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## Gay-Straight Alliances, School Functioning, and Mental Health: Associations for Students of Color and LGBTQ Students

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### Abstract

Utilizing a school-based sample of 895,218 students aged 10–18 years old, we examine differences in students' school functioning, substance use, and mental health in schools with and without Gay-Straight Alliances (GSAs). In addition, we examine whether GSA presence is associated with these outcomes for students of color and LGBTQ students. Overall, students in schools with GSAs were found to report better school functioning, lower substance use, and better mental health. For students of color, the association between the presence of a GSA and mental health and substance use was not as strong as it was for non-Hispanic white students. Further, for LGBTQ students, the association between the presence of a GSA and school functioning was not as strong as it was for non-LGBTQ students. Future research is necessary to ascertain the function of GSAs, especially for marginalized youth.

### Keywords

Gay-Straight Alliance; race/ethnicity; LGBTQ

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Gay-Straight Alliances, or more recently Gender-Sexuality Alliances (GSAs), are student-initiated clubs that provide social networks and support for students with different sexual and gender identities. Schools with GSAs have been found to be safer and more accepting of sexual and gender diversity (Marx & Kettrey, 2016). However, some research on GSAs suggests that they mostly serve white students and provide less support for students of color (Fetner et al., 2012; Herdt et al., 2006; McCready, 2001), and that GSAs may be less welcoming for lesbian, gay, bisexual, transgender, and queer or questioning (LGBTQ) students (Fetner et al., 2012). Yet there have been few efforts to empirically examine whether GSAs benefit students across race/ethnic and LGBTQ statuses. The current study

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aims to answer this question using a large school-based sample. We examine differences between schools with and without GSAs in student school functioning, substance use, and mental health, and whether the duration of a GSA's presence is associated with these outcomes. Finally, we examine whether these associations are different for students of color and LGBTQ students.

## Students in Schools with GSAs

A large number of studies has shown that GSAs are associated with better school climates and student adjustment (Day et al., 2020; Hatzenbuehler et al., 2019; Marx & Kettrey, 2016; Poteat et al., 2013). For example, students in schools with GSAs report lower levels of bullying and rates of absenteeism are lower (Poteat et al., 2013). Further, in schools with GSAs, academic achievement is higher (Russell et al., 2011), and rates of suicidality, depression (Davis et al., 2014; Goodenow et al., 2006; Poteat et al., 2013; Russell et al., 2011), and substance use are lower (Heck et al., 2014; Poteat et al., 2013). In addition to these cross-sectional studies, to our knowledge there are currently two studies that attempt to tackle the issue of temporality and selection bias (i.e., students in schools with better school climates may be more likely to initiate a GSA). The first showed that when GSAs had been in place for more than 3 years, students had a lower likelihood of experiencing discrimination and suicidality (Saewyc et al., 2014). Second, a two-wave study (Ioverno et al., 2016) showed that students who gained a GSA in their school from one year to the next reported stronger perceived safety in the following school year (Ioverno et al., 2016).

Although there is currently little research on how GSAs might function for non-members, scholars have suggested that mechanisms might include efforts by GSAs to improve school climate, raise awareness of LGBTQ issues (Griffin et al., 2004; Poteat et al., 2015; Poteat et al., 2016) and advocate for inclusive curricula, teacher training, or enumerated anti-bullying policies (Poteat, 2016). Although the positive presence of GSAs has been found among members and non-members alike (Toomey et al., 2011), it is currently unclear whether the positive benefits are evident across racial/ethnic minority status or LGBTQ-status. The current study does not assess GSA membership, but rather focuses on differences between students in schools with and without GSAs, as well as the duration of a GSA's presence.

## Disparities in School Functioning, Substance Use, and Mental Health

In general, sexual and gender minority (SGM) youth experience more victimization, poorer school outcomes and mental health, and report more substance use than heterosexual and cisgender youth (Coulter et al., 2018; Fish et al., 2017; Russell & Fish, 2016). Research on disparities in these outcomes for students of color shows similar patterns, although findings differ for different racial/ethnic groups. For example, youth of color report poorer school functioning than (non-Hispanic) white youth (Chen & Jacobson, 2012; Fiscella & Kitzman, 2009). Further, white and Hispanic adolescents report more victimization than Black adolescents, but Black and Hispanic adolescents miss school due to safety concerns more often than white adolescents (Kann et al., 2018). Rates of depression and suicidal ideation are higher among Hispanic adolescents than among Black adolescents, while

findings for substance use are mixed and show important intersections with gender (Kann et al., 2018).

## Do GSAs Benefit Everyone?

Although research suggests that schools with GSAs have safer and more supportive school climates than schools without GSAs (e.g., Marx & Kettrey, 2016), an important question posed by Griffin and colleagues remains: “safe and supportive for whom?” (Griffin, Lee, Waugh, & Beyer, 2004, p.19). Scholars have questioned the role of GSAs based on students’ personal characteristics: When GSAs were first initiated, memberships were often largely heterosexual and white (Garcia-Alonso, 2004; Herdt et al., 2006), which may have created a space that was not equally safe or inclusive to students of color and LGBTQ students (Fetner et al., 2012; McCready, 2001).

In one of the earliest studies of GSA members conducted more than a decade ago (Herdt et al., 2006), a group of students reported on the “whiteness of GSAs.” Students of color reportedly felt unwelcome and less safe in GSAs (Herdt et al., 2006). In addition, because participation involves visible activities in a student’s peer network, membership in a GSA may be risky to LGBTQ youth who are not “out” to people around them (Herdt et al., 2006). Further, an early study among urban queer youth showed important racial/ethnic segregation in school club activities, including the GSA—the membership was predominantly white and female. Queer students of color in this study reported being surveilled by heterosexual students of color and it felt unsafe to these students to join GSA activities. Thus, GSAs may inadvertently push out youth, or disregard experiences, for those who have a racial identity that is different from a predominantly white membership (McCready, 2004) or for LGBTQ youth who are not “out” to their peers (Herdt et al., 2006). Although both studies are dated and specific to GSA membership, it is possible that the presence of a GSA also has differential associations with outcomes by race/ethnicity and sexual orientation or gender identity.

We assume that although GSAs might help create a positive school environment, beyond their membership, in which it becomes easier for students to find what they might desire or need, that the availability of resources might differ for students by racial/ethnic minority status and LGBTQ-status. Thus, the fit between what students desire and what is available in a school environment becomes relevant (Calzo et al., 2020). Research looking at GSA membership and race/ethnicity shows important differences. For example, racial/ethnic minority GSA members report attending meetings less frequently and receiving less social support from the GSA (Poteat, Yoshikawa, et al., 2015), and they report less engagement in the GSA than white youth (Poteat et al., 2016). In contrast, gender minority (transgender/gender-queer) students report *greater* engagement in GSAs than cisgender females, and sexual minority students report receiving *more* support, more socializing from GSAs, and greater engagement than heterosexual students (Poteat et al., 2016).

To our knowledge, there are currently two studies that examined whether the presence of a GSA was differentially associated with outcomes for LGBTQ and racial/ethnic minority students. In a large SGM sample, the association between GSA presence and higher school

belonging was similar for non-Hispanic white and racial/ethnic minority students, and across various sexual and gender identities (Fischer, 2011). In a school-based sample from Wisconsin, the association between GSA presence and lower truancy, smoking, alcohol use, and suicide attempts was stronger for LGBTQ students (Poteat et al., 2013). These two studies highlight that the presence of GSAs was associated with better outcomes, but that the strength of these associations for minority students may be dependent on the outcome.

## Current Study

In the current study, we examine differences in student school functioning, substance use, and mental health for students in schools with and without GSAs, as well as the association with the number of years GSAs have been in school. Based on previous work, we hypothesize that students in schools with GSAs report better school functioning, lower substance use, and better mental health than students in schools without GSAs. For students in schools with GSAs, we hypothesize that a longer duration of a GSA's presence in a school is related to better school functioning, lower substance use, and better mental health. Further, we explore whether these associations differ by racial/ethnic minority status and LGBTQ-status.

## Method

### Procedure and Participants

The current study utilizes the 2013–2015 California Healthy Kids Survey (CHKS;  $N = 910,885$ ) as well as registration data of GSA presence in California from the Gender and Sexuality Alliance Network (formerly Gay-Straight Alliance Network). The CHKS is conducted in middle and high schools across California, and administered by WestEd to track health risks and resilience among youth (Austin et al., 2014). All parents and participants gave informed consent, and each student's participation was voluntary and anonymous. As recommended by WestEd, youth whose response validity were questionable were excluded. Exclusion of these youth was based on meeting two or more criteria related to inconsistent responses (e.g., never using a drug and use in the past 30 days, exaggerated drug use, using a fake drug, and answering dishonestly to all or most of the questions on the survey (Austin et al., 2013). Based on these criteria 1.7% of youth were excluded from the current analyses.

In total, the analytic sample comprises 895,218 students (age range 10–18) enrolled in grades 6 through 12, or ungraded, across 2,641 schools. Slightly less than one-half of respondents identified as male (49.5%), 50.5% identified as female. Respondents were asked about their ethnic and racial background: Over half (51.3%) of respondents reported being Hispanic or of Latino origin. In addition, 24.1% identified as white non-Hispanic, 13.4% as Asian, 2.4% as Native Hawaiian or Pacific Islander, 5.4% as Black or African American, 4.7% as American Indian or Alaska Native, and 42.0% as "Mixed race."

## Measures

**School functioning.**—School climate was assessed with 14 items about school belongingness, teacher-student relationships, and meaningful participation ( $\alpha = .89$ ). An

example item is “I feel close to people at this school” (1 = *Strongly disagree*, 5 = *Strongly agree*). Grades were assessed with the following item: “During the past 12 months, how would you describe the grades you mostly received in school” (1 = *Mostly A’s*, 8 = *Mostly F’s*). Truancy was assessed with the item: “During the past 12 months, about how many times did you skip school or cut classes” (1 = *0 times*, 6 = *more than once a week*). Bias-based bullying was assessed with the following prompt: “During the past 12 months, how many times on school property were you harassed or bullied for any of the following reasons?” Type of bias-based bullying that was presented includes: because you are gay or lesbian or someone thought you were (1 = *0 times*, 4 = *4 or more times*).

**Substance use.**—Lifetime alcohol use and smoking was assessed with two single items: “During your life, how many times have you used the following substances? A whole cigarette; One full drink of alcohol (such as a can of beer, glass of wine, wine cooler, or shot of liquor)” (1 = *0 times*, 6 = *7 or more times*).

**Mental health.**—Whether youth had depressive symptoms was assessed with a single item: “During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more that you stopped doing some usual activities?” (0 = *no*, 1 = *yes*). Whether youth had seriously considered suicide was assessed with the item: “During the past 12 months, did you ever seriously consider attempting suicide?” (0 = *no*, 1 = *yes*).

**GSA presence.**—GSA Network maintains a registry of GSAs in schools in California (not membership of individual students). According to this registry, a total of 523 schools (19.8%) represented in the 2013–2015 CHKS had a GSA (0 = *not present*, 1 = *present*). Based on the date of their registration we assessed how many years the GSA had been present in the school in 2015 (min = 0.2, max = 15.7 years). See Table S1 for an overview of student and school characteristics in schools with or without GSAs.

**Sexual and gender identity.**—Students were asked about their sexual and gender identity with the following item: “Which of the following best describes you?” With answer options: *Heterosexual (straight)*, *Gay or Lesbian or Bisexual*, *Transgender*, *Not sure*, or *Decline to respond*. For focal analyses, we compare youth who *only* reported being Heterosexual (non-LGBTQ = 1) to youth who reported being Gay or Lesbian or Bisexual, Transgender, or Not sure, or any other composition of identities (LGBTQ = 0).

**Race and ethnicity.**—Students were asked whether they were “Hispanic or of Latino origin.” With answer options *Yes* or *No*. Students were also asked, “What is your race?” With answer options: *American Indian or Alaska, Asian, Black or African American, Native Hawaiian or Pacific Islander, White*, or *Mixed (two or more) races*. For focal analyses, students were stratified by non-Hispanic white (those who self-identified as white *and* reported not being Hispanic or of Latino origin; = 1) and students of color (= 0).

**Control variables.**—At the student level we included self-reported age and sex (0 = female, 1 = male). At the school level, school student body size, the percentage of dropout, years of teacher experience, and the percentage of students of color were obtained from

the California Department of Education for the year 2014–2015 (<http://www.ed-data.org/Comparisons?compType=School>).

## Analysis Plan

To account for the nested structure of the data (students nested in schools), we used mixed (logistic) regression analyses with robust standard errors in Stata version 14.0 to analyze associations between GSA presence and duration at the school-level and outcomes at the student-level. The variables for sexual orientation and gender identity and race/ethnicity were dichotomized for all focal analyses. For sensitivity analyses, we conducted the analyses for five larger racial/ethnic subgroups and compared findings to non-Hispanic white students. Further, we compared LGB, unsure, and transgender students to those who did not endorse these identity labels.

First, to assess whether student's racial/ethnic minority status or LGBTQ-status was associated with positive outcomes, we included student's LGBTQ-status, racial/ethnic minority status, GSA presence, and student age and sex, as well as school-level student body size, percentage dropout, teacher experience, and percentage of students of color into our regression models. For the models on the duration of GSA presence, we included the same variables and the number of years a GSA had been present (instead of GSA presence). Regression coefficients of focal analyses were transformed to standardized betas to aid the interpretation of results (Hox, 2010), and are presented in Table S2. To assess moderation by racial/ethnic minority status and LGBTQ-status, we included two interaction terms: racial/ethnic minority status  $\times$  GSA presence [or] duration of GSA presence and LGBTQ-status  $\times$  GSA presence [or] duration of GSA presence (one at a time) into our regression models. A final model with a three-way interaction term (GSA  $\times$  Racial/ethnic minority status  $\times$  LGBTQ-status; including all lower-order two-way interactions) tested possible differential associations for LGBTQ youth of color.

## Results

Table 1 shows descriptive statistics for the key variables (school functioning, mental health, and substance use) for the overall sample, and by LGBTQ-status and racial/ethnic minority status.

Findings in Table 2 show that students in schools with GSAs reported better school climate ( $B = .03$ ,  $SE = .01$ ,  $p = .013$ ), lower truancy ( $B = -.20$ ,  $SE = .02$ ,  $p < .001$ ), better grades ( $B = -.25$ ,  $SE = .03$ ,  $p < .001$ ), lower bullying based on sexual orientation ( $B = -.03$ ,  $SE = .01$ ,  $p < .001$ ), lower likelihood of depressive symptoms ( $OR = 0.90$ , 95% CI[0.87, 0.94]) and suicidality ( $OR = 0.86$ , 95% CI[0.82, 0.90]), and lower lifetime alcohol use ( $B = -.24$ ,  $SE = .03$ ,  $p < .001$ ) and smoking ( $B = -.31$ ,  $SE = .03$ ,  $p < .001$ ), than students in schools without GSAs. Standardized regression coefficients are presented in Table S2.

Students in schools that had a GSA in their school for a longer period of time reported better grades ( $B = -.02$ ,  $SE = .00$ ,  $p < .001$ ), lower truancy ( $B = -.00$ ,  $SE = .00$ ,  $p = .028$ ), and lower bullying based on sexual orientation ( $B = -.00$ ,  $SE = .00$ ,  $p < .001$ ). Students in schools that had a GSA in their school for a longer period of time also had a lower



likelihood of depressive symptoms ( $OR = .99$ ,  $95\%CI[.98, .99]$ ) and suicidality ( $OR = 0.98$ ,  $95\%CI[0.98, 0.99]$ ), as well as lower lifetime smoking ( $B = -.01$ ,  $SE = .00$ ,  $p < .001$ ). The duration of a GSA presence was not significantly related to school climate ( $B = .00$ ,  $SE = .00$ ,  $p = .150$ ) and lifetime alcohol use ( $B = -.00$ ,  $SE = .00$ ,  $p = .214$ ). Standardized regression coefficients are presented in Table S2.

### Moderation by Race/Ethnicity

Tests of moderation of racial/ethnic minority status showed no significant differences in the presence of a GSA and students' reports of school climate ( $B = .01$ ,  $SE = .01$ ,  $p = .201$ ), grades ( $B = -.00$ ,  $SE = .04$ ,  $p = .907$ ), truancy ( $B = .00$ ,  $SE = .01$ ,  $p = .962$ ), and bullying due to sexual orientation ( $B = .00$ ,  $SE = .01$ ,  $p = .957$ ). However, for students of color, the presence of a GSA was differentially associated with depressive symptoms ( $OR = .93$ ,  $95\%CI[.89, .96]$ ), suicidality ( $OR = .91$ ,  $95\%CI[.87, .95]$ ), lifetime alcohol use ( $B = .11$ ,  $SE = .02$ ,  $p < .001$ ) and lifetime smoking ( $B = -.05$ ,  $SE = .02$ ,  $p = .011$ ). Of note, the model on student grades did not converge when school-level percentage of students of color in school was included in the model—this variable was omitted from the model. The model on lifetime alcohol use also did not converge using robust standard errors [vce(robust)]—this statement was omitted from the model.

The longer a GSA had been present in a school was not differentially associated with outcomes for non-Hispanic white youth and youth of color with one exception: lifetime alcohol use ( $B = .03$ ,  $SE = .00$ ,  $p < .001$ ). Students in schools with a GSA for a longer period of time reported lower lifetime alcohol use, but these associations were weaker for students of color compared to non-Hispanic white students. Overall, these results show a general pattern of a protective role of GSA presence and longer duration but that the protective associations between GSA presence and mental health and substance use were stronger for non-Hispanic white students compared to students of color (see Figure 1ab for an illustrations of two of these interaction effects).

**Sensitivity analyses.**—We also examined differences in school functioning, substance use, and mental health for students in schools with and without GSAs for several larger racial/ethnic subgroups in the CHKS: multiracial students, Black or African American students, Asian students, and American Indian or Alaska Native students compared to non-Hispanic white students; and students who were Hispanic or of Latino origin compared to those who were not. Overall, findings confirm the racial/ethnic minority status findings: For multiracial students, Black or African American students, and American Indian or Alaska Native students, the presence of a GSA was differentially related to lifetime smoking, suicidality, and depressive symptoms—the associations between GSA presence and these outcomes were weaker for multiracial students, Black or African American students, and American Indian or Alaska Native students compared to non-Hispanic white students. For American Indian or Alaska Native students, GSA presence was less strongly related to truancy and grades, compared to non-Hispanic white students. For Asian students, GSA presence was more strongly related to suicidality, but less strongly related to lifetime alcohol use, compared to non-Hispanic white students.

For students who were Hispanic or of Latino origin, GSA presence was differentially related to bullying based on sexual orientation, school climate, truancy, depressive symptoms, suicidality, and lifetime smoking—the associations between GSA presence and these outcomes were stronger for students who were *not* Hispanic or of Latino origin compared to students who were Hispanic or of Latino origin. For student grades, the regression model including the interaction term for Hispanic or Latino origin did not converge. For this outcome, we conducted two separate regression analyses, including GSA presence, for students who were Hispanic or of Latino origin and students who were not Hispanic or of Latino origin. The results showed that, for both groups, GSA presence was associated with better grades, but the association was stronger for students who were not Hispanic or of Latino origin.

### Moderation by LGBTQ-Status

Regarding LGBTQ-status, there were no group differences in the associations between GSA presence and suicidality ( $OR = 0.97$ , 95%CI[0.93, 1.01]), lifetime alcohol use ( $B = .02$ ,  $SE = .02$ ,  $p = .368$ ), smoking ( $B = .03$ ,  $SE = .02$ ,  $p = .123$ ), and bullying based on sexual orientation ( $B = .01$ ,  $SE = .02$ ,  $p = .550$ ). However, for LGBTQ students, the presence of a GSA was differentially related to school climate ( $B = .03$ ,  $SE = .01$ ,  $p = .001$ ), grades ( $B = -.09$ ,  $SE = .02$ ,  $p < .001$ ), and truancy ( $B = -.04$ ,  $SE = .02$ ,  $p = .016$ ), and depressive symptoms ( $OR = 0.95$ , 95%CI[0.91, 0.99]). The duration of a GSA's presence in school was also differentially related to bullying based on sexual orientation for LGBTQ students ( $B = .01$ ,  $SE = .00$ ,  $p = .003$ ), lifetime alcohol use ( $B = .01$ ,  $SE = .00$ ,  $p = .040$ ), and suicidality ( $OR = 1.01$ , 95%CI[1.00, 1.01]). Overall, having a GSA in school for a longer period of time was associated with lower bullying, lifetime alcohol use, and suicidality, but less so for LGBTQ students. The interaction patterns show that the associations between GSA presence and school functioning are weaker for LGBTQ students (see Figure 2ab for an illustration of these interaction effects).

**Sensitivity analyses.**—To examine differences for students across sexual and gender identities, we conducted analyses based on youth's identities as lesbian, gay, bisexual (LGB), unsure, or transgender—because students were able to choose several of these response categories, the comparison group includes all others who did not select this response category. Overall, the associations between GSA presence and truancy, school climate, suicidality, and depressive symptoms were weaker for LGB students compared to non-LGB students. Interactions between GSA presence and Unsure or Transgender students were not significant. Finally, the test of the three-way interaction showed no significant results ( $ps > .05$ ) for LGBTQ students of color.

### Discussion

In line with previous work (e.g., Marx & Kettrey, 2016) and our hypotheses, the current study shows that, overall, students in schools with GSAs reported better school outcomes, lower substance use, and better mental health. Further, a *longer* presence of GSAs was related to better school functioning, better mental health outcomes, and lower lifetime



smoking. These findings underline the positive presence of GSAs in schools for outcomes including school functioning, substance use, and mental health.

We also assessed whether students of color and LGBTQ students benefited more or less from GSAs than non-LGBTQ students and non-Hispanic white students, respectively. Concerning mental health and substance use, we find that for students of color the presence of a GSA was associated with better outcomes, but these associations were not as strong as they were for non-Hispanic white students. Concerning school functioning, we find that although LGBTQ students had better outcomes in schools with GSAs than LGBTQ students in schools without GSAs, these associations were stronger for non-LGBTQ students. Thus, overall, the findings show that GSAs have a positive presence for all students, but the associations are stronger for mental and behavioral health for non-Hispanic white students, and for school functioning for non-LGBTQ students.

As previous research suggests, an explanation for the differential associations between GSA presence and outcomes for students of color and LGBTQ students may lie in the function that GSAs have (Poteat et al., 2017). It may be that for students of color and LGBTQ students, needs and desires in a school environment do not “fit” what is currently available (Calzo et al., 2020). For example, a GSA may not be perceived as a safe space by students of color or LGBTQ students, or students who in some other way are different from the majority of GSA members (Fetner et al., 2012; McCready, 2001). In addition, research on bullying and school climate shows that in schools where bullying rates decrease, some students are persistently bullied and for them the negative effects may be even larger because they are a minority in their school—“the healthy context paradox” (Huitsing et al., 2019).

This study indicates that for majority (non-Hispanic white, non-LGBTQ) students, associations with outcomes were stronger compared to students who are most at risk of exclusion and negative outcomes (i.e., students of color and LGBTQ students). These findings suggest that the positive effects of the presence of a GSA may be strongest for majority students who are already advantaged. Given that GSAs function in various ways and address both sexuality and gender-specific causes, but also acceptance of diversity and general school climate, it should not be surprising that all students—perhaps especially those with most advantage—benefit from their presence.

Although our findings are encouraging—students in schools with GSAs report better school functioning, lower substance use, and better mental health—further studies should examine the different roles GSAs may play in promoting positive school climates, and who benefits from GSA’s presence, membership, and participation.

### **Limitations and Suggestions of Future Research**

There are several limitations to note. First, because we only assessed GSA presence, we cannot directly compare the experiences of GSA members and non-members in schools with GSAs. Second, although having a large and ethnically diverse sample of adolescents from California enabled us to examine group differences in a way that other studies have not, we do not know whether the current findings generalize to other states and in places with different racial/ethnic diversity. In addition, we were unable to reflect on the complexity,

development, and meaning of racial/ethnic, sexual, and gender identities. Further, because the item to assess sexual orientation and gender identity included sexual orientation and gender identity labels within a single question (marking all that apply), we were limited in examining sexual orientation *and* gender identity. It is unclear, for example, whether students who selected the option “unsure” felt unsure about their sexual orientation or their gender identity. Third, although GSAs are clearly linked to better outcomes for students, effect sizes appear to be small in magnitude and we were limited to the use of several single-item measures in a cross-sectional design. Further, we were unable to include some important confounders, such as knowledge of GSA presence, GSA membership, and GSA activities. We must, therefore, look at these associations with caution. Finally, by controlling for several important school-level covariates (Baams et al., 2018; Fetner & Kush, 2008; Poteat et al., 2013), we aimed to reduce the issue of selection bias. However, it is still possible that students in schools with an already positive and open school climate are more likely to initiate a GSA.

For future research, it will be important to examine students’ experiences in schools with GSAs and as members in GSAs, with attention to how such experiences differ across race and ethnicity, and across sexual and gender identities. For example, we currently know very little about students’ motivations to join GSAs and about how GSAs might function for non-members. In addition, little attention is paid to the mechanisms through which heterosexual, cisgender students benefit from the presence or membership of GSAs, and help to co-create safer school climates. Attention to the development of resilience and advocacy work in GSAs or in schools with GSAs might also highlight ways that GSAs may strengthen the benefits for students of color, LGBTQ students, and LGBTQ students of color.

## Conclusion

The current study supports previous findings on the positive presence of GSAs in schools for student school functioning, substance use, and mental health. However, the current study also shows that results for school functioning are stronger for non-LGBTQ students, and results for substance use and mental health are stronger for non-Hispanic white students. Future research on both the meaning and function of GSAs in schools, as well as the diversity of GSAs across schools, will illuminate how and in what ways GSAs may benefit all students, especially those who are most marginalized.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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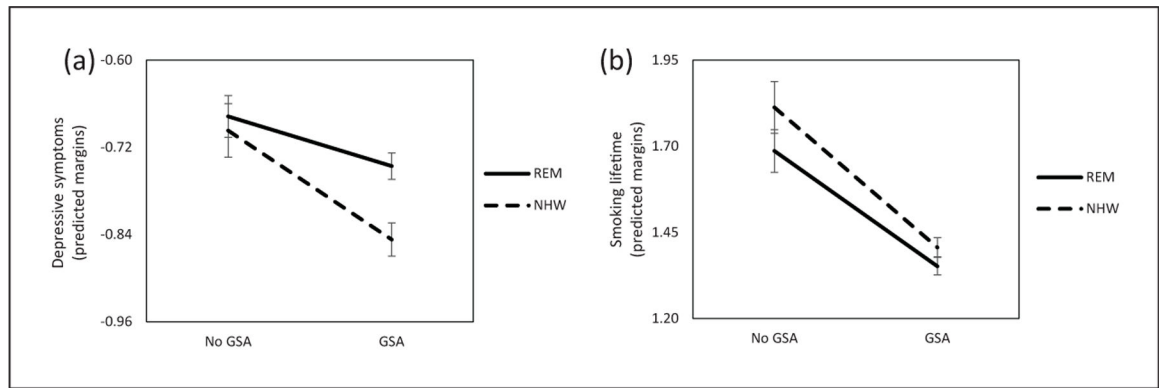
**Stephen T. Russell** is a priscilla pond flawn regents professor in Child Development at the Human Development and Family Sciences and Population Research Center at the University of Texas at Austin. He studies adolescent development, with an emphasis on adolescent sexuality, LGBT youth, and parent-adolescent relationships.

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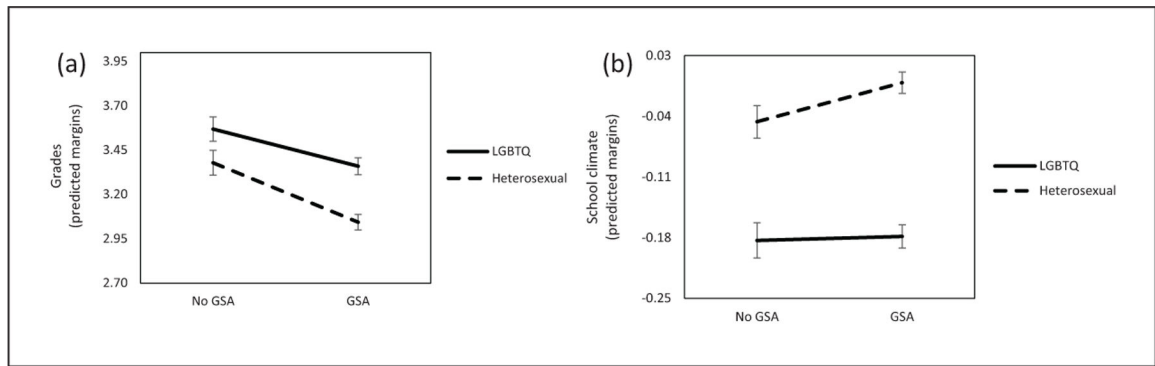
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**Figure 1ab.**

Interaction GSA  $\times$  Race/ethnicity for depressive symptoms predictive margins (left) and smoking predictive margins (right). REM = Racial Ethnic Minority, NHW = Non-Hispanic White.





**Figure 2ab.**  
Interaction GSA  $\times$  LGBTQ-status for grades (left) and school climate (right).

**Table 1.**

Descriptive Statistics for Key Variables.

	Full sample	LGBTQ students	Non-LGBTQ students	Students of color	Non-Hispanic white students
Variable (range)	<i>M</i> ( <i>SD</i> ) / %	<i>M</i> ( <i>SD</i> ) / %	<i>M</i> ( <i>SD</i> ) / %	<i>M</i> ( <i>SD</i> ) / %	<i>M</i> ( <i>SD</i> ) / %
School climate (standardized <i>z</i> -score)	0.00 (0.65)	-0.08 (0.68)	0.02 (0.64)	-0.03 (0.64)	0.14 (0.65)
Grades (1, 8)	3.10 (1.79)	3.25 (1.88)	3.04 (1.75)	3.23 (1.81)	2.58 (1.60)
Truancy (1, 6)	1.77 (1.23)	1.90 (1.37)	1.74 (1.20)	1.80 (1.26)	1.66 (1.12)
Bullying sexual orientation (1, 4)	1.17 (0.60)	1.54 (1.00)	1.10 (0.46)	1.16 (0.59)	1.18 (0.62)
Depressive symptoms (0 = no, 1 = yes)	30.12%	44.06%	27.96%	30.86%	27.63%
Suicidality (0 = no, 1 = yes)	18.52%	37.29%	15.32%	18.64%	18.13%
Alcohol lifetime (1, 6)	2.10 (1.83)	2.34 (1.96)	2.10 (1.83)	2.08 (1.81)	2.20 (1.92)
Smoking lifetime (1, 6)	1.35 (1.13)	1.61 (1.45)	1.30 (1.05)	1.34 (1.10)	1.40 (1.25)

*Note.* Sample sizes for the full sample ranged from  $N = 555,107$  (suicidality) to  $N = 882,820$  (school climate). Sample sizes for the LGBTQ sample ranged from  $N = 69,955$  (suicidality) to  $N = 115,524$  (school climate). Sample sizes for the non-LGBTQ sample ranged from  $N = 430,606$  (suicidality) to  $N = 610,816$  (school climate). Sample sizes for the students of youth of color ranged from  $N = 428,127$  (suicidality) to  $N = 685,774$  (school climate). Sample sizes for the non-Hispanic white students ranged from  $N = 118,771$  (suicidality) to  $N = 179,220$  (school climate).

**Table 2.**

Multilevel Models of GSA Presence and School Functioning, Substance Use, and Mental Health.

	<u>School climate</u>	<u>Grades</u>	<u>Truancy</u>	<u>Bullying sexual orientation</u>	<u>Depressive symptoms</u>	<u>Suicidality</u>	<u>Alcohol lifetime</u>	<u>Smoking lifetime</u>
	B	B	B	B	OR [95%CI]	OR [95%CI]	B	B
GSA presence in the school								
GSA present	.03 *	-.25 ***	-.20 ***	-.03 ***	.90 [.87, .94]	.86 [.82, .90]	-.24 ***	-.31 ***
Racial/ethnic minority status <sup>a</sup>	.12 ***	-.40 ***	-.06 ***	.02 ***	.91 [.89, .93]	.94 [.92, .96]	.10 ***	.07 ***
LGBTQ-status <sup>b</sup>	.16 ***	-.34 ***	-.27 ***	-.60 ***	.41 [.40, .41]	.29 [.29, .30]	-.42 ***	-.46 ***
Number of years GSA has been present in the school [min = 0.2, max = 15.7 years]								
Duration (# of years)	.00	-.02 ***	-.00 *	-.00 ***	.99 [.98, .99]	.98 [.98, .99]	-.00	-.01 ***
Racial/ethnic minority status <sup>a</sup>	.12 ***	-.40 ***	-.06 ***	.02 ***	.90 [.88, .92]	.92 [.90, .94]	.12 ***	.05 ***
LGBTQ-status <sup>b</sup>	.17 ***	-.36 ***	-.28 ***	-.60 ***	.40 [.39, .41]	.29 [.28, .30]	-.42 ***	-.45 ***

*Note.* Total number of schools = 2,641 (895,218 students); number of schools with GSA = 523 (437,752 students). All models included student level: age and sex (0 = female, 1 = male), and school level: student body size, percentage dropout, teacher experience, and percentage of students of color.

<sup>a</sup> 0 = students of color, 1 = non-Hispanic white students

<sup>b</sup> 0 = LGBTQ students, 1 = heterosexual.

\*  $p < .05$ ,

\*\*  $p < .005$ ,

\*\*\*  $p < .001$ .