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Gender-Sexuality Alliances as a Moderator of the Association between Victimization, Depressive Symptoms, and Drinking Behavior among LGBTQ+ Youth

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Abstract

Background: Victimization and depression are major stressors underlying drinking behavior among LGBTQ+ youth. There remains limited attention to setting-level factors that buffer their effects. Gender-Sexuality Alliances (GSAs) are school clubs that could promote the health of LGBTQ+ youth. We consider whether their presence in schools moderates associations between victimization, depressive symptoms, and recent alcohol use and heavy episodic drinking.

Methods: LGBTQ+ youth (n = 5,776) ages 13-17 in all 50 U.S. states with any prior history of alcohol use reported past 30-day alcohol use and heavy episodic drinking, victimization, depressive symptoms, and covariates including recent mental health counseling, perceived school safety, and demographics. Logistic regression models predicted youth's likelihood of any recent drinking and any heavy episodic drinking, with attention to GSA × victimization and GSA × depressive symptoms interaction effects.

Findings: GSA presence moderated the extent to which victimization and depressive symptoms were associated with greater odds of recent heavy episodic drinking. GSA presence did not moderate these associations for lower thresholds of drinking (i.e., any drinking).

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Contributors

V.P.P. conceived of the study, conducted the analyses, and drafted the manuscript; J.N.F. participated in drafting and editing the manuscript and interpreting the findings; R.J.W. also participated in editing the manuscript and interpreting the findings. All authors read and approved the final manuscript.

Declaration of Competing Interest

Authors report no conflict of interest

Conclusion: For LGBTQ+ youth with any lifetime history of alcohol use, GSAs could protect against heavy alcohol use, particularly when they face victimization and depression. GSAs may provide them with social-emotional support or educate school health professionals on ways to support LGBTQ+ youth facing victimization or mental health concerns. GSAs may not protect against all drinking behavior because youth may view some levels as normative. Our findings begin to suggest for whom GSA presence could be most protective.

Keywords

LGBTQ youth; discrimination; depression; GSA; alcohol use

1. Introduction

Despite general declines in alcohol use among adolescents, sexual and gender minority youth (e.g., lesbian, gay, bisexual, transgender, or queer youth; LGBTQ+) continue to report higher rates of recent alcohol use and heavy episodic drinking than their heterosexual and cisgender peers (Day et al., 2017; Fish et al., 2019; Johns et al., 2018, 2019a). In some cases, these disparities are widening (Fish et al., 2017), and recent findings suggest that they are present by the age of 12 (Fish et al., 2021). These early and persistent experiences with alcohol use leave LGBTQ+ youth vulnerable to later alcohol use disorders and comorbidities (Fish & Exten, 2019; Schulenberg et al. 2016).

Minority stress models identify discrimination as a major social determinant of health risk behaviors, including alcohol use (Hatzenbuehler & Pachankas, 2016). Among LGBTQ+ youth, greater victimization is associated with a heightened risk of alcohol use and misuse (Goldbach et al., 2014; Huebner et al., 2015; Newcomb et al., 2012). Victimization is also associated with greater depressive symptomatology (Baams et al., 2018; Mallory & Russell, 2021; Mustanski et al., 2016). The comorbidity of depression and alcohol use is concerning, as both are tied to greater risk of suicide (Amiri & Behnezhad, 2020; Carton et al., 2018; Perez et al., in press).

Although researchers have focused on drivers of drinking behavior among LGBTQ+ youth (e.g., victimization, depression), they have given less focus to factors that mitigate the effects of these stressors (Mereish, 2019). Protective factors could buffer the extent to which distal and proximal stressors—discrimination and depression, respectively—are associated with drinking behavior. Minority stress models note that social environments can provide support to promote LGBTQ+ youth's resilience in the face of these stressors (Goldbach & Gibbs, 2017). Identifying factors that buffer the effects of stressors could inform prevention and intervention strategies to counteract their effects among LGBTQ+ youth.

Protective factors can exist within specific settings. We attend here to the school setting. Although many LGBTQ+ youth experience hostility in this setting, schools are also one wherein they can access affirming resources (Johns et al., 2019b). Gender-Sexuality Alliances (GSAs) are among these resources that could promote the health and safety of LGBTQ+ youth. We give focus to how GSAs may protect against recent alcohol use and heavy episodic drinking.

GSAs are school clubs for LGBTQ+ youth and allies, now present in about 38% of U.S. secondary schools (CDC, 2019). They provide opportunities for support and advocacy and awareness-raising around LGBTQ+ issues (Griffin et al., 2004). For instance, GSAs may host school-wide events like Day of Silence, International Transgender Day of Visibility, Youth Pride, or Solidarity Week (GLSEN, 2021; Poteat et al., 2018). They also advocate for LGBTQ+ inclusive school policies and practices such as enumerated anti-bullying policies and using inclusive curricula (Mayberry et al., 2013; Mayo, 2015).

There has been increased attention to GSA presence in relation to youth's health. Youth in schools with GSAs report greater perceived safety and school belonging than youth in schools without GSAs (Davis et al., 2014; Marx & Kettrey, 2016; Walls et al., 2010). The evidence is mixed, however, on whether GSA presence is associated with certain health risks, including substance use (often indicated by smoking, drinking, or illicit drug use). Some studies have found that GSA presence is associated with less substance use among students in these schools (Baams & Russell, 2021; Heck et al., 2013; Poteat et al., 2013), whereas others have not (Toomey et al., 2011; Walls et al., 2013).

With respect to drinking behavior, GSA presence may be important principally for youth who have actually used alcohol in the past. Youth with no history of ever using alcohol may be less inclined to drink in general, whether in social situations or as a coping strategy, regardless of GSA presence. In contrast, among youth who have a past history of alcohol use, GSA presence could protect against current drinking behavior, especially for those experiencing major stressors (e.g., victimization or depression) that could otherwise exacerbate current drinking behavior. For this reason, we focus on how GSA presence may relate to alcohol use for LGBTQ+ youth who have reported a past history of any alcohol use.

We consider whether GSA presence moderates the association between victimization and recent alcohol use and heavy episodic drinking. Some LGBTQ+ youth drink to cope in response to discrimination (Hatzenbuehler, 2009; Mereish, 2019). However, the association between victimization and drinking may be weaker for LGBTQ+ youth in schools with GSAs. GSAs may provide a substance-free setting for victimized LGBTQ+ youth to solicit support and to learn and practice other healthy coping strategies (Murchison et al., 2021). GSAs also may promote more LGBTQ+-affirming peer norms and supportive adult responses to bullying in their schools that could benefit LGBTQ+ youth, regardless of whether they are GSA members. Such GSA efforts may dampen an otherwise significant association between victimization and drinking behavior.

We also consider whether GSA presence moderates the association between depressive symptoms and drinking behavior. GSAs may moderate this association through their provision of support to LGBTQ+ youth and their broader advocacy to promote safe and affirming school climates (Mayberry et al., 2013; Mayo, 2015; Poteat et al., 2018). From these GSA efforts, LGBTQ+ youth in these schools who are experiencing depressive symptoms may feel more comfortable approaching school health professionals for support or outside referrals. They may also learn coping strategies for their depressive symptoms that could supplant potentially heavier alcohol use. Consequently, the association between

depressive symptoms and drinking behavior may be weaker for LGBTQ+ youth in schools with GSAs relative to those in schools without GSAs.

We also adjust for several covariates. First, we consider whether youth have received any recent mental health counseling. Psychotherapy can protect against alcohol misuse and its underlying risk factors such as depression (Kang et al., 2019; Steele et al., 2020). Second, we consider perceived school safety. Greater perceived school safety and positive climate are associated with lower alcohol use for LGBTQ+ youth (Coulter et al., 2016). Youth in schools without GSAs could still perceive their schools as relatively safe due to other policies and practices in place that guard against alcohol use. Third, we attend to age, as some findings show developmental increases in alcohol use among LGBTQ+ youth (Fish et al., 2021; Newcomb et al., 2012). Finally, we consider other demographic factors, including caregiver highest education (a proxy for socioeconomic status), and youth's specific sexual orientation, gender identity, and race/ethnicity. Prior findings have identified some variability in youth's drinking behavior across specific sexual orientation, gender, and racial groups and in relation to socioeconomic status (De Pedro et al., 2017; Feinstein et al., 2019; Newcomb et al., 2012).

2. Method

2.1 Participants and Procedure

Participants included 5,776 LGBTQ+ youth in all 50 U.S. states who participated in a larger national survey project, [the LGBTQ National Teen Survey], between April and December of 2017. Sample demographics are in Table 1. Youth could participate in the project who were 13-17 years of age and living in the United States. Youth were recruited through a number of social media outlets (e.g., Twitter, Facebook) and organizations (e.g., posts on the Human Rights Campaign blogs and website), and community-based organizations (e.g., Youth Link, Trevor Project, Advocates for Youth, Planned Parenthood, and Big Brother / Big Sisters). The recruitment strategy was designed to reach youth through social media and youth who visited and interacted with youth-serving organization in person. The survey design prevented bots from completing it, and data were screened for unreliable or questionably valid responses. Youth took an average of 28 minutes to complete it. A waiver of parent consent was granted to avoid the risk of outing youth to caregivers, a practice recommended in LGBTQ+ research to ensure youth's safety and guard against unrepresentative samples (Newcomb et al., 2016). Youth assented to participate. All procedures were approved through the host institution's IRB.

Our current sample was based on several criteria. Because we focused on the protective role of GSA presence in schools for LGBTQ+ youth with any prior history of alcohol use, we did not include youth who reported that they were either not in school or were in college (n = 516), or youth who reported they had never used alcohol in their lifetime (n = 4,754) or did not respond to this screener (n = 921). The total proportion of missing data in the final sample was 2.3%, ranging from 0% to 8% across our measures; nearly all participants had no missing data (89.7%). However, the data were not missing completely at random (χ^2 = 147.28, df = 82, p < .001). Therefore, we analyzed our data using full information maximum likelihood (FIML) to include all participants rather than use listwise deletion.

2.2 Measures

2.2.1 Demographic characteristics—Youth reported their age, race or ethnicity, sexual orientation, and gender identity, and caregiver highest educational attainment (see Table 1). Gender identity was based on youth's combined responses to two items, one which asked their gender identity (*male, female, transgender male/boy, transgender female/girl, non-binary, genderqueer*, or an optional write-in response) and one which asked their sex assigned at birth (*male, female*). The combined responses yielded the groups reported for demographic purposes. In the analyses, boys (which included cis- and trans-identified boys) served as the reference group, with two other groups formed for girls (cis- and trans-identified girls) and non-binary youth.

2.2.2 Other covariates—Youth reported receipt of recent mental health counseling in the question, "In the past 12 months, have you received psychological or emotional counseling?" Response options were *yes, no*, or *don't know*, which we coded as 0 (*no/don't know*) or 1 (*yes*). Youth also reported their perceived sense of school safety across eight items referencing specific locations: classrooms, bathrooms, locker rooms, hallways, the library, cafeteria, outside on school grounds, and getting to and from school. Response options ranged from 0 (*never*) to 4 (*always*). Higher average scores represented greater perceived school safety (α = .91).

2.2.3 Victimization—Youth responded to three items on whether they had experienced bullying on school property, outside of school property, and electronically, with response options of 0 (*no*) or 1 (*yes*), from which we created a summed score. Higher scores indicated experiencing bullying with greater ubiquity.

2.2.4 Depressive symptoms—Youth completed a 10-item version of the 11-item Kutcher Adolescent Depression Scale (we omitted the item on suicidality; Brooks et al., 2003), which asked if they had experienced a range of symptoms over the past week (e.g., low mood, irritability, sleeping difficulties, hopelessness). We omitted the suicidality item because of the waiver of parental consent obtained from the IRB. Response options were *hardly ever*, *much of the time*, *most of the time*, and *all of the time* (scored 0 to 3). Higher average scale scores represented greater depressive symptoms (α = .87).

2.2.5 Drinking behavior—In an initial screener item, youth reported whether they had ever had at least one drink of alcohol in their lifetime. Among those who had, they were prompted with two additional items asking them about recent alcohol use and heavy episodic drinking. The item for recent alcohol use was, "During the past 30 days, on how many days did you have at least one drink of alcohol?" The item for heavy episodic drinking was, "During the past 30 days, on how many days did you have five or more drinks of alcohol in a row, that is, within a couple of hours?" Response options for both items were *0 days*, *1 or 2 days*, *3 to 5 days*, *6 to 9 days*, *10 to 19 days*, *20 to 29 days*, and *all 30 days* (scored 0 to 6). Due to the distribution of the responses for both items, we recoded them into binary variables of *none* (0) or *one or more days* (1).

2.3 Analytic approach

For our primary analyses, we tested logistic regression models in Mplus 8.1 (Muthen & Muthen, 2019), with maximum likelihood estimation using a logit link function and Monte Carlo integration to handle missing data. Recent alcohol use was the binary dependent variable in Model 1, and heavy episodic drinking was the binary dependent variable in Model 2. Our covariates were sexual orientation (lesbian/gay as the reference group), gender (boys as the reference group), race/ethnicity (white as the reference group), caregiver highest education, perceived school safety, and receipt of mental health counseling. We included the main effects of our focal independent variables—GSA presence, depressive symptoms, and victimization—with depressive symptom and victimization scores grand mean centered. We used the XWITH function in Mplus to create the interaction terms of *GSA* × *victimization* and *GSA* × *depression*. To probe significant interaction effects, we used the model constraint function to calculate conditional associations between depressive symptoms and likelihood of drinking based on GSA presence or absence. Likewise, we calculated the conditional association between victimization and likelihood of drinking based on GSA presence or absence.

3. Results

Descriptive information for our measures are reported in Table 1. Among our sample of LGBTQ+ youth who reported that they had ever used alcohol in their lifetime, 48% reported drinking on at least one day within the past 30 days, and 16.8% reported at least one episode of heavy drinking. A majority of youth reported victimization (58.7%), and the average depressive symptoms score ($M = 1.30$, $SD = 0.69$) corresponded most closely to the response anchor of experiencing symptoms "much of the time." Victimization and depressive symptoms were significantly associated ($r = .35$, $p < .001$). Approximately 55% of participants reported having a GSA at their school. Youth in schools with GSAs reported less ubiquitous victimization, $F(1, 4769) = 35.47$, $p < .001$, $\eta_p^2 = .01$, and lower depressive symptoms, $F(1, 4910) = 38.68$, $p < .001$, $\eta_p^2 = .01$, than youth in schools without GSAs, though effect sizes were small for both.

The results of Model 1 for recent alcohol use are reported in Table 2. While adjusting for all covariates, greater victimization was associated with greater odds of recent alcohol use (AOR = 1.246, $p < .001$), though greater depressive symptomatology was not (AOR = 1.190, $p = .07$). There was no main effect for GSA presence, and GSA presence was not a significant moderator for victimization or depressive symptoms.

The results of Model 2 for heavy episodic drinking are reported in Table 2. In this case, while adjusting for all covariates, both victimization and depressive symptoms were significantly related to greater odds of heavy episodic drinking, and GSA presence moderated these associations (AOR for *GSA* × *victimization* = 0.859, $p = .03$; AOR for *GSA* × *depression* = 0.758, $p = .01$). In probing these interactions, greater victimization was associated with greater odds of heavy episodic drinking for youth in schools without GSAs (AOR = 1.447, 95% CI [1.278, 1.637]), but less so for youth in schools with GSAs (AOR = 1.242, 95% CI [1.133, 1.362]). Similarly, greater depressive symptomatology was associated

with greater odds of heavy episodic drinking for youth in schools without GSAs (AOR = 1.531, 95% CI [1.210, 1.937]), but it was not associated with greater odds of heavy episodic drinking for youth in schools with GSAs (AOR = 1.161, 95% CI [0.950, 1.418]).

4. Discussion

GSAs are a potential protective resource for LGBTQ+ youth in schools. GSA presence moderated the extent to which two prominent distal and proximal stressors faced by LGBTQ+ youth—victimization and depression—were associated with greater odds of recent heavy episodic drinking among youth with a prior history of drinking. However, GSA presence did not moderate these associations for lower thresholds of drinking (i.e., any drinking). These findings point to GSAs as a protective factor against heavy alcohol use, particularly for LGBTQ+ youth facing victimization and depression.

Because prior GSA studies have been mixed in documenting differences in substance use based on GSA presence (Baams & Russell, 2021; Heck et al., 2013; Poteat et al., 2013; Toomey et al., 2011; Walls et al., 2013), we gave finer attention to them here. Rather than including youth in general, many who have never used alcohol, we focused on LGBTQ+ youth with at least some nominal potential for recent use (i.e., youth reporting any lifetime alcohol use). Thus, our sample and findings are not necessarily meant to represent or apply to the general LGBTQ+ youth population, but rather to those who may be at greater risk for alcohol use. We further attended to key drivers of such risk (victimization and depression; Goldbach et al., 2014; Huebner et al., 2012, 2015) and to GSA moderating effects. In doing so, our findings start to suggest for whom GSA presence could be most protective.

GSA presence moderated the extent to which more ubiquitous victimization was associated with greater odds of recent heavy episodic drinking. Given that discrimination is a major social determinant of health for LGBTQ+ youth (Goldbach & Gibbs, 2017; Hatzenbuehler & Pachankas, 2016), this finding highlights the protective role that GSAs could play for LGBTQ+ youth who otherwise could be most at risk for alcohol misuse. LGBTQ+ youth in schools with GSAs still face victimization, whether in or outside of their school. In fact, victimization differences based on GSA presence were small in size for our current sample. Still, GSA presence may have moderated the association between victimization and heavy episodic drinking because LGBTQ+ youth may have used their school's GSA as a space for support when facing victimization rather than drinking as a means to cope (Hatenbuehler, 2009; Mereish, 2019). Also, perhaps stemming from many GSAs' efforts to raise attention to bias-based bullying (GLSEN, 2021, Poteat et al., 2018), adults in schools with GSAs may have responded more effectively to LGBTQ+ youth who did report victimization, thereby dampening the association between victimization and heavy episodic drinking.

GSA presence also moderated the extent to which greater depressive symptomatology was associated with greater odds of recent heavy episodic drinking. Even while adjusting for relevant covariates such as recent mental health counseling, this moderating effect remained significant. This suggests another way in which GSA presence could play an important protective role for LGBTQ+ youth, as the comorbidity of depression and alcohol abuse is associated with greater risk of suicide (Amiri & Behnezhad, 2020; Carton et al., 2018; Perez

et al., in press). Similar to when experiencing victimization, LGBTQ+ youth experiencing elevated depressive symptoms may have used their GSA as a space for support and an alternative to heavier alcohol use as a means to cope. Also, possibly resulting from their GSA's broader efforts to promote LGBTQ+-affirming norms and practices in their school (Mayberry et al., 2013; Mayo, 2015; Poteat et al., 2018), LGBTQ+ youth in schools with GSAs may have perceived their school's health professionals as more affirming and approachable to solicit support and referrals for their depressive symptoms.

We did not identify significant main or moderating effects for GSA presence in our model for a lower threshold of any recent alcohol use. Drinking in some situations may be considered normative among youth, and not necessarily indicative of alcohol misuse or abuse (Brown et al., 2008). For instance, some youth drink in moderation at social gatherings (Brown et al., 2008). This could be the case for a number of LGBTQ+ youth in the current study—all who had reported some prior lifetime alcohol use—and who may view some level of drinking as normative. Taken with our findings for heavy episodic drinking, it appears that GSA presence may be primarily protective against more concerning levels of alcohol use, especially for LGBTQ+ youth at the greatest risk for this behavior (i.e., youth who have experienced greater victimization and depressive symptoms).

Finally, we note that greater perceived school safety and age were associated with greater odds of any alcohol use and heavy episodic drinking. The association with perceived school safety could reflect a greater propensity for social drinking, wherein LGBTQ+ youth who perceive greater safety or belonging are better able to connect and socialize with peers, a part of which could include drinking, given that our sample included LGBTQ+ youth who reported any prior lifetime alcohol use. This is similar to findings that SGM youth in states with more affirming policies are more likely to report alcohol use (Watson et al., 2021). Older youth may have had greater access to alcohol through their interactions with older peers of legal drinking age or greater likelihood of attending social events where alcohol is present, or due to lower adult monitoring with age.

Although our study highlights the potential benefits of GSA presence, it is not without limitations. First, our data are non-experimental and cannot imply causality attributable to GSA presence. GSAs are not established at random in schools. They also operate in concert with other setting-level protective factors (e.g., enumerated anti-bullying policies) to promote LGBTQ+ youth's health. As a cross-sectional study, we were constrained to focus on associations without attention to directionality. Our measures also referenced different timeframes, which further limits our ability to consider directionality with our findings. Second, the moderating effects of GSAs that we documented could vary across schools, depending on other factors such as GSA visibility, advocacy, or focus on health issues. Third, we focused on GSA presence, but could not distinguish whether youth were GSA members or consider specific discussions or efforts undertaken by their GSA that could underlie GSA effects. Although social support and advocacy are common across GSAs (Griffin et al., 2004) and some work has begun to consider these and other health-promoting mechanisms in GSAs (Poteat et al., 2020), it would be important for research to further identify ways in which GSAs protect or improve the wellbeing of students in their schools, for both members and non-members. Fourth, our data relied on youth self-report, which

could be subject to inaccuracies (e.g., knowledge of a GSA's presence). Also, our measure of depression excluded an item on suicidality in order for us to secure a waiver of parent consent. This may have limited its overall robustness as an index of depression and the mean scores may have been artificially lower as a result. Last, all participants had Internet access, and many learned about the study through social media. We may have oversampled youth who were well-connected to organizations supporting LGBTQ+ youth.

These limitations notwithstanding, we note several strengths to our study. First, rather than considering youth at large, most who have never used alcohol, we selectively focused on LGBTQ+ youth who had reported any past alcohol use and thus, in this respect, could stand to benefit more clearly from GSA presence. Second, beyond attending to simple main effects tied to GSA presence, as is common in most extant GSA research, we considered how GSA presence could moderate the associations between two prominent distal and proximal stressors that underlie drinking behavior. Third, our data come from a large national sample of LGBTQ+ youth, which advances a field often reliant upon smaller community samples. Fourth, we included several covariates in our model to offer a more rigorous test of the contribution of GSA presence over and above other relevant factors. Still, we did not consider certain covariates, such as mental health counseling, with nuance (e.g., reasons for seeking counseling, therapy duration). Future research should include robust measures for all variables that could play key roles in LGBTQ+ youth's alcohol use.

5. Conclusions

Our findings carry implications for research and intervention efforts. More research is needed on how GSAs discuss health risk behaviors such as alcohol use among members and address them within their larger school setting. For instance, does the subject of alcohol use arise organically during GSA meetings in relation to other stressors raised by members (e.g., bullying, family rejection), or do advisors and student leaders plan for such discussions or for advocacy efforts directly around this issue? GSAs may be a setting for outreach and tailored supportive resource delivery for LGBTQ+ youth around drinking and the factors underlying this behavior. Future work may seek to identify the best approaches for delivering such programming and resources in GSAs. These efforts could ensure that GSAs are able to provide effective support for LGBTQ+ youth in schools who are experiencing the greatest need and who could most benefit from a GSA in their school.

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References

Amiri S, Behnezhad S, 2020. Alcohol use and risk of suicide: a systematic review and meta-analysis. J. Addict. Dis 38, 200–213. 10.1080/10550887.2020.1736757 [PubMed: 32469287]

Baams L, Dubas JS, Russell ST, Buikema RL, van Aken MAG, 2018. Minority stress, perceived burdensomeness, and depressive symptoms among sexual minority youth. J. Adolesc 66, 9–18. 10.1016/j.adolescence.2018.03.015 [PubMed: 29723686]

Baams L, Russell ST, 2021. Gay-straight alliances, school functioning, and mental health: Associations for students of color and LGBTQ students. Youth Soc. 53, 211–229. 10.1177/0044118X20951045

Brooks SJ, Krulewicz SP, Kutcher S 2003. The Kutcher Adolescent Depression Scale: Assessment of its evaluative properties over the course of an 8-week pediatric pharmacotherapy trial. J. Child Adolesc. Psychopharmacol 13, 337–349. 10.1089/104454603322572679 [PubMed: 14642022]

Brown SA, McGue M, Maggs J, Schulenberg J, Hingson R, Swartzwelder S, Martin C, Chung T, Tapert SF, Sher K, Winters KC, Lowman C, Murphy S, 2008. A developmental perspective on alcohol and youths 16 to 20 years of age. Pediatrics 121, S290–S310. 10.1542/peds.2007-2243D [PubMed: 18381495]

Carton L, Pignon B, Baguet A, Benradia I, Roelandt JL, Vaiva G, Thomas P, Amad A, De Timary P, Naassila M, Geoffroy PA, Rolland B, 2018. Influence of comorbid alcohol use disorders on the clinical patterns of major depressive disorder: A general population-based study. Drug Alcohol Depend. 187, 40–47. 10.1016/j.drugalcdep.2018.02.009 [PubMed: 29626745]

Centers for Disease Control and Prevention, 2019. School Health Profiles 2018: Characteristics of Health Programs among Secondary Schools. Centers for Disease Control and Prevention, Georgia.

Coulter RWS, Birkett M, Corliss HL, Hatzenbuehler ML, Mustanski B, Stall RD, 2016. Associations between LGBTQ-affirmative school climate and adolescent drinking behaviors. Drug Alcohol Depend. 161, 340–347. 10.1016/j.drugalcdep.2016.02.022 [PubMed: 26946989]

Davis B, Royne Stafford MB, Pullig C, 2014. How gay-straight alliance groups mitigate the relationship between gay-bias victimization and adolescent suicide attempts. J. Am. Acad. Child Adolesc. Psychiatry 53, 1271–1278. 10.1016/j.jaac.2014.09.010 [PubMed: 25457925]

Day JK, Fish JN, Perez-Brumer A, Hatzenbuehler ML, Russell ST, 2017. Transgender youth substance use disparities: Results from a population-based sample. J. Adolesc. Heal 61, 729–735. 10.1016/j.jadohealth.2017.06.024

De Pedro KT, Esqueda MC, Gilreath TD 2017. School protective factors and substance use among lesbian, gay, and bisexual adolescents in California public schools. LGBT Heal. 4, 210–216. 10.1089/lgbt.2016.0132

Feinstein BA, Turner BC, Beach LB, Korpak AK, Phillips G, 2019. Racial/ethnic differences in mental health, substance use, and bullying victimization among self-identified bisexual high school-aged youth. LGBT Heal. 6, 174–183. 10.1089/lgbt.2018.0229

Fish JN, Bishop MD, Russell ST, 2021. Developmental differences in sexual orientation and gender identity—related substance use disparities: Findings from population-based data. J. Adolesc. Heal 68, 1162–1169. 10.1016/j.jadohealth.2020.10.023

Fish JN, Exten C, 2020. Sexual orientation differences in alcohol use disorder across the adult life course. Am. J. Prev. Med 59, 428–436. 10.1016/j.amepre.2020.04.012 [PubMed: 32713615]

Fish JN, Schulenberg JE, Russell ST, 2019. Sexual minority youth report high-intensity binge drinking: The critical role of school victimization. J. Adolesc. Heal 64, 186–193. 10.1016/j.jadohealth.2018.07.005

Fish JN, Watson RJ, Porta CM, Russell ST, Saewyc EM, 2017. Are alcohol-related disparities between sexual minority and heterosexual youth decreasing? Addiction 112, 1931–1941. 10.1111/add.13896 [PubMed: 28678415]

GLSEN. 2021. Student and GSA resources. Retrieved from http://www.glsen.org/student-and-gsa-resources

Goldbach JT, Gibbs JJ, 2017. A developmentally informed adaptation of minority stress for sexual minority adolescents. J. Adolesc 55, 36–50. 10.1016/j.adolescence.2016.12.007 [PubMed: 28033502]

Goldbach JT, Tanner-Smith EE, Bagwell M, Dunlap S, 2014. Minority stress and substance use in sexual minority adolescents: A meta-analysis. Prev. Sci 15, 350–363. 10.1007/s11121-013-0393-7 [PubMed: 23605479]

Griffin P, Lee C, Waugh J, Beyer C, 2013. Describing roles that gay-straight alliances play in schools: From individual support to school. Gay Lesbian Transgender Issues Educ. 1, 7–22. 10.4324/9780203462591

Hatzenbuehler ML, 2009. How does sexual minority stigma "get under the skin"? A psychological mediation framework. Psychol. Bull 135, 707–730. 10.1037/a0016441 [PubMed: 19702379]

Hatzenbuehler ML, Pachankis JE, 2016. Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: Research evidence and clinical implications. Pediatr. Clin. North Am 63, 985–997. 10.1016/j.pcl.2016.07.003 [PubMed: 27865340]

Huebner DM, Thoma BC, Neilands TB, 2015. School victimization and substance use among lesbian, gay, bisexual, and transgender adolescents. Prev. Sci 16, 734–743. 10.1007/s11121-014-0507-x [PubMed: 25529390]

Johns MM, Lowry R, Andrzejewski J, Barrios LC, Demissie Z, McManus T, Rasberry CN, Robin L, Underwood JM, 2019. Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students — 19 states and large urban school districts, 2017. Morb. Mortal. Wkly. Rep 68, 67–71. 10.15585/mmwr.mm6803a3

Johns MM, Lowry R, Rasberry CN, Dunville R, Robin L, Pampati S, Stone DM, Mercer Kollar LM, 2018. Violence victimization, substance use, and suicide risk among sexual minority high school students — United States, 2015–2017. Morb. Mortal. Wkly. Rep 67, 1211–1215. 10.15585/mmwr.mm6743a4

Johns MM, Poteat VP, Horn SS, Kosciw J 2019. Strengthening our schools to promote resilience and health among LGBTQ youth: Emerging evidence and research priorities from The State of LGBTQ Youth Health and Wellbeing Symposium. LGBT Heal. 6, 146–155. 10.1089/lgbt.2018.0109

Kang D, Fairbaim CE, Ariss TA, 2019. A meta-analysis of the effect of substance use interventions on emotion outcomes. J. Consult. Clin. Psychol 87, 1106–1123. 10.1037/ccp0000450 [PubMed: 31724427]

Mallory AB, Russell ST, 2021. Intersections of racial discrimination and LGB victimization for mental health: A prospective study of sexual minority youth of color. J. Youth Adolesc 50, 1353–1368. 10.1007/s10964-021-01443-x [PubMed: 33991275]

Marx RA, Kettrey HH, 2016. Gay-straight alliances are associated with lower levels of school-based victimization of LGBTQ+ youth: A systematic review and meta-analysis. J. Youth Adolesc 45, 1269–1282. 10.1007/s10964-016-0501-7 [PubMed: 27221632]

Mayo JB, 2015. Youth work in gay straight alliances: Curriculum, pedagogy, and activist development. Child Youth Serv. 36, 79–93. 10.1080/0145935X.2015.1015887

Mereish EH, 2019. Substance use and misuse among sexual and gender minority youth. Curr. Opin. Psychol 30, 123–127. 10.1016/j.copsyc.2019.05.002 [PubMed: 31202102]

Murchison GR, Rosenbach SB, Poteat VP, Yoshikawa H, Calzo JP, 2021. Gender-sexuality alliance membership and activities: Associations with students' comfort, confidence and awareness regarding substance use resources. Health Educ. Res 36, 295–308. 10.1093/her/cyab007 [PubMed: 33544834]

Mustanski B, Andrews R, Puckett JA, 2016. The effects of cumulative victimization on mental health among lesbian, gay, bisexual, and transgender adolescents and young adults. Am. J. Public Health 106, 527–533. 10.2105/AJPH.2015.302976 [PubMed: 26794175]

Muthen LK, Muthen BO, 2017. Mplus User's Guide, eighth ed. Muthen & Muthen, California.

Newcomb ME, Clifford A, Greene GJ, Mustanski B, 2016. Parent perspectives about sexual minority adolescent participation in research and requirements of parental permission. J. Adolesc. Heal 59, 443–449. 10.1016/j.jadohealth.2016.05.014

Newcomb ME, Heinz AJ, Mustanski B, 2012. Examining risk and protective factors for alcohol use in lesbian, gay, bisexual, and transgender youth: A longitudinal multilevel analysis. J. Stud. Alcohol Drugs 73, 783–793. 10.15288/jsad.2012.73.783 [PubMed: 22846242]

Perez J, Beale E, Overholser J, Athey A, Stockmeier C, 2020. Depression and alcohol use disorders as precursors to death by suicide. Death Stud. 0, 1–9. 10.1080/07481187.2020.1745954

Poteat VP, Calzo JP, Yoshikawa H, 2018. Gay-straight alliance involvement and youths' participation in civic engagement, advocacy, and awareness-raising. J. Appl. Dev. Psychol 56, 13–20. 10.1016/j.appdev.2018.01.001 [PubMed: 29805190]

Poteat VP, Calzo JP, Yoshikawa H, Lipkin A, Ceccolini CJ, Rosenbach SB, O'Brien MD, Marx RA, Murchison GR, Burson E, 2020. Greater engagement in gender-sexuality alliances (GSAs) and GSA characteristics predict youth empowerment and reduced mental health concerns. Child Dev. 91, 1509–1528. 10.1111/cdev.13345 [PubMed: 31762010]

Poteat VP, Sinclair KO, DiGiovanni CD, Koenig BW, Russell ST, 2013. Gay-straight alliances are associated with student health: A multischool comparison of LGBTQ and heterosexual youth. J. Res. Adolesc 23, 319–330. 10.1111/j.1532-7795.2012.00832.x

Schulenberg JE, Patrick ME, Kloska DD, Maslowsky J, Maggs JL, O'malley PM, 2015. Substance use disorder in early midlife: A national prospective study on health and well-being correlates and long-term predictors. Subst. Abus. Res. Treat 9s1, 41–57. 10.4137/SART.S31437

Steele DW, Becker SJ, Danko KJ, Balk EM, Adams GP, Saldanha IJ, Trikalinos TA, 2020. Brief behavioral interventions for substance use in adolescents: A meta-analysis. Pediatrics 146, e20200351. 10.1542/peds.2020-0351 [PubMed: 32928988]

Toomey RB, Ryan C, Diaz RM, Russell ST, 2011. High school gay-straight alliances (GSAs) and young adult well-being: An examination of GSA presence, participation, and perceived effectiveness. Appl. Dev. Sci 15, 175–185. 10.1080/10888691.2011.607378 [PubMed: 22102782]

Walls NE, Kane SB, Wisneski H, 2010. Gay-straight alliances and school experiences of sexual minority youth. Youth Soc. 41, 307–332. 10.1177/0044118X09334957

Walls NE, Wisneski H, Kane S, 2013. School climate, individual support, or both? Gay—straight alliances and the mental health of sexual minority youth. Sch. Soc. Work J 37, 88–111.

Watson RJ, Fish JN, Denary W, Caba A, Cunningham C, Eaton LA, 2021. LGBTQ state policies: A lever for reducing SGM youth substance use and bullying. Drug Alcohol Depend. 221, 108659. 10.1016/j.drugalcdep.2021.108659 [PubMed: 33676075]

Highlights

- GSA presence moderated the effects of victimization on heavy episodic drinking
- GSA presence moderated the effects of depressive symptoms on heavy episodic drinking
- GSA presence did not moderate these effects for lower threshold drinking behavior
- GSAs are a potential protective factor for LGBTQ+ youth in schools

Table 1,

Participant Demographics and Descriptive Information for Measures

Demographic Variables and Study Measures	*N* (%)	*M* (*SD*)
Demographic Variables		
Sexual orientation		
Lesbian or gay	2,157 (37.3)	
Bisexual	2,019 (35.0)	
Queer	267 (4.6)	
Pansexual	791 (13.7)	
Asexual	198 (3.4)	
Questioning	107 (1.9)	
Straight	104 (1.8)	
Another sexual orientation	133 (2.3)	
Gender identity		
Boy	1,791 (31.0)	
Girl	2,552 (44.2)	
Non-binary	1,433 (24.8)	
Race or ethnicity		
White	3,808 (65.9)	
Black, African American	235 (4.1)	
Asian, Pacific Islander	181 (3.1)	
Latino, Hispanic, or Mexican American	604 (10.5)	
American Indian or Alaska Native	31 (0.5)	
Biracial or multiracial	812 (14.1)	
Another racial/ethnic identity	99 (1.7)	
No response	6 (0.1)	
Caregiver highest education		
Less than high school or GED	175 (3.0)	
High school or GED	765 (13.2)	
Some college	1,030 (17.8)	
College graduate or higher	3,584 (62.0)	
No response	222 (3.8)	
Age		15.75 (1.19)
Study Measures		
Any past-30 day drinking	2,773 (48.0)	
Any past-30 day heavy episodic drinking	971 (16.8)	
GSA present in school	3,180 (55.1)	
Depressive symptoms		1.30 (0.69)
Victimization		1.24 (1.14)
Perceived school safety		2.86 (0.83)
Received recent mental health counseling	1,926 (33.3)	

Table 2,

Models for Any Recent Alcohol Use and Heavy Episodic Drinking

	Any Recent Alcohol Use		Heavy Episodic Drinking	
	B	**OR (95% CI)**	**B**	**OR (95% CI)**
Main Effects				
GSA	−0.091	0.913 (0.805, 1.034)	−0.069	0.933 (0.784, 1.110)
Depressive symptoms	0.174	1.190 (0.999, 1.418)	0.426***	1.531 (1.210, 1.937)
Victimization	0.220**	1.246 (1.134, 1.369)	0.369***	1.447 (1.278, 1.637)
Interaction Effects				
GSA × depressive symptoms	−0.043	0.958 (0.794, 1.155)	−0.277*	0.758 (0.590, 0.974)
GSA × victimization	−0.021	0.979 (0.874, 1.097)	−0.152*	0.859 (0.740, 0.998)
Covariates				
Mental health counseling	0.005	1.005 (0.834, 1.212)	0.037	1.037 (0.799, 1.348)
Perceived school safety	0.137**	1.147 (1.051, 1.252)	0.153*	1.165 (1.037, 1.309)
Age	0.197***	1.218 (1.156, 1.283)	0.302***	1.353 (1.256, 1.458)
Caregiver education	0.034	1.034 (0.960, 1.114)	−0.037	0.964 (0.874, 1.063)
Sexual orientation				
Bisexual	0.116	1.123 (0.975, 1.293)	0.023	1.023 (0.849, 1.234)
Queer	−0.055	0.947 (0.710, 1.263)	0.021	1.022 (0.695, 1.501)
Pansexual	0.129	1.138 (0.938, 1.380)	−0.066	0.936 (0.718, 1.219)
Asexual	−0.396*	0.673 (0.477, 0.949)	−0.750*	0.473 (0.266, 0.840)
Questioning	−0.193	0.824 (0.521, 1.304)	−0.145	0.865 (0.457, 1.638)
Straight	−0.008	0.992 (0.635, 1.549)	0.772**	2.164 (1.326, 3.530)
Another sexual orientation	−0.911***	0.402 (0.259, 0.624)	−1.020**	0.361 (0.172, 0.757)
Gender identity				
Girl	−0.094	0.910 (0.788, 1.051)	−0.030	0.970 (0.803, 1.172)
Non-binary	−0.278**	0.757 (0.639, 0.897)	−0.285**	0.752 (0.598, 0.946)
Race/ethnicity				
Black, African American	−0.153	0.858 (0.631, 1.168)	−1.047***	0.351 (0.197, 0.626)
Asian, Pacific Islander	−0.086	0.918 (0.658, 1.280)	−0.458	0.632 (0.379, 1.056)
Latino, Hispanic, or Mexican American	0.022	1.022 (0.835, 1.251)	−0.090	0.914 (0.698, 1.197)
American Indian or Alaska Native	−0.356	0.700 (0.279, 1.760)	0.468	1.597 (0.561, 4.543)
Biracial or multiracial	−0.092	0.912 (0.767, 1.084)	−0.255*	0.775 (0.607, 0.989)
Another racial/ethnic identity	0.235	1.265 (0.797, 2.008)	−0.050	0.951 (0.520, 1.739)

Note. Results represent unstandardized coefficient estimates (B) and odds ratios (OR) with their 95% confidence intervals (95% CI). The reference groups for sexual orientation, gender identity, race/ethnicity, mental health counseling, and GSA presence were gay/lesbian youth, boys, white youth, youth who had not received mental health counseling in the past 12 months, and GSA absence at school, respectively.

* $p < .05$

** $p < .01$

*** $p < .001$