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Depression, Anxiety, and Interest in Mental Health Resources in School-Based Gender-Sexuality Alliances: Implications for Sexual and Gender Minority Youth Health Promotion

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Abstract

Schools can be a setting to address mental health needs of sexual and gender minority (SGM) youth. Gender-Sexuality Alliances (GSAs), as extracurricular support groups, provide an existing structure that could be leveraged to reach SGM youth and deliver services. Nevertheless, limited data indicate the prevalence of depression and anxiety among GSA members, how often GSAs discuss mental health, or their receptivity to resources. Participants in the current study were 580 youth (M_{age} = 15.59; 79% sexual minority, 57% cisgender female; 68% White) and 58 advisors in 38 GSAs purposively sampled across Massachusetts. Youth completed established measures of depression and anxiety; advisors reported how frequently their GSAs discussed mental health; and both reported their interest in mental health materials. Among youth, 70.1% scored above the threshold indicating probable mild depression, and 34.4% scored above the threshold suggesting concerning anxiety. Adjusted odds ratios indicated that the odds of depression and anxiety were higher for SGM members relative to heterosexual and cisgender members, particularly among youth reporting SGM identities that have been underrepresented. GSAs discussed mental health with some frequency over the school year. Youth and advisors expressed strong interest in

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Compliance with Ethical Standards

All procedures performed in this study, which involved human participants, were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all adults, and informed assent was obtained from all youth participating in the study.

resources. Findings support the case for developing selective and indicated school-based prevention programming for youth in GSAs to address their mental health needs.

Keywords

Depression; Anxiety; Sexual and gender minority youth; Gender-Sexuality Alliances; Mental health programming

Sexual and gender minority (SGM) youth report greater depressive and anxiety symptoms than heterosexual and cisgender youth, often tied to discrimination (Marshal et al., 2011; Russell & Fish, 2016). For instance, the prevalence of depressive symptoms among sexual minority youth (18%−23%) and among gender minority youth (20%−50%; Becerra-Culqui et al., 2018; Mustanski, Garofalo, & Emerson, 2010; Olson, Schrager, Belzer, Simons, & Clark, 2015; Reisner et al., 2015; Rodriguez-Seijas, Eaton, & Pachankis, 2019) is higher than in the general adolescent population (8%−17%; Avenevoli et al., 2015; Hankin et al., 1998; Kessler et al., 2012; Merikangas et al., 2010). SGM youth also report lower rates of seeking mental health services than their heterosexual cisgender peers (Williams & Chapman, 2015). Many avoid services because they view providers as unsupportive, lacking in SGM-related expertise, or unlikely to maintain confidentiality of their SGM identities to parents (Williams & Chapman, 2011). SGM youth express strong preferences for accessible settings (e.g., in terms of hours or location) with providers who are friendly, competent, and SGM-affirming (Hoffman, Freeman, & Swann, 2009).

Although SGM youth often experience discrimination in schools (Russell & Fish, 2016), schools also can be a key setting to address mental health needs of SGM youth and to provide resources (Johns, Poteat, Horn, & Kosciw, 2019). In addition to serving as an access point to health supports such as nurses, counselors, and social workers, schools provide access to extracurricular groups that could support SGM youth. We focus on the context of Gender-Sexuality Alliances (GSAs). These clubs are now in a median of 37% of secondary schools across states in the U.S., ranging from 14% to 72% (CDC, 2019). They provide space for SGM youth and heterosexual cisgender allies to access support and opportunities to counteract discrimination (Griffin, Lee, Waugh, & Beyer, 2004). GSAs often meet weekly, during or after school, for up to an hour. Members may discuss stressors and solicit support, socialize with peers, learn about specific topics (e.g., self-care), or plan advocacy efforts (Poteat, Yoshikawa, Calzo, Russell, & Horn, 2017).

Most studies have considered youth's health in relation to GSA presence at their school. SGM youth and heterosexual cisgender youth in schools with GSAs report some lower health risks than youth in schools without GSAs (Heck et al., 2014; Poteat, Sinclair, DiGiovanni, Koenig, & Russell, 2013; Toomey, Ryan, Diaz, & Russell, 2011; Walls, Kane, & Wisneski, 2010). For instance, youth in schools with GSAs have reported lower levels of depressive symptoms, lower risk for suicide attempts, and lower risk for substance use than youth in schools without GSAs. There has been mixed support, however, for whether youth in schools with GSAs report less victimization than youth in schools without GSAs (Day, Fish, Grossman, & Russell, 2020; Poteat et al., 213; Walls et al., 2010).

A few studies also have compared youth's mental health based on their membership in a GSA at their school. These comparisons have not yielded clear evidence that members are at either lesser or greater risk for mental health concerns (Toomey et al., 2011; Walls et al., 2010). For example, in schools with GSAs, members and non-members did not differ in their reported levels of depressive symptoms or self-esteem (Toomey et al., 2011). However, GSA members are not a homogenous group, and they may have different mental health profiles from one another. On the one hand, many SGM members attend GSAs expressly to seek support due to discrimination (Lapointe, 2015; Miceli, 2005) and may have distinctively high mental health needs. On the other hand, heterosexual cisgender allies may attend more so to provide support than to receive it. They may differ from SGM members and their nonmember counterparts in ways that have yet to be explored. Similarly, some SGM and ally members participate in GSAs to engage in advocacy (Griffin et al., 2004; Miceli, 2005) and may be distinctively thriving compared to nonmembers at their school. Ultimately, comparing members to nonmembers as two monolithic groups gives limited indication of the potential mental health needs of many GSA members or the extent to which any services are needed or desired among members in this setting. Attention to variability among members themselves would better clarify these points.

GSAs provide an existing structure located in many communities nationwide that could be leveraged to reach SGM youth and deliver school-based mental health services such as selective or indicated prevention (i.e., for youth whose risk is elevated [selective] or who already show detectable symptoms [indicated]; Haggerty & Mrazek, 1994). There are limited data to provide a compelling case for developing and evaluating mental health programs at a large scale in GSAs. There is little indication of the prevalence of depression and anxiety among GSA members or whether GSAs differ from one another in the prevalence of depression and anxiety among their members. It is also unclear how often GSAs discuss mental health issues and how receptive they would be to mental health materials. This lack of knowledge impedes efforts to develop and deliver mental health programming in GSAs. Is programming needed at a modest or at a fairly large scale; are there certain youth toward whom materials should be tailored; and, what is the preferred duration of programming? We address these issues in the current study.

Potential Patterns of Depression and Anxiety among GSA Members

SGM individuals share experiences of marginalization that place them at greater risk for mental health concerns than heterosexual cisgender individuals (Meyer, 2003). Yet, there is growing evidence that specific groups of SGM individuals experience different levels of mental health risks. Bisexual and questioning youth have reported greater depressive symptoms relative to gay and lesbian youth (Marshal et al., 2011; Ross et al., 2018). Other studies suggest differences between binary transgender and genderqueer adults on depressive and anxiety levels (Lefevor, Boyd-Rogers, Sprague, & Janis, 2019); these differences remain understudied among youth. Youth identifying with other sexual orientation identities and gender identities—such as pansexual, queer, asexual, genderqueer, or non-binary, among others—rarely have been given a focus in the SGM literature.

Likewise, most GSA research has treated SGM members as a singular group. It has also tended to consider only SGM members, without attention to ally members. This represents a major oversight because GSA members represent a diversity of sexual orientations and gender identities (Lapointe, 2017). Youth have expressed that a broader range of sexual orientations and gender identities need to be recognized in their GSAs (Lapointe, 2017). Some GSA members may be at greater risk for depression and anxiety than others on account of their sexual orientation or gender identity. Knowledge of which youth in GSAs are at greater risk could enhance GSA outreach to be inclusive of these youth and ensure that GSAs provide adequate resources to youth who may be in the most need of support.

GSA Mental Health Discussions and Interest in Programming

GSAs aim to provide social-emotional support (Griffin et al., 2004; Poteat, Yoshikawa, et al., 2017), and mental health issues arise during meetings when members discuss stressors (e.g., bullying, family rejection) or related topics (e.g., self-care; Lapointe, Dunlop, & Crooks, 2018; Poteat, Heck, et al., 2017). In the current study, we asked advisors how many times their GSA discussed mental health over the school year. Frequent discussions could reflect the centrality of mental health in GSAs and suggest that GSAs are well-suited for mental health programming.

Some mental health programs have been piloted in a few GSAs. One study included ten youth (Heck, 2015) while another included feedback from seven youth (Lapointe et al., 2018). There is sparse indication, then, of the extent to which youth and adult advisors across many GSAs would be interested in mental health materials. Further, there are no data on whether such interest might vary across GSAs. Is there relatively high universal interest, or is it limited to a few youth or GSAs? Data from a broader range of GSAs could strengthen the case for developing and evaluating mental health programs or services in GSAs at a large scale.

The Current Study

We assessed the prevalence of self-reported anxiety and depression among 580 GSA members in 38 purposively sampled GSAs in Massachusetts, a state wherein 66% of secondary schools have a GSA or comparable club (CDC, 2019). We hypothesized that sexual and gender minority members would be more likely to meet thresholds for mild depression and concerning anxiety than heterosexual and cisgender ally members. For exploratory purposes, we considered whether youth from underrepresented sexual minority identities differed from their gay or lesbian peers in risk for depression and anxiety. Also for exploratory purposes, we considered whether youth from underrepresented gender minority identities differed from their transgender peers. Also, we asked advisors about the frequency with which their GSAs discussed mental health. We hypothesized that advisors of most GSAs would report frequent discussions of mental health over the school year. Finally, in 19 of these GSAs, we assessed youth and advisor interest in resources. We hypothesized that youth and advisors would express, on average, strong interest in mental health resources for their GSA. We further considered variability in levels of interest across GSAs.

Method

Participants

Participants were 580 youth (M_{age} = 15.59 years, SD = 1.39 years; range = 10 to 20 years) in 38 GSAs (4 to 34 students per GSA; M = 15 students, SD = 6.62) across Massachusetts and their advisors (n = 58; M_{age} = 43.58 years, SD = 10.50 years; range = 27 to 62 years). Table 1 contains complete demographic information. Of these GSAs, 21 had one advisor and 17 had multiple advisors (15 had two, one had three, and one had four advisors). The data were drawn from surveys that youth completed as part of a larger two-year project. Some data (depressive and anxiety symptoms) were collected at the beginning of the school year (Wave 1) and other data (frequency of discussing mental health issues over the school year, interest in mental health materials) were collected at the end of the school year (Wave 2). All participating youth received the depression and anxiety measures, but only youth and advisors in the second year of the project received items assessing interest in mental health materials (as these were added at the end of the project for 150 youth and 27 advisors in 19 GSAs).

Procedures

We made efforts to recruit a more representative sample of GSAs and members than in prior studies by purposively sampling GSAs and visiting them directly to reach members. We identified GSAs in consultation with the Massachusetts Safe Schools Program for LGBTQ Students. Schools included traditional public schools, charter public schools, and vocational or technical public schools. We aimed for diversity among schools in the geographic location and population density of their communities, and in their size and racial composition. We asked our consultants to recommend GSAs which they knew anecdotally ranged in level of activity and years established. We first secured permission from GSA advisors and principals, and then asked youth to complete a confidential survey. Advisors consented for all youth to participate, and all youth assented. We used advisor adult consent over parent consent to avoid risks of outing SGM youth to their parents. This method is common in SGM youth research to protect their safety (Mustanski, 2011). Advisors consented to complete their own survey (all who were recruited agreed). Procedures were approved by the primary institution's IRB and each school.

There were 19 GSAs in the first year and a separate set of 19 GSAs in the second year, for 38 total GSAs. We did this for feasibility: it ensured that in each year we could visit all GSAs within a close time frame, because they were located across the state and many met on the same days of the week. Surveys were completed during GSA meetings, overseen by proctors. Each participant received a $10 (Wave 1) or $20 (Wave 2) gift card for participating. Wave 1 data were collected in September or October; Wave 2 data were collected in April or May.

Measures

Demographics.—Youth reported their sexual orientation, gender identity, and race or ethnicity by selecting one or more options provided or providing their own written-in responses for each demographic factor. In our presentation of descriptive data, we included

youth who selected multiple sexual orientations (e.g., both bisexual and queer) or specific written-in responses in a single common group due to inadequate representation of each combination or written-in identity to serve as its own group. We followed similar procedures for youth who selected multiple gender identities or provided written-in identities. Youth also reported their age, whether they received a free or reduced-cost lunch, and GSA membership duration.

Depression.—At Wave 1, youth completed the 10-item Center for Epidemiological Studies Depression Scale (CESD-10 brief version; Radloff, 1991) to report depressive symptoms over the past week (e.g., "I felt lonely," and "I felt depressed"). Response options were *rarely or none of the time (less than one day)*, *some or a little of the time (one to two days)*, *occasionally or moderate amount of the time (three to four days)*, and *all of the time (five to seven days*), which are scored 0 to 3. A total scale score of 10 or higher is considered to indicate high probability of mild depression. The coefficient alpha reliability estimate was α = .85.

Anxiety.—At Wave 1, youth completed the 21-item Beck Anxiety Inventory (BAI; Beck & Steer, 1993) to report anxiety symptoms over the past month (e.g., "heart pounding/racing," and "shaky/unsteady"). Response options were *not at all*; *mildly, but it didn't bother me much*; *moderately, it wasn't pleasant at times*; and *severely, it bothered me a lot* (scored 0 to 3). Total scale scores of 0–21 suggest low anxiety, scores of 22–35 suggest moderate anxiety, and scores over 36 suggest concerning anxiety. The coefficient alpha reliability estimate was α = .95.

Mental health conversations.—At Wave 2, advisors completed four items on the number of times their GSA had discussed mental health-related issues over the school year: depression, anxiety, mental health issues in general, and self-care/coping strategies. Response options were *never*, *1 time*, *2 times*, *3 to 5 times*, and *more than 5 times* (scored 1 to 5). Higher total scale scores indicated that the GSA discussed mental health issues more frequently. The coefficient alpha reliability estimate was α = .91.

Interest in mental health resources.—For youth and advisors participating in year 2 of the project, we added two questions at Wave 2 on their level of interest in receiving resources and materials to learn about (a) how to deal with stress and (b) how to strengthen mental health (like combatting anxiety and depression). Response options ranged from 1 (*no interest*) to 10 (*highly interested*). Higher average scale scores indicated greater interest (α = .89).

Analytic Approach

To assess prevalence of depression and anxiety, we identified the number of youth whose CESD-10 scores were above the threshold to indicate high probability for mild depression and whose BAI scores were above the thresholds suggesting moderate or concerning anxiety. We tested for significant sexual orientation and gender identity differences in depression and anxiety using multilevel modeling in Mplus 8.3 (Muthén & Muthén, 2017) to adjust for youth clustered in GSAs. The dependent variable for depression was whether

youth were above threshold for probable mild depression (0 = below, 1 = above). The dependent variable for anxiety was whether youth were above threshold suggesting concerning anxiety (0 = below, 1 = above). We used a binary comparison for anxiety (versus low, moderate, and concerning) to focus on risk of falling within the range that would most likely indicate clinical levels of anxiety. We computed models using maximum likelihood estimation with robust standard errors with the logit link function for the binary outcomes. Null models tested whether there was significant variance across GSAs in their members' likelihood of reporting mild depression and concerning anxiety. In our full models, heterosexual youth were the referent group for sexual orientation (to which each of the other sexual minority groups were compared). We included four gender identity categories in our models: cisgender male, cisgender female, transgender, and gender expansive. The gender expansive group included youth who identified as genderqueer, gender fluid, non-binary, or provided another written-in response. Initially, in models where we included these groups as distinct from one another, their coefficient estimates could not be precisely estimated (as reflected in extreme confidence intervals). These four categories allowed us to consider variation in mental health concerns across more categories of gender identity than in most all prior GSA studies, while the broader gender expansive group allowed us to represent youth who have been among the most understudied in the SGM youth literature. Cisgender male youth were the referent group for gender identity. Our covariates included youth's age, GSA membership duration, race/ethnicity (0 = White; 1 = racial/ethnic minority), and whether youth reported receiving a free or reduced-price lunch (0 = no/unsure, 1 = yes).

For exploratory purposes, we analyzed the models with gay/lesbian youth as the referent group to test whether youth who identified with other sexual minority identities were at greater risk for depression or anxiety than gay/lesbian youth and report adjusted odds ratios (AOR) for significant differences. Similarly, we analyzed the models with transgender youth as the referent group to test whether gender expansive youth were at relatively greater risk for depression or anxiety than transgender youth.

We compiled advisor reports on the number of times GSAs discussed mental health-related issues over the school year. In GSAs with more than one advisor, we used the average of the advisors' reports; there was little to no discrepancy between these advisors. Finally, we compiled youth and advisor reports on their level of interest in receiving mental health resources and materials. We also examined whether youth's interest varied significantly across GSAs.

Results

Among all GSA members, 70.1% scored above the threshold indicating probable mild depression, while 27.8% and 34.4% scored above the thresholds suggesting moderate and concerning anxiety, respectively (Table 2). GSAs did not differ significantly in the likelihood of their members to report mild depression ($p = .31$, intraclass correlation coefficient [ICC] = .07) or concerning anxiety ($p = .13$, ICC = .09). As shown in Tables 2 and 3, a greater proportion of youth in each sexual minority group and gender minority group scored above the thresholds for mild depression and moderate or concerning anxiety than their heterosexual and cisgender peers.

Sexual Orientation and Gender Identity Differences in Depression and Anxiety

The results of our depression model indicated that, as hypothesized, gay/lesbian youth, bisexual youth, and pansexual youth were significantly more likely than heterosexual youth to score above the threshold for probable mild depression, while adjusting for their gender identities and other covariates (Table 4). There was a very large coefficient estimate and confidence interval for the group of youth reporting other sexual orientations, possibly indicative of complications due to partial separation (Lesaffre & Albert, 1998). Therefore, we consider only the directionality of this finding and refrain from interpreting its magnitude or statistical significance. Also as hypothesized, transgender youth and gender expansive youth were significantly more likely than cisgender male youth to score above the threshold for probable mild depression, while adjusting for their sexual orientations and other covariates (Table 4). In our exploratory follow-up comparisons, queer youth were at lower risk for probable mild depression than gay/lesbian youth (AOR = 0.20, 95% CI [0.05, 0.80]). The other groups of sexual minority youth did not differ significantly from gay/lesbian youth in their risk, nor did gender expansive youth differ significantly from transgender youth.

The results of our anxiety model indicated that, as hypothesized, gay/lesbian youth and pansexual youth were significantly more likely than heterosexual youth to score above the threshold for concerning anxiety, while adjusting for their gender identities and other covariates (Table 4). Also as hypothesized, transgender youth and gender expansive youth were significantly more likely than cisgender male youth to score above the threshold for concerning anxiety, while adjusting for their sexual orientations and other covariates (Table 4). In our exploratory follow-up comparisons, bisexual youth were less likely than gay/lesbian youth to score above the threshold for concerning anxiety (AOR = 0.46, 95% CI [0.25, 0.83]). The other groups of sexual minority youth did not differ significantly from gay/lesbian youth in their risk, nor did gender expansive youth differ significantly from transgender youth.

Discussion of Mental Health Issues and Interest in Mental Health Materials

As we anticipated, advisors reported discussing mental health topics with some frequency over the school year, including depression ($M = 2.37$, $SD = 1.18$), anxiety ($M = 2.56$, $SD = 1.25$), mental health issues in general ($M = 2.68$, $SD = 1.17$), and self-care/coping strategies ($M = 2.52$, $SD = 1.13$). These averages fell between the response options of “2 times” and “3 to 5 times.” Responses covered the full range of options (*never* to *more than five times*). Around half of GSAs discussed each issue at least three times: 40% for depression, 50% for anxiety, 55% for mental health issues in general, and 50% for self-care/coping.

Youth reported strong interest in materials for dealing with stress, anxiety, and depression ($M = 6.97$, $SD = 2.63$; range = 1.00 to 10), as did advisors ($M = 8.30$, $SD = 2.30$; range = 3.00 to 10), as we had hypothesized. Most youth (72%) and advisors (89%) reported more than moderate interest (scores of 6.00 or higher). Interest levels did not differ between heterosexual and sexual minority members, $F(1, 145) = 0.19$, $p = .67$, or between cisgender and gender minority members, $F(1, 148) = 0.44$, $p = .51$. GSAs did not differ significantly in their members’ levels of interest in receiving resources ($p = .49$; ICC = .05).

Discussion

The majority of GSA members in this study scored above thresholds indicating probable mild depression and either moderate or concerning anxiety. The likelihood of youth meeting these thresholds did not vary significantly across GSAs. However, the odds of depression and anxiety were higher for SGM youth than for heterosexual and cisgender ally members. This distinction for SGM members was apparent even though heterosexual and cisgender allies reported rates of depression and anxiety that themselves were higher than in population-based studies (Avenevoli et al., 2015). In some cases, there were trends suggesting that youth who reported certain underrepresented identities in the SGM youth literature, such as pansexual youth, were at particular risk of depression or anxiety. GSAs discussed mental health with some frequency over the school year, and both youth and advisors expressed strong interest for mental health resources.

Youth in GSAs Demonstrated High Risk for Depression and Anxiety

The rates for probable depression and anxiety exceeded those documented in the general adolescent population (Avenevoli et al., 2015; Kessler et al. 2012; Merikangas et al., 2010). For SGM youth, rates were as pronounced as, or appeared higher than, those documented in certain other SGM youth samples (Becerra-Culqui et al., 2018; Mustanski et al., 2010; Olson et al., 2015; Reisner et al., 2015; Rodriguez-Seijas et al., 2019). Likewise, rates appeared higher for heterosexual and cisgender ally members than in the general adolescent population (Avenevoli et al., 2015). Our findings suggest that ally youth in GSAs are not entirely representative of the broader heterosexual and cisgender youth population with regard to mental health concerns.

Youth often join GSAs for support (Lapointe, 2015; Miceli, 2005), and our findings underscore the scope of this need. These results could partly explain why some studies have not documented differences in health risks based on youth's GSA membership status (Toomey et al., 2011; Walls et al., 2010). Many SGM and some ally members of GSAs appear to evidence clear mental health needs. Advisors should be aware of the possible severity of mental health concerns among members, so as to provide them with adequate support or referrals (e.g., to school or community mental health providers). These findings, when framed within the model of universal, selective, or indicated prevention (Haggerty & Mrazek, 1994), suggest that GSAs could be a relevant setting for selective prevention programming as well as screening for youth who may benefit from referrals for more intensive services. Of note, we assessed youth's mental health concerns at the beginning of the school year, prior to any potential benefits (or by contrast, co-rumination) from GSA involvement that year.

The trends that we documented suggested that even among SGM youth, there was a degree of variability in the extent to which youth were at risk for anxiety and depression. It would be important for interventionists to take this variation into account when designing and delivering selective prevention and mental health promotion programs. Some SGM youth who have been underrepresented in research demonstrated a high risk for depression and anxiety. For instance, a large majority of pansexual and asexual youth reached the threshold for probable mild depression (83% and 75%, respectively) and anxiety (79% and 70%,

respectively), while over 90% of genderqueer and non-binary youth reached the threshold for probable mild depression and anxiety. Although risks for these specific groups of sexual minority youth and the group of gender expansive youth generally were not greater to a statistically significant degree than for their gay/lesbian or transgender peers, respectively, these trends add to emerging findings that suggest variable risk among specific groups of SGM individuals (Marshal et al., 2011; Lefevor et al., 2019). Thus, research and interventions with SGM youth should ensure that youth with these identities are represented.

We also note our findings for youth who identified with more than one sexual minority or gender minority identity or who provided unique written-in identities. Ideally we would have considered youth in their own distinct groups if each group had been represented adequately for sufficient statistical power. Still, it is important to note that youth in these clusters may share commonalities, such as experiencing invisibility or marginalization to a greater degree, even within SGM communities and GSAs. Our findings align with calls from other researchers and youth to be fully inclusive of the broad range of identities with which contemporary SGM youth identify (Lapointe, 2017; Watson, Wheldon, & Puhl, 2020). Qualitative inquiries could provide a richer sense of the experiences and needs of youth whose identities have been under-acknowledged.

Youth and Advisors Reported Strong Interest in Mental Health Resources

Advisors in most GSAs reported that they had discussed mental health topics several times over the school year. Half of GSAs had discussed depression, anxiety, general mental health issues, and self-care at least three times. Advisors' reports may have captured the number of meetings during which there was a collective focus on these topics. Given that half of GSAs discussed various mental health topics at least three times, this suggests the potential for delivering brief prevention or intervention programming in GSAs while also connecting youth with other school or community resources.

Youth and advisors reported strong interest in materials to address mental health issues in their GSA. Moreover, interest did not differ significantly across GSAs, suggesting it is relatively universal and not limited to a few GSAs. Nevertheless, we are aware of only two programs which have been piloted in GSAs, one a 4-week CBT-based program (Heck, 2015) and the other a 16-week educational program on healthy relationships (Lapointe et al., 2018). It is unclear whether universal school-based programs or health services are adequately inclusive of SGM youth (Williams & Chapman, 2015). Thus, our findings suggest that GSAs could be a naturalistic setting for brief mental health programs tailored for SGM youth, as well as for some heterosexual and cisgender youth allies in GSAs, which could be delivered at a large scale with potentially high acceptability. At the same time, the findings regarding high levels of depression and anxiety suggest that it may be important for GSAs to refer some students to school or community health professionals. In addition, given the high prevalence of depression and anxiety, it may be important for health professionals to monitor and circumvent any co-rumination that could occur among peers (Schwartz-Mette & Rose, 2012), and which could inadvertently exacerbate mental health concern within the group.

Limitations, Strengths, and Future Directions

We note several limitations to this study. First, we purposively sampled our GSAs, but all were located in Massachusetts, a more politically and socially progressive state with a larger percentage of schools with GSAs and support systems than others (CDC, 2019). Health risks and supports for SGM youth can vary based on the broader sociopolitical context (Russell & Fish, 2016). Still, we found clear mental health risks for SGM youth in Massachusetts. Second, our assessment of interest in mental health materials was limited to participants in the second year of the project. A larger and national sample would be ideal to provide a fuller sense of the broad appeal for programming, which could be considered in future research. Third, although we considered specific sexual orientation identities and gender identities, we did not have sufficient representation to further consider their intersection (e.g., to distinguish between transgender or cisgender pansexual youth). It would be important for future research to document health risks among youth with multiple marginalized identities. Similarly, among youth who provided written-in responses, we were unable to disaggregate them into multiple distinct groups for purposes of comparison due to the small cell sizes for certain identities. Also, in our depression model, the analysis yielded large coefficient estimates and confidence intervals for youth who had indicated other sexual orientation identities, potentially indicative of partial separation (Lesaffre & Albert, 1998). Thus, we could only interpret the direction of the difference and not its statistical significance or magnitude. Fourth, although we included established self-report measures of depression and anxiety, structured clinical interviews could provide a more refined determination of diagnoses. Finally, advisor reports of their number of mental health discussions over the school year may have been less precisely estimated due to the longer recall period we requested.

We also point to several contributions of this study. It is among the first to provide a larger-scale assessment of the prevalence of depression and anxiety among youth in GSAs using robust and well-established measures. Also, we purposively sampled GSAs on the basis of multiple characteristics and visited each of them to better ensure fuller member representation. Other studies have relied on internet-based data collection or a few limited items to assess mental health symptoms. In addition, we considered youth’s specific sexual orientation identities and gender identities rather than treating SGM youth as one singular group. We also gave attention to youth and advisor interest in mental health resources, which offered a strong case for developing and delivering programming tailored for GSAs at a larger scale. Future research might consider how GSAs address youth’s mental health needs in ways that are unique or overlapping with those of other settings.

Ultimately, schools are a key setting to support SGM youth and to promote their well-being. Our findings point to GSAs as important spaces in schools to reach SGM youth, and indeed some heterosexual cisgender ally youth, who demonstrate a clear need and interest for mental health programming. The high proportion of GSA members reaching the threshold for probable mild depression and concerning anxiety, as well as the strong interest among youth and advisors for mental health resources in this setting, support this point. Some of the main features of GSAs, such as providing SGM-affirming support and resources, align with the qualities that SGM youth report being absent yet desired in other settings (Williams &

Chapman, 2011). Further, as school-based settings, GSAs may be more accessible to youth than other settings, and youth may feel more comfortable seeking support from those whom they know, trust, and with whom they have established relationships. These collective findings provide a case for developing selective and indicated school-based prevention programming for GSAs to address the mental health needs of SGM youth.

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Table 1

Youth Demographics and Variable Descriptive Data

Variable	*N* (%)	*M (SD)*
Sexual orientation		
Gay or Lesbian	100 (17.2)	
Bisexual	119 (20.5)	
Questioning	38 (6.6)	
Heterosexual	115 (19.8)	
Pansexual	115 (19.8)	
Asexual	20 (3.4)	
Queer	26 (4.5)	
Multiple or other written-in responses	43 (7.4)	
Not reported	4 (0.7)	
Gender identity		
Cisgender Male	95 (16.4)	
Cisgender Female	330 (56.9)	
Transgender	44 (7.6)	
Genderqueer	13 (2.2)	
Gender Fluid	14 (2.4)	
Non-Binary	35 (6.0)	
Multiple or other written-in responses	47 (8.1)	
Not reported	2 (0.3)	
Race or ethnicity		
White, non-Hispanic	397 (68.4)	
Black or African American	20 (3.4)	
Asian or Asian American	21 (3.6)	
Latino/a/x	63 (10.9)	
Biracial or Multiracial	63 (10.9)	
Native American	3 (0.5)	
Middle Eastern or Arab American	3 (0.5)	
Other written-in responses	7 (1.2)	
Not reported	3 (0.5)	
Depression		13.95 (6.85)
Anxiety		28.29 (16.50)

Note. The average depression and anxiety scores are reported from the full sample.

Table 2

Prevalence of Depression and Anxiety for Specific Sexual Orientation Groups based on Threshold Criteria

	Heterosexual ***n*** **= 115**	**Gay/Lesbian** ***n*** **= 100**	**Bisexual** ***n*** **= 119**	**Questioning** ***n*** **= 38**	**Pansexual** ***n*** **= 115**	**Asexual** ***n*** **= 20**	**Queer** ***n*** **= 26**	**Other identities** ***n*** **= 43**	**Full Sample** ***n*** **= 576**
Depression									
Below threshold	66 (57.4%)	24 (24%)	36 (30.3%)	11 (28.9%)	20 (17.4%)	5 (25.0%)	9 (34.6%)	1 (2.3%)	172 (29.9%)
Above threshold	49 (42.6%)	76 (76%)	83 (69.7%)	27 (71.1%)	95 (82.6%)	15 (75.0%)	17 (65.4%)	42 (97.7%)	404 (70.1%)
Anxiety									
Low	70 (61.4%)	39 (39.0%)	49 (41.9%)	15 (39.5%)	24 (20.9%)	6 (30.0%)	8 (32.0%)	5 (11.6%)	216 (37.8%)
Moderate	28 (24.6%)	27 (27.0%)	39 (33.3%)	11 (28.9%)	26 (22.6%)	10 (50.0%)	4 (16.0%)	14 (32.6%)	159 (27.8%)
Concerning	16 (14.0%)	34 (34.0%)	29 (24.8%)	12 (31.6%)	65 (56.5%)	4 (20.0%)	13 (52.0%)	24 (55.8%)	197 (34.4%)

Note. Across sexual orientation groups, youth identified with a range of gender identities. Prevalence rates are by sexual orientation only, not reflecting the intersection of sexual orientation and gender identity. To meet the threshold for probable mild depression, respondents had a cumulative score of at least 10 out of 30 on the Center for Epidemiological Studies Depression Scale (brief version). On the Beck Anxiety Inventory, low anxiety is defined as total scores ranging from 0 to 21; moderate anxiety constitutes scores from 22 to 35; concerning anxiety constitutes scores from 36 to 63. Participants within the “other identities” group did not feel that any of the other categories accurately captured their sexual orientation identities and wrote in responses which either combined a number of the listed response options or supplied other identities (e.g., gray-asexual, demisexual, polysexual, or various romantic orientations).

Table 3

Prevalence of Depression and Anxiety for Specific Gender Identity Groups based on Threshold Criteria

	Male ***n*** **= 94**	**Female** ***n*** **= 327**	**Transgender** ***n*** **= 44**	**Genderqueer** ***n*** **= 13**	**Gender fluid** ***n*** **= 14**	**Non binary** ***n*** **= 35**	**Other identities** ***n*** **= 47**	**Full Sample** ***n*** **= 574**
Depression								
Below threshold	39 (41.1%)	117 (35.5%)	8 (18.2%)	1 (7.7%)	2 (14.3%)	2 (5.7%)	4 (8.5%)	173 (29.9%)
Above threshold	56 (58.9%)	213 (64.5%)	36 (81.8%)	12 (92.3%)	12 (85.7%)	33 (94.3%)	43 (91.5%)	405 (70.1%)
Anxiety								
Low	50 (53.2%)	139 (42.5%)	12 (27.3%)	1 (7.7%)	2 (14.3%)	4 (11.4%)	10 (21.3%)	218 (38.0%)
Moderate	28 (29.8%)	93 (28.4%)	8 (18.2%)	5 (38.5%)	7 (50.0%)	7 (20.0%)	11 (23.4%)	159 (27.7%)
Concerning	16 (17.0%)	95 (29.1%)	24 (54.5%)	7 (53.8%)	5 (35.7%)	24 (68.6%)	26 (55.3%)	197 (34.3%)

Note. Across gender identity groups, youth identified with a range of sexual orientations. Prevalence rates are by gender identity only, not reflecting the intersection of gender identity and sexual orientation. To meet the threshold for probable mild depression, respondents had a cumulative score of at least 10 out of 30 on the Center for Epidemiological Studies Depression Scale (brief version). On the Beck Anxiety Inventory, low anxiety is defined as total scores ranging from 0 to 21; moderate anxiety constitutes scores from 22 to 35; concerning anxiety constitutes scores from 36 to 63. Participants within the "other identities" group did not feel that any of the other categories accurately captured their gender identities and wrote in responses which either combined a number of the listed response options or supplied other identities (e.g., androgynous, agender, demigirl, demiboy, genderflux).

Table 4

Models of Meeting Threshold for Probable Mild Depression and Concerning Anxiety

Variables	Model for Depression (Pseudo- R^2 = .32)		Model for Anxiety (Pseudo- R^2 = .21)	
	B	OR (95% CI)	B	OR (95% CI)
Sexual orientation				
Heterosexual	—	—	—	—
Gay/Lesbian	1.21***	3.35 (1.75, 6.41)	1.08***	2.95 (1.74, 5.01)
Bisexual	0.88**	2.40 (1.36, 4.25)	0.29	1.34 (0.65, 2.78)
Questioning	1.03	2.81 (1.00, 7.93)	0.50	1.64 (0.67, 4.01)
Pansexual	1.31***	3.70 (1.79, 7.63)	1.59***	4.88 (3.01, 7.90)
Asexual	0.51	1.66 (0.45, 6.10)	0.06	1.07 (0.26, 4.33)
Queer	−0.40	0.67 (0.19, 2.34)	0.95	2.60 (0.92, 7.31)
Other S.O. identities	3.30[a]	27.12[a] (3.10, 237.08)	1.50**	4.46 (1.89, 10.56)
Gender identity				
Cisgender male	—	—	—	—
Cisgender female	0.37	1.45 (0.81, 2.59)	0.83**	2.29 (1.26, 4.16)
Transgender	1.18*	3.24 (1.08, 9.75)	1.49**	4.43 (1.81, 10.82)
Gender expansive	2.17***	8.79 (3.85, 20.05)	1.69***	5.44 (2.83, 10.48)
Covariates				
Racial minority	−0.15	0.86 (0.51, 1.45)	−0.41	0.66 (0.43, 1.00)
Membership duration	0.03	1.03 (0.80, 1.35)	−0.11	0.89 (0.71, 1.13)
Age	0.05	1.06 (0.81, 1.37)	−0.09	0.92 (0.76, 1.11)
Free/reduced lunch	0.20	1.22 (0.79, 1.88)	0.07	1.08 (0.68, 1.71)

Note. Other S.O. identities = participants who did not feel that any of the other categories accurately captured their sexual orientation identities and wrote in responses which either combined a number of the listed response options or supplied other identities; Gender expansive = youth who identified as genderqueer, gender fluid, non-binary, or who provided a written-in response that was not included in the listed response options; the racial minority variable was coded such that White youth were the referent group; Free/reduced lunch = receives free or reduced-price lunch, with "no/unsure" as the referent group. Heterosexual was the referent group for sexual orientation comparisons, and cisgender male was the referent group for gender identity comparisons.

[a]Because of the very wide confidence intervals, which could suggest complications due to partial separation, we refrain from interpreting the statistical significance of this coefficient estimate.

*** $p < .001$.

** $p < .01$.

$^{*}p < .05$.