Sexual Minority Students' Engagement with School

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Abstract

Compared to the general student population, sexual minority students are at increased risk of low academic achievement, poor attendance, and not completing high school with their cohort. One construct that has the potential to identify students at increased risk for negative educational outcomes is students' school engagement. Based on self-report data from 411 middle and high school students who attended community sexual minority youth support programming, this study utilized statistical stepwise regression to develop a model of behavioral and demographic variables that predicted a sexual minority student's engagement with school. Confirmatory hierarchical regression found that school grades and presence of a school-based Gay/Straight Alliance support group accounted for 31% of the variance seen in student school engagement scores. Recommendations for supporting the engagement of sexual minority students and future research are given.

Keywords: LGBTQ youth, Gay/Straight Alliances, school completion, sexual minority students, student school engagement

Sexual Minority Students' Engagement with School

Sexual minority students are youth whose sexual orientation is not exclusively heterosexual, whose gender expression is atypical, or who identify as transgender. Sexual orientation includes attraction, behavior, relationships, and identity (Goodenow, Szalacha, & Westheimer, 2006; Hansen, 2007). When not critically challenged, schools can perpetuate societal inequities and power imbalances (Prilleltensky & Nelson, 2002). Sexual minority students are one of the vulnerable populations in society and schools (National Association of School Psychologists, 2004) with documented negative outcomes such as academic failure, emotional distress, compromised relationships, risk behavior, and suicidality (Russell, 2005). Schools are a primary setting where sexual minority youth experience violence, discrimination, and harassment (Kosciw, Greytak, Bartkiewicz, Boesen, & Palmer, 2012). Representing anywhere from 3% to 10% of the adolescent population, "sexual minority youth are thought to be perhaps the most underserved of all students in our school systems" due to their stigma rendering them invisible to adults (Mudrey & Medina-Adams, 2006, p.64). Adults in school systems often passively or actively contribute to the discrimination against sexual minority students (Grossman et al., 2009; Pearson, Muller, & Wilkinson, 2007) by using discriminatory language themselves or not challenging students who use biased or derogatory language (Kosciw et al., 2012). School psychologists can play a major role in supporting sexual minority students by identifying and encouraging protective factors that insulate against or counteract risk factors (Russell, 2005). Research has shown that resilient, successful sexual minority adults had positive experiences in their youth such as family affirmation, close friendships, and positive self-esteem (Russell, 2005).

Although there is little research on school engagement of sexual minority students, this population is at increased risk for many of the problems that engagement with school has been shown to defend against (Fredricks et al., 2004; Mudrey & Medina-Adams, 2006). Understanding which sexual minority students may be at risk of disengagement with school has the potential to help school and community personnel target these students for increased supports. This study reviews the literature on the engagement with school of sexual minority students, presents findings regarding characteristics of sexual minority students found to have lower levels of school engagement, and makes recommendations for how to support sexual minority students and for future study.

Students' Engagement with School

Student engagement with school has been conceptualized in different ways. Current conceptualization of students' engagement with school represents the merger of school dropout prevention studies (Finn, 1989) with motivational theories (Connell & Wellborn, 1991; Deci, Koestner, & Ryan, 2001). In Finn's Participation-Identification Model (Finn, 1989; Finn & Zimmer, 2012), participation in school activities supports successful performance, which leads to positive identification with school. Connell and Wellborn (1991) postulated that the social context either supported or hindered the developing person in experiencing the self as competent, autonomous, and related; the meeting or frustration of these psychological needs led to engagement or disaffection with the environment. This response to the environment affected the development of academic skills and social adjustment.

Current models of engagement describe engagement with school as a multidimensional concept that includes emotions, behaviors, and cognitions (Reschly & Christenson, 2012). Although engagement does not have an agreed upon definition in the literature, there is

consensus that engagement is an interaction between student and environment. Further, engagement is plastic: it can be changed and increased, thus making it a target for intervention (Christenson, Reschly, & Wylie, 2012; Finn & Zimmer, 2012). Students who are engaged with school are more likely to complete high school with their cohort (Balfanz, Herzog, & MacIver, 2007; Christenson et al., 2012; Connor, 2008) and have enhanced psychosocial engagement across their lifespan (Furlong et al., 2003). Three current engagement models will be reviewed.

School Engagement Model. Blumenfeld, Fredricks, and colleagues define engagement as comprised of three interrelated domains: emotional engagement, behavioral engagement, and cognitive engagement (Fredricks et al., 2005; Fredricks et al., 2004; Jimerson, Campos, & Greif, 2003). Emotional engagement refers to students' attachment to their teachers and peers, as well as their feelings about academics and school in general. Behavioral engagement includes effort, persistence, concentration, attention, and contributions in class (Fredricks et al., 2004). Cognitive engagement is comprised of both motivation and learning strategies (Fredricks et al., 2004). Motivation includes students' investment in their learning as well as an intrinsic desire to learn and master the material.

Student Engagement Model. Christenson and colleagues (2008) developed a four factor model of Student Engagement: academic, behavioral, cognitive, and affective engagement. This model differentiates between observable factors (academic and behavioral engagement) and internal factors (cognitive and affective engagement) that contribute to students' engagement. The observable engagement factors can be determined by observation of behaviors; the internal engagement factors require self-report to assess. Academic engagement is evidenced by behaviors such as time on task, credits earned, and homework completion. Behavioral engagement is determined by attendance, voluntary classroom participation, extracurricular

participation, and extra-credit options. Cognitive engagement includes students' appraisals of self-regulation abilities, the relevance of school to future aspirations, the value of learning, and ability to set goals and strategize. Affective engagement encompasses students' sense of belonging at school, identification with school, and appraisal of school membership.

Student School Engagement Model. The Student School Engagement Model (Hazel, Vazirabadi, & Gallagher, 2013) defines engagement as a student's appraisal of the goodness of fit between his or her needs and the school environment:

> Student school engagement is 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, Jack, Wonner, & Albanes, 2009, para. 2).

According to this model, student school engagement is divided into three domains: Aspirations, Belonging, and Productivity (Hazel et al., 2013). Aspirations are defined as a student's interest and investment in his or her education. Belonging is a student's identification with school values and sense of membership in the school community. Productivity is a student's investment in academic activities, in and out of school. The Student School Engagement Measure (SSEM), developed from this conceptual model, has shown to be predictive of grades, state standardized test scores, attendance, and suspensions/expulsions, and has demonstrated promising psychometric properties (Hazel et al., 2013; Hazel, Vazirabadi, Albanes, & Gallagher, in press). This model was used for the current study because, in the Student School Engagement Model, belonging is its own domain. It is not part of a greater construct such as affective or emotional engagement. A student's sense of belonging was hypothesized to be especially critical for sexual

minority youth as these students are routinely marginalized and excluded by use of discriminatory policies, practices, and language (Kosciw et al., 2012)

School engagement of sexual minority students. Engagement models have been successfully applied to differing subpopulations within the US and internationally (Christenson et al., 2012; Fredricks et al., 2011; Lam et al., 2012), suggesting that they will have utility with sexual minority students; however, scant research has been published that examines the engagement of sexual minority students. The literature that does exist suggests that engagement is a significant predictor of academic achievement and can mediate fear-based truancy for sexual minority students, even when controlling for demographic and school-related variables (Seelman, Walls, Hazel, & Wisneski, 2012). In studies of students' sense of school belonging (one domain of the Student School Engagement Model), sexual minority students reported lower belongingness than heterosexual students in both middle and high school (Pearson et al., 2007; Robinson & Espelage, 2011). Most schools do not have a climate that supports sexual minority students. Sexual minority students who have been bullied report less school attachment and belonging, lower academic achievement, and higher levels of dropping out than sexual minority students who have not been victims of violence or harassment (Grossman et al., 2009). Given this, understanding and addressing sexual minority students' engagement with school may lead to greater academic success for this population.

Support, Harassment, Achievement, and Attendance of Sexual Minority Students

Support for sexual minority students. It is critical to remember that all students' engagement is fostered by a responsive, developmentally appropriate school ecology (Waters, Cross, & Runions, 2009). For instance, sexual minority students reported higher school belongingness at schools with lower rates of sexual orientation victimization (Toomey &

Russell, 2011). The actions and inactions of administrators, teachers, and other students lead the majority of sexual minority students to feel vulnerable and unsafe in their schools (Grossman et al., 2009; Pearson et al., 2007). In a national study of secondary school counselors, 25% reported that teachers exhibited significant prejudice toward lesbian, gay, and bisexual students and 41% believed that schools were not doing enough to support sexual minority students (Thompson, 2006). Sexual minority students report that they would feel most comfortable confiding victimization to a school mental health professional; as many do not have access to these personnel, they are most likely to inform a teacher of harassment and abuse (Kosciw et al., 2012). However, most students (60%) who are victimized do not report the harassment or assault to school personnel and, of those who do, 30% report that nothing was done (Kosciw et al., 2012). School climates that are hostile to or dangerous for sexual minority students impede their ability to succeed academically (Bowen, Richman, Brewster, & Bowen, 1998; Pearson et al., 2007).

However, in the presence of a community of supportive educators (six or more), sexual minority students report a greater sense of belonging to their school community (Kosciw et al., 2012). Sexual minority students with positive feelings about their teachers are less likely than their peers to experience school troubles (Goodenow & Szalacha, 2003). The presence of a Gay-Straight Alliance (GSA) is a protective factor and youth have reported less harassment and feeling safer when they have a GSA at their school (Goodenow & Szalacha, 2003). Further, the presence of a GSA at a school has been shown to be a significant predictor of grade point average for sexual minority youth (Seelman, et al., 2012).

Harassment of sexual minority students. Experiences of stigma due to gender expression or sexuality can lead to emotional distress and risk taking, preventing many sexual

minority students from feeling like they belong to their schools and ultimately affecting academic success. Sexual minority students report weaker attachments to school and less positive relationships with teachers and peers than heterosexual students; these effects appear to be particularly strong for sexual minority girls (Pearson et al., 2007). Male victims of anti-gay harassment and abuse report significantly lower sense of school belonging, while female victims report higher levels of withdrawal (Poteat & Espelage, 2007). A majority (61%) of students who participated in the 2011 National School Climate Survey (Kosciw et al., 2012) reported hearing derogatory comments about atypical gender expression (Kosciw et al., 2012). Most sexual minority students are verbally harassed: 82% for their sexual orientation and 64% for their gender expression (Kosciw et al., 2012).

Academic achievement of sexual minority students. Students who are harassed because of their gender or sexual orientation have been found to have significantly lower grade point averages, to be at increased risk for failing a course, and less likely to have completed algebra II and chemistry—classes needed for admission into many post-secondary education opportunities (Kosciw et al., 2012; Pearson et al., 2007). These differences were found to be particularly great for sexual minority boys (Pearson et al., 2007). Analysis of the 2004 California Healthy Kids Survey showed that 24% of students who were bullied because of actual or perceived sexual orientation maintained a C average or below, compared to 17% of non-bullied sexual minority students (Rivers & Noret, 2008).

Attendance and school completion of sexual minority students. Sexual minority students have lower attendance levels than heterosexual peers; depending on the data source, sexual minority students miss 4 to 6 times as much school as national samples (Kosciw et al., 2010; Thompson, 2006). Students with poor attendance are at increased risk of not completing

high school with their cohort (Bruce, Bridgeland, Fox, & Balfanz, 2011). Many sexual minority

students miss specific classes or entire days because of feeling unsafe, and those experiencing

high levels of harassment are at particular risk for truancy (Kosciw et al., 2010; Rivers & Noret,

2008). A study that compared two sets of lesbian, gay, and bisexual adults who had been

victimized as students due to their sexual orientation found that absences did not impact

academic performance until after the age of 16. However, after the age of 16 years, sexual

minority students with a long-term record of absenteeism were more likely to drop out of school

(Rivers, 2000). More research is needed to understand the longitudinal impacts of harassment

and absenteeism on sexual minority students.

Given the above, it should not be unforeseen that sexual minority students drop out of

school at a rate higher than their heterosexual peers (Lasser, Tharinger, & Cloth, 2006; Mudrey

& Medina-Adams, 2006). Sexual minority students drop out of school three times as frequently

as the national average (Thompson, 2006). Understanding and intervening on the factors that

contribute to the engagement of sexual minority students has the potential to increase high school

completion rates. However, because there are few studies of the engagement of sexual minority

students, we do not know when, how, or with which sexual minority students to intervene to

promote high school graduation. This study sought to help identify which sexual minority

students are at greater risk of school disengagement, and therefore at increased risk of not

completing high school.

This Study

The purpose of this study was to identify predictors of school engagement for students

who identified as a sexual minority. The research question was, "What demographic, behavioral,

and environmental characteristics predict student school engagement for sexual minority

students?" Because the engagement of sexual minority students has been so little studied, our

hypotheses were tentative. We expected that factors shown to correlate with engagement in total

student populations (age, race and ethnicity, poverty, grades, school attendance, transience, and

alcohol use; Christenson, Reschly, & Wylie, 2012) and factors salient to the safety of sexual

minority students (bullying and GSAs; Kosciw et al., 2012) would contribute to the school

engagement of sexual minority students. Given that the participants identified as sexual

minorities, we did not expect that gender identity or sexual orientation would be significant

contributors to engagement; gender identity and sexual orientation variables were analyzed to

confirm these hypotheses of invariance.

Method

For this study, data collected in two annual surveys were utilized (2008 and 2010). The

surveys were administered by four Inter-Mountain West organizations that provide services to

youth who self-identify as sexual minorities. The organizations provide health services,

counseling, and social activities to sexual minority youth ages 12 through 21 in their

communities. The organizations' administrators use the annual survey results for program

planning and evaluation. Regularly-attending clients of the organizations as well as those who

attended social events sponsored by the organizations were encouraged to complete the online

surveys. Questions were patterned from national surveys conducted by the Centers for Disease

Control and Prevention (2004) and the Gay, Lesbian, and Straight Education Network (Kosciw

et al., 2010). The survey took approximately 20 minutes to complete and comprised 12 primary

topics (see Seelman et al., 2012, for a description of the complete survey content). This study

was approved for secondary data analysis by the Institutional Review Board at the [name of

authors' institution] . Leaders from the organizations that administered the surveys participated in study groups with the researchers and helped shape the research question.

Participants

As stated, all youth who visited the organizations were encouraged to complete the survey. As some of the services did not require registration, there was no way to estimate the percentage of the clients who completed the surveys. For the youth who consented to participate, there was no compensation for completing the survey. Only participants who identified as currently in school and who listed their sexual orientation as other than exclusively heterosexual were included in this study, as the research question and focus of the study were on sexual minority students. For the 2008 sample, 230 respondents qualified for inclusion. However, when cases were examined for missing data, 14 participants had answered none of the survey items used in this analysis and were eliminated, leaving 216 cases in the 2008 sample. There were 195 qualifying respondents in the 2010 sample and all had answered some of the utilized survey items. In total, the responses from 411 participants were utilized in this analysis.

Measures

Independent variables. A comparison of the 2008 and 2010 surveys was conducted to determine the survey items that were consistent across the years and, therefore, potentially could be utilized as independent variables. From this list, we selected 11 items that were useful in testing our hypotheses. These included: age (13, 14, 15, 16, 17, 18, 19, 20 or older), race (White, Biracial or Multiracial, Latino/a, Native American/Alaska Native/Hawaiian Native, Asian or Asian American, Other), gender identity (Female, Male, Transgender/Gender variant/Gender queer, Other), sexual orientation (Gay, Bisexual, Lesbian, Queer/Not sure/Other), qualification

for free/reduced lunch (yes or no), grades (straight A's, mostly A's, mostly B's, mostly C's, mostly D's, mostly F's), presence of a Gay/Straight Alliance (yes, no, I don't know), feeling unsafe at school in the last 12 months (never, rarely, sometimes, most of the time, all of the time), absences in the last 30 days from school due to feeling unsafe (0, 1, 2-3, 4-5, 6 or more days), number of times in the last year they had to sleep somewhere other than home (never, 1, 2-3, 4-6, 7-9, 10 or more times), and age at which they first drank alcohol (8 or younger, 9-10, 11-12, 13-14, 15-16, 17 or older, never). These variables were classified as personal characteristics, school characteristics and behaviors, and non-school behaviors (see Table 1).

SSEM Abbreviated. The dependent variable in this study was total student school engagement. Given that the survey covers many aspects of their clients' experiences, the administrators chose to use an abbreviated version of the SSEM (Hazel et al., 2013). In a validation study of the SSEM with 396 eighth graders at three middle schools, a second-order empirical model (comprised of Student School Engagement as the first order and the factors of Aspirations, Belonging, and Productivity as the second order) best fit the data (Hazel et al., 2013). The correlations between the factors ranged from .84 to .93, and the reliability of each factor ranged from .83 to .92. When the model was analyzed for its relationship to state-level academic achievement data and district-level risk data, Total Engagement scores were shown to positively contribute to achievement on the state assessment of academic achievement (.18) and protect against district-assessed risks (poor attendance, suspensions, and failure in math or language arts) (-.23). In a study to assess the convergent and discriminate validity of the SSEM, Total Engagement was found to correlate more strongly with two other measures of engagement (.80) than with a measure of student life satisfaction (.35) (Hazel et al., in press); in other words, a student's total score on the SSEM could predict 64% of the variation of his or her score on the

other engagement instruments, as compared to only 12% of the variability on the life satisfaction measure. These studies show promising evidence for the SSEM as a measure of engagement and to predict significant school outcomes.

Because the model stipulates that Student School Engagement is the first order of engagement, Total Engagement was the outcome measure used. Nine questions from the SSEM (3 questions from each of the constructs: Aspirations, Belonging, and Productivity), were included on the 2008 and the 2010 surveys to obtain a measure of Total Engagement. Responses on the 9 items were scaled ranging from 1 (strongly disagree) to 4 (strongly agree). Within the 2008 SSEM items, the responses were 85% complete and the Cronbach's alpha reliability estimate was .79; this is within the acceptable limit of .70 or greater, and almost meets the desired level of .80 or higher (Nunnally, 1978). For the 2010 items, the responses were 99% complete and the reliability estimate (Cronbach's alpha = .81) was within the desired level of .80 or greater (Nunnally, 1978).

The mean score (rather than a composite score) for all answered engagement items was calculated into a Total Engagement score (possible range of 1 to 4); the mean was used as a precaution against the possibility of missingness. For the 2008 data set, Total Engagement was missing for one out of the 216 participants (99.5% complete); the Total Engagement mean was 2.2 (range from 1.3 to 4.0, $SD = 0.51$). For 2010 data set, the Total Engagement mean was 100% complete (195 out of 195); the mean was 2.9 (range from 1.3 to 4.0, $SD = 0.45$).

Analyses

Descriptive analysis of independent variables. The initial analysis yielded descriptive statistics on the independent variables of interest from the 2008 and 2010 data. For one variable, number of days that a student had missed school due to fear (*No Go*), the response categories

varied in the two surveys: the 2008 survey had groupings (0 days, 1 day, 2-3 days, 4-5 days, 6 or more days) whereas the 2010 survey asked participants to list the actual number of days. To allow for comparisons, the 2010 answers were converted to the 2008 groupings.

Development of predictive model. Before conducting the inferential analyses, the data were reviewed for completeness and violation of assumptions. All variables were dummy coded by if the item had been answered or not and Pearson correlations were computed to assess for lack of randomness of the missing data (Buhi, Goodson, & Neilands, 2008; Tabachnick & Fidell, 2013). Data were analyzed for missingness by participants and variables; see Table 2. Also prior to developing the model, Spearman's Rho correlations were computed between the variables and with the SSEM scores. To compensate for possible spurious correlations due to the self-report response format, it is recommended that Spearman Rho, rather than Pearson, correlations be utilized (Bobko, 2001).

Non-dichotomous categorical variables (race/ethnicity, gender identity, sexual orientation, and presence of a GSA) were dummy coded into dichotomous variables, with the most frequently used category as the reference category (Tabachnick & Fidell, 2013). For the variable of race and ethnicity, four categories were eliminated due to too few respondents; this left the three categories of White, Biracial or Multiracial, and Latino/a. The ordinal data were treated as continuous, as the underlying scale was continuous and there were a large number of categories (Tabachnick & Fidell, 2013). The ordinal data were analyzed for normality of distribution, including skewness and kurtosis. Two variables (*No Go* and *Sleep Other*) violated assumptions of normality. One variable (*No Go*) was dropped from the regression analysis because of its correlation with another variable (*Unsafe*), and because it had the highest amount of missing data. The *Sleep Other* variable was analyzed with and without a log transformation;

the variable was not a significant predictor of student school engagement in either case.

Preliminary analyses and examination of residuals showed no violations of linearity,

multicollinearity, or homoscedasticity. Each data set had one to two multivariate outliers, which

were retained under the assumption that they were accurate but greater than statistically expected

variance within the population.

To develop the predictive model, statistical stepwise regression was performed with the

2008 survey data. Statistical stepwise regression, where variables are added based on the

strength of their correlation with the dependent variable (Tabachnick & Fidell, 2013), was used

due to the exploratory nature of the study; the variables were selected based on previous research

in student school engagement but not this specific population and there was no hypothesized

hierarchy of variables. Listwise deletion was utilized because it provides less biased parameter

estimates (Allison, 2009). There were 189 cases included in the analysis; this met the size

recommendations for standard multiple regression with 15 independent variables ($N \geq 170$)

(Tabachnick & Fidell, 2013).

Model confirmation. Because regression models developed on statistical criteria may be

unduly influenced by characteristics of the sample (Tabachnick & Fidell, 2013), the model was

then applied to the 2010 data set using hierarchical multiple regression. Utilizing listwise

deletion, there were 185 cases included in the analysis. The 2010 sample exceeded the size

recommendations for testing 3 individual predictors ($N \geq 107$) (Tabachnick & Fidell, 2013). All

analyses were performed using the Statistical Package for the Social Sciences (SPSS), version

20.

Results

Description of Participants

See Table 1 for the survey items, response categories, and percentages of students in each category.

Personal characteristics. Given that a requirement of this study was that participants were current students, it is not surprising that most survey respondents were in middle adolescence. In both years, most respondents (58% and 62%) self-identified as White, followed by Biracial (11% each year) or Latino/a (10% and 13%). Slightly over half of the respondents identified their gender as female; a small, but increasing, percentage (6% and 12%) identified as transgendered or gender variant. Most respondents identified as gay or lesbian (53% and 45% by year), or bisexual (29% and 37%).

School characteristics and behaviors. Almost two-thirds of the students (63% and 64%) identified themselves as academically successful (receiving all A's, mostly A's, or mostly B's). Over a third (38% and 37%) said that they had received FRL at some point during their academic careers. Most students (65% and 51%) reported that their schools had a GSA. Although most students reported that they never or rarely felt unsafe at school (62% and 66%), about 1 out of 10 said that they felt unsafe at school most or all of the time (10% and 9%). Likewise, most students reported missing no school due to fear (79% and 68%); however, in each survey, 4% of students reported that they missed 6 or more days per month due to safety concerns.

Non-school behaviors. About a third of the students reported that they had been homeless at some point in the last year; a few (10% and 4%) reported that they had spent 10 or more days sleeping outside of their home. The median age for first drinking alcohol was 13-14

years of age, with almost a tenth of students reporting that they had started drinking alcohol at age 8 or younger (9% and 8%).

Analysis of Missingness

2008 data. As shown in Table 2, the 2008 data were 96% complete, with 28 of the 216 participants (13%) having at least one item unanswered. The 2008 data showed evidence that the data were not missing completely at random; correlations between the variables' missing items suggest two patterns of non-response. The first pattern was that six of the participants (or 3%) chose not to answer items about school (*Unsafe, No Go, Grades,* and *Lunch*); on closer inspection, one student did not answer all four of these items, one student did not answer two items, and four students did not answer one item. However, there was no correlation between this pattern of independent variable missingness and the dependent variable, Total Engagement.

Of greater interest, 22 participants (10%) did not answer items pertaining to personal characteristics and non-school behaviors (*Age, Race, Gender, SO, Slept Other,* and *Alcohol)*; 13 students did not answer all six of these items, 1 student each did not answer two to five of these items, and 5 students did not answer one item. The one student who did not answer any of the SSEM questions in this data set had also not answered these six items, and so the Total Engagement score missingness correlated with these six item's missingness. However, for those with a Total Engagement score, their score did not correlate with their identity as participants with missing data.

2010 data. For the 2010 survey, the data were 97% complete and 38 of the 195 participants (19%) had some amount of missingness. The patterns of missingness showed a significant correlation between not answering items *Alcohol* and *No Go*; however, only one student did not answer both of these items but 23 students did not answer *No Go* (part of the

reason that this variable was eliminated from the regression analysis). Similar to the 2008 data, there were 9 students (5%) who did not answer items pertaining to personal characteristics and non-school behaviors (*Age, Race, Gender,* and *Slept Other)*: six students did not answer all four items, one student did not answer two items, and three students did not answer one item. All students in this data set had a Total Engagement score, and there were no correlation between the Total Engagement score and the missingness of the independent variables.

Regression Results

Table 3 displays the correlations between the independent variables and the dependent variable. Age, grades, feeling unsafe at school, not going to school due to safety concerns, and sleeping elsewhere were all significantly correlated to student school engagement. Numerous predictors were also correlated to each other. Although highly correlated, the constructs of gender and sexual orientation contribute unique information of interest in this study and so were retained. Other correlations included that older students were often male and reported lower grades, Latino students had more often qualified for FRL, those who had received FRL reported higher grades, and students who reported feeling unsafe (*Unsafe)* were also more likely to miss school due to fears (*No Go)*. Because of missingness, the skewed distribution, and the high correlation with *Unsafe*, *No Go* was dropped from the regression analysis.

The statistical stepwise regression analysis identified three statistically significant predictors of students' engagement with school: (1) *Grades* ($\beta=0.33, p < .01$), (2) *Unsafe* ($\beta=0.26, p < .01$), and (3) *GSA* ($\beta=0.17, p < .05$) (see Table 4). The model was statistically significant ($p < .01$) and showed that 23% of the variance in student school engagement could be attributed to *Grades, Unsafe,* and *GSA* ($R^2 =0.23$, $F(3,185)=18.22$, $p<.01$). With the 2010 data, the three variables were entered in a hierarchical manner to mimic results of the 2008 data

analysis. These three variables predicted 31% of the variability in engagement scores (R^2 =0.31, F(3,188)=27.8, p<.01): *Grades* (β=*0.52, p < .01*), *Unsafe* (β=*0.09*), and *GSA* (β=*0.15, p < .05*). Again the model was statistically significant (*p < .01*); however, *Grades* and *GSA* made statistically significant contributions to the model while *Unsafe* did not, when *Unsafe* was entered after *Grades*. As shown by the semi partial correlation coefficients, all three variables contributed unique variability; *Grades* provided the most unique variability, followed by *Unsafe* and *GSA*.

Discussion

The purpose of this study was to develop a model that would predict the engagement of students who identified as sexual minorities; we hypothesized that age, race or ethnicity, poverty (as measured by FRL), grades, attendance, mobility, alcohol use, bullying, and GSAs would contribute to the school engagement of sexual minority students. As all participants identified as sexual minority students, we predicted that sexual orientation and gender would not be predictive of engagement; as predicted these were not contributors to the model.

This study found that course grades and presence of a GSA were predictive of sexual minority students' engagement with school. In the initial data set, feeling unsafe at school due to harassment was also part of the model; however, this was not statistically significant in the confirmation of the model, after the impact of grades was already considered. In contrast to the hypotheses, the variables of age, poverty, race or ethnicity, alcohol use, and homelessness were not found to predict engagement levels.

These findings are similar to those of Seelman et al. (2012); they found a relationship between the presence of a GSA and grade point average (GPA) with students' school engagement. Overall, higher GPA was associated with higher student school engagement. The

relationship was even stronger in schools with GSAs, suggesting a catalyst effect between student school engagement, grades, and the presence of a GSA. In general student populations, it has been documented that poor grades are predictors of leaving high school prematurely (Bruce et al., 2011). For sexual minority students, feeling unsafe is a major risk factor and having a GSA on campus has been shown to be a significant protective factor (Kosciw et al., 2012). This study found that the engagement of sexual minority students is affected by factors common to all students and specific to the sexual minority population.

Grades. Most students in this sample reported getting good grades. However, for those that did not, their engagement was compromised. The design of this study does not allow for specifying a causal relationship; in other words, this study could not assess if disengagement leads sexual minority students to get poor grades or if sexual minority students who have poor grades become disengaged. Other studies have shown that the impact of engagement on grades and grades on engagement is recursive: getting low grades leads to disengagement and being disengaged has a negative impact on grades (Finn & Zimmer, 2012). Course grades often represent both compliance (i.e. attendance and turning in assignments) and academic mastery (i.e. competence on assignments and tests). In Connell and Wellborn's model (1991), engagement or disaffection with the environment lead to the ultimate outcome of academic skill development (the competence aspect of course grades); and, in Finn's Participation-Identification model (1989), participation (the compliance aspect of course grades) leads to engagement.

Because of this recursive nature, course grades may not be the most useful variable to explain engagement; however, course grades have great applied significance as they are what determine if a student meets the criteria for high school graduation and are heavily considered in

admission decisions by post-secondary institutions. Because of the importance of course grades, ideally course failures are prevented; when prevention is not successful, it is critical to intervene quickly and effectively to assure future academic investment and success. According to Pearson et al. (2007), sexual minority males are much more likely than their heterosexual male peers to fail a course during high school. As with all students, it is critical that school personnel respond to student course failure with appropriate academic and, depending on the reason for course failure, possibly social-emotional supports. An area for further study is the relationship between engagement and grades for sexual minority students.

Presence of a GSA. This study found that not having a GSA contributed to lower student engagement. Numerous studies have documented positive associations (or reduced negative associations) between the presence of GSAs and school experiences of sexual minority students (see Kosciw et al., 2012, for an overview). In schools with GSAs, sexual minority students have reported lower rates of victimization and fewer incidents of being physically attacked and harmed (Goodenow et al., 2006; Lee, 2002), fewer suicide attempts (Goodenow et al., 2006; Walls, Kane, & Wisneksi, 2010), better attendance (Walls et al., 2010), decreased likelihood of dropping out (Walls et al., 2010), and higher GPAs (Walls et al., 2010). Additionally, students who are members of GSAs have reported greater comfort with their gender expression (Walls, Wisneksi, & Kane, 2013).

In another study, Walls et al. (2010) found that the presence of a GSA, regardless of the student's involvement with the club, was correlated with increased GPA and the subjective sense of safety for sexual minority students; however, the presence of a GSA did not decrease the likelihood of actual harassment. They call for investigation into GSA size, administrative

support, and visibility to understand the underlying means by which GSAs might support the academic success and commitment of sexual minority students.

        Feeling unsafe or afraid at school. This study was inconclusive regarding the impact of feeling unsafe at school on school engagement. Prior research has shown that even when controlling for demographic and school factors, sexual minority students are more likely to miss school because of not feeling safe, feeling depressed, or being injured (Goodenow et al., 2006) and sexual minority students who are bullied report less school attachment and belonging (Grossman, et al., 2009; Poteat & Espelage, 2007). For this sample, it may be that feeling unsafe had an influence on grades; after the impact of grades on engagement was already accounted for, feeling unsafe did not add enough unique variability to be confirmed in the model.

        Also, this sample of participants could be unique in that they took the survey at a community organization that supports sexual minority youth. Research has shown that coming out is a protective factor, as is experiencing social support from sexual minority peers (Russell, 2005). Perhaps feeling unsafe was not a predictor of engagement due to the support the students were already receiving from the community group. There is a need for more nuanced investigations into the relationship between school safety and engagement.

        It is a violation of students' basic rights to not be safe while at school. In order for sexual minority students to be safe at school, schools and districts need to have clear and explicit written policies that forbid harassment in schools (Hansen, 2007). School psychologists can play a key role in creating and implementing these policies to support sexual minority students. To prevent victimization, psychologists can partner with administrators to provide sexual minority training for staff to increase sensitivity and awareness, address sexual minority issues in academic curriculum, and foster a school culture that is accepting of diversity (Fisher &

Kennedy, 2012; Goodenow et al., 2006). Prevention programs confronting school harassment

and violence towards sexual minority students have been shown to increase self-esteem,

attendance, and academic performance for sexual minority students (Henning-Stout, James, &

Macintosh, 2000).

       Gender and sexual orientation. As we expected, gender and sexual identity were not

predictive of student school engagement within this sample of exclusively sexual minority

students. The participants' engagement could not be contrasted to the engagement of their

heterosexual, gender-conforming counterparts. Other studies have found that school engagement

of sexual minority students is depressed when compared to heterosexual peers (Pearson et al.,

2007).

       Other factors. Equally of interest are the factors that were not found to be significant in

this study that we had predicted would be significant. For instance, in general student

populations it has been found that engagement decreases across adolescence (Fredricks,

Blumenfeld, Friedel, & Paris, 2005; Wylie & Hodgen, 2012); although age correlated with

student school engagement in this study, it did not emerge as a significant predictor of

engagement when the other variables were considered. It may be that sexual minority students

who disengage from school do so at an earlier age than their heterosexual gender-typical peers,

or that other factors (such as grades) were more salient. A study of school belongingness and

risk-taking behaviors found that sexual minority students' truancy and lack of belonging was

particularly pronounced in middle school in contrast to heterosexual students, who showed

increased truancy and lack of belonging as they moved into high school (Robinson & Espelage,

2011). This is an important area for further investigation.

Similarly, poor students are often assumed to be at risk for low school engagement as school pedagogy may be less aligned with their cultural backgrounds (Tileston & Darling, 2009), schools in impoverished neighborhoods may be inhospitable environments (Kozol, 2005), and schools of poverty may lack the resources of schools that service more affluent families (Darling-Hammond, 2010); but, FRL status was not found to predict engagement among these students. Perhaps this result is unique to this sample; or these results could indicate the impact of poverty on engagement could be different for queer youth and heterosexual youth. The impact of socio-economic status on engagement and educational obtainment of sexual minority students warrants further study.

Similarly, we expected that being of a non-dominant race or ethnicity would have an impact on the engagement of sexual minority students, as students of color have lower engagement and high school graduation rates (Aud et al., 2012). There is limited research regarding the school success of sexual minority students of color, but sexual minority students of color's experiences of discrimination has been shown to negatively affect school success (Craig & Smith, 2011). Sexual minority students of color may face additional or additive challenges based on their non-dominant race, ethnicity, and cultural background. Kosciw et al. (2012) found that more than half of sexual minority students of color experienced harassment based on their race or ethnicity. Despite this, the most common reason they reported for feeling unsafe at school was their sexual orientation or gender expression (Kosciw et al., 2012). In contrast, Della, Wilson, and Miller (2002) found that some sexual minority students of color develop strategies that make them more resilient, because of experiencing oppression and stigmatization on multiple fronts. Regardless of the primary source of discrimination, many students of color who are sexual minorities experience significant denigration at school. The small size of some

minority groups led us to eliminate them from the model development; even for the included categories, the small sample size may have minimized found impacts. There is a need for more research into the intersections between students' race and sexual minority status, and the impacts on educational outcomes.

An important consideration in supporting sexual minority students of color is their ability to access school and community resources (Craig & Smith, 2011). When extracurricular activities are racially segregated, the protective benefits of a GSA or other student support groups may not extend to sexual minority students of color (Blackburn & McCready, 2009). In the United States, being a student of color is highly correlated with poverty (Aud et al., 2012). In school districts where the median family income is below average, there are less likely to be programs that specifically address the needs of sexual minority students (Blackburn & McCready, 2009).

Limitations of Study

There are several limitations to this study that should be considered. First, the students who participated in this study were those who accessed community outreach services targeting sexual minority youth in urban areas in the Intermountain West. Because most sexual minority youth community service providers respect the privacy of their clients by not requiring registration to receive services, it is unknown how this sample was representative of clients at the organizations that administered the survey or community organizations generally. More broadly, the sample is likely not representative of the general population of sexual minority students, especially those who do not attend community programming for sexual minority youth, those who live in rural areas, and those who live in other geographic regions in the United States or outside the United States.

Second, there were variables that we theorized would associated with engagement that we were unable to assess adequately. For instance, we were unable to assess the impact of being of a non-dominant ethnic or racial minority status other than multiracial and Latino/a. Even for these groups, the sample size was small and may have led to underestimating the impact of race and ethnicity on engagement. Similarly, this sample included students who reported their ages as varying from 13 to 20 years old. However, over 80% of the sample was within the range of 15 to 18 years old. Variables that were found to be non-significant contributors to the model, such as age and race, may actually have an impact on sexual minority students' engagement and should be studied further.

Third, the dependent variable was an abbreviated version of the SSEM. Although the SSEM shows promising utility (Hazel et al., 2013; Hazel et al., in press), the abbreviated version has not been validated. With the measurement of engagement still emerging (Fredricks et al., 2011), the measurement validity of general conceptualizations of engagement to sexual minority students has not been studied. The Total Engagement scores were significantly different between the two data sets. This is not a violation of assumptions in regression analyses (Tabachnick & Fidell, 2013) but does suggest that validating the concept of school engagement with sexual minority students is an area that deserves further investigation.

Fourth, there are always concerns with survey data: both that items are interpreted by the respondent as the researcher intended and that the answers are carefully and honestly given. Because this was anonymously collected in a location that the youth chose to frequent, we assume that most respondents were invested and felt safe to answer honestly. However, it would have strengthened our confidence in the findings had we been able to follow up on some items and probe into some answers, which the secondary data analysis design did not permit. For

instance, most students represented getting good grades; it may be that these students were academically successful or they may have answered in a socially desirable manner and inflated their estimation of their grades. Similarly, we were unable to interpret the causes of missing data. Although the data were very close to complete (total missingness was 3%), the statistical analysis of randomness suggests a pattern of non-response, whereby students who did not answer every item were inclined to omit answering demographic and non-school behavior items. This may have weakened our ability to find relationships between these factors and the SSEM.

Additionally, it is not known if some participants took the survey in both 2008 and 2010; but, it is certainly a possibility. It can be hypothesized that the same student, taking the survey two years later, would be more consistent in his or her answers on both the independent variables and his or her engagement with school. This could result in a stronger replication of the model than if the samples had been independent.

Finally, the study's design was cross-sectional and dependent on informants exclusively. The perceptions of others who work with or know the students could not be considered, nor could important variables in their school environments be assessed. This study provides important insights into the perceptions of sexual minority students regarding their engagement with school, but it will be important that future studies also consider adult behaviors and attitudes, as well as other environmental factors, to better understand the students' engagement.

Conclusion

This study found that poor grades and attending a school that did not have a GSA, and possibly being frightened while at school due to being harassed, was predictive of decreased engagement for sexual minority students. As it is known that sexual minority students are at increased risk of disengaging from school and not completing high school (Pearson et al., 2007;

Rivers, 2001; Thompson, 2006), understanding which sexual minority students may be at greatest risk for these negative outcomes is critical. These findings suggest that school psychologists should investigate the engagement of sexual minority students who are failing classes, are bullied, and attend schools without a GSA in order to be able to provide greater levels of support and services if needed. It also suggests a need for school psychologists to work with all building personnel to ensure that school environments are safe for and accepting of sexual minority students. Applying a Multi-Tiered System of Support model to the educational needs of sexual minority students, all students will benefit from strong universal programming that promotes a safe, inclusive environment; some students will also need targeted interventions to enhance their engagement; and a few students will require additional intensive supports to ensure that disengagement does not lead to dropping out. Sexual minority students are not a homogeneous group in their sexual identity formation or in other aspects of their selfhood (Fisher & Kennedy, 2012; Hansen, 2007). Additional research into the engagement of sexual minority students and subgroups of sexual minority students is needed to better understand how to prevent and revert the disengagement of sexual minority students with school.

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Table 1

Survey Items from which Independent Variables were taken and Percentage of the Sample for each Response Category for the 2008 and 2010 Surveys

Survey Item[a]	Response Categories	2008[b] (*N=216*)	2010[b] (*N=195*)
Personal Characteristics			
How old are you? (*Age*)	13 years old	1	7
	14 years old	5	11
	15 years old	17	16
	16 years old	23	25
	17 years old	31	29
	18 years old	12	7
	19 years old	2	1
	20 years old or older	1	0
	Missing	*8*	*3*
	Median	16 years old	16 years old
How would you best describe your race/ethnicity? (*Race*)	White[c]	58	62
	Biracial or Multiracial	11	11
	Latino/a	10	13
	Native American, Alaskan Native, or Native Hawaiian[d]	3	2

	Asian or Asian American[d]	3	1
	Black or African American[d]	1	3
	Other[d]	6	4
	Missing	*8*	*4*
What is your gender identity? (*Gender*)	Female[c]	51	49
	Male	36	35
	Transgender; Gender variant/gender queer; Other	6	12
	Missing	*8*	*5*
What is your sexual orientation? (*SO*)	Gay[c]	30	27
	Bisexual	29	37
	Lesbian	23	18
	Queer; Not sure/questioning; Other	11	12
	Missing	*7*	*0*

School Characteristics and Behaviors

During the years that you have attended school, do you or did you ever receive reduced lunch prices or free lunches? (*FRL*)	Yes	38	37
	No	62	62
	Missing	*1*	*1*

Putting them all together, what were your grades like this past school year? (*Grades*)	Straight A's	9	10
	Mostly A's	24	26
	Mostly B's	30	28
	Mostly C's	25	23
	Mostly D's	8	8
	Mostly F's	4	5
	Missing	*1*	*1*
	Median	Mostly B's	Mostly B's
Does your school have a Gay/Straight Alliance? (*GSA*)	Yes[c]	65	51
	No	23	32
	I don't know	11	16
	Missing	*1*	*1*
During the past 12 months, how much of the time have you felt unsafe or afraid while at school (or on your way to or from school)? (*Unsafe*)	Never	28	26
	Rarely	34	42
	Sometimes	26	24
	Most of the time	10	7
	All of the time	0	2
	Missing	*2*	*1*
	Median	Rarely	Rarely
DURING THE PAST 30 DAYS, on how many days did you NOT go to school	0 days	79	68

because you felt that you would be unsafe at school or on your way to or from school? (*No Go*)[e]	1 day	7	5
	2-3 days	8	7
	4-5 days	1	4
	6 or more days	4	4
	Missing	*1*	*12*
	Median	0 days	0 days

Non-School Behaviors

How many times in the last year have you slept on someone's couch, outside, or in a homeless shelter BECAUSE YOU HAD NOWHERE ELSE TO STAY? (*Slept Other*)	Never	62	74
	1 time	8	9
	2-3 times	9	5
	4-6 times	2	3
	7-9 times	2	2
	10 or more times	10	4
	Missing	*7*	*4*
	Median	Never	Never
How old were you when you had your first drink of alcohol other than a few sips? (*Alcohol*)	8 years or younger	9	8
	9-10 years old	7	4
	11-12 years old	14	13
	13-14 years old	25	27
	15-16 years old	17	12
	17 years old or older	4	5
	Never	16	30

Missing	*7*	*1*
Median	13-14 years old	13-14 years old

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[a]Following the survey item, in parenthesis, is the abbreviation used in subsequent tables

[b]Not all percentages add up to 100% due to rounding; when categories are ordinal, medians are given

[c]Category that was used for comparison in dummy coding

[d]Category not considered in development of model due to small sample size

[e]Item not utilized in development of model due to missing data, skewedness, and correlation with *Unsafe*

Table 2

Missingness by Respondents and Variables

	Missingness by Respondents					Missingness by Variables	
	Respondents with Missing Data	Number of Items Missing for Respondents with Missing Data					
		Range	Mean	Median	Mode	Total Missing	Range
2008	13%	1-8	5.0	6	6	4%	0-8%
N=216	(28)						
2010	19%	1-4	1.6	1	1	3%	0-12%
N=195	(37)						

Table 3

Spearman's Rho Correlations between Variables and with SSEM Total Engagement Score from

2008 Data Set (N=216)

Variable	A1	A2	A3	A4	A5	A6	A7	A8
A. Personal Characteristics								
1. Age	1.00							
2. R: Multiracial	.08	1.00						
3. R: Latino/a	-.05	-.13	1.00					
4. G: Male	.20**	-.04	.05	1.00				
5. G: Other	-.15*	-.02	.12	-.20**	1.00			
6. SO: Bisexual	-.09	.17*	-.03	-.32**	-.02	1.00		
7. SO: Lesbian	.01	-.12	.03	-.45**	-.04	-.38**	1.00	
8. SO: Other	-.16*	.07	-.04	-.21**	.31**	-.25**	-.22**	1.00
B. School Characteristics and Behaviors								
1. FRL	-.17*	.03	.26**	-.12	.11	.17*	-.15*	.16*
2. Grades	-.26**	.05	.08	.08	.10	.00	-.06	.06
3. GSA: No	-.02	.05	.04	.13	-.08	.00	-.07	-.13
4. GSA: DK	-.03	-.02	.02	-.02	-.09	.01	-.01	.01
5. Unsafe	-.15*	-.08	-.03	.13	.06	-.12	.00	.03
6. No go	-.16*	.04	.00	.05	.05	-.01	-.06	.14*
C. Non-School Behaviors								
1. Slept Other	-.11	.13	-.02	-.01	.10	.15*	-.11	.11
2. Alcohol	-.10	.02	.12	-.05	.07	.04	-.04	.17*
SSEM Total Engagement	-.22**	.12	-.01	.04	.05	-.12	.06	.06

*p < 0.05
**p < 0.01

Variable	B1	B2	B3	B4	B5	B6	C1	C2
B. School Characteristics and Behaviors								
1. FRL	1.00							
2. Grades	.21**	1.00						
3. GSA: No	-.01	.00	1.00					
4. GSA: DK	.09	-.09	-.19**	1.00				
5. Unsafe	-.07	.17*	-.05	.07	1.00			
6. No go	.10	.14	-.03	.18*	.43**	1.00		
C. Non-school Behaviors								
1. Slept Other	.21**	.20**	.07	.14	.15*	.29**	1.00	
3. Alcohol	.12	.18*	-.07	.04	.08	.09	.10	1.00
SSEM Total Engagement	.04	.39**	.14	-.03	.30**	.28**	.16*	.05

*p < 0.05
**p < 0.01

Table 4

Statistical Stepwise (Model Development) and Hierarchical (Model Confirmation) Regression

Analyses Predicting Student School Engagement from the Variables of Grades, Unsafe, and GSA

Predictor	Model Development		Model Confirmation		
	ΔR^2	β	ΔR^2	β	sr^2
Grades	.14**	.33**	.27**	.52**	.08
Unsafe	.06**	.26**	.01	.09	.03
GSA	.03*	.17**	.02*	.15*	.02
Total R^2	.23**		.31**		
Adjusted R^2	.22		.30		
n	195		185		

* p <0 .05
** p <0 .01