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School Absenteeism and Mental Health among Sexual Minority Youth and Heterosexual Youth

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Abstract

Adolescent school absenteeism is associated with negative outcomes such as conduct disorders, substance abuse, and dropping out of school. Mental health factors, such as depression and anxiety, have been found to be associated with increased absenteeism from school. Sexual minority youth (youth who are attracted to the same sex or endorse a gay, lesbian, or bisexual identity) are a group at risk for increased absenteeism due to fear, avoidance, and higher rates of depression and anxiety than their heterosexual peers. The present study used longitudinal data to compare sexual minority youth and heterosexual youth on excused and unexcused absences from school and to evaluate differences in the relations between depression and anxiety symptoms and school absences among sexual minority youth and heterosexual youth. A total of 108 14- to 19-years-old adolescents (71% female and 26% sexual minority) completed self-report measures of excused and unexcused absences and depression and anxiety symptoms. Compared to heterosexual youth, sexual minority youth reported more excused and unexcused absences and more depression and anxiety symptoms. Sexual minority status significantly moderated the effects of depression and anxiety symptoms on unexcused absences such that depression and anxiety symptoms were stronger predictors of unexcused absences for sexual minority youth than for heterosexual youth. The results demonstrate that sexual minority status and mental health are important factors to consider when assessing school absenteeism and when developing interventions to prevent or reduce school absenteeism among adolescents.

Keywords

school absenteeism; truancy; sexual minority youth; depression; anxiety

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School absenteeism is associated with myriad negative outcomes including social isolation, mood and conduct disorders, sleep disturbances, substance abuse, and longer term outcomes such as dropping out from school entirely (Eaton, Brener, & Kann, 2008; Egger, Costello, & Angold, 2003; Kearney, 1993; Wood et al., 2012). A longitudinal study of 9- to 16-year-olds found that, depending on the type of school absence (school refusal due to anxiety, unexcused or unexplained absence, and mixed school refusal behavior), 25% to 90% of those missing school met criteria for a diagnosis as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994), whereas less than 7% of those who did not miss school met criteria for a DSM-IV diagnosis (Egger et al., 2003). The directionality of these relations is often unclear, although analysis of large-scale longitudinal datasets has found somewhat more support for psychopathology leading to absenteeism rather than the other way around (Wood et al., 2012). These results suggest it is possible to use psychological measures to identify those at risk for skipping school before the onset of the behavior and therefore create an opportunity for preventive intervention.

School absenteeism can be categorized in multiple ways. Some researchers suggest categorizing absenteeism by considering the motive for skipping school and thereby differentiating between “anxious school refusers” and “truants.” Anxious school refusers miss school because of social phobia, separation anxiety, or fear of harm at school, whereas truants skip school due to lack of interest or defiance of authority (Egger et al., 2003; King & Bernstein, 2001). Some of the more common causes of truancy are unsupportive school environment, lack of community support, and an unstable family life (McCray, 2006). Anxious school refusal behavior and truancy are both associated with negative outcomes, although differences can be found. Not surprisingly, anxious school refusers are more likely to meet criteria for a mood disorder, whereas truants are more likely to meet criteria for a conduct disorder (Egger et al., 2003). Another way to categorize absenteeism is by classifying absences as excused or unexcused. Excused absences can be for a variety of reasons (e.g., illness and family vacation), but such absences require permission from a parent or guardian and school officials. Unexcused absences are absences without explanation or permission. Research has found that both excused and unexcused absences are associated with risk behaviors (e.g., substance use, sexual activity, and violence), but unexcused absences are associated with significantly more risk behaviors than excused absences (Eaton et al., 2008). For the purposes of this article, we differentiate between excused absences and unexcused absences and examine depression and anxiety symptoms as predictors of each.

Previous research has identified sexual minority youth¹ (SMY; youth who are attracted to the same sex or endorse a gay, lesbian, or bisexual identity) as an at-risk population, and many United States federal agencies, including the Department of Education and Department of Health and Human Services, have called for more research on SMY and

¹The term “sexual minority youth” is a term commonly used in research reports to describe lesbian, gay, and bisexual adolescents. “Sexual minority youth” is not a term typically used in school settings or everyday language. For information on preferred language outside of a research context, see materials created and distributed by the Gay, Lesbian, and Straight Education Network (www.glsen.org).

more protection for SMY in schools (Centers for Disease Control and Prevention, 2011; Institute of Medicine, 2011; United States Department of Education, 2011). SMY are at greater risk for many negative health outcomes in general and negative mental health outcomes in particular (Burton, Marshal, Chisolm, Sucato, & Friedman, 2013; Garofalo, Wolf, Wissow, Woods, & Goodman, 1999; Hershberger & D'Augelli, 1995; Marshal et al., 2011; 2012; Remafedi, French, Story, Resnick, & Blum, 1998; Russell & Joyner, 2001). A meta-analysis of 24 studies measuring mental health of SMY found that SMY report significantly higher rates of depression and are 3 times more likely to report suicidality (suicide ideation and suicide attempts) than heterosexual youth (Marshal et al., 2011). Another study found that 22% of SMY in the 11th grade attempted suicide in the past 12 months compared to 4% of heterosexual youth (Hatzenbuehler, 2011). Multiple studies have also found SMY to have a higher prevalence of anxiety symptoms and disorders (Fergusson, Horwood, & Beautrais, 1999; Kerr, Santurri, & Peters, 2013; Marshal et al., 2012).

The mental health disparities found between SMY and heterosexual youth can be understood through the minority stress hypothesis, which contends the stigma and discrimination experienced by sexual minorities creates a hostile social environment that leads to chronic stress and mental health disorders (Meyer, 2003). It is well documented that sexual minority students report greater victimization or bullying in school than heterosexual students (Poteat, Mereish, DiGiovanni, & Koenig, 2011; Shields, Whitaker, Glassman, Franks, & Howard, 2012; Toomey & Russell, 2013) and recent research has demonstrated that the increased victimization is partly responsible for mental health disparities in SMY (Burton et al., 2013). It is reasonable to extend the minority stress hypothesis to include school absenteeism because if school is perceived as a hostile environment for some SMY then they will be more likely to skip school. Friedman et al. (2011) found that, compared to heterosexual youth, SMY reported higher rates of being assaulted in school by a peer with a weapon and higher rates of skipping school due to fear. Therefore, understanding school related variables is important in order to advance our understanding of the challenges faced by SMY.

The higher prevalence of depression and anxiety symptoms in SMY (Marshal et al., 2011) and greater levels of victimization in school (Toomey & Russell, 2013) suggest that SMY may be at higher risk for school absenteeism because both mental health and victimization are associated with absenteeism (Poteat et al., 2011; Wood et al., 2012). There is relatively little research on school absenteeism among SMY and even less research that compares absenteeism among SMY and heterosexual youth. One study used a large school-based sample to examine the effects of homophobic victimization on educational and psychosocial outcomes for SMY and heterosexual youth in grades 7 to 12 and found that SMY had higher rates of self-reported truancy than heterosexual youth (Poteat et al., 2011). Poteat and colleagues (2011) further found that homophobic victimization reduces school belonging and increases truancy in both SMY and heterosexual youth, but the study was not able to examine the relation between mental health and absenteeism in depth. Absenteeism among SMY is a concern because other research has found that, in male adolescents who engage in same-sex sexual behavior, school absence due to fear is associated with greater number of same-sex sexual partners (Durant, Krowchuk, & Sinal, 1998), which is a risk factor for sexually transmitted infections. Also a retrospective study of gay, lesbian, and bisexual

adults found that school absenteeism was associated with suicide ideation while in school (Rivers, 2000), but the study did not include a heterosexual comparison group, so it could not determine if the association between absenteeism and suicidality is unique to SMY. This study also asked participants about school absenteeism and suicidality during their high school years more than 10 years after they graduated high school; thus, the resulting data may have been generally inaccurate or perhaps biased. School absenteeism is clearly associated with negative outcomes in SMY, but whether those outcomes differ from those found in the general population is not currently known. The present study fills in these gaps in the research by comparing school absenteeism and mental health in SMY and heterosexual youth.

Our study used a 6-month longitudinal design to address two aims: (a) determine if there are differences in excused and unexcused absences between SMY and heterosexual youth and (b) explore sexual minority status as a moderator of the previously established relations between mental health and school absences. We predicted that, based on group differences for depression symptoms reported in Burton et al. (2013), SMY would report more absences and more depression and anxiety symptoms than heterosexual youth. We further predicted that depression and anxiety symptoms would be positively correlated with absences. We did not differentiate our hypotheses for excused versus unexcused absences. Many parents would consider a mental health problem as reasonable grounds for some excused absences from school. However, there is a great deal of stigma and misunderstanding associated with mental illness, and therefore some parents may not view it as an acceptable reason to miss school. Adolescents may also avoid seeking permission to miss school due to the stigma associated with mental illness, preferring instead to deal with the consequences of skipping school rather than divulging their depressive or anxious feelings. For these reasons, it is difficult to develop a priori hypotheses regarding excused versus unexcused school absence, and therefore we examined both outcomes separately.

As part of our second aim, we examined sexual minority status as a moderator of the relations between depression and anxiety symptoms and school absences. Moderation occurs when the relation between X and Y varies at different levels of a third variable (the moderator; Baron & Kenny, 1986; Cohen, Cohen, West, & Aiken, 2003). Our moderation hypotheses were exploratory in nature because there is no previous research we located examining differences in the predictors of school absenteeism between SMY and heterosexual youth. Previous research has found that SMY report a higher number of depression and anxiety symptoms (Marshall et al., 2011, 2012), so it is plausible that these variables would have a stronger effect on school absences for SMY. It is also plausible that these predictors of school absence affect all youth equally (e.g., depression leads to more school absences regardless of sexual identity), in which case no moderation effects would be found. This study will take a first step at exploring differences in the predictors of school absence between SMY and heterosexual youth.

Method

Participants and Recruitment

Results presented in this article are from the participants recruited in the first two years of a National Institutes of Health (NIH) funded longitudinal study (with the second and third authors as co-PIs) designed to study general health and wellness of adolescents; preliminary results have previously been reported by Burton and colleagues (2013). At the culmination of this project, investigators will have recruited via an open-cohort design a sample of 200 SMY and a comparison group of 200 heterosexual youth matched on gender and race. This project will be conducted for 4 to 5 years (with the goal of recruiting approximately 100 participants per year) to accommodate for the slower rate of recruitment for SMY due to the lower proportion of sexual minority individuals in the population (2% to 8%). No specific outreach efforts are being made to increase the number of SMY recruited for the project. Rather, the intended sample size and demographic breakdown will be obtained gradually over time by pausing the recruitment of certain demographics when a recruitment target is met while continuing recruitment of other demographics until all recruitment targets are met.

Participants—Data were collected in two assessments, 6 months apart. The full sample was 197 adolescents. A total of 8 participants did not complete the follow-up assessment, 6 participants did not complete demographic information, and 75 were not enrolled in school at the time of the follow-up assessment due to summer vacation; therefore, their surveys did not include school-related variables.² As a result, the sample used in analyses consisted of 108 adolescents (29% males and 71% females) ranging in age from 14 to 19 ($M = 16.26$ years, $SD = 0.92$ years). Represented racial groups included 38% White, 59% African American, and 2% other. The ethnicity of the sample was predominately non-Hispanic (90%). Average parent education level was high school graduate with some college education.

A total of about 26% percent of the sample ($n = 28$) was classified as sexual minority due to a self-reported status other than 100% heterosexual (see Procedure and Measures section for details regarding the operationalization of sexual minority status). Compared to the general population, SMY are overrepresented in this sample due to purposeful oversampling that was necessary in order to compare SMY to heterosexual youth. See Table 1 for demographic characteristics of the SMY and heterosexual youth subsamples.

Recruitment and eligibility—Youth were recruited to participate in a study of adolescent health and wellness from one adolescent medicine clinic in Pennsylvania and another adolescent medicine clinic in Ohio by either provider referral or a screening system in a provider's waiting room. The two adolescent medicine clinics are large, urban clinics affiliated with academic medical centers that serve adolescents between the ages of 10 and 22 years. They provide primary care health services including routine physical exams and

²Demographic characteristics of those who completed the follow-up assessment were compared to those who did not. Completers and noncompleters differed significantly only on age, with noncompleters being an average age of 18 years and completers an average age of 16 years, $t(193) = 13.17$. This result is likely because 18-year-olds were more likely to have graduated high school by the time of the follow-up assessment and therefore were not given the school-related measures.

immunizations, family planning services (including contraception and testing), treatment for sexually transmitted infections, and consultative care for patients with concerns specific to adolescence. Attraction status was obtained via a clinic-based, confidential assessment procedure. All youth were eligible to participate as long as they were within the age range of 14 to 19 and able to read and understand English at the sixth-grade level. Neither the youths' health status at the time of their clinical visit nor their presenting problem were considered as inclusionary or exclusionary criteria for recruitment.

Procedure and Measures

Study materials and procedures were approved by the Institutional Review Boards at the University of Pittsburgh and Nationwide Children's Hospital (Columbus, OH). Participants who were under 18 years old at the time of study entry provided written assent and a parent or guardian provided written consent. Participants who were 18 to 19 years old provided their own written consent. Participants completed a battery of questionnaires at the initial assessment and again 6 months later at the follow-up assessment. Questionnaires were administered in a university laboratory on desktop computers linked to secure university servers and a deidentified database. The facilitators who handled the informed consent (or assent in the case of participants under the age of 18) process and provided instructions to participants were blind to participants' sexual minority status, mental health history, and, at the follow-up assessment, blind to all information gathered during the initial assessment.

Demographics—Gender, age in years, race, and parental education level were reported by participants and included in the ANCOVA and regression analyses as control variables. Parental education level was scored on a scale of 1 (*no high school diploma*) to 5 (*graduate degree*); when the participant reported on two parents, the mean was taken.

School absence—Absences from school were measured at both assessments by self-report and broken down into two categories: excused absences (e.g., absence due to illness or out-of-town travel) and unexcused absences. Participants reported on a scale of 0 (*never*), 1 (*1 or 2 times*), 2 (*3 to 10 times*), and 3 (*more than 10 times*) (a) how many times in the past 6 months they had been absent with an excuse and (b) how many times they had been absent without an excuse. Investigators did not request access to participant's school records; therefore, the self-reported absence data could not be confirmed. However, a previous study using self-reported truancy data from a large statewide school based study compared self-reported truancy reports to official school records and deemed the self-reported truancy reports to be reasonably accurate representation of actual school absences (Poteat et al., 2011).

Sexual minority status—Participants' sexual minority status was measured by one item that stated “Please choose the description that best fits how you think about yourself.” Response options were (a) 100% heterosexual (*straight*), (b) mostly heterosexual (*straight*), but somewhat attracted to people of your own sex, (c) bisexual – that is, attracted to men and women equally, (d) mostly homosexual (*gay*), but somewhat attracted to people of the opposite sex, and (e) 100% homosexual (*gay*). Previous research on the measurement of

sexual orientation has identified this wording and these response options as the most easily understood by youth ages 15 to 21 (Austin, Conron, Patel, & Freedner, 2007).

Participants who indicated any category other than 100% heterosexual were classified as a sexual minority (coded as 0 = heterosexual youth and 1 = SMY). When asking about sexual identity, the inclusion of intermediate options such as mostly heterosexual and mostly homosexual is recommended because some adolescents feel these options reflect their experience of feeling in-between categories (Austin et al., 2007). Although participants prefer having these “in-between” options, the categories must be reduced for the purposes of statistical analysis (i.e., it would require a prohibitively large sample to provide the statistical power to analyze each subgroup of sexual minority status). Participants who identified as anything other than 100% heterosexual were categorized as SMY for two reasons: (a) identifying as any category other than 100% heterosexual is, statistically speaking, a minority status, and (b) each of the sexual minority subgroups have been found to experience many of the same disparities compared to 100% heterosexual youth. In some cases, the mostly heterosexual and bisexual individuals are at the greatest risk, so it is recommended that they not be excluded from disparity research (Corliss, Austin, Roberts, & Molnar, 2009; Marshal et al., 2011).

Depression symptoms—The Center for Epidemiological Studies–Depression inventory (CES-D; Radloff, 1977) was administered at both assessments to assess frequency of depressive symptoms during the past week. The CES-D consists of 20 common symptoms of depression scored on a scale of 0 (*rarely or none of the time*) to 3 (*most or all of the time*). A mean score of all 20 items was computed and used in analyses. The measure had acceptable internal consistency (initial and follow-up assessment: $\alpha = .86$). The CES-D is a widely used measure of depression and has been used in many sexual minority health studies (Feinstein, Goldfried, & Davila, 2012; Russel & Joyner, 2001) and general adolescent health studies (e.g., National Longitudinal Study of Adolescent Health; Harris et al., 2009). The original psychometric analysis of the CES-D found the measure to have acceptable internal consistency ($\alpha = .85$), adequate test–retest reliability across 2 to 8 weeks ($r = .57$), and strong correlations with other self-report measures and clinical ratings of depression (Radloff, 1977). The utility of the CES-D for measuring prevalence of depression symptoms in adolescents has been specifically addressed, and the CES-D was found to have evidence of strong reliability and validity. For example, for adolescents in grades 9 to 12, $\alpha = .86$ (Radloff, 1991).

Anxiety symptoms—The Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1999) was administered at both assessments and used to measure the presence of anxiety symptoms. The SCARED is designed for children ages 9 to 18 and consists of 41 items scored on a scale of 0 (*not true or hardly ever true*) to 2 (*very true or often true*). A mean score of all 41 items was computed and used in analyses. The measure had acceptable internal consistency (initial and follow-up assessment: $\alpha = .92$). The original psychometric analysis of the SCARED found it to have acceptable internal consistency ($\alpha = .93$), good test–retest reliability across 5 weeks ($r = .86$), somewhat weak parent–child agreement ($r = .33$), and good discriminant validity between anxiety and

depression symptoms (Birmaher et al., 1997). These psychometric properties have been replicated using a different sample (Birmaher et al., 1999).

Data Analytic Plan

An analysis of covariance (ANCOVA) was conducted to determine group differences (SMY versus heterosexual youth) controlling for demographic characteristics (gender, race, age, and parent education level), and bivariate correlations were conducted to determine relations among the variables. An alpha of .05 was used for all tests of statistical significance unless otherwise noted. The outcomes of excused and unexcused absences were measured at both assessments, but the follow-up assessment was used as the dependent variable in all analyses. Depression and anxiety symptoms were also measured at both assessments, but for these variables, the initial assessment scores were used in all analyses. We chose to use the follow-up assessment for school absences and initial assessment for depression and anxiety symptoms because our hypotheses were prospective in nature, and it was necessary to increase our confidence in the temporal precedence between the predictors and the outcome variables. Little's (1988) missing completely at random (MCAR) test was conducted and detected no systematic pattern to the missing data. All analyses used listwise deletion to handle missing data.

Moderation was tested within a regression framework using the PROCESS macro for SPSS (Hayes, 2012). Moderation occurs when the relation between the predictor and dependent variable varies across different levels of a third variable (the moderator) and is supported by the significance of the interaction between the predictor and moderator. Moderation can occur in the presence or absence of significant main effects, but the interpretation of a statistically significant main effect is necessarily qualified by the interpretation of the interaction if the interaction is also statistically significant. In this study, we sought to determine if depression and anxiety symptoms relate to school absenteeism (follow-up assessment) differently for SMY and heterosexual youth while controlling for prior school absenteeism (initial assessment). To do this, continuous variables were first mean centered, and the PROCESS macro was used to compute an interaction term by multiplying the moderator (sexual minority status) by each mean-centered predictor (depression and anxiety symptoms). The predictors (depression and anxiety symptoms) and outcomes (excused and unexcused absences) were analyzed separately, so a total of four regression analyses were conducted. Each analysis contained control variables (initial assessment absences, gender, age, race, and parent education level), main effects for the predictor and sexual minority status, and the interaction term.

An alternative strategy to the one employed and described in the previous paragraph would be to estimate two regression models, one for excused absences and one for unexcused absences, in which all predictors (depression and anxiety symptoms and sexual minority status) and interaction terms are entered. We did not apply this strategy due to the risk of Type II error, which occurs when analytic procedures fail to detect a true effect due to low power. Most studies on minority populations are underpowered to detect moderation effects and the present study is no exception. Several researchers have identified the difficulty detecting moderation in nonexperimental settings (e.g., field studies; Jaccard, Helbig, Wan,

Gutman, & Kritz-Silverstein, 1990; Morris, Sherman, & Mansfield, 1986). Compared to experiments, field studies have a much more difficult time detecting moderation because their variables tend to have non-normal distributions. Non-normal distributions make the residual variance of the interaction term relatively lower and drastically reduce statistical power (McClelland & Judd, 1993). Furthermore, moderation effects in non-experimental settings are typically quite small, ranging from 1% to 3% of the total variance, but even an effect that only accounts for 1% for the variance can be meaningful in the social sciences (Champoux & Peters, 1987). For these reasons, in a non-experimental setting, it is imperative to apply a data analytic strategy that maximizes the ability to detect moderation effects and reduces Type II error. As explained by Cohen et al. (2003), the greater the number of predictors in a model, the lower the power of the test on each individual predictor or interaction; therefore, one way to increase power is to reduce the number of predictors in any given model. We, therefore, limited the number of predictors and interaction terms by testing our hypotheses individually in separate regression equations.

Results

Group Differences

Table 2 shows the reported frequency of excused and unexcused absences by sexual minority status. Table 3 shows the ANCOVA results for excused and unexcused absences, depression symptoms, and anxiety symptoms controlling for gender, race, age, and parent education level. Unique sums of squares (also known as Type III sums of squares) is invariant to unequal group sizes and was therefore used in the ANCOVA to account for the unequal group sizes and failure to meet the homogeneity of variance assumption of standard group-difference tests. As predicted, there were significant differences between SMY and heterosexual youth on all variables, and effect sizes were medium to large. SMY reported more excused and unexcused absences from school and higher levels of depression and anxiety symptoms than heterosexual youth. All reported differences were statistically significant even after applying the Bonferroni correction to control for familywise error. The critical alpha for the Bonferroni correction was set at .0125 because 4 comparisons were run ($.05 / 4 = .0125$). The SMY effect sizes for both types of absences and depression symptoms were medium (defined as $d > 0.50$), and the effect size for anxiety symptoms was large (defined as $d > 0.80$; Cohen, 1988).

Correlations

Table 4 shows correlations between the absence variables, depression symptoms, and anxiety symptoms. As predicted, depression symptoms were statistically significantly correlated with unexcused absences; however, contrary to predictions, anxiety symptoms were not statistically significantly correlated with unexcused absences. Neither depression nor anxiety symptoms were statistically significantly correlated with excused absences.

Moderation Analyses

To determine whether the relations between depression symptoms and anxiety symptoms and the two outcome variables (excused and unexcused absences) differed between SMY and heterosexual youth, moderation analyses were conducted. Demographic characteristics

of gender, age, race, and parent education level were standardized as Z-scores and entered as covariates to control for the influence of these variables because previous research has shown demographics to be significant predictors of school absence (Henry, 2007). Frequency of school absence in the initial assessment was also standardized as a Z-score and entered as a covariate in all models. A total of four models were run to examine the relations between each of the two predictors and the two outcomes among SMY and heterosexual youth. Depression symptoms and anxiety symptoms each interacted with sexual minority status to predict unexcused absences (see Figures 1 and 2) but did not interact to predict excused absences. Results of these models are shown in Tables 5 and 6.

Simple slope analyses showed that, in general, the predictor variables were most predictive of absences among SMY as opposed to heterosexual youth. Depression symptoms were positively related to unexcused absences for SMY, $b = 0.43$, $t_{(88)} = 2.30$, $p = .02$, but not significantly related for heterosexual youth, $b = -0.07$, $t_{(88)} = -.46$, $p = .65$. Simple slope analysis results for anxiety symptoms was less clear. While the statistically significant interaction shown in Table 6 indicates that the relation between anxiety symptoms and unexcused absences varies between the two groups, neither simple slope was significant at $p < .05$. However, the simple slope results for anxiety symptoms can be cautiously interpreted to support the effects found for depression symptoms because the magnitude and direction of the effects are quite different between SMY and heterosexual youth and are consistent with the effects found for depression symptoms, SMY: $b = 0.56$, $t_{(89)} = 1.52$, $p = .13$ and heterosexual youth: $b = -0.30$, $t_{(89)} = -1.43$, $p = .16$.

Discussion

The goal of this research was to determine if disparities in school absenteeism between SMY and heterosexual youth exist (aim 1) and to explore differences in the relation between mental health and school absenteeism between the two groups (aim 2). We found that SMY report more excused and unexcused absences and replicated previous research that has found SMY report more depression and anxiety symptoms (Marshall et al., 2011; 2012). However the moderation analyses revealed important differences in the strength of these associations between SMY and heterosexual youth. Specifically, depression and anxiety symptoms were stronger predictors of unexcused absences in SMY than in heterosexual youth.

Previous research found that mood disorders are more strongly associated with anxious school refusal behavior than with truancy (Egger et al., 2003). However the present study found that among SMY depression and anxiety symptoms are more strongly associated with unexcused absences (i.e., truancy). Why depression and anxiety symptoms are associated with unexcused absences rather than excused absences among SMY cannot be conclusively determined from the present data. Because our study did not measure motive for missing school, it is unknown how many of the absences classified as unexcused in our study would have been classified as anxious school refusal behavior in other studies.

There are a couple possible explanations for the moderation findings, one considering the perceived supportiveness of the school environment and another considering the stigma

associated with being a sexual minority and the concealment of that identity. It is possible that heterosexual youth find more support from friends and teachers in school than do SMY. If this is the case, then when heterosexual students experience anxiety or depression, they do not want to skip school because the support they find in school makes them feel better; whereas SMY who experience anxiety or depression avoid school and seek support elsewhere. It is also possible that SMY with more depression or anxiety symptoms do not feel comfortable articulating to a parent or guardian why they do not want to go to school for fear that doing so would involve disclosing their sexual identity and therefore they do not seek permission before skipping school. For example, if SMY are anxious about going to school because they are teased for being gay or maybe feel depressed because they do not fit in at school, then they may not want to explain these reasons to a parent because doing so would reveal a sexual identity they may not yet be ready to discuss. Both explanations would be supported by the minority stress hypothesis that stigma, victimization, and concealment of a minority identity can have a negative impact on mental health (Meyer, 2003). Future studies with larger sample sizes and measures of the perceived supportiveness of the school environment and bullying–victimization are necessary to shed light on these interpretations of the findings.

Strengths, Limitations, and Future Research

A few strengths of this study are that the sample consisted of both SMY and heterosexual youth, absences were categorized as either excused or unexcused, and the data are longitudinal. These strengths allowed us to determine that some of the known risk factors for school absence predict such absences differently between SMY and heterosexual youth.

There are also several limitations worth noting. School absences in our study were based on self-report and could not be confirmed by official school records. This limitation likely increased measurement error as students may not have been able to accurately recall the number of times they missed school or intentionally misreported in an effort to conceal their truancy. Previous research has found self-report absence data to be valid when compared to official school records (Poteat et al., 2011); however, the presumed validity of the self-report absence data in the present study could not be directly confirmed.

This study also used a rolling recruitment plan so participants were recruited at different times during the year. Because the time of year was not held constant, some participants' response periods included summer vacation, which may have led to an underestimation of school absences for some participants (e.g., missing school two times in the past 6 months when 3 of those months included summer vacation is different than missing school two times in the past 6 months when all 6 months were during the regular school year). However, time of year of recruitment was not associated with SMY status; thus, we have no reason to believe this would change the direction of our findings.

The scaling of the self-report school absence variables was also not as precise as it could have been. Participants essentially reported their absences in a categorical framework: 0 (*never*), 1 (*1 or 2 times*), 2 (*3 to 10 times*), and 3 (*more than 10 times*). The third category includes a large range (3 to 10 absences), and it is a larger range than the previous two categories combined. A better method would be to measure absences as a continuous

frequency measure or, at least, a categorical measure with more evenly distributed categories. These limitations are artifacts of using clinic-based data rather than school-based data. The study from which these data were drawn is focused on clinical outcomes in adolescence; therefore, clinical data were prioritized over school data. Using a relatively small clinic-based sample to study school outcomes limits the generalizability of the findings. Therefore, we recommend future studies replicate the present results using school-based data to overcome some of limitations highlighted here.

Future research on school absenteeism would benefit from including a measure of sexual identity and categorizing absences based on excused versus unexcused as we have done here. Future research could expand upon our findings by including a measure of the motive behind absences. Previous research has found that SMY are more likely than heterosexual youth to miss school due to fear (Friedman et al., 2011). SMY may be more likely to skip school as a means of avoidance or anxious school refusal whereas heterosexual youth may be more likely to skip school due to a conduct disorder or as rebellion against authority.

Implications for Schools

These results suggest that absences from school may be an early warning sign for mental health issues, particularly for SMY. Previous research has found that 22% of SMY will attempt suicide before reaching the 12th grade (Hatzenbuehler, 2011). Faced with such a staggering statistic it is imperative school psychologists seek ways to identify mental health problems early and refer students to the appropriate mental health professionals. The present study cannot determine if unexcused absences typically precede the onset of suicidal thoughts among SMY but it is an important avenue for future research and is worth considering when school psychologists are faced with a sexual minority student who is missing school. Mental health screening and treatment may be far more helpful at reducing absenteeism and improving mental health than punishment for absenteeism, which may only further alienate the student from school. Schools can be an important source of support for all students, but particularly for SMY who may not have support at home depending on if they disclosed their sexual minority status to their parents and the reaction of the parents. The more aware school psychologists are of the particular risk factors for SMY, the more prepared they will be to provide the needed support.

School officials and policy makers have long sought measures to improve school climate and reduce school absenteeism. Gay Straight Alliances (GSAs) in schools are one way to improve the school climate for SMY. A GSA is an extracurricular club composed of gay and straight students along with a faculty advisor and has a stated mission to improve the school environment for all students while also specifically addressing concerns relevant to SMY. Preliminary research suggests that GSAs have largely been successful in improving school climate, and the United States Secretary of Education has encouraged schools to include GSAs among their extracurricular clubs (United States Department of Education, 2011). SMY who attend a school with a GSA, regardless of actual participation in the GSA, report less bullying, skip school less frequently, and are less likely to attempt suicide (Hatzenbuehler, 2011; Walls, Kane, & Wisneski, 2010). The Gay, Lesbian, and Straight

Education Network (GLSEN) provides students and educators with resources for GSAs and related programs.

Conclusion

Parents and school officials should consider sexual minority status and mental health when seeking explanations for unexcused absences and particularly when developing interventions or preventive measures to reduce absenteeism. Chronic absenteeism can cause long term problems such as school dropout, delinquency, and later occupational and relationship problems (Kearney & Bensaheb, 2006). It is therefore important to identify these issues early, understand the causes of the behavior, and take steps to reduce the behavior in order to mitigate the long-term consequences.

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Figure 1. Unexcused absences and depression symptoms moderated by sexual minority status
SMY = sexual minority youth. Unexcused absences scaled as 0 (never), 1 (1 or 2 times), 2 (3 to 10 times), and 3 (more than 10 times).

Figure 2. Unexcused absences and anxiety symptoms moderated by sexual minority status
SMY = sexual minority youth. Unexcused absences scaled as 0 (*never*), 1 (*1 or 2 times*), 2 (*3 to 10 times*), and 3 (*more than 10 times*).

Table 1

Demographic Characteristics of the Sample

Subsample	Gender (<i>n</i>)		Race (<i>n</i>)		Age (<i>M</i>)	Parent Educ. (<i>M</i>)
	Male	Female	White	African American		
SMY	4	24	8	20	16.25	3.54
Heterosexual	27	53	33	47	16.30	3.91

Note. SMY = Sexual minority youth. Parent Educ. = parent education level; it was scaled as 1 (*no high school diploma*) to 5 (*graduate degree*). The 2% of the sample that reported race of “other” have been included in the African American category for reporting purposes in this table in order to protect confidentiality.

Table 2
Distribution of Absences by Sexual Minority Status

Frequency of absences (past 6 months)	Group	
	SMY	Heterosexual youth
Excused		
0	4 (14%)	27 (34%)
1-2	10 (36%)	34 (42%)
3-10	10 (36%)	17 (21%)
11+	4 (14%)	2 (3%)
Unexcused		
0	14 (50%)	65 (81%)
1-2	7 (25%)	12 (15%)
3-10	6 (21%)	2 (3%)
11+	1 (4%)	1 (1%)

Note. Excused and unexcused absences were measured at the follow-up assessment. Cell values represent number of participants reporting each frequency range of excused and unexcused absences. Percentages are the percent of participants within each demographic group (SMY and heterosexual youth) reporting each frequency range. SMY = Sexual minority youth.

Table 3
Descriptive Statistics and ANCOVA Results

Measure	SMY <i>M (SD)</i>	Heterosexual youth <i>M (SD)</i>	<i>F</i> _(5,100)	<i>d</i>
Excused absences	1.50 (0.92)	0.91 (0.81)	9.97*	0.65
Unexcused absences	0.79 (0.92)	0.23 (0.56)	13.24*	0.72
Depression symptoms	0.87 (0.56)	0.57 (0.40)	9.69*	0.62
Anxiety symptoms	0.69 (0.29)	0.43 (0.30)	14.73*	0.88

Note. Gender, race, age, and parent education level were entered as covariates. Excused and unexcused absences were measured at the follow-up assessment; depression and anxiety symptoms were measured at the initial assessment. Variables were scaled as follows: absences: 0 (*never*), 1 (1 or 2 times), 2 (*3 to 10 times*), and 3 (more than 10 times); depression symptoms: 0 (*rarely or none of the time*) to 3 (*most or all of the time*); anxiety symptoms: 0 (*not true or hardly ever true*) to 2 (*very true or often true*).

SMY = Sexual minority youth.

*
 $p < .0125$

Table 4
Correlations between Measures

Measure	1	2	3	4
1. Excused absences	-			
2. Unexcused absences	.28*	-		
3. Depression symptoms	.17	.32*	-	
4. Anxiety symptoms	.17	.15	.55*	-

Note. Excused and unexcused absences measured at the follow-up assessment; depression and anxiety symptoms measured at the initial assessment.

* $p < .05$

Table 5
Moderation Analyses of Depression Symptoms, Anxiety Symptoms, and Excused Absences

Variables entered on step	Depression symptoms	
	<i>b</i>	SE <i>b</i>
Constant	1.03	0.12
Covariates		
Unexcused absences (initial assessment)	0.23*	0.08
Gender	0.10	0.09
Age	-0.01	0.14
Race	-0.13	0.08
Parent education	-0.07	0.06
Main effects		
Sexual minority status	0.41*	0.20
Depression symptoms	0.38	0.24
Interaction (R^2 change = .01, p = .22)		
Sexual minority status $\times$ depression symptoms	-0.44	0.36
Anxiety symptoms		
Variables entered on step	<i>b</i>	SE <i>b</i>
Constant	1.03	0.12
Covariates		
Unexcused absences (initial assessment)	0.23*	0.08
Gender	0.09	0.09
Age	0.03	0.14
Race	-0.12	0.09
Parent education	-0.06	0.06
Main effects		
Sexual minority status	0.49*	0.22
Anxiety symptoms	0.01	0.32
Interaction (R^2 change = .002, p = .64)		
Sexual minority status $\times$ anxiety symptoms	-0.30	0.63

Note. Equation for depression symptoms: R^2 = .26, $F(8, 90) = 3.92$, $p < .001$. Equation for anxiety symptoms: R^2 = .22, $F(8, 91) = 3.21$, $p = .003$.

* $p < .05$

Table 6
Moderation Analyses of Depression Symptoms, Anxiety Symptoms, and Unexcused Absences

Variables entered on step	Depression symptoms	
	<i>b</i>	SE <i>b</i>
Constant	0.33	0.08
Covariates		
Unexcused absences (initial assessment)	0.44*	0.06
Gender	-0.06	0.06
Age	0.04	0.09
Race	-0.06	0.06
Parent education	-0.04	0.04
Main effects		
Sexual minority status	0.36*	0.13
Depression symptoms	-0.07	0.16
Interaction (R^2 change = .02, p = .04)		
Sexual minority status × depression symptoms	0.51*	0.24
Anxiety symptoms		
Variables entered on step	<i>b</i>	SE <i>b</i>
Constant	0.35	0.08
Covariates		
Unexcused absences (initial assessment)	0.46*	0.06
Gender	-0.05	0.06
Age	0.07	0.09
Race	-0.07	0.06
Parent education	-0.04	0.04
Main effects		
Sexual minority status	0.32*	0.14
Anxiety symptoms	-0.30	0.21
Interaction (R^2 change = .02, p = .04)		
Sexual minority status × anxiety symptoms	0.85*	0.42

Note. DV = Unexcused absences.

Equation for depression symptoms: $R^2 = .52$, $F(8, 88) = 11.91$, $p < .001$.

Equation for anxiety symptoms: $R^2 = .50$, $F(8, 89) = 11.01$, $p < .001$.

*
 $p < .05$