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Publisher: Routledge

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Journal of Social Service Research

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/wssr20>

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Available online: 11 Jul 2011

To cite this article: Kristie L. Seelman, N. Eugene Walls, Cynthia Hazel & Hope Wisneski (2011): Student School Engagement Among Sexual Minority Students: Understanding the Contributors to Predicting Academic Outcomes, Journal of Social Service Research, 38:1, 3-17

To link to this article: <http://dx.doi.org/10.1080/01488376.2011.583829>

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ABSTRACT. Hierarchical multiple regression is used to examine whether student school engagement predicts grade point average (GPA) and fear-based truancy among 315 sexual minority youth aged 13 to 24 years. Results indicate that student school engagement is a significant predictor of GPA, and this relationship is strongest in the presence of a gay–straight alliance. Having an adult ally at school is associated with a decrease in fear-based truancy, while student school engagement predicts a decrease in fear-based truancy only for youth who have higher levels of subjective fear at school. Implications for future research and for practice among school-based helping professionals are discussed.

KEYWORDS. Academic achievement, student school engagement, gay, lesbian, bisexual, sexual minority, gay–straight alliance, truancy

Among general populations of youth, student school engagement has been associated with positive academic outcomes, such as higher grades, completion of high school, and improved test scores (Fredricks, Blumenfeld, & Paris, 2004). Theories of student school engagement are frequently used to encourage student investment at school and develop interventions with youth to prevent dropping out (Furlong & Christenson, 2008). However, little research has been

done to examine whether student school engagement is a useful construct in understanding and predicting the academic success of sexual minority youth,¹ who often face hostile school environments and stigma that make it difficult to achieve academic success (Pearson, Muller, & Wilkinson, 2007). This study helps to fill this gap in the research by examining whether student school engagement predicts two academic outcomes (grade point average [GPA] and fear-based

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truancy) among a sample of sexual minority youth while controlling for specific school-level characteristics (e.g., presence of a gay-straight alliance [GSA]). Before moving into a discussion of the current study, this article will first review the literature on sexual minority youth in school settings and definitions and theories of student school engagement.

SEXUAL MINORITY YOUTH IN SCHOOL SETTINGS

Educational settings continue to be sites of victimization and violence for many sexual minority youth (D'Augelli, Grossman, & Starks, 2006; DuRant, Kahn, Beckford, & Woods, 1997), with Human Rights Watch (2001) suggesting that such victimization is "endemic" in American schools and includes verbal harassment, sexual harassment, threats, and physical abuse. More than a third of sexual minority youth experience physical harassment (Kosciw, 2004; Kosciw & Diaz, 2006), and between one half and two thirds experience either verbal harassment, physical harassment, or both because of their actual or perceived sexual orientation or gender identity (Kosciw & Diaz, 2006; Walls, Hancock, & Wisneski, 2007; Walls, Kane, & Wisneski, 2010). The risks for victimization increase even further for certain groups of sexual minority youth, including those who experience homelessness (Millburn, Ayala, Batterham, & Rotherham-Borus, 2006; Walls et al., 2007), those who are more open about their sexual orientation (Kiedman, 2002), and those who are gender nonconforming (D'Augelli et al., 2006; Plöderl & Fartacek, 2007).

Sexual minority youth frequently feel powerless in figuring out how to respond and confront harassment at school (Craig, Tucker, & Wagner, 2008), with the majority of those harassed or assaulted at school failing to report it to school staff, their parents, or other family members (Kosciw & Diaz, 2006). Even when schools are aware of antigay victimization and bullying, it is frequently met with inaction on the part of education system employees and school officials (National Education Association Task Force on Sexual Orientation, 2002).

Experiences of victimization can impact academic achievement in a number of negative ways. One potential outcome is higher rates of fear-based truancy for sexual minority youth. Avoiding school because of fear of victimization appears to be common among sexual minority youth, with between 20% and 25% of youth skipping school at least once in the previous month because they feel unsafe at school (Walls et al., 2007, 2010). Given the linkage between repeated truancy and poor school performance (Chang, Chen, & Brownson, 2003), this protective coping behavior comes at the possible cost of lower academic achievement.

A second potential outcome of experiencing a context hostile to one's sexual identity is the increased likelihood of bringing weapons to school as a way to protect oneself. Male sexual minority youth are more likely to carry a weapon and fight at school than are female sexual minority youth (DuRant et al., 1997), with much of the behavior appearing to be defensive rather than offensive (Webster, Gainer, & Champion, 1993). Given that male sexual minority youth report higher rates of victimization and assault at school than do female sexual minority youth, this gendered pattern is not surprising (D'Augelli, Pilkington, & Hershberger, 2002).

Experiences of victimization are also correlated with numerous mental health issues, including increased symptoms of posttraumatic stress disorder, depression, anxiety, social phobias, and suicidality (D'Augelli et al., 2002, 2006; Hershberger, Pilkington, & D'Augelli, 1997; Menesini, Modena, & Tani, 2009; Walls, Freedenthal, & Wisneski, 2008). Likewise, a correlation exists between being bullied and increased drug and alcohol use (Tharp-Taylor, Haviland, & D'Amico, 2009). Mental health issues and psychological distress represent another barrier to strong academic achievement (Fernández-Castillo & Gutiérrez-Rojas, 2009; Hamilton, Newman, Delville, & Delville, 2008; Rotherham et al., 2009).

Although there is scant research on the academic achievement of sexual minority youth, what does exist suggests that the educational outcomes are, indeed, negatively influenced by these common school experiences. Sexual minority youth appear to perform poorer in

schools—whether measured by GPA or likelihood of taking advanced coursework—than their heterosexual counterparts (Pearson et al., 2007). This difference appears to be even greater for boys than for girls. Substance use, emotional distress, lower school attachment and school engagement, and more negative attitudes toward school, however, appear to be greater risks for sexual minority girls than sexual minority boys. Overall, the pattern that emerges from the Pearson et al. (2007) study suggests that sexual minority youth are more difficult to engage in school and tend to have lower educational aspirations. Their findings led Pearson et al. (2007) to argue that sexual minority youth face risks of low school engagement similar to those found among youth of color and low-income youth.

In addition to having poorer academic performance, sexual minority youth are also more likely to drop out of school than are heterosexual youth (Remafedi, 1987; U.S. Department of Health & Human Services, as cited in Brookins-Fisher, 1995), although the presence of a GSA in the school and participation in a GSA are both associated with decreased likelihood of dropping out for sexual minority youth (Walls et al., 2010). Given these patterns of risks, Pearson and colleagues (2007) argue that:

Same-sex attracted youth are indeed suffering in schools in ways that can impact their opportunity for future success. Experiencing sexual stigma can lead to emotional distress and risk-taking and can prevent adolescents from feeling like they belong in their schools, ultimately impacting their academic performance. (p. 536)

An important point to emphasize is that schools are not helpless in improving outcomes for sexual minority youth; rather, school personnel have the ability to decrease the negative outcomes for sexual minority youth through improving school climate and reducing homophobic victimization (Birkett, Espelage, & Koenig, 2009).

Given the context of victimization that many sexual minority youth experience in educational settings, the protective and supportive relationship of strong student school engagement with

positive academic achievements may be attenuated or nonexistent. While student school engagement has been shown to be a protective factor and a strong predictor of positive academic outcomes for general community samples of youth (Fredricks et al., 2004), little is known about how student school engagement functions for sexual minority youth. Likewise, student school engagement may function differently for different subpopulations of sexual minority youth or interact with other protective factors. Before discussing the study at hand, this article will provide a brief review of the literature on student school engagement.

DEFINITIONS AND THEORIES OF STUDENT SCHOOL ENGAGEMENT

Student school engagement has been discussed under many terms, including school connectedness, affiliation, membership, bonding, and belonging (Jimerson, Campos, & Greif, 2003; Osterman, 2000). The most commonly used terms are *student engagement* (see, for example, Appleton, Christenson, & Furlong, 2008; Appleton, Christenson, Kim, & Reschly, 2006; Christenson et al., 2008) and *school engagement* (see, for example, Fredricks, Blumenfeld, Friedel, & Paris, 2005; Fredricks et al., 2004; O'Farrell, Morrison, & Furlong, 2006). As might be expected given the terminology differences, student school engagement does not have an agreed-upon definition (Appleton et al., 2008; Jimerson et al., 2003). There is growing consensus, however, that student school “engagement is a multi-dimensional construct. . . [that] is highly influenced by specific facilitators such as family and school expectations” (Christenson, n.d., para. 1) and represents “the fusion of behavior, emotion, and cognition under the idea of engagement” (Fredricks et al., 2004, p. 61). While engagement has sometimes been defined as the opposite of disengagement (Willms, 2003), other scholars (Jimerson et al., 2003) have argued that engagement is an active pro-education trait and much more than a lack of disengagement.

This study utilizes the conceptualization of student school engagement offered by Hazel,

Jack, Wonner, and Albanes (2009). They suggest that “student school engagement is a multi-dimensional meta-construct representing a student’s internally and externally mediated affiliation with and investment in schooling. Student school engagement is a biopsychosocial phenomenon, occurring in and responding to environmental contexts within a developmental trajectory” (Hazel et al., 2009, para. 2). Further, the underlying assumptions regarding student school engagement are that: a) the level of engagement is fluid (and therefore can be changed and increased), and b) higher levels of engagement typically result in improved academic performance and increased rates of high school completion (Hazel et al., 2009).

Because the definition of student school engagement is not agreed upon, there are multiple measurement challenges, not the least of which is the differentiation between a student’s engagement and the variables in the environment that help or hinder a student’s performance (Furlong & Christenson, 2008). Previous theories of engagement have been partitioned into differing psychological constructs (i.e., behavioral engagement, cognitive engagement, emotional engagement), leading to both measurement and practice problems. For instance, from the measurement perspective, does participating in an extracurricular chess club indicate behavioral, emotional, or cognitive engagement? Further, if a student is lacking in emotional engagement, how does one intervene with that student? In response to these research and clinical issues and based upon a comprehensive literature review of student school engagement, Hazel et al. (2010) have proposed a three-factor model of student school engagement in which more than one aspect of psychological functioning is represented in each factor.

The *Student School Engagement* model posits three interrelated domains of engagement: *aspirations*, *belonging*, and *productivity* (Hazel et al., 2010). Aspirations are a student’s appraisal of the worthiness of an education, its utility to his or her future, and, therefore, his or her investment in academic achievement. Belonging is a student’s sense that he or she is a member of the school community and commitment to the school’s norms. Productivity

encompasses a student’s academically oriented behaviors and cognitive strategies designed to monitor and maximize learning. The Student School Engagement Measure (SSEM) was developed to measure students’ perceptions of their engagement in the domains of aspirations, belonging, and productivity (Hazel et al., 2010).

RESEARCH QUESTION

Using the *Student School Engagement* model, this study seeks to explore the relationship between levels of student school engagement and academic outcomes for sexual minority youth. Specifically, this study asks: Is student school engagement able to predict academic outcomes (GPA and fear-based truancy) for sexual minority youth, after controlling for demographic and school-related variables?

METHOD

Sample Recruitment and Characteristics

Participants in this study were recruited from two primary sources: a) youth receiving services or attending social events at either the primary lesbian, gay, bisexual, transgender (LGBT) organization leading the data collection or one of three other sexual minority youth-serving programs in the Rocky Mountain region, and b) youth who elected to click a Web link that was prominently displayed on the youth services section of an LGBT organization’s Web page inviting sexual minority youth and young adults to participate in the study.

As part of its programmatic evaluation and needs assessment activities, the organization that collects the data conducts an annual survey of the youth participating in its programs. Data used in this study were collected in the 2007–2008 annual survey, which was administered in an online format. Staff and volunteers at the lead organization and the youth-serving partner agencies directly requested that youth receiving services or attending social events sponsored by the programs take part in the survey and explained that participation was voluntary and that decisions

not to participate would not influence the youth's relationship with the program. Youth who participated in the survey were able to enter themselves into a lottery for various gift certificates. Of the sample used for this study, 44.65% had received services at one of the four organizations, and the remaining 55.35% had not. Although these youth reported not having received services, it is possible that some of them may have attended social events organized by one of the four agencies.

The online survey took approximately 20 minutes to complete and consisted of 12 primary topics (e.g., demographics, school experiences, violence, and safety), with each topic consisting of a number of questions and skip patterns based on screening questions. Measures used in the survey were modeled after questions from the National Youth Risk Behavior Surveillance survey (Centers for Disease Control and Prevention, 2004), the Gay, Lesbian, Straight Education Network 2003 National Climate Survey (Kosciw, 2004), and other sources from the existing literature. Data were collected anonymously and all respondents had to electronically sign a consent form prior to completing the survey. University institutional review board approval was sought and obtained for secondary analyses of the data set, because the data were originally collected for evaluation and planning purposes by the lead LGBT organization. Only responses from certain questions on the survey were used in this analysis.

Measures

Demographic Variables

The demographic variables included in the models are race (a White/non-White dummy variable), free or reduced-price school lunch qualification (a yes/no dummy variable used as a proxy for socioeconomic status), age (in years), sexual orientation (lesbian, gay, bisexual, queer, or questioning, with gay as the reference group), and gender identity (male, female, or transgender/other, with male as the reference group). In terms of the race variable, this sample had a sizeable number of students who identified as Latino/a and youth who identified as

Bi-/Multiracial; however, there were not significant results when partitioning youth by these identities in the final models. For the sake of parsimony, a White/non-White dummy variable was used as an indicator of race. In regards to sexual orientation, youth could select whether they were gay, lesbian, bisexual, heterosexual, unsure/questioning, or other; those who selected "other" could include further information about how they self-identify. The largest number of youth who chose "other" as their sexual orientation self-identified as queer, so this term is used to designate this group in the statistical models.

Independent Variables

Information was collected about three school-related variables: presence of a safe adult at school (a dichotomous variable indicating whether in the past year there was a teacher, counselor, social worker, or other adult at school that the youth felt safe to talk to about their sexual orientation and/or gender identity); presence of a GSA at their current or most recent school or college (a yes/no dichotomous variable); and feeling unsafe or afraid at school in the past year (an interval-level variable with a scale ranging from 1 = *never* to 5 = *all of the time*).

The independent variable of primary interest in this study was student school engagement. The 9 items used to capture student school engagement were based on the SSEM (Hazel et al., 2010), with the three domains of aspirations, belonging, and productivity. In psychometric testing using a sample of more than 350 secondary students, the instrument, composed of 22 items, each on a 10-point scale, was found to be reliable (Cronbach's alphas ranged from .89 to .93 for each domain), and the model structure was validated (Hazel et al., 2010). For this survey, 3 items from each domain were included. Two sample items were: "The things I am learning in school are going to be important to me in my life" (aspirations), and "I feel like I belong at my school" (belonging). Questions were slightly reworded for youth who were no longer in school (e.g., "I felt like I belonged in my school"). Youth responded to each item on a scale ranging from 1 = *strongly agree* to 4 = *strongly disagree*. The 9 items were summed (with negatively worded

items being reverse-coded) to derive a composite student school engagement score for each participant; 8 was subtracted from each score so that the lowest possible score would be 1.0 for ease of interpretation.

Dependent Variables

GPA was calculated by taking the youth's reported letter grades for the previous or most recent school year and rescoreing these items as a numeric GPA (*mostly Fs* = 0.2, *mostly Ds* = 0.8, *mostly Cs* = 1.8, *mostly Bs* = 2.8, *mostly As* = 3.8, *straight As* = 4.0).

Fear-based truancy was measured by the number of days the youth reported missing school due to feeling unsafe during their most recent month of school. Possible answers ranged from 0 days to 6 or more days; these answers were rescored to reflect the midpoint of each answer range (e.g., 2 or 3 days = 2.5).

Analyses

Hierarchical multiple regression was used to test the study's hypothesis with two models, the first for predicting GPA and the second for predicting fear-based truancy. All analyses were performed using the Statistical Package for the Social Sciences (SPSS), version 16.0.

The full sample included 346 sexual minority youth between the ages of 13 and 24 years. Four records were dropped as multivariate outliers on the school engagement scale. None of the variables had more than 9.3% of data missing, and analyses of patterns of missing data indicated that all of the independent variables were either missing completely at random or missing at random. Eighteen records were dropped because they had too much missing data to complete multiple imputation, and an additional 6 records were dropped because of missing data on one or both of the dependent variables. Multiple imputation by chained equations (van Buuren, Boshuizen, & Knook, 1999) was then used to address the remaining missing data. This left a usable sample of 318 for the multiple regression analyses.

RESULTS

Descriptive Statistics

Descriptive statistics were calculated only for the existing (nonimputed) data prior to any rescoreing or centering of variables. In terms of race/ethnicity, 65.2% ($n = 199$) of the sample identified as White, 13.8% ($n = 42$) identified as biracial or multiracial, 8.9% ($n = 27$) identified as Hispanic/Latino/a, 2.3% ($n = 7$) identified as American Indian or Alaskan Native, 2.0% ($n = 6$) identified as Asian or Asian American, 2.0% ($n = 6$) identified as Black or African American, and 5.9% ($n = 18$) identified as Other race/ethnicity. With regard to gender identity, 48.5% ($n = 148$) of the sample identified as female, 41.0% ($n = 125$) identified as male, and 10.5% ($n = 32$) identified as transgender, gender variant, genderqueer, or other.

Almost one third of the sample (32.1%, $n = 100$) identified as gay, 31.1% ($n = 97$) identified as bisexual, 22.4% ($n = 70$) identified as lesbian, 8.3% ($n = 26$) identified as queer, pansexual, or some other identity, and 6.1% ($n = 19$) were questioning. The sample ranged in age from 13 to 24 years old, with a mean age of 17.88 years ($SD = 2.32$). As a proxy for social class, slightly more than one third of the sample (34.7%, $n = 110$) reported having received a free or reduced-price lunch at some point during their schooling. The breakdown of youth's grade status in school is included in Table 1.

TABLE 1. Current Grade Level or Dropout Status of the Sample

Current grade level	Percent	Frequency
9th grade	6.4%	20
10th grade	13.5%	42
11th grade	20.2%	63
12th-grade equivalent ^a	20.8%	65
Finished high school, not attending college	4.2%	13
Attending college	25.3%	79
Finished college	1.9%	6
College graduate student	2.6%	8
Dropped out of HS or college	5.1%	16

^aIncludes current 12th-grade students, alternative high school students, general education diploma (GED) prep, and those who had earned a GED.

Two thirds of the youth (66.6%, $n = 209$) reported having a teacher, counselor, social worker, or other adult at their current or most recent school or college with whom they felt safe talking to about their sexual orientation and/or gender identity. The majority (68.2%, $n = 217$) also stated that their current or most recent school has a GSA, while the remaining youth said that their school either did not have a GSA or they did not know whether it did. In terms of feeling unsafe or afraid while at their most recent school or on the way to/from school, 29.4% ($n = 92$) said they never felt unsafe or afraid, 38.0% ($n = 119$) rarely did, 23.3% ($n = 73$) sometimes did, 8.6% ($n = 27$) felt unsafe or afraid most of the time, and 0.6% ($n = 2$) felt unsafe or afraid all of the time. While the modal response was rarely feeling unsafe or afraid, almost one third of the youth reported feeling unsafe or afraid at least sometimes. On the measure of student school engagement, scores spanned the entire range of the scale from 1 (*low engagement*) to 28 (*high engagement*), with an average engagement score of 17.92 ($SD = 4.94$), indicating that most of the youth scored slightly above the scale's midpoint.

Turning to the dependent variables, youth's GPA from their previous (or most recent) academic year ranged from 0.2 (*mostly Fs*) to 4.0 (*straight As*), with an average GPA of 2.79 ($SD = 1.04$), which is approximately equal to receiving mostly Bs. For the fear-based truancy variable (average number of missed days of school per month due to feeling unsafe), answers ranged the full length of the original scale (from 0 days to 6 or more days). However, this variable's distribution was positively skewed and leptokurtic, with 83.0% of youth reporting not missing any school days due to fear of being unsafe, 5.7% ($n = 18$) missing 1 day of school, 6.9% ($n = 22$) missing 2 or 3 days, 1.6% ($n = 5$) missing 4 or 5 days, and 2.8% ($n = 9$) missing 6 or more days.

Inferential Statistics

For each of the regression models (one predicting GPA and the other predicting fear-based truancy), the first block includes only the demographic variables, the second block adds school-level variables, the third block adds student school engagement, and the fourth block in-

cludes any significant interaction terms between student school engagement and the school-level variables.

The assumptions of multiple regression were tested using SPSS REGRESSION and plotting the residuals against the dependent variable. The model predicting truancy had a scatter plot suggesting violations of assumptions of normality of errors and homoscedasticity, indicating that the truancy variable was highly positively skewed and leptokurtic. The truancy variable was transformed to address the violations of assumptions, but there was only one minor difference (a slightly higher adjusted R^2) when comparing the final results using the transformed dependent variable with the untransformed version of the same variable. Therefore, for ease of interpretation, the untransformed version of the truancy variable was used in the models reported here.

Turning to the assumptions regarding univariate and multivariate outliers, two of the dichotomous independent variables (having a queer/other sexual orientation, and being questioning about one's sexual orientation) had greater than 90:10 splits. These variables were retained in the models, recognizing that their correlations with other variables would be deflated due to their lopsided splits. Six records were extremely low outliers on student school engagement, and one case was extremely high in the interaction term of engagement and feeling unsafe/afraid. Because both of these variables' distributions were otherwise normal, these seven extreme records were rescored so that they remained at the tail end of their distributions but would not be as influential (Tabachnick & Fidell, 2007). None of the other variables had extreme univariate outliers. Using a $p < .001$ criterion for Mahalanobis distance, three cases were found to be multivariate outliers in the models predicting GPA, and three cases were found to be multivariate outliers in the models predicting truancy. These outlier cases were significantly older than the rest of the sample ($p < .001$ for the GPA models, and $p < .01$ for truancy), and in the case of predicting GPA were more likely to be queer identified ($p < .001$). These cases were excluded from the final analyses for the model(s) in which they were multivariate outliers so that all of the analyses used a final sample size of 315.

Finally, to address issues of multicollinearity that were introduced by including interaction terms in the models, the following variables were centered: age, age squared, feeling unsafe or afraid at school, student school engagement, and the two interaction terms.

Model Predicting GPA

The results of the hierarchical regression predicting GPA can be found in Table 2. Within the first block of variables, the overall model accounted for 9% of the variance in GPA, with receiving a free or reduced-price lunch, age squared, and being female emerging as significant predictors of GPA when controlling for all other demographic variables. Youth who received a free or reduced-price lunch are predicted to have a GPA that is 0.24 points lower than other youth ($p < .05$). The significant age-squared variable ($p < .05$) indicates a curvilinear relationship between age and GPA when controlling for the other demographic variables. Sexual minority females are predicted to have a GPA

that is 0.53 points higher than that of sexual minority males ($p < .01$).

In the second block, in which school-level variables had been introduced, free/reduced-price lunch lost its significance in predicting GPA; all other demographic variables that were significant in the first block remained significant when controlling for all other variables. None of the school-level variables were significant predictors of GPA. The variables included in Block 2 accounted for 10% of the variance in GPA.

All of the variables that were significant predictors in Block 2 remained so in Block 3. Presence of a GSA became a significant predictor ($p < .05$) of student GPA once student school engagement was added to the model. When controlling for the other variables, youth whose school or college has a GSA are predicted to have a GPA that is 0.26 points lower than youth who said their school did not have a GSA or who did not know whether their school did. Additionally, student school engagement was a significant predictor of GPA ($p < .001$) when controlling for student demographics and school-level

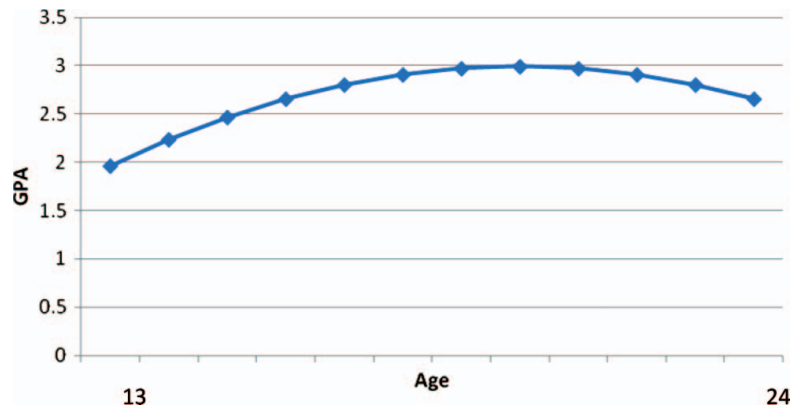
TABLE 2. Hierarchical Regression Model Predicting Grade Point Average ($N = 315$)

Predictor Variables	Block 1 B (s.e.)	Block 2 B (s.e.)	Block 3 B (s.e.)	Block 4 B (s.e.)	β
<i>Demographics</i>					
Non-Hispanic White	.04 (.12)	.05 (.12)	.11 (.12)	.11 (.12)	.05
Free/Reduced-Price Lunch	-.24* (.12)	-.23 (.12)	-.18 (.12)	-.20 (.12)	-.09
Age (centered)	.13*** (.03)	.12*** (.03)	.09** (.03)	.08** (.03)	.18
Age squared (centered)	-.02* (.01)	-.02* (.01)	-.02* (.01)	-.02* (.01)	-.13
Lesbian	-.25 (.23)	-.24 (.23)	-.21 (.22)	-.23 (.21)	-.09
Bisexual	-.27 (.18)	-.26 (.18)	-.28 (.18)	-.30 (.18)	-.13
Queer	-.06 (.26)	-.05 (.26)	.00 (.24)	-.03 (.24)	-.01
Questioning	.02 (.28)	-.00 (.28)	-.08 (.27)	-.02 (.27)	-.00
Female	.53** (.18)	.53** (.18)	.49** (.17)	.49** (.17)	.23
Trans	.15 (.22)	.20 (.23)	.16 (.22)	.17 (.21)	.05
<i>School-Level Variables</i>					
Safe Adult		.17 (.13)	-.00 (.12)	-.01 (.12)	-.00
GSA		-.16 (.12)	-.26* (.12)	-.21 (.12)	-.10
Unsafe/Afraid (centered)		-.11 (.06)	-.04 (.06)	-.03 (.06)	-.02
<i>Student School Engagement</i>					
Student School Engagement (centered)			.07*** (.01)	.03 (.02)	.16
<i>Interaction Terms</i>					
Engagement \times GSA				.06* (.02)	.21
Adjusted R^2	.09	.10	.18	.19	
F-value	4.00***	3.60***	5.93***	6.00***	

Note. GSA = gay-straight alliance.

* $p < .05$. ** $p < .01$. *** $p < .001$.

FIGURE 1. Curvilinear Relationship Between Age and Grade Point Average (GPA) (color figure available online)



variables; for every 10-unit increase in student school engagement, GPA is predicted to increase 0.70 points. This block accounts for 18% of the variance in GPA.

The full regression equation (Block 4) was a statistically significant model for predicting GPA, $F(15, 299) = 6.00, p < .001$, and accounts for 19% of the variance in GPA. Age squared continues to be a significant predictor of GPA ($p < .05$), indicating that a curvilinear relationship remains between age and GPA even when controlling for all other variables. This relationship is displayed in Figure 1. Females are predicted to have a GPA that is 0.49 points higher than males when controlling for all other variables ($p < .01$). The interaction term between student school engagement and GSA presence is also a statistically significant predictor of GPA when controlling for all other variables ($p < .05$). This interaction is displayed in Figure 2. None of the other school-level variables were significant predictors of GPA once this interaction term was included in the model.

Model Predicting Fear-Based Truancy

Table 3 displays the results of the hierarchical regression predicting the second dependent variable: fear-based truancy. The demographic variables in the first block account for 4% of the variability in truancy. Age is the only significant predictor ($p < .01$) within this first block. For every year increase in age, youth are predicted

to skip 0.10 fewer days at school in the past month due to feeling unsafe when controlling for all other demographic variables. Put another way, for each year increase in age, youth are predicted to miss 1 less day of school during a 10-month period due to feeling unsafe.

In the second block, age remained a statistically significant predictor ($p < .05$) of fear-based truancy. Identifying as queer became a significant predictor ($p < .01$) of truancy: Compared with the reference group of youth who identify as gay, those who identify as queer are predicted to miss 0.77 more days of school per month due to feeling unsafe, when controlling for the other variables. Two of the three school-level variables were also found to be statistically significant ($p < .001$) predictors of fear-based truancy when controlling for all other variables. Youth who reported having a teacher, counselor, social worker, or other adult at their school who they felt safe talking to about their sexual orientation and/or gender identity are predicted to miss about half a day less of school per month due to feeling unsafe than youth who did not have access to a safe adult. Similarly, for every unit increase in feeling unsafe or afraid at school or while traveling to/from school, youth are predicted to miss 0.54 more days of school each month due to fear when controlling for all other variables. This block accounted for a total of 25% of the variance in fear-based truancy.

Even after adding student school engagement in Block 3, there was no change in the total

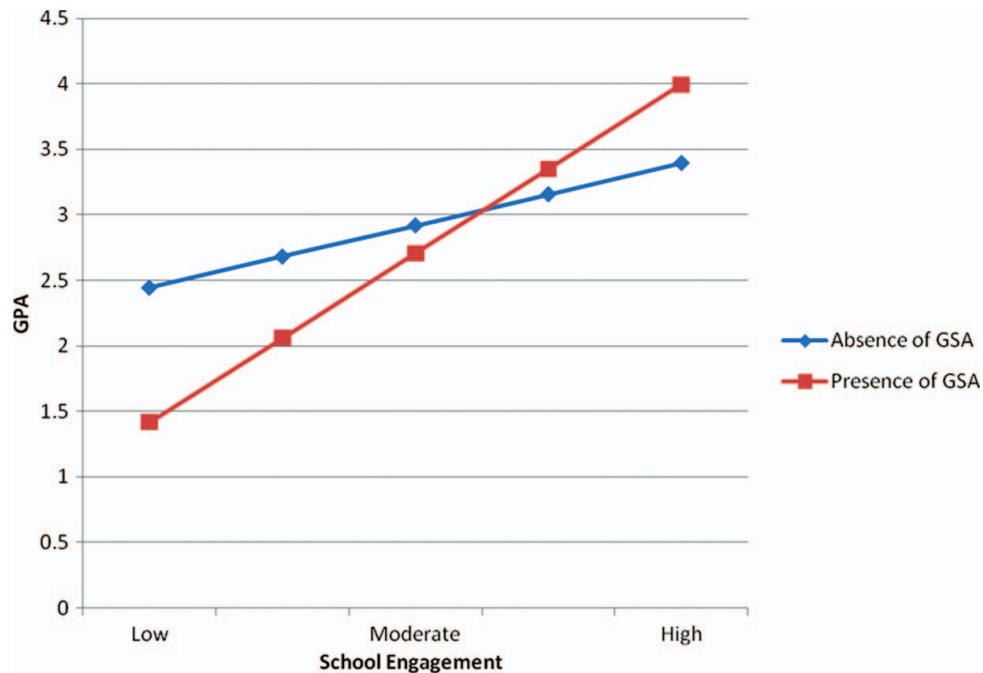
TABLE 3. Hierarchical Regression Model Predicting Fear-Based Truancy ($N = 315$)

Predictor Variables	Block 1 B (s.e.)	Block 2 B (s.e.)	Block 3 B (s.e.)	Block 4 B (s.e.)	β
<i>Demographics</i>					
Non-Hispanic White	.01 (.15)	-.07 (.14)	-.06 (.14)	-.07 (.14)	-.03
Free/Reduced-Price Lunch	.26 (.15)	.18 (.14)	.18 (.14)	.20 (.14)	.08
Age (centered)	-.10** (.04)	-.05* (.03)	-.06 (.03)	-.05 (.03)	-.09
Age squared (centered)	.01 (.01)	.01 (.01)	.01 (.01)	.00 (.01)	.02
Lesbian	-.19 (.28)	-.11 (.25)	-.11 (.25)	-.13 (.25)	-.04
Bisexual	-.05 (.23)	-.06 (.21)	.06 (.21)	.08 (.21)	.03
Queer	.59 (.32)	.77** (.28)	.78** (.28)	.78** (.28)	.17
Questioning	.07 (.34)	.16 (.31)	.15 (.31)	.14 (.31)	.03
Female	-.28 (.23)	-.32 (.20)	-.32 (.20)	-.28 (.20)	-.11
Trans	-.08 (.28)	-.46 (.25)	-.46 (.25)	-.47 (.25)	-.11
<i>School-Level Variables</i>					
Safe Adult		-.53*** (.14)	-.55*** (.14)	-.57*** (.14)	-.21
GSA		-.08 (.14)	-.09 (.14)	-.10 (.14)	-.04
Unsafe/Afraid		.54*** (.07)	.55*** (.07)	.54*** (.07)	.40
<i>Student School Engagement</i>					
Student School Engagement (centered)			.01 (.02)	.00 (.02)	.01
<i>Interaction Terms</i>					
Engagement \times Unsafe/Afraid				-.03* (.01)	-.12
Adjusted R^2	.04	.25	.25	.26	
F-value	2.42**	8.99***	8.34***	8.28***	

Note. GSA = gay–straight alliance.

* $p < .05$. ** $p < .01$. *** $p < .001$.

FIGURE 2. Interaction Between Student School Engagement and the Presence of a Gay–Straight Alliance (GSA) on Grade Point Average (GPA) (color figure available online)



percentage of variance in fear-based truancy accounted for by the model. Age lost its statistical significance, and student school engagement was not a statistically significant predictor of fear-based truancy.

The final model (Block 4) was a statistically significant predictor of fear-based truancy, $F(15, 299) = 8.28, p < .001$. This model accounts for 26% of the variance in fear-based truancy among the sexual minority youth. The only demographic variable with a significant coefficient in this final equation was having a queer identity ($p < .01$); compared with their gay peers, youth who identify as queer are predicted to miss 0.78 more days of school per month due to feeling unsafe, when controlling for all other variables. Having a safe adult to talk to within the school was also significant ($p < .001$) and had the second highest standardized beta weight ($\beta = -.21$); when controlling for all other variables, sexual minority youth with a safe adult at school are predicted to miss 0.57 fewer days of school per month due to feeling unsafe than youth who did not have access to such an adult. Feeling unsafe or afraid in the context of school was also a significant variable ($p < .001$) in the final model and had the largest degree of influence compared with all other variables ($\beta = .40$). For every unit increase in feeling unsafe or afraid at school or while traveling to/from school, youth are predicted to miss 0.54 more days of school due to fear each month when controlling for all other variables. These findings suggest that sexual minority students who report feeling unsafe at school *all of the time* are likely to miss 2.5 more days per month than sexual minority students who report *never* feeling unsafe at school.

Finally, the interaction term between student school engagement and feeling unsafe or afraid at school was a significant predictor of fear-based truancy ($p < .05$). This interaction is graphed in Figure 3 for ease of interpretation. It suggests that student school engagement functions very differently in predicting fear-based truancy based on how unsafe the youth feels at school. Comparing students who are at a low level of engagement, there is about a 4.0-day difference in the number of days missed in the previous month, while the students who

are at a high level of student school engagement are virtually indistinguishable from one another based on subjective feelings of being unsafe.

DISCUSSION

Limitations

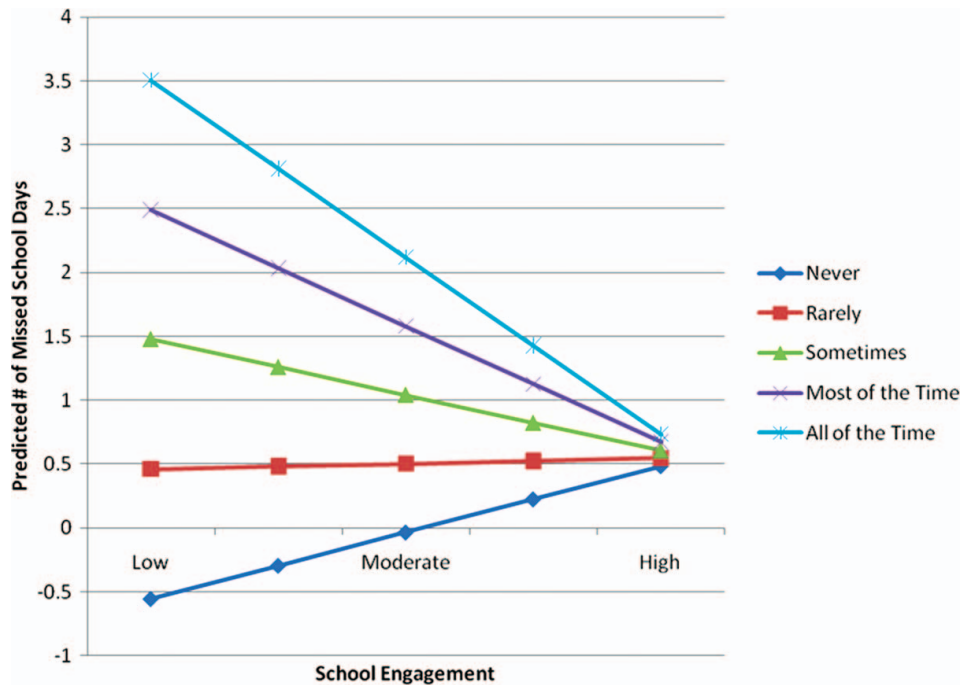
One of the limitations of this study is the nature of the sample. Because youth were recruited via either social service agencies or the Web site of a large LGBT organization, these youth may not be representative of all sexual minority youth (particularly those who are less out and/or are located in more rural regions). Further, about 45% of the youth in the sample were recruited from organizations that offer programming specifically for sexual minority youth; the youth who were recruited from these sites tend to have disproportionately high levels of risk factors (e.g., homelessness) that may not be the same for the general population of sexual minority youth.

Our findings should be interpreted with a number of cautions in mind. First, the sample included both in-school and out-of-school youth. This characteristic of the sample may have had an unmeasured effect on youth's abilities to accurately share information about their school experiences, particularly if they had dropped out of school or graduated several years previously. Secondly, because many sexual minority youth organizations offer programming to youth throughout their teenage years and into their mid-20s, the sample included both high school and college students. Because an age variable was included to act as a proxy for grade level, there may be differences between the high school and college-aged youth that could not be captured in these models that are helpful in understanding the difference in contexts between high school and college experiences for sexual minority youth.

Implications for Practice

Student school engagement is a construct that encapsulates a student's feelings of affiliation and investment in the school setting. The underlying premise of student school engagement

FIGURE 3. Interaction Between Student School Engagement and Feeling Unsafe/Afraid on Fear-Based Truancy (color figure available online)



is that it is fluid (can be changed) and has the ability to predict academic outcomes and high school completion. Few studies, however, have examined the effectiveness of student school engagement as a predictor of academic outcomes among sexual minority youth. This study addresses this gap in the research through the examination of two specific models: one that analyzes engagement as a predictor of GPA, and a second that examines it as a predictor of fear-based truancy.

Within the GPA model, even after controlling for demographics and school-related variables, student school engagement was a significant predictor of student GPA: Higher student school engagement predicted higher grades, a pattern that mirrors what currently exists in the literature regarding community-representative samples of students. This suggests that, as with heterosexual students, student school engagement can be useful in forecasting sexual minority students' grades. In terms of intervention, the findings suggest that school social workers, counselors, teachers, and psychologists may find that fostering greater student school engagement

among sexual minority youth supports stronger academic achievement for these youth. At the same time, some school-related variables were not found to significantly predict GPA for sexual minority youth. Having a safe adult to talk with and having lower levels of fear might be emotionally and psychologically supportive of sexual minority students, but their impact does not seem to be strong enough to be associated with improved grades.

There initially appeared to be a negative relationship between the presence of a GSA and GPA in Block 3; however, in Block 4, a notable interaction emerges in the model between student school engagement and presence of a GSA (refer back to Figure 2) that illustrates a more complex relationship: Among sexual minority youth, the positive relationship between engagement and GPA differs based on whether or not there is a GSA in the school. In both cases, greater engagement is associated with higher GPA, but that relationship is stronger in schools with GSAs than in schools without GSAs. This suggests that GSAs and student school engagement may have a mutually amplifying influence

on one another, strengthening the positive relationship of the other with GPA. These results imply that school-based personnel committed to the educational equality for sexual minority youth may find that concurrently supporting numerous interventions (e.g., supporting both the formation and maintenance of a GSA while also implementing programs to strengthen student school engagement) may have an exponential impact on academic performance for those youth.

In the fear-based truancy model, in contrast, some of the strongest predictors were school-related variables, such as having a safe adult at school and subjective experiences of fear at school. The presence of a teacher, counselor, social worker, or other adult at school that youth felt like they could talk to about their sexual orientation and/or gender identity is predicted to lower the number of days of school youth miss due to feeling afraid by half of a day per month. Similarly, youth who were less likely to feel unsafe or afraid at school or while traveling to/from school missed fewer days of school each month due to fear. Because sexual minority youth, similar to other vulnerable populations of youth such as youth of color, are often at higher risk for harassment and violence from their peers or staff at school, it is important that staff pay attention to methods for reducing the youth's experiences of the school setting as a place of fear. This study suggests that having a "safe adult" on campus who is willing to openly support sexual minority youth can be a method for reducing fear-based truancy.

After controlling for school-related variables, however, engagement was not found to be a significant predictor of fear-based truancy. Nonetheless, a significant interaction emerged between student school engagement and feeling unsafe or afraid at school (refer back to Figure 3). For youth who were less likely to experience fear at school (at the *never* or *seldom* levels), engagement does not appear to be related to fear-based truancy. However, for youth who more frequently experience fear at school (at the *all of the time*, *most of the time*, or *sometimes* levels), student school engagement is associated with decreases in fear-based truancy. Interventions in schools that promote engagement may be particularly important in decreasing truancy

among the sexual minority youth who experience the most fear. Assessing the level of fear that is driving truancy among sexual minority youth may not only provide concrete avenues for intervention to directly address the students, faculty, or staff who are responsible for the fear or the dangerous contexts of school (such as during lunch or gym), but may also indicate that involving these youth in activities that develop and support their student school engagement may likewise be helpful in reducing their truancy.

Implications for Future Research

Future studies could utilize more rigorous designs and statistical analyses to capture a more complete understanding of the role of student school engagement for sexual minority youth. Multilevel modeling, coupled with purposeful sampling of a larger number of schools across the country, could be used to better understand how cluster-level variables at the school level impact the relationship of engagement with academic outcomes. Structural equation models could be used to tease out the relationship between student school engagement and GPA, given that it could be that fear-based truancy is a mediating variable between engagement and GPA. Furthermore, the final regression models only accounted for 19% and 26% of the variance in the outcome variables of interest; clearly, there are other variables that impact GPA and truancy, perhaps including family and community supports, peer influences, curricular delivery, and individual student characteristics (e.g., previous academic success). Future studies could examine these additional variables to determine if their inclusion helps to better capture the dynamics at work in understanding the school experiences and outcomes for sexual minority youth.

NOTE

1. For the purposes of this article, *sexual minority youth* are those who identify as lesbian, gay, bisexual, transgender, queer, and/or questioning (LGBTQ). *Queer* is a term that is being positively reclaimed by many in

the LGBTQ community and is typically used to indicate a more fluid and overtly politicized sexual orientation.

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