focus on school connectedness which is defined as school community including supportive and inclusive policies, staff and, at times, the presence of a Gay Straight Alliance (Centers for Disease Control and Prevention 2009; Diaz et al. 2010; Marraccini and Brier 2017). Having a clear understanding of which factors matter most to sexual/gender minority students would not only improve measurements, but would better inform policy. The following sections will outline measures of school climate, the importance of Gay–Straight Alliances, and supportive adults. Consideration of all factors are important in understanding why the overall school environment may affect the mental health of sexual/gender minority youth.

There are a few specific school factors that have been studied with sexual/gender minority youth. Adult support is one important factor. Unsupportive policies and a lack of staff support has been found to be associated with increased suicide risk in New Zealand and the U.K. (Denny et al. 2016; Rimes et al. 2018). Consistency and clarity in rule enforcement has also been associated with positive mental health outcomes for Dutch sexual minority youth (Sandfort et al. 2010). Other U.S. public school policy changes such as access to bathrooms for transgender students and inclusive polices about public displays of affection and gender norms are associated with positive outcomes for sexual/gender minority youth (Snapp et al. 2015; Wernick et al. 2017).

Caring adults and a safe school environment have also been found to be associated with lower levels of suicide ideation (Eisenberg and Resnick 2006). A 2018 literature review found that, for all students, a positive school climate is associated with positive behavioral, academic, interpersonal and health (physical and mental) outcomes and increased school engagement. In addition, this review found that school involvement promoted school connectedness and that this connectedness was associated with positive mental health outcomes (Aldridge and Mcchesney 2018). School connectedness has been found to be particularly beneficial for sexual/gender minority youth. School connectedness and social

support can be protective factors for sexual/gender minority students and are associated with reduced suicide risk (Marraccini and Brier 2017; Whitaker et al. 2016).

Gay–Straight Alliances

Many studies also use the presence of a Gay–Straight Alliance as a proxy for school climate, but some studies have shown that having a Gay–Straight Alliance is not enough to improve the experience of sexual/gender minority students (Marx and Kettrey 2016; Mayberry 2013). Gay–Straight Alliances can provide a sense of community for sexual/gender minority students as well as positive adult support and empowerment, but the presence of a Gay–Straight Alliance is often paired with other environmental factors that affect sexual/gender minority youth (Ioverno et al. 2016; Marx and Hensman 2016).

Gay–Straight Alliances in schools have been associated with increased emotional safety and identity support for sexual/gender minority youth (Fetner and Elafros 2015; Ioverno et al. 2016; Mayberry 2013; Poteat et al. 2016). Active and visible Gay–Straight Alliances are also associated with increased school engagement for sexual/gender minority youth, even if they are not members (Seelman et al. 2015). A qualitative study of sexual/gender minority youth found that Gay–Straight Alliances provided community benefits—emotional and social support, sense of membership and fulfils needs of the members. Gay–Straight Alliances can also provide adult support and connection to a larger community and is a safe space (Porta et al. 2017). It seems that the presence of a Gay–Straight Alliance is related to school climate in specific ways such as increased acceptance and visibility and adult support.

A study of high schools in Minnesota looked at bullying and related school factors. Lower incidence of bullying were associated with having a sexual/gender minority point person, displaying sexual/gender minority content in a positive and inclusive way, having a Gay–Straight Alliance, professional development around sexual/gender minority issues and openly discussing bullying with students (Gower et al. 2018). Sexual/gender minority students in schools that used these supports were less likely to be bullied. Both straight and sexual/gender minority students were bullied less when schools used more than one supportive practices. The authors suggest that when stakeholders at all levels engage in improving school climate, the effects are stronger (Gower et al. 2018). A school-based media program in British Columbia was associated with less bullying and less suicide ideation and higher school connectedness (Burk et al. 2018). Again, this intervention was implemented at a systemic level. The open dialog and cultural shifts had a positive effect for sexual/gender minority youth.

Supportive Adults

In addition to school connection, research suggests that supportive adults are important for sexual/gender minority youth. Having supportive adults available to sexual/gender minority youth is associated with higher school engagement (Seelman et al. 2015) and with lower levels of substance use (De Pedro et al. 2017). In a review of the literature, researchers found that support from peers and trusted adults was protective for the wellbeing of transgender students (Johns et al. 2018). An extension of specific supportive adults is supportive and

inclusive policies across schools. A Canadian study found that anti-homophobia policies can reduce harassment and shift heteronormative discourse can improve school climate (Peter et al. 2016). Several studies have found policies that overtly targeted homophobia and transphobia are associated with positive effects on student mental health and suicidality (Kull et al. 2016; Peter et al. 2016). One study found that implementing sexual/gender minority support such as visible displays, trained staff and professional development for teachers improved safety and climate for all students in the school (Gower et al. 2018). These types of policies can support cultural shifts and can be reflective of supportive adults within the school. They also challenge a normative climate of silence around sexual/gender minority issues and identity (Mayberry et al. 2013).

Help-Seeking Behavior

Willingness to seek help has been shown to be a protective factor against negative mental health outcomes (Hatchel, Ingram et al. 2019). Asking for help can help alleviate depressive symptoms and suicidal ideation but trusted adults are not always available to sexual/gender minority youth (Hatchel, Ingram et al. 2019). Low help-seeking beliefs in sexual/gender minority youth have been associated with increased suicide ideation and suicide attempts (Hatchel, Ingram et al. 2019). In addition to being at risk for poor mental health outcomes, sexual/gender minority youth may experience increased shame about asking for help (Hatchel, Ingram et al. 2019). The compounded stigma of their identity and that of poor mental health has been shown to lead students to normalize their distress and only ask for help when they reach a crisis point (McDermott 2015; McDermott et al. 2018). Willingness to report depressive symptoms and suicide ideation may be a reflection of openness to help-seeking in general (Hughes et al. 2018; Hatchel, Ingram et al. 2019) which makes the study of help-seeking beliefs and perceptions extremely important in this vulnerable population.

Framework for Current Study

This study uses a social-ecological framework to understand the associations of perceived school support, teacher support, and Gay–Straight Alliances on depressive symptoms and anxiety symptoms in sexual/gender minority students. Understanding the ecology of gender/sexual minority students and the people and organizations that affect them can help identify productive areas for intervention. A review of socio-ecological models of development as it relates to bullying points to the need for research on the impact of school personnel and school policies on students (Espelage 2014).

Previous research has shown that school climate, in its various measurements, has a positive effect on sexual/gender minority youth (Coulter et al. 2016; De Pedro et al. 2018; Kosciw et al. 2009). Evidence suggests that school policies and inclusiveness affect not only the wellbeing of sexual/gender minority youth, but also their connection to adults who could support them. Successful interventions seem to take an organizational view of the school inclusivity and school climate in order to improve the experience of sexual/gender minority (Black et al. 2012; Jonathan Cohen 2013). This broad view of school environment includes aspects of safety, connection and belonging. School climate measures vary greatly so this study will consider a broad perspective and include specific aspects of the overall school

environment that could be considered and surveyed in order to understand the wellbeing of sexual/gender minority students.

If supportive adults are key to creating a supportive school environment for sexual/gender minority students (Mulcahy et al. 2016), then it is important to measure their perception of this support. Student perception, in this case, will be measured using help-seeking behaviors and intentions. This is a concrete way to explore whether or not students feel comfortable seeking support from teachers in their school.

Having a Gay–Straight Alliance seems to be strongly associated with the adult support present in the school. This fits in with existing literature on adult youth relationships and their positive developmental effects (Liang et al. 2008). In order to investigate the impact of having a Gay–Straight Alliance, it is included as a possible measure of school environment. It is possible that the presence of a Gay–Straight Alliance is a reflection of peer and/or institutional support.

Sexual/gender minority student mental health seems to be greatly affected by the culture of the school as well as the presence of a group just for sexual/gender minority students (Day et al. 2016; Marx and Kettrey 2016). In addition, having supportive teachers as both mentors and advisors for Gay–Straight Alliances affects mental health (Bird et al. 2012; Mulcahy et al. 2016; Poteat and Scheer 2016). This model includes all factors into a working definition of school environment that might affect mental health.

Current Study

Previous research indicates that school climate is a key predictor for mental health outcomes in sexual/gender minority youth. The supportiveness of school personnel as well as the presence of a Gay–Straight Alliance are key indicators of a positive school climate. This study seeks to investigate how these elements relate separately and in concert to effect the depressive and anxiety symptoms of sexual/gender minority youth.

The primary research question was: What are the associations between the supportiveness of school environment and sexual/gender minority youth mental health? Specifically, how do the facets of school environment (school climate, presence of a Gay–Straight Alliance, and perceived teacher support) affect help-seeking behavior and mental health? Based on previous research, it follows that a positive school environment including supportive adults and supportive policies, would be associated with reduced depressive symptoms and anxiety symptoms. A Gay–Straight Alliance may be a facet of this supportive environment, but is likely not enough to affect student wellbeing on its own. Previous research on school climate indicates that the overall school culture is key to the well-being of sexual/gender minority youth. It follows that the well-being of sexual/gender minority students would be related to both the supportiveness of the school climate and the perceived support of the teachers.

Method

This study is an analysis of de-identified baseline data collected as part of a randomized controlled trial of a game-based intervention for sexual/gender minority youth (Coulter et al. 2019).

Recruitment

Participants were recruited between April and July 2018 using social media platforms, allowing youth from across the U.S. to enroll into the study. Researchers posted advertisements on Facebook, Instagram and sexual/gender minority-related online gaming groups. Specific ads were created and used to target underrepresented groups (see Coulter et al. 2019 for more detail; clinicaltrials.gov NCT03501264). Depending on the prior enrollment numbers, researchers tailored which ads were used for the upcoming week. Incentives, in the form of $10 gift cards, were sent via email.

Eligibility—Respondents were eligible if they: were English literate; lived in the U.S.; were 14–18 years-old; had experienced bullying or cyberbullying victimization in the past year; identified as a sexual or gender minority; had a PC or Mac laptop or desktop computer where they could download the game; and had an email address. Email addresses were used to detect duplication and fraud. IP addresses were not collected in order to protect the anonymity of the participants.

Sample—240 participants completed the baseline survey and were enrolled into the randomized control trial (RCT) between April 2018 and July 2018. The sample characteristics are in Table 1. Of the 240 participants, 62% were white, 37% were cisgender (sex assigned at birth is the same as reported gender identity) boys and 54% reported that their school has a Gay–Straight Alliance. All participants identified as a sexual minority with 45% identifying as gay or lesbian.

Measures

School environment—The school climate construct used in this analysis was adapted from the California School Climate Survey and include questions about safety, diversity and respect and overall supportiveness (California Department of Education 2015). These questions are more general than the school connectedness constructs used in previous research (Diaz et al. 2010). This measure of cultural supportiveness along with perceived teacher support and help-seeking behavior will allow us to see the different aspects of the school environment that may affect mental health outcomes. Perceived support will be measured both in intention and behavior to explore the ways that students feel supported both in theory and practice.

School climate—Participants completed three items from the California School Climate Survey (California Department of Education 2015) that measured overall school environment for students. (*This school is a supportive and inviting place for students to learn; This school fosters an appreciation of student diversity and respect; This school is a safe place for students.*) For each statement, participants responded from 1 (Strongly

Disagree) to 5 (Strongly Agree) on a 5-point Likert Scale. A mean score was used for analysis. The scale was internally consistent (Cronbach's Alpha = 0.90).

Presence of a Gay–Straight Alliance—Participants self-reported whether or not their school had a Gay–Straight Alliance. "Unsure" responses were added to "no" responses to create a binary variable.

Help-seeking intentions for personal problems—Help-seeking intentions were assessed using adapted version of the General Help-seeking Questionnaire (Wilson et al. 2005). A set of questions assessed how likely participants are to seek help from a variety of sources about emotional problems. Sources of help included people (e.g., doctor, counselor) and places (e.g., websites). This study used only used the single items focused on teachers, in order to focus on school environment. (*If you were having a personal or emotional problem, how likely is it that you would seek help from a teacher?)* For each question, participants could respond from 1 (extremely unlikely) to 7 (extremely likely) on a 7-point Likert Scale.

Help-seeking intentions for suicidal thoughts—Help-seeking intentions were assessed using adapted version of the General Help-seeking Questionnaire (Wilson et al. 2005). A set of questions assess how likely participants are to seek help from a variety of sources about suicidal ideation. Sources of help included people (e.g., doctor, counselor) and places (e.g., websites). This study used only used the single items focused on teachers, in order to focus on school environment. (*If you were experiencing suicidal thoughts, how likely is it that you would seek help from a teacher?)* For each question, participants could respond from 1 (extremely unlikely) to 7 (extremely likely) on a 7-point Likert Scale.

Help-seeking behaviors—Help-seeking behaviors were assessed using items adapted from the Help-Seeking Behaviors Scale (Pham et al. 2014). This study used only the teacher-related questions. (*In the past month, how often have you… Asked a teacher for help? Talked to a teacher about personal problems? Talked to a teacher about problems at school?*) For each question, participants could respond from 1 (never) to 5 (a great deal) in a 5-point Likert Scale. Help-Seeking Behavior is defined as a mean value of the three questions measuring their teacher help-seeking behavior in the last month. (Alpha = 0.82).

Anxiety—Past-week anxiety symptoms were assessed using the Severity Measure for Generalized Anxiety Disorder—Child Age 11–17 (American Psychiatric Association 2013; Lebeau et al. 2012), which contains 10 items used to calculate a mean score (alpha = 0.89). Response options use a 5-point scale from "never" to "all of the time," with a higher mean score indicating greater anxiety symptoms.

Depressive symptoms—Past-week depressive symptoms were assessed using the Patient Health Questionairre-9 for children ages 11–17 (Johnson et al. 2002), which contains 9 items used to calculate a mean score (alpha = 0.89). Response options use a 4-point scale from "not at all" to "nearly every day," with a higher mean score indicating greater depressive symptoms.

Gender—Gender is defined using the two-step process assessing current gender identity and sex assigned at birth (Gender Identity in U.S. Surveillance (GenIUSS) Group 2014). These measures combined to create six gender categories: Cisgender girls (participant identifies as female and was assigned female at birth), Cisgender boys (participant identifies as male and was assigned male at birth), Transgender girls (participant identifies as male but was not assigned male at birth), Transgender girls (participant identifies as female but was not assigned female at birth), Nonbinary AFAB (participant identifies as neither male nor female but was assigned female at birth) and Nonbinary AMAB (participant identifies as neither male nor female but was assigned male at birth).

Sexual orientation—Sexual orientation was defined by three questions assessing sexual attraction, behavior, and identity. These measures combined to create five sexual orientation categories: Gay/Lesbian, Bisexual, Queer, Another Identity (write-ins included "other" and identities that were not listed), Multiple Identities (those participants who selected more than one option to describe their identity).

Other demographics—Demographic variables included age, race/ethnicity, and eligibility for free or reduced-price lunch at school.

Analysis

All data analysis was performed using Stata. The analyses included two sets of linear regressions to test the relationship between school environment and mental health. Prior research indicates that help-seeking behavior is important for youth who are in psychological distress (McDermott 2015). The first set of regression analyses focused on help-seeking intentions and behaviors and its predictors, including school climate and demographic covariates. The second set of regressions focused on depressive and anxiety symptoms and their predictors, including school climate and demographic covariates. All models controlled for demographics including gender identity, sexual orientation, race, age, and whether or not the participant was eligible for Free and Reduced Lunch. There is little missing data in this sample. One participant did not answer the question about intending to seek help from a teacher for a personal problem. All other data is complete.

Power—After adjusting for socio-demographics, with $N = 240$ subjects, $\alpha = 0.05$, power of 0.99, we are able to detect medium effect sizes; after adjusting for socio-demographics, with $N = 240$ subjects, $\alpha = 0.05$, power of 0.48, we do not have enough power to detect small effect sizes (Jacob Cohen 1988).

Results

The sample is described in Table 1. The participants were aged 14–18 (mean =15.77), majority white (62.1%), 100% sexual minority, and 53% cisgender. In order to explore the relationship between the measures of school environment and mental health symptoms, a correlation matrix (Table 2) was constructed. Anxiety symptoms are significantly negatively correlated with the school climate measure (supportiveness and safety) and help-seeking intentions for suicidal thoughts ($p < 0.05$). Depressive symptoms are significantly negatively correlated with the school climate measure (supportiveness and safety) and help-seeking

intentions for both personal problems and suicidal thoughts ($p < 0.05$). The presence of a Gay–Straight Alliance is only significantly correlated with school climate (supportiveness and safety) and not with the mental health outcomes.

Two linear regression analyses explore the relationship between the measures of school environment and mental health symptoms. The first analysis explores the predictors for help-seeking behavior and intentions. These measures are not typically included in measures of school environment so this analysis was intended to determine if it was a good predictor of mental health symptoms and other measures of school environment. Interaction effects between school climate (supportiveness and safety) and the presence of a GSA did not provide significant findings.

The results from the first series of regressions are in Table 3. Adjusting for demographics and presence of a Gay–Straight Alliance, lower depressive symptoms were associated with help-seeking intentions for suicidal thoughts (0.17, $p < 0.05$). However, school climate (supportiveness and safety) was not statistically associated with help-seeking intentions for personal problems or help-seeking behaviors. The presence of Gay–Straight Alliance was not statistically associated with help-seeking intentions or help-seeking behaviors in the last month. Compared with cisgender girls, cisgender boys (0.39, $p < 0.05$) and transgender girls (0.93, $p < 0.01$) were more likely to report intentions to seek help for suicidal thoughts.

The results from the second series of regressions are in Table 4. Controlling for demographics and presence of a Gay–Straight Alliance, a more positive school climate (supportiveness and safety) was associated with lower anxiety (0.13 points on a 4-point scale; $\beta = -0.14$, $p < 0.05$) and depressive symptoms (0.13 points on a 3-point scale; $\beta = -0.13$, $p < 0.05$). However, the presence of a Gay–Straight Alliance was not significantly associated with anxiety or depressive symptoms. As shown in Table 4, greater intentions to seek help for suicidal thoughts was associated lower number of depressive symptoms (0.17 points of a 3-point scale; $\beta = -0.17$, $p < 0.05$), but not statistically associated with anxiety symptoms. Help-seeking behavior in the last month and intentions to seek help from teachers for personal problems were not statistically associated with anxiety or depressive symptoms.

Discussion

There are large mental health disparities for sexual/gender minority youth including increased anxiety and depressive symptoms and suicidal thoughts (Kosciw et al. 2016). School environment is an important factor for the wellbeing sexual/gender minority high school students. Social-ecological theory places school personnel and policies in a fundamental place in the ecology of student life (Espelage 2014). There are many ways to measure school environment including safety, supportiveness and diversity (Furlong et al. 2005). Previous studies have found that adult and organizational support are also important for the wellbeing of sexual/gender minority students (Black et al. 2012; Mulcahy et al. 2016). In addition, many studies have identified the presence of a Gay–Straight Alliance to be associated with more positive mental health of sexual/gender minority students (Marx and Kettrey 2016). This study brings all of these aspects together in one sample and provides

a way to explore the important aspects of school environment and the ways that they affect mental health symptoms.

The measure of school climate used in this analysis was made up of questions about supportiveness, safety and diversity. Students who reported a more positive school climate on this measure were less likely to report anxiety or depressive symptoms. While the school climate measure (supportiveness and safety) was associated with mental health outcomes, the presence of a Gay–Straight Alliance was not. Intentions to seek help for suicidal thoughts was associated with a positive school climate which may reflect the supportiveness of the school personnel. School climate measures vary greatly and a closer examination of the facets of this concept are necessary in order to understand how to support the mental health of sexual/gender minority youth.

This sample is unique in that it captured youth with a diversity of sexual/gender identities and asked many questions related to wellbeing and school climate. With access to a sample of youth who all identify as sexual/gender minority, we were able to explore the important aspects of school climate. Many surveys ask about only one aspect of school climate such as school connectedness, safety or the presence of a Gay–Straight Alliance (Gay Lesbian and Straight Education Network 2007; Marx and Kettrey 2016; Zaza et al. 2016). Depending on the scale, this may reflect perceived safety, diversity and acceptance, but it does not always reflect the organizational supports of the school, the effectiveness of the Gay–Straight Alliance and the supportiveness of the adults within the school. Previous research has shown that school climate is key to supporting sexual/gender minority youth (Aldridge and Mcchesney 2018; Denny et al. 2016; Heck et al. 2011; Riekie et al. 2017), but there are many aspects of school climate that could be further explored.

More than half of the participants in this sample reported that their high school had a Gay–Straight Alliance (54%), but the presence of a Gay–Straight Alliance was not correlated with mental health outcomes, nor was it a significant predictor of help-seeking behavior. The presence of Gay–Straight Alliances have been widely studied in the literature as a way to support sexual/gender minority (Fetner and Elafros 2015; Mayberry et al. 2013; Russell et al. 2009; Toomey et al. 2011) but these results point to the presence of a Gay–Straight Alliance as being associated with but not a proxy for school climate. It seems that having a Gay–Straight Alliance is not enough to indicate a supportive school environment for this sample.

On the other hand, positive school climate was associated with positive mental health. There seems to be an interesting logical system at play where schools with positive environments are likely to have a Gay–Straight Alliance, but that having a Gay–Straight Alliance alone does not predict mental health outcomes for youth. Qualitative inquiry could help untangle what youth thought of the effectiveness or supportiveness of their high school Gay–Straight Alliances. It is possible that some Gay–Straight Alliances do not make up for a negative overall school culture.

More positive school climate is associated with increased help-seeking behavior for suicidal thoughts among the youth in this sample. Interestingly, the same is not true for help-seeking

for emotional or personal problems. Research suggests that sexual/gender minority youth tend to turn to friends for support with mental health issues while relatively few sought support from school personnel (Lytle et al. 2018). These findings support the thought that help-seeking intentions may be generally higher when suicidal ideation is present (Michelmore and Hindley 2012). This could indicate that while students felt they could go to school personnel when in crisis, they did not intend to ask for help for less critical issues.

It is also possible that youth seek out teachers for help only when feeling desperate. This could reflect the stigma associated with mental health and sexual/gender minority identity (McDermott et al. 2018). It is also possible that youth are asking peers for help for less critical matters and only approach teachers when feeling desperate. Intentions for seeking help for suicidal thoughts is also associated with fewer depressive symptoms. This could have implications for schools because depressed students are at risk and could be at even more risk if they are reluctant to ask for help.

This study is not without limitations. First, the sample was relatively small and the power analysis found only enough power to detect medium effects. In order to detect smaller effects, additional research is needed with larger samples. Additionally, the measure of school climate used here was only three questions about supportiveness, respect and safety. These questions were very broad so it is unclear what aspects were most important to the participants. A more detailed scale could illuminate the key components of school climate. In addition, participants were recruited from social media and gaming sites and not from high schools. Little information was collected on the type of schools participants attended (for the sake of anonymity) so it is unclear whether this sample is representative of sexual/gender minority youth. Key questions would include the urbanicity of the school's location as well as its relative size, funding, affiliation and mission. All data was self-reported which could present bias. Youth perspectives are important to understanding how school climate affects mental health, but additional information from school personnel would help triangulate the perspectives and give a deeper understanding of the school climate.

Future research should focus on exploring the facets of school climate with a more comprehensive measure. While the presence of a Gay–Straight Alliance is a convenient measure, it does not capture the overall culture of the school which seems to be important for the wellbeing of sexual/gender minority youth (Fetner and Elafros 2015; Mayberry 2013; Russell et al. 2009; Toomey and Russell 2011). In the interest of learning more about the schools, surveys should ask about supportiveness of the school as well as the specific people within the school. It would be interesting to know if the teachers referred to in this study are the faculty mentors for the Gay–Straight Alliance, school counselors or another person. It would also be beneficial to know if students feel that they could go to multiple people within the school, especially when experiencing suicidal ideation. In addition to improving measures, future research should explore the variation within the sexual/gender minority youth community. It is likely that transgender students and sexual/gender minority of color have unique needs (Mcguire et al. 2010; Poteat and Scheer 2016). In order to create beneficial interventions, these should must be identified and explored.

Survey studies are important for this vulnerable population because they protect anonymity and reach a wide population. However, due to the anonymous nature of the study, there is no way to know where the participants live or what type of school they attend. Qualitative interviews could illuminate the intricacies of school supportiveness and sexual/gender minority youth mental health. This type of data could inform future surveys as well as interventions.

The sample was also made up of youth who had experienced bullying in the last year. Therefore the results of this study are only generalizable to sexual/gender minority students who experienced bullying. On the one hand, this is a limitation, but 33% of sexual minority students report being bullied at school (compared with 17% of heterosexual students) so there is a high likelihood that sexual/gender minority students in any school experience some kind of bullying (Centers for Disease Control and Prevention 2017). Future studies could focus on a broader sample.

Future research should look at the specifics of the school environments such as urbanicity, resources, teacher demographics and policies. This, accompanied by youth interviews could give a clear picture of the specific risk and protective factors for sexual/gender minority youth. Understanding youth perspective is of primary concern, but the school context is also extremely important. Once risk and protective factors are identified, they can inform recommendations for future policies and measurement tools.

Conclusion

Sexual/gender minority youth experience significant mental health disparities. School environment can support mental health outcomes such as anxiety and depressive symptoms. Many studies have looked at the presence of a Gay–Straight Alliance as a proxy for a positive school environment. This is an incomplete picture of school environment and the accompanying risk and protective factors for sexual/gender minority youth. The results of this study point to a complex relationships between the high school environment and the mental well-being of sexual/gender minority youth. It is clear that school climate is important for the mental health of sexual/gender minority youth, but it is unclear what specific mechanism is in play. For these reasons, schools should be cautious about making policy changes or creating groups like Gay–Straight Alliances without addressing the overall culture and supportiveness of the school and its personnel. There are many facets of a school's environment that could play into sexual/gender minority youth mental health such as supportiveness of teachers and overall diversity and respect. It is especially important that youth feel they have support when in crisis, so having supportive adults will be an important consideration. Adolescents are actively developing their identities along with their cognitive and social skills. It will be important to learn more about the type of support that a school environment could provide its most vulnerable students.

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Data Sharing and Declaration

The datasets analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

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Table 1

Sample characteristics

Characteristics	Mean (SD)
Demographics	
Age years (range: 14–18)	15.77 (1.1)
Eligible for Free and Reduce-priced Lunch	36.7% (88)
Race/ethnicity, % *(n)*	
White	62.1% (149)
Latinx	20.8% (50)
Asian or Pacific islander	3.8% (9)
Black	3.33% (8)
Multiracial	10.0% (24)
Gender[a], % *(n)*	
Cisgender girl	16.3% (39)
Cisgender boy	36.7% (88)
Transboys	24.2% (58)
Transgirls	3.3% (8)
Nonbinary AFAB	16.7% (40)
Nonbinary AMAB	2.9% (7)
Sexual orientation, % *(n)*	
Gay/lesbian	45.0% (108)
Bisexual	18.3% (44)
Queer	10.4% (25)
Another Identity	7.9% (19)
Multiple sexual identities	18.3% (44)
Mental health	
Anxiety symptoms (range: 0–4)	2.25 (0.92)
Depressive symptoms (range: 0–3)	1.66 (0.79)
Help seeking	
Intention to seek help from a teacher for personal problems (range: 0–3)	0.98 (0.88)
Intention to seek help from a teacher for suicidal thoughts (range: 0–3)	0.71 (0.93)
Actually seeking help from a teacher (range: 0–4)	1.31 (1.00)
School climate	
School climate (range: 1–5)	2.16 (1.03)
School has a GSA[b], % *(n)*	53.8% (129)

[a]Gender was defined based on two questions: gender identity and sex assigned at birth. Cisgender boys and girls were defined as those who identified as the same gender as their sex assigned at birth. Transboys were defined as those who identified as “transboy” as well as those who identified as boy but were assigned female at birth. Transgirls were defined as those who identified as “transgirl” as well as those who identified as girl but were assigned male at birth. Nonbinary was defined as those who chose genderqueer, nonbinary or another gender as their gender identity. AFAB indicates Assigned Female at Birth and AMAB indicates Assigned Male at Birth

[b]GSA stands for Gay–Straight Alliance or Gender-Sexuality Alliance

Table 2

Correlation matrix of key variables

	Anxiety symptoms	Depression symptoms	School climate	School has a GSA	Intention to seek help from a teacher for a personal problem	Intention to seek help from a teacher for suicidal thoughts	Actually seeking help from a teacher in the last month
Anxiety symptoms	1.00						
Depressive symptoms	0.62*	1.00					
School climate	−0.19*	−0.27*	1.00				
School has a GSA[a]	−0.02	−0.11	0.28*	1.00			
Intention to seek help from a teacher for a personal problem	−0.06	−0.13*	0.15*	−0.01	1.00		
Intention to seek help from a teacher for suicidal thoughts	−0.13*	−0.24*	0.21*	−0.01	0.57*	1.00	
Actually seeking help from a teacher in the last month	0.02	−0.05	0.15*	−0.04	0.57*	0.48*	1.00

* $p < 0.05$

[a] GSA stands for Gay–Straight Alliance or Gender-Sexuality Alliance

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Table 3

Linear regression analysis of help seeking intentions and behaviors

	Seeking help from a teacher in the last month *β* (95% CI)	**Intention to seek help from a teacher for a personal problem *β* (95% CI)**	**Intention to seek help from a teacher for a suicidal thoughts *β* (95% CI)**
School climate	0.11 (−0.03,0.25)	0.08 (−0.04,0.20)	0.16 (0.04,0.29)*
School GSA[a]	−0.15 (−0.43,0.12)	−0.04 (−0.28,0.20)	−0.10 (−0.35,0.15)
Age	0.11 (−0.01,0.23)	0.10 (−0.00,0.21)	0.08 (−0.03,0.19)
Gender[b]			
Cisgender girls	0 (Referent)	0 (Referent)	0 (Referent)
Cisgender boys	0.27 (−0.14,0.68)	0.41 (0.05,0.77)*	0.39 (0.01,0.76)*
Transgender boys	−0.06 (−0.49,0.37)	0.06 (−0.31,0.44)	0.11 (−0.28,0.50)
Transgender girls	0.69 (−0.07,1.45)	0.38 (−0.29,1.04)	0.93 (0.23,1.63)**
Nonbinary AFAB	0.07 (−0.41,0.54)	0.10 (−0.31,0.52)	0.12 (−0.31,0.55)
Nonbinary AMAB	−0.24 (−1.06,0.58)	−0.16 (−0.88,0.56)	0.11 (−0.64,0.86)
Sexual orientation			
Gay or lesbian	0 (Referent)	0 (Referent)	0 (Referent)
Bisexual	0.06 (−0.32,0.44)	0.26 (−0.08,0.59)	−0.04 (−0.39,0.31)
Queer	0.01 (−0.48,0.50)	−0.11 (−0.53,0.32)	0.01 (−0.44,0.45)
Another identity	−0.18 (−0.69,0.34)	0.25 (−0.20,0.70)	−0.26 (−0.73,0.21)
Multiple sexual identities	0.23 (−0.16,0.63)	0.25 (−0.10,0.60)	−0.12 (−0.48,0.24)
Race/ethnicity			
White	0 (Referent)	0 (Referent)	0 (Referent)
Latinx	−0.19 (−0.52,0.15)	0.45 (−0.26,0.33)	0.06 (−0.25,0.37)
Asian/Pacific islander	−0.55 (−1.24,0.14)	0.08 (−0.53,0.68)	0.20 (−0.43,0.83)
Black	0.19 (−0.54,0.92)	0.33 (−0.31,0.97)	0.02 (−0.65,0.69)
Multiracial	0.22 (−0.23,0.66)	0.20 (−0.19,0.59)	0.14 (−0.26,0.54)
Intercept	−0.70 (−2.60,1.26)	−1.14 (−2.83,0.55)	−0.99 (−2.75,0.78)
N	240	239	240
R-squared	0.099	0.098	0.123

CI Confidence Interval

*$p < 0.05$

**$p < 0.01$

***$p < 0.001$

[a]GSA stands for Gay–Straight Alliance or Gender-Sexuality Alliance

[b]Gender was defined based on two questions: gender identity and sex assigned at birth. Cisgender boys and girls were defined as those who identified as the same gender as their sex assigned at birth. Transboys were defined as those who identified as "transboy" as well as those who identified as boy but were assigned female at birth. Transgirls were defined as those who identified as "transgirl" as well as those who identified as girl but were assigned male at birth. Nonbinary was defined as those who chose genderqueer, nonbinary or another gender as their gender identity. AFAB indicates Assigned Female at Birth and AMAB indicates Assigned Male at Birth

Table 4

Linear regression analysis of anxiety and depression symptoms

	Anxiety symptoms		Depressive symptoms	
	β **(95% CI)**	***β*** **(95% CI)**	***β*** **(95% CI)**	***β*** **(95% CI)**
School climate	−0.14 (−0.26,−0.02) *	−0.13 (−0.26,−0.01) *	−0.14 (−0.24,−0.04) **	−0.13 (−0.23,−0.02) *
School GSA[a]	−0.01 (−0.24, 0.24)	0.00 (−0.24, 0.24)	−0.14 (−0.34, 0.06)	−0.14 (−0.34, 0.06)
Age	0.04 (−0.06, 0.15)	0.04 (−0.07, 0.15)	0.02 (−0.07, 0.11)	0.03 (−0.06, 0.11)
Gender[b]				
Cisgender girls	0 (Referent)	0 (Referent)	0 (Referent)	0 (Referent)
Cisgender boys	−0.31 (−0.67, 0.05)	−0.31 (−0.67, 0.06)	−0.27 (−0.57, 0.03)	−0.22 (−0.52, 0.08)
Transboy	0.36 (−0.01, 0.74)	0.38 (0.01, 0.76) *	0.47 (0.16, 0.78) **	0.49 (0.18, 0.80) **
Transgirl	0.05 (−0.62, 0.72)	0.07 (−0.62, 0.75)	0.19 (−0.37, 0.74)	0.29 (−0.27, 0.85)
Nonbinary AFAB	0.44 (0.02, 0.85) *	0.44 (0.03, 0.86) *	0.18 (−0.17, 0.52)	0.19 (−0.15, 0.54)
Nonbinary AMAB	−0.13 (−0.85, 0.59)	−0.09 (−0.82, 0.63)	−0.17 (−0.77, 0.43)	−0.14 (−0.73, 0.46)
Sexual orientation				
Gay/lesbian	0 (Referent)	0 (Referent)	0 (Referent)	0 (Referent)
Bisexual	0.00 (−0.33, 0.34)	−0.00 (−0.34, 0.34)	0.01 (−0.26, 0.29)	0.01 (−0.27, 0.29)
Queer	−0.13 (−0.55, 0.30)	−0.13 (−0.56, 0.30)	−0.03 (−0.39, 0.32)	−0.03 (−0.39, 0.32)
Another identity	0.03 (−0.43, 0.48)	0.02 (−0.44, 0.48)	−0.12 (−0.50, 0.26)	−0.15 (−0.52, 0.23)
Multiple sexual identities	−0.09 (−0.44, 0.26)	−0.12 (−0.48, 0.23)	0.23 (−0.06, 0.53)	0.20 (−0.09, 0.49)
Race/ethnicity				
White	0 (Referent)	0 (Referent)	0 (Referent)	0 (Referent)
Latinx	−0.02 (−0.32, 0.28)	0.01 (0.29, 0.31)	0.05 (−0.20, 0.29)	0.07 (−0.18, 0.32)
Asian/Pacific islander	−0.67 (−1.27,−0.06) *	−0.59 (−1.20, 0.02)	0.06 (−0.45, 0.56)	0.14 (−0.37, 0.65)
Black	−0.21 (−0.85, 0.43)	−0.22 (−0.87, 0.42)	0.11 (−0.42, 0.64)	0.10 (−0.43, 0.63)
Multiracial	−0.09 (−0.48, 0.29)	−0.10 (−0.49, 0.29)	−0.08 (−0.40, 0.24)	−0.07 (−0.39, 0.25)
Seeking help from a teacher in the last month		0.10 (−0.04, 0.25)		0.08 (0.00, 0.00)
Intention to seek help from a teacher for a personal problem		−0.01 (−0.18, 0.17)		−0.01 (−0.15, 0.14)
Intention to seek help from a teacher for suicidal thoughts		0.09 (−0.25, 0.07)		−0.17 (−0.30,0.04) *

	Anxiety symptoms		Depressive symptoms	
	β (95% CI)	**β (95% CI)**	**β (95% CI)**	**β (95% CI)**
Intercept	1.90 (0.21, 3.60) *	1.86 (0.16, 3.57) *	1.62 (0.21,3.03) *	1.50 (0.09, 2.90) *
N	240	239	240	239
R-squared	0.17	0.18	0.23	0.25

CI Confidence interval

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

[a] GSA stands for Gay–Straight Alliance or Gender-Sexuality Alliance

[b] Gender was defined based on two questions: gender identity and sex assigned at birth. Cisgender boys and girls were defined as those who identified as the same gender as their sex assigned at birth. Transboys were defined as those who identified as “transboy” as well as those who identified as boy but were assigned female at birth. Transgirls were defined as those who identified as “transgirl” as well as those who identified as girl but were assigned male at birth. Nonbinary was defined as those who chose genderqueer, nonbinary or another gender as their gender identity. AFAB indicates Assigned Female at Birth and AMAB indicates Assigned Male at Birth

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