The Effect of Negative School Climate on Academic Outcomes for LGBT Youth and the Role of In-School Supports

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For many lesbian, gay, bisexual, and transgender (LGBT) youth, intolerance and prejudice make school a hostile and dangerous place. This study examined simultaneously the effects of a negative school climate on achievement and the role that school-based supports—safe school policies, supportive school personnel, and gay–straight alliance (GSA) clubs—may have in offsetting these effects. Data were drawn from a survey of a diverse sample of 5,730 LGBT youths who had attended secondary schools in the United States. Results from structural equation modeling showed that victimization contributed to lower academic outcomes and lower self-esteem; however, school-based supports contributed to lower victimization and better academic outcomes. Moderating effects of supports on esteem and academic outcomes were also examined through hierarchical linear regression. Results suggested that a hostile school climate has serious ramifications for LGBT students but institutional supports can play a significant role in making schools safer for these students.

KEYWORDS LGBT youth, school climate, bullying, harassment, achievement

The experiences of lesbian, gay, bisexual, and transgender (LGBT) youths have received increased attention in the empirical literature in the past decade. Most of the literature has focused on the experiences of anti-LGBT victimization and its consequences, such as higher rates of suicidal thoughts and attempts, substance use, and sexual risk behaviors (Bontempo & D'Augelli, 2002; Toomey, Ryan, Diaz, Card, & Russell, 2010). In recent years, there has been increased attention to school safety in general, with a particular emphasis on issues of bullying. In the context of this growing attention to safer school environments, studies have demonstrated the elevated rates of victimization and bullying that LGBT youths experience at school, and more recently have focused on the contexts and characteristics of schools that may support negative attitudes and behaviors toward LGBT youths (Horn, Kosciw, & Russell, 2009). Youths who are LGBT often report experiencing harassment, discrimination, and other negative events in school, often specifically related to their sexual orientation, gender identity, and/or how they express their gender. Such experiences include high levels of verbal and physical harassment and assault (Bontempo & D'Augelli, 2002; D'Augelli, Pilkington, & Hershberger, 2002; Kosciw, Greytak, Diaz, & Bartkiewicz, 2010), sexual harassment (Bochenek & Brown, 2001), social exclusion and isolation (Ueno, 2005), and other interpersonal problems with peers (Pearson, Muller, & Wilkinson, 2007; Russell, Seif, & Truong, 2001).

Less attention has been paid in the research to the negative consequences that a hostile climate may have on LGBT students' access to education and ability to learn. Experiences of victimization can negatively affect LGBT youths' access to education, as they are linked to increased absenteeism due to feeling uncomfortable or unsafe in school, increased discipline problems, and lower levels of school engagement and academic achievement (Kosciw et al., 2010; Murdock & Bolch, 2005).

Whereas victimization in school can directly affect a student's academic engagement—attending school and interest in completing school work—it is important to discern possible intermediary factors that are affected by school climate that, in turn, may negatively affect educational outcomes. Studies of the general student population have found that the negative impact of peer victimization on psychological adjustment serves as a pathway to poor academic outcomes (Lopez & DuBois, 2005; Schwartz, Gorman, Nakamoto, & Toblin, 2005). Among LGBT adolescents specifically, in-school victimization is associated with harmful psychological effects, such as depression and low self-esteem (Bontempo & D'Augelli, 2002; Kosciw et al., 2010; Toomey et al., 2010). Thus, given the evidence that LGBT youths experience higher rates of victimization than their non-LGBT peers (Harris Interactive & Gay, Lesbian & Straight Education Network [GLSEN], 2005), it is important to develop a better understanding of the influence that school climate has on their psychological well-being and, in turn, on academic achievement.

A central challenge for educators and safe school advocates is how to identify and design supportive school climates that promote the positive

development of LGBT and all students. Some literature has examined the role that school-based supports for LGBT students can have in improving school climate and educational outcomes, including educators supportive of LGBT students, the presence of gay–straight alliance clubs (GSAs), antibullying/harassment policies that provide specific protections regarding sexual orientation and gender identity, and LGBT-inclusive curricula (i.e., additions to the classroom curricula that include positive representations of LGBT people, history, and events). The presence of adults in school who are supportive of LGBT students is associated with increased feelings of safety at school (Kosciw et al., 2010). The presence of a GSA has been associated with lower rates of victimization (Kosciw et al., 2010; Szalacha, 2003) and a greater sense of school belonging (Kosciw et al., 2010). School antibullying/harassment policies have also been associated with lower victimization (Chesir-Teran & Hughes, 2009; Goodenow, Szalacha, & Westheimer, 2006; Szalacha, 2003). Finally, LGBT students who report the inclusion of positive representations of LGBT-related topics in the curriculum report greater feelings of safety in school as well as lower incidences of anti-LGBT remarks and victimization (Kosciw et al., 2010; Russell, Kostroski, McGuire, Laub, & Manke, 2006).

In addition to improving the school climate directly, it is possible that school resources can also mitigate the negative effects of victimization on mental health and educational outcomes for LGBT youth. GSAs have been shown to relate directly to better mental health (Heck, Flentje, & Cochran, 2011; Goodenow et al., 2006, Toomey, Ryan, Diaz, & Russell, 2011) but also to buffer the effect of victimization (Toomey et al., 2011). Similarly, having supportive educators is directly related to increased psychological attachment to school (Kosciw et al., 2010), decreased suicidality (Goodenow et al., 2006), and offsets or buffers the relation between victimization and mental health in general (Birkett, Espelage, & Koenig, 2009). There is less evidence that there is any direct role that LGBT-inclusive curricula or comprehensive policies might play in contributing to positive mental health for LGBT students or in possibly offsetting the negative effects of victimization. However, LGBT students who report having such curricular inclusion in their schools are likelier to report greater acceptance among school peers (Kosciw et al., 2010), which may indicate that the curriculum can directly affect LGBT students' feelings of self-worth.

Some research suggests that school-based resources play an important role in LGBT students' academic outcomes. The presence of adults in school who are supportive of LGBT students is related to lower absenteeism (Kosciw et al., 2010; Seelman, Walls, Hazel, & Wisneski, 2011), and GSA participation is associated with higher grade-point averages (GPAs) (Walls, Kane, & Wisneski, 2010). It is also possible that resources are protective against the effects of hostile school climates on academic outcomes by increasing an LGBT student's connection and engagement with school. For example, Seelman et al. (2011) found that school engagement

predicted LGBT students' GPAs, and the presence of a GSA further strengthened this relation.

Although prior research has expanded understanding of the school experiences of LGBT youth, several gaps in knowledge remain. The literature on LGBT youth has demonstrated the direct negative effects of victimization on mental well-being and academic achievement, but has not as clearly identified any intermediate role that this decreased well-being may have on achievement. There has also been less attention paid in the literature to the role that school-based supports for LGBT students may have in students' academic performance and access to education. Furthermore, the research examining the benefits of LGBT-related supports has largely not considered the interconnections across supports and the unique contribution each type of support has on school climate when considered together. By improving school climate or enhancing personal well-being, it is clear how LGBT-related supports in school may be indirectly related to academic success. But, do these supports also directly influence a student's connection to school and his or her performance? Do they buffer the negative effect of victimization on educational indicators?

Purpose of the Current Study

This study examined simultaneously the effect of school climate on achievement and the role that school-based supports for LGBT students may have in offsetting this effect. Whereas previous literature on LGBT-related school supports have most often examined their relations with well-being and academic outcomes individually, this study built on this prior literature by examining these supports in the context of one another and their effects on academic outcomes via direct and indirect pathways. Specifically, we examined: (a) the direct contribution of in-school victimization to academic outcomes for LGBT youth; (b) the indirect contribution of in-school victimization via psychological well-being; (c) the role of inclusive safe schools policies, supportive school staff, and GSA clubs in contributing to a safer school environment, greater well-being and better academic outcomes; and (d) the potential of school supports in buffering the negative effects of victimization on academic outcomes.

METHOD

Sampling

Data came from a larger study on the school-related experiences of LGBT secondary school students (Kosciw et al., 2010). To obtain a more representative sample of LGBT youth, we used two methods to locate

participants. First, we secured participation from 50 randomly selected community-based groups or organizations serving LGBT youth. Second, we made the survey available online, and notices regarding the survey were posted on LGBT youth-oriented listservs and Web sites. We also advertised the online survey on social networking sites, targeting users who were between 13 and 18 years old and who indicated on their user profile that they were gay, lesbian, bisexual, or transgender. Data collection occurred in the spring/summer 2009. Participants were provided a written informed consent/assent briefing—the first page of both Internet and paper surveys contained information about the nature of the study, and youth indicated whether they agreed or declined to participate in the survey before proceeding. Given the nature of the survey method and in order to protect the anonymity of the respondents, documentation of informed consent/assent and parental consent were waived by GLSEN's research ethics review committee. Given that many LGBT youths in the sample may not be out to their parents or peers, requiring such documentation would potentially expose them to increased risk of harm or deter them from participating in the study.

The full sample consisted of 7,261 lesbian, gay, bisexual, and transgender students between the ages of 13 and 21 ($M = 16.3$ years) from all 50 states and the District of Columbia. Participants were excluded if they were not in a K–12 school at some point during the 2008–2009 school year, were not in school in the United States, or identified as heterosexual (except for those who were also transgender). List-wise deletion of cases was employed, leaving 5,730 youth in the sample for this study. Sample demographics are shown in Table 1. About two thirds of the participants were White and more than half identified as female. Almost all attended public schools.

Measures

VICTIMIZATION

Participants were asked about the frequency of experiencing verbal harassment, physical harassment, and physical assault in school in the past school year due to their sexual orientation or gender expression using a five-point response scale: (1 = *never*; 2 = *rarely*; 3 = *sometimes*; 4 = *often*; 5 = *frequently*). In order to assess youths' overall victimization for sexual orientation and for gender expression, a weighted variable was created using the frequency of victimization across the three severity levels (verbal harassment, physical harassment, and physical assault), giving more weight to physical harassment ($\times 1.5$) and, in turn, physical assault ($\times 3$) because of their relative severity. One reason for creating this weighted variable was that types of victimization across severity levels were correlated moderately

TABLE 1 Survey Sample Demographic Information

Demographics	%	*n*
Gender identity		
Male	33.7	1,930
Female	56.9	3,263
Transgender	5.5	314
Other gender identity	3.9	223
Race or Ethnicity		
White	67.3	3,858
African American or Black	3.9	221
Hispanic or Latino/a	13.8	788
Asian or Pacific Islander	2.5	145
Native American	0.6	34
Bi/multiracial	10.5	603
Other racial/ethnic identity	1.4	81
Region		
Northeast	24.9	1,424
South	28.9	1,654
Midwest	23.2	1,332
West	23.0	1,320
School type		
Public	91.0	5,215
Private	9.0	515
School locale		
Urban	29.8	1,709
Suburban	45.3	2,596
Rural	24.9	1,425
Outness (to at least one)		
Peer	94.6	5,422
School staff	68.8	3,944
Parent/guardian	63.6	3,645

to highly. For both victimization related to sexual orientation and victimization related to gender expression, physical harassment was highly correlated with verbal harassment ($r = .62$ for both types) and physical assault (r's $= .72$ and .71, respectively), and verbal harassment and physical assault were moderately correlated ($r = .43$ for both types). In addition, the more severe types of victimization occurred less frequently. Therefore, we believe that the weighted variables provide better estimates of overall victimization (see Table 2 for the means and standard deviations of the weighted variables and the original six individual harassment and assault variables).

EDUCATIONAL INDICATORS

We used two educational indicators: missing school and academic achievement:

TABLE 2 Descriptive Information for Predictor and Outcome Variables

Incidence of victimization and psychological and academic outcomes	*M*	*SD*
Type of victimization		
Sexual orientation-weighted score	9.96	5.14
Verbal harassment	3.13	1.37
Physical harassment	1.83	1.24
Physical assault	1.36	0.91
Gender expression-weighted score	8.52	4.51
Verbal harassment	2.47	1.41
Physical harassment	1.56	1.09
Physical assault	1.23	0.74
Psychological and academic outcomes		
Self-esteem	2.64	0.69
GPA	2.99	0.94
Missed days of school in past month	0.63	1.13

Students' reports of available school resources and supports	%	*n*
Number of teachers or staff supportive of LGBT students		
None	5.4	308
1	5.0	287
2–5	35.4	2,030
6–10	23.5	1,345
More than 10	30.7	1,760
GSA presence	45.3	2,597
Inclusive curriculum	18.1	1,038
Comprehensive antibullying/harassment policy	18.4	1,053

Note. $N = 5,730$. GPA = grade-point average; LGBT = lesbian, gay, bisexual, transgender.

1. Missing school: To assess education access, we asked participants how many days in the prior month they had missed school because of feeling uncomfortable or unsafe ($0 = $ *0 times*; $1 = $ *1 day*; $2 = $ *2 or 3 days*; $3 = $ *4 or 5 days*; $4 = $ *6 or more days*).
2. Grade-point average (GPA): Participants were asked to describe the grades they had received in school in the 2008–2009 school year and these were then coded to correspond to a traditional 4-point scale ($4 = $ *mostly As*; $3.5 = $ *As and Bs*; $3 = $ *mostly Bs*; $2.5 = $ *Bs and Cs*; $2 = $ *mostly Cs*; $1.5 = $ *Cs and Ds*; $1 = $ *mostly Ds*; $0 = $ *mostly Fs*).

SCHOOL SUPPORTS FOR LGBT STUDENTS

We examined four types of school supports:

1. GSA: Participants were asked whether or not their school had a gay–straight alliance or similar club addressing LGBT student issues ($0 = $ *school did not have a GSA*; $1 = $ *school had a GSA*).

2. Supportive educators: Participants were asked how many teachers or other school staff were supportive of LGBT students (0 = *none*; 1 = *one*; 2 = *two to five*; 3 = *six to 10*; 4 = *more than 10*).

3. Inclusive curriculum: Students were asked whether they had been taught about LGBT people, history, or events in school, and those who indicated that they had been were subsequently asked whether the representations were positive or negative using a 4-point response scale (1 = *very negative;* 4 = *very positive*). A dichotomous variable was computed, with students who reported being taught positive representations having a score of 1 and those who were taught nothing or negative representations having a score of 0.

4. Comprehensive antibullying/harassment policy: Students were asked whether or not their school or district had an antibullying or harassment policy and, if so, whether the policy specifically included protections based on sexual orientation or gender identity or gender expression. A dichotomous variable was computed, with students reporting a policy that included said protections having a score of 1 and those who reported having no policy or a policy without said protections having a score of 0.

Psychological well-being

We used one key indicator of psychological well-being: self-esteem. Participants completed the 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1989). RSE items ask respondents how much they agree with statements regarding their global self-worth using a 4-point Likert scale (1 = *strongly disagree;* 4 = *strongly agree*). This measure has demonstrated considerable reliability and validity among general adolescent samples in several studies (Demo, 1985; Hagborg, 1996; Rosenberg, 1965), and for our LGBT adolescent sample, the scale also had high internal reliability (Cronbach's α = .94). Mean total scores, with higher scores indicating more positive self-esteem, were computed.

Control variables

Participants self-reported their race/ethnicity, gender, age, state, type of school (public vs. private), and the name and zip code of their school district. Region was created by coding the state variable into four groups: Northeast, South, Midwest, and West. School locale (urban, suburban, and small town/rural) was created by matching school district locale information from the National Center for Education Statistics with the school district name and/or zip code provided by the participants. In addition, students were asked about the degree of outness (i.e., openness about their sexual orientation/gender identity) to other students and to school staff using 4-point scales (0 = *out to none*; 1 = *out to only a few*; 2 = *out to most*; 3 = *out*

to all). Participants were asked a dichotomous question whether they were out to one or more parent/guardian.

Hypotheses and Data Analyses

Our analyses were based on four primary hypotheses: (a) LGBT-related supports in school—GSAs, number of supportive educators, comprehensive school policies, and inclusive curricula—would be directly related to lower rates of in-school victimization for the LGBT youths; (b) school supports would also be related to greater self-esteem both directly and indirectly through decreased victimization; (c) school supports would be related to better educational outcomes (fewer missed days of school and higher GPA) primarily through the indirect relations via decreased victimization and increased self-esteem but perhaps also via direct relations to educational outcomes; and (d) LGBT-related school supports would buffer the relations between victimization and self-esteem and victimization and educational outcomes above and beyond any direct or indirect contribution. The first three hypotheses were tested using structural equation modeling and the fourth was tested through a series of hierarchical ordinary least squares (OLS) regressions by including interactions terms between the two indicators of victimization and the four types of supports.

RESULTS

Figure 1 illustrates the fully specified model testing both the direct and mediated paths among the four LGBT-related supports related to in-school victimization, self-esteem, and the two educational indicators. Not shown are the paths from covariates—three outness variables were included as a latent variable; age was included as a manifest variable, and all other covariates were categorical and entered as dummy variables with correlations within each set. In addition, the model includes correlations among the four types of support and between the two educational indicators. Demographic and school characteristic covariates were also included as predictors for all outcome and mediating variables and the latent construct of victimization, but are not illustrated in Figure 1.

We used standard measures of practical fit: the comparative fit index (CFI), the root-mean-squared error of approximation (RMSEA), and the nonnormed fit index (NNFI), all of which indicated acceptable model fit: $\chi^2(df = 187, n = 5,730) = 2030.13$, $p < .001$, RMSEA $= .04$, CFI $= 0.96$, NNFI $= 0.92$. Although a significant chi-square test can indicate model misspecification, we consider the model to have a good fit given that the other fit indices are
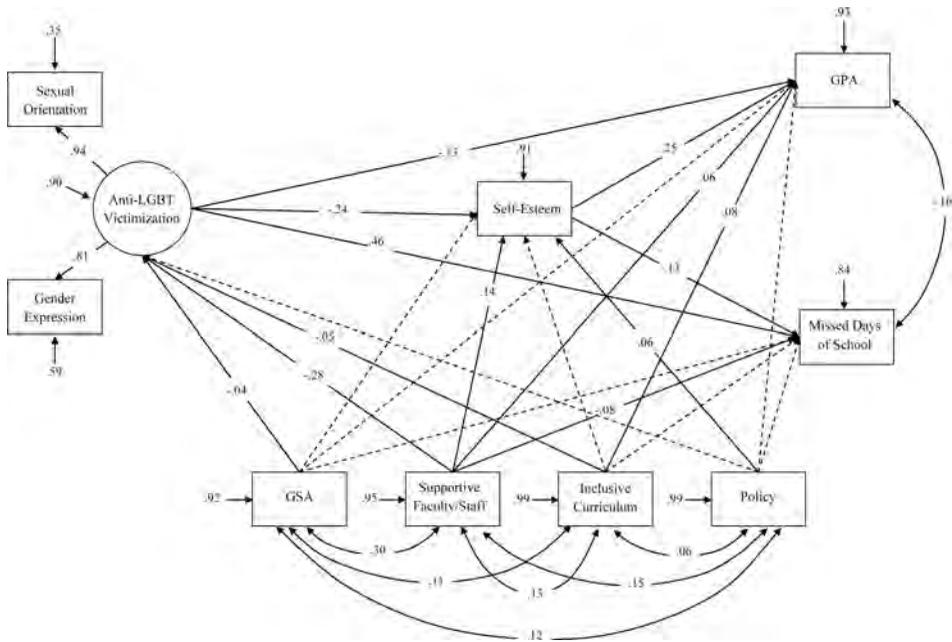
FIGURE 1 LGBT-related school supports predicting educational outcomes directly and via anti-LGBT victimization and self-esteem ($N = 5{,}730$). *Note*. Hypothesized paths that were not significant at $p < .05$ are indicated by a dotted line. Controls for gender; age; race; outness to peers, school staff, and parents; and school locale, type, and region are included in the analysis but not depicted here.

within acceptable ranges and given the chi-square test's sensitivity to large sample sizes (Hu & Bentler, 2005; Kline, 2005).

In-School Victimization, Self-Esteem, and Educational Outcomes

As we hypothesized, in-school victimization predicted decreased self-esteem and worse educational outcomes (lower GPA and more missed days of school). Also, as hypothesized, self-esteem was positively associated with GPA and negatively associated with missed school. Thus, the model supports our hypothesis that in-school victimization is both directly and indirectly related to diminished educational outcomes.

Direct and Indirect Effects of LGBT-Related School Supports

Figure 1 illustrates the significant and nonsignificant paths for all four types of LGBT-related school supports. As shown, all four supports had statistically significant low to moderate correlations with one another. Having a GSA was most highly correlated with the number of supportive educators in school

($r = .30$). The weakest correlation was between inclusive curriculum and comprehensive school policy ($r = .06$). The individual contribution of each type of support to other predictors and outcomes when all other supports are considered in the model is discussed next.

GSA

Having a GSA in school was related to a decreased incidence of anti-LGBT victimization. However, having a GSA was not significantly directly related to an individual's self-esteem or to the two educational outcomes.

SUPPORTIVE EDUCATORS

As we hypothesized, all of the predictive paths related to having a greater number of educators at school who are supportive of LGBT students were significant. A greater number of educators was related to a decreased incidence of victimization, greater self-esteem, higher GPAs, and fewer missed days of school.

LGBT-INCLUSIVE CURRICULUM

Inclusive curriculum had a significant and negative relation with in-school victimization, such that youth who had been taught positive representations of LGBT people, history, and events reported less victimization. Contrary to our hypotheses, curriculum was not significantly predictive of self-esteem. Curriculum was predictive of higher reported GPA but was unrelated to missed days of school.

COMPREHENSIVE ANTIBULLYING/HARASSMENT POLICY

Students' report of a comprehensive policy in their school was only predictive of self-esteem, such that the presence of such a policy was related to more positive feelings of self-esteem.

Buffering Effects of LGBT-Related Supports

Because we wanted to test whether in-school resources function differently depending on school climate, we performed three hierarchical OLS regressions similar to the structural equation modeling (SEM) model presented previously, but with the addition of eight interaction terms: four terms between gender expression-based victimization and in-school supports and four terms between sexual orientation-based victimization and in-school supports.

The addition of interaction terms significantly increased the proportion of variance in self-esteem explained by the model, as shown in Table 3.

TABLE 3 Interaction Effects on Self-Esteem Between Victimization and School Resources

Victimization and school resources	Self-esteem		
	Adj. ΔR^2	β	SE_β
Step 1:	.167*** $F(25, 5704)$ = 47.04		
Victimization based on gender expression		−.054**	.021
Victimization based on sexual orientation		−.186***	.021
GSA presence		−.013	.014
Supportive staff member		.156***	.014
Comprehensive policy		.058***	.012
Inclusive curriculum		.011	.013
Step 2:	.003** $F(8, 5696)$ = 2.51		
VGE × GSA		.032	.020
VGE × Supportive Staff Member		−.022	.021
VGE × Comprehensive Policy		.020	.018
VGE × Inclusive Curriculum		.046*	.020
VSO × GSA		−.034	.020
VSO × Supportive Staff Member		−.020	.021
VSO × Comprehensive Policy		−.015	.018
VSO × Inclusive Curriculum		−.029	.020

Note. $N = 5,730$. VGE = victimization based on gender expression; VSO = victimization based on sexual orientation; GSA = gay–straight alliance. Controls for gender identity; age; race or ethnicity; outness to peers, school staff, and parents; and school locale, type, and region are included in the analysis but not depicted here.

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

In particular, although the SEM shows that an inclusive curriculum positively influences self-esteem, the regression model suggested that it might have additional benefits in schools with poor climates, or for students who are more severely victimized.

The interaction terms were differentially predictive of school outcomes like GPA and missed days of school, as shown in Table 4. For GPA, their addition did not significantly increase the amount of variance explained, but for missed days of school, their inclusion in the model increased the amount of variance explained. The interaction term between gender expression-based victimization and supportive staff suggested that although supportive staff members might be associated with fewer missed days of school in general, they might be especially helpful for students who are highly victimized. Meanwhile, although the presence of a GSA was generally unrelated to missed days of school in the SEM and this analysis, the interaction term between sexual orientation-based victimization and presence of a GSA suggested that having a GSA might result in fewer missed days of school for students who experience less victimization.

TABLE 4 Interaction Effects on GPA and Missed Days of School Between Victimization and School Resources

Victimization and school resources	GPA			Missed school days		
	Adj. ΔR^2	β	SE_β	Adj. ΔR^2	β	SE_β
Step 1	.131*** $F(26, 5703)$ = 34.31			.277*** $F(26, 5703)$ = 85.25		
Victimization based on gender expression		−.067**	.021		.072***	.019
Victimization based on sexual orientation		−.075***	.021		.346***	.020
GSA presence		−.028	.014		.003	.013
Supportive staff member		.059***	.014		−.097***	.013
Comprehensive policy		−.023	.013		−.008	.012
Inclusive curriculum		.082***	.013		−.024*	.012
Step 2	.002 $F(8, 5695)$ = 1.44			.004*** $F(8, 5695)$ = 4.10		
VGE × GSA		−.012	.021		−.014	.019
VGE × Supportive Staff Member		−.003	.022		−.059**	.020
VGE × Comprehensive Policy		.016	.018		.027	.016
VGE × Inclusive Curriculum		.016	.021		−.010	.019
VSO × GSA		−.025	.020		.041*	.027
VSO × Supportive Staff Member		−.011	.021		−.008	.690
VSO × Comprehensive Policy		−.009	.018		−.022	.189
VSO × Inclusive Curriculum		−.008	.021		−.003	.894

Note. $N = 5,730$. VGE = victimization based on gender expression; VSO = victimization based on sexual orientation; GSA = gay–straight alliance. Controls for gender identity; age; race or ethnicity; outness to peers, school staff, and parents; school locale, type, and region; and self-esteem are included in the analysis but not depicted here.

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

DISCUSSION

Prior research has demonstrated that school is often not a safe or affirming environment for LGBT youth and that a hostile school climate can have negative consequences on well-being and achievement (Kosciw et al., 2010; Murdock & Bolch, 2005; Russell et al., 2006). Further, research has shown that school-based supports for LGBT students can improve the school climate and educational outcomes (Goodenow, 2006; Kosciw et al., 2010; Szalacha, 2003). The current study expanded upon this research, first by examining how in-school victimization affects LGBT students' self-esteem and academic performance, and second by illuminating how the varied roles that LGBT-related student supports play via direct benefits

to students' well-being and achievement and via mitigation of the negative effects of victimization. Our findings indicate that all four types of LGBT-related supports examined—GSAs, supportive school staff, inclusive curricula, and comprehensive antibullying/harassment policies—make unique positive contributions to the lives of LGBT students, yet differ in how they provide that benefit. Lastly, our findings suggest that, in general, the effects of school-based resources on self-esteem, GPA, and missed days of school are not highly dependent on rates of victimization.

Perhaps the strongest positive influence for LGBT students, as shown from our results, was having supportive adults at school. The number of supportive educators was one of the stronger predictors of a less hostile school climate and of greater self-esteem for LGBT students. Not surprisingly, the number of supportive educators was associated with positive educational outcomes; specifically, students who reported having more supportive educators were likelier to report higher GPAs and less likely to have missed school. Further, supportive staff might be especially helpful for students who are highly victimized, given the significant interaction between victimization and educators for missing school. Our findings related to supportive educators might reflect the myriad ways that these individuals can influence the school climate for LGBT students. Supportive staff might provide the personal connection needed to help keep students in school and buffer against severe victimization. Staff also might make the environment safer and more affirming directly for these students by intervening when homophobic remarks are made and anti-LGBT victimization occurs, providing support for individual students and perhaps advocating for school-wide efforts, such as affirming and protective policies and practices among staff and administration. Our study did not examine students' reports of educators' actions that were perceived as supportive, and further research is warranted that examines in greater depth the ways in which educators make a difference. Such research would also help inform preservice and continuing education for school staff on how to help create a safe and affirming school environment for these students.

Our findings about GSAs are also consistent with previous research in that the presence of these clubs was associated with lower incidences of victimization (Kosciw et al., 2010). Contrary to our hypotheses, the presence of a GSA was not directly related to students' self-esteem or to educational outcomes. One function that a GSA may serve is identifying a supportive school staff person, given that student clubs typically have an adult sponsor. It is possible that the relative benefit of a GSA for an individual student's well-being or academic performance is accounted for, in the current study, by the contribution of supportive staff. It is important to note that our study examined only the presence of a GSA and not students' participation in the club. It is very possible that simply having this type of student club does not affect a student's psychosocial experience or their engagement in schoolwork

and that only participation may result in such benefits; simply having a GSA may be related to environmental factors that result in greater safety and less victimization for LGBT students, however.

Experts in multicultural education believe that a curriculum that is inclusive of diverse groups promotes respect and equity for all (National Association of Multicultural Education, 2003). The SEM reported in this study confirmed a relation between an inclusive curriculum and victimization, and the regression model indicated that an inclusive curriculum might moderate the relation between victimization and self-esteem, with an LGBT-inclusive curriculum having an additional benefit in schools with poor climates or for students who are more severely victimized. Further, curricular inclusion might enhance an LGBT student's engagement in schoolwork, thereby benefiting academic achievement.

Prior research has shown comprehensive policies to be related to less hostile school climates for LGBT students; however, our findings did not show a significant relation between a comprehensive policy and victimization when the other types of supports were considered. One of the intended consequences of an antibullying/harassment policy is to specify to school personnel the behaviors that are not to be tolerated and the procedures for intervening in and reporting harassment. Thus, it might be that the influence of comprehensive policies on victimization was accounted for by the relation between supportive educators and victimization. Yet, having a comprehensive policy was predictive of students' self-esteem. When a school has a policy that specifically provides protections regarding sexual orientation and gender identity or gender expression, the school may demonstrate to an LGBT student that it is an affirming environment, and thereby may enhance the students' self-esteem. It is important to note that our policy measure is not an indicator of an actual school policy but an indicator of students' perceptions about policy. Further research is warranted that can examine actual school or school district policies and how they may affect school climate and the well-being and achievement of students.

Limitations

This study expands upon the current research by examining the complex relations among school climate, student well-being and academic achievement for LGBT students within the context of positive school supports for these students. Nonetheless, our study has several limitations.

The primary limitation is that the data were cross-sectional, which introduced an assumption that levels of predictors are static over time. This assumption is likely true for the availability of school supports examined here—the presence of a GSA, for example, would likely hold constant over a short or moderate length of time (i.e., for months or even years). However, this assumption may be less tenable for other predictors, such as

victimization and self-esteem, which may have resulted in overestimated or underestimated paths among predictors and academic outcomes. Similarly, we make assumptions about the directionality of the paths. In this article, as with SEM in general, we offer a plausible explanation of the relations observed among the data. However, alternative and sometime equivalent models are possible (Kline, 2005; Lee & Hershberger, 1990; MacCallum & Austin, 2000). It is possible, for instance, that the causal paths examined in this study actually flow in the reverse direction; however, these potential equivalent models are generally less theoretically plausible (e.g., self-esteem predicting victimization). We also examined an alternative but nonequivalent model of whether self-esteem predicted all other key variables, which were also allowed to correlate with one another. It is plausible that students with high levels of self-esteem would be more likely to report positive experiences—perceive their school climate as accepting and evaluate their educational success more highly (although still rather implausible that the determination of the presence of a GSA at school, relative to the other supports, would be predicted by a student's self-esteem). This alternative model, as well as additional nested models, was found to fit less well than the final model. Nevertheless, longitudinal data on the experiences of LGBT youth are needed to more assuredly assess the role of in-school victimization on well-being and achievement and to examine the potential benefits of LGBT-related school supports. As no such data are currently available, this analysis provides a useful foundation for research on school climate and school-based supports for LGBT students.

In addition, when considering the role of school supports, it is important to remember that this study's survey was specifically intended for youth who identify as LGBT. We cannot make determinations from our data about the experiences of youth who might engage in same-sex sexual activity or experience same-sex attractions but: (a) do not identify themselves as lesbian, gay, or bisexual; or (b) have a gender identity or gender expression that is outside of traditional cultural norms, but do not identify as transgender. These data might not reflect the experiences of these youth, who may be more isolated and have less access to resources than LGBT-identified youth. In a similar vein, we controlled for outness in order to examine the effects of school supports regardless of how open students were about their LGBT identity. It would be important for future research to examine whether LGBT-related school supports have varying levels of utility based on students' comfort level with their sexual orientation or gender identity and their level of outness.

Conclusion

Our results suggest that a hostile school climate has serious ramifications for LGBT students, but they also highlight the important role that institutional

supports can play in making schools safer for these students. Furthermore, these steps to improve school climate are also an investment in better educational outcomes and healthy youth development for LGBT students.

COMPETING INTERESTS

The authors have no known competing interests in this research or the publication of its results.

ACKNOWLEDGMENTS

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