



# Teacher Support, Victimization, and Alcohol Use Among Sexual and Gender Minority Youth: Considering Ethnoracial Identity

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## Abstract

Although scholarship continues to document higher rates of alcohol use for sexual and gender minority (SGM) youth compared with heterosexual and cisgender youth, research identifying factors that mitigate SGM youths' risk is nascent. Youth spend substantial time in schools; therefore, teachers could play significant roles in attenuating these health concerns. We used data from a nationwide survey of 11,189 SGM youth ( $M_{\text{age}} = 15.52$ ; 67.7% White) to explore whether perceived teacher social-emotional support attenuated the association between victimization and alcohol use, further conditioned by youths' specific ethnoracial identity. As expected, victimization was associated with more frequent alcohol use; however, greater perceived teacher support attenuated this association. The attenuating effect of perceived teacher support was significantly stronger for Hispanic/Latinx youth than White youth. Our findings have implications for alcohol use prevention among SGM youth, who face significant marginalization in schools and society. If we are to prevent alcohol use disparities among SGM youth, scholars and stakeholders (e.g., school administrators, teachers) should invest in building teacher efficacy to intervene in SGM-specific victimization.

**Keywords** Alcohol · SGM · Teacher support · Victimization · SOGI

Despite decreased rates of alcohol use among most heterosexual, cisgender youth in the USA in the past decade (Fish et al., 2017), disparities in alcohol use continue among sexual minority youth (Fish & Baams, 2018; Watson et al., 2019a, b) and gender minority youth (Day et al., 2017; Reisner et al., 2015). In the 2017 Youth Risk Behavior Surveillance Survey, 21.6% of lesbian, gay, and bisexual youth reported drinking alcohol before

the age of 13, compared with 14.9% of heterosexual youth (Kann et al., 2018). Some evidence indicates bisexual individuals experience larger disparities in alcohol use than their gay/lesbian counterparts (Marshal et al., 2008; Talley et al., 2014). Similar patterns of early alcohol use onset are observed among transgender relative to non-transgender youth (Day et al., 2017), yet studies focused on transgender youth are far less common than those examining sexual minority alcohol disparities. These differences in alcohol use can be partly attributable to sexual and gender minority (SGM)-specific victimization (Day et al., 2017; Marshal et al., 2008). It is important to study alcohol use during adolescence as the development of early patterns of alcohol use often carry forward to other stages of the life course (Brown et al., 2008; Schulenberg et al., 2015).

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## The Minority Stress Model, Victimization, and Protective Factors

The minority stress model, conceptualized by Ilan Meyer (Meyer, 2003), suggests that sexual minority individuals are exposed to specific stressors that heterosexual individuals

do not experience (e.g., sexual orientation-specific victimization). Sexual minority-specific stressors experienced by sexual minority individuals explain, in part, disparities in alcohol use (Marshall et al., 2008). Sexual minority youth are more susceptible to school-based victimization than their heterosexual peers (Goodenow et al., 2016; Toomey & Russell, 2016), with sexual minority youth of color at particularly elevated risk (Pollitt et al., 2018). The relationship between school-based victimization and alcohol use among sexual minority youth is well-established; victimization is most commonly studied as a key distal stressor that negatively influences the health and well-being of sexual minority youth (Russell et al., 2012)—thus, we focus on victimization—in particular—in the current study. Sexual minority youth who experience bias-based harassment and victimization from peers at school are more likely to use alcohol and engage in binge drinking behaviors compared with their heterosexual peers; though bias-based bullying is related to alcohol use for heterosexual youth as well, the relation is more pernicious for sexual minority youth in particular (Russell et al., 2012; Fish et al., 2019).

Importantly, the minority stress model posits that protective factors (e.g., social supports) modify the relation between minority stressors (e.g., victimization) and adverse health outcomes (e.g., alcohol use). Some scholarship has considered supportive family experiences as a buffer (Ryan et al., 2010; Snapp et al., 2015a, b; Watson et al., 2019a, b) against negative health experiences among SGM youth. There has been less consideration of supports outside the family context, such as those at schools. However, teacher support may mitigate the relationship between school-based victimization and alcohol use among sexual minorities (Meyer, 2003). Furthermore, teacher support could have even stronger effects for SGM youth of color, who are at particular risk of experiencing victimization. Whereas much research has considered how school settings may pose significant risks for SGM youth (such as contexts where bullying and/or victimization occur and thus exacerbate educational and health disparities), markedly less work has considered how they may serve in protective roles. In this respect, we focus specifically on how SGM youths' perceived social-emotional support from their teachers could significantly attenuate the association between victimization and their level of alcohol use.

## Protective Factors in the Lives of Sexual Minority Youth

For youth of all sexual orientations and gender identities, perceptions of teacher support are associated with higher levels of classroom engagement, motivation, school

attendance, and academic achievement (Tennant et al., 2015; Quin, 2017), as well as lower school suspension and dropout (Quin, 2017). For SGM youth specifically, adult support is associated with more positive school and health indicators. Their perceptions of having LGBTQ-supportive teachers are associated with greater self-esteem, higher grade point averages, fewer school absences, and less victimization (Kosciw et al., 2013). Pertinent to the current study, other findings suggest that adult support at school is associated with less substance use and buffers the association between victimization and substance use at least for bisexual male students (Darwich et al., 2012). Another study found that adult support at school was associated with decreased odds of substance use among sexual minority youth (Pedro et al., 2017), and other recent evidence documented that in Minnesota, higher quality reported teacher relationships by transgender and gender diverse youth had lower the odds of drinking alcohol in the past 30 days (Gower et al., 2018).

Two key issues remain unaddressed in this literature. First, beyond documenting bivariate associations between perceived teacher support and SGM youths' substance use, extant studies do not consider whether teacher support might moderate the association between victimization and alcohol use. In addition to increasing efforts to reduce victimization, it is also important to better understand the role teachers can play in reducing substance use problems—potentially low-cost strategies to be leveraged. Second, despite school environments being disproportionately favorable to White youth (Hughes et al., 2010), studies have not considered whether the potential buffering role of teacher support may extend differentially to SGM youth of color relative to White youth.

Additionally, some work has documented variability in alcohol use at the intersection of youths' ethnoracial identity and sexual minority status (Pollitt et al., 2018), but little research has considered whether protective factors, such as teacher support, mitigate the effects of victimization on alcohol use differentially for SGM youth of color compared with White youth. School environments are oftentimes hostile for youth of color (Hughes et al., 2010), and particularly for SGM youth of color (Craig et al., 2014) for whom protective factors (e.g., support from adults/teachers at school) in schools may be especially critical. This hostility may exist in child-peer or child-teacher interpersonal relationships, or be shaped from structural factors (e.g., anti-trans bathroom legislation, schools without numerated anti-bullying policies in place). In the current paper, we considered not only how protective relationships might attenuate the association between victimization and substance use but also how this buffering effect might vary based on SGM youth's specific ethnoracial identity. This added level of specificity has been neglected in the literature but may be key to reducing the disproportional alcohol use behaviors among specific populations of SGM youth.

## Intersections of Ethnoracial and Sexual Identities

There is emerging work on variability in alcohol use among sexual minority youth on account of their ethnoracial identity (Mereish, 2019; Toomey et al., 2017). Although findings are not always consistent in documenting differences (e.g., Rosario et al., 1997), when such differences are documented they suggest that alcohol use is more elevated among White sexual minorities than sexual minorities of color (Mereish et al., 2017; Newcomb et al., 2014). In a population-based sample of transgender youth, Hispanic youth had 1.41 greater odds of lifetime alcohol use compared with White youth, whereas Asian and multiracial youth had lower odds of lifetime alcohol use compared with White youth (Day et al., 2017). Other research found no statistically significant ethnoracial differences in alcohol use among transgender and gender diverse youth (Hatchel et al., 2019; Gower et al., 2018). There remains a need to continue to test these ethnoracial patterns in alcohol use of SGM youth across unique samples given the relative inconsistency of findings in the current literature (Mereish, 2019; Toomey et al., 2017). The better we understand these differences, the more adept we are to explore and address the mechanisms that contribute to SGM youth vulnerabilities to alcohol use.

Equally important is the need to understand how protective factors may operate differentially for SGM from different ethnoracial backgrounds. For example, in their investigation of the moderating effect of parental support in the association between homophobic victimization and psychological distress, Poteat et al. (2019) found that parental support attenuated this relationship for sexual minority youth of color, but not for White sexual minority youth. In the context of schools, teacher-student relationships have been shown to vary by student ethnoracial group, whereby youth of color are less likely to receive positive support and are more subject to bias, regardless of teacher race (Scott et al., 2019). Similarly, youth of color experience a disproportionate burden of disciplinary practices (Welsh & Little, 2018), and these inequities can be amplified for SGM youth of color (Snapp et al., 2015). As such, the link between victimization and alcohol use and the attenuation by teacher support may further vary by youth ethnoracial identity.

### Current Study

Protective factors that mitigate the effects of victimization on alcohol use among SGM youth, and especially among SGM youth of color, remain largely underexplored. Of particular interest are protective factors at school. In the current study, we hypothesized that youths' perceived teacher support would attenuate the otherwise negative

association between victimization and alcohol use. Further, we considered whether this moderating effect might be differentially protective for SGM youth of color.

## Methods

### Study Design, Participant Recruitment, and Data Cleaning Procedures

Participants responded anonymously to the LGBTQ National Teen Survey, an online Qualtrics survey between April and December 2017. Inclusion criteria included youth aged 13–17 residing in the USA who identified as a sexual and/or gender minority (e.g., any SGM identity that was non-cisgender and non-heterosexual). Researchers partnered with the Human Rights Campaign (HRC) to utilize the following recruitment sources: community-based organizations, Twitter, Facebook, Instagram, and word-of-mouth. Incentives were an LGBTQ wristband and entry into a drawing for Amazon.com gift cards. A waiver of parental consent was granted by the University of Connecticut IRB—adolescents provided informed assent to participate. More information regarding the study design and participant recruitment procedures can be found elsewhere (Watson et al., 2020). Data were cleaned to eliminate duplicate responses, screened for automated bots and evaluated for other suspicious entries (e.g., from participant written-in responses). Participants spent 28 min, on average, to complete the survey.

### Sample

From the larger project, the initial participant sample included 17,112 youth who entered the survey and answered at least the demographic items. For this study, we applied several criteria for inclusion in the analyses. First, we did not include participants who completed less than half of the survey ( $n = 5,145$ ). Among the remaining participants, we did not include participants who reported that they were in college or that they were not in school ( $n = 516$ ). Finally, we could not include participants who identified as American Indian or Alaska Native ( $n = 52$ ), who reported another written-in ethnoracial identity ( $n = 195$ ), or who did not report their ethnoracial identity ( $n = 15$ ) because we had too few participants in these specific groups for our planned three-way interaction analyses. This resulted in a final sample of 11,189 youth in our analyses. The majority of youth identified as White non-Hispanic (67.7%), followed by multiracial (13.5%), Latino, Hispanic, or Mexican-American (10.3%), Black or African American (4.6%), and Asian or Pacific Islander (3.9%).

Participants in the analytic sample were slightly older and more likely to identify as White compared with youth in the full sample. There is no nationally representative sample available that allows for direct comparison to our sample; however, we do acknowledge that our survey captured more diversity across sexual orientations than surveillance surveys, such as the Youth Risk Behavior Surveillance (YRBS) Survey conducted by the Centers for Disease Control. In their 2017 national survey (Kann et al., 2018), YRBS researchers found that 85.4% of their sample of youth identified as heterosexual, 2.4% identified as gay or lesbian, 8.0% identified as bisexual, and 4.2% were unsure of their sexual orientation. Our data include disproportionately more gay/lesbian and non-binary youth than the YRBS. Participants in this study resided in all 50 states across the USA. The average age of the sample was 15.53 ( $SD = 1.26$ ). See Table 1 for additional sample demographics and descriptive statistics for our study measures.

Approximately 61% of our participants responded to all of the items in the full survey, and 79% of participants responded to 99% of the items. Participants' missing data across our set of variables ranged from 0% (for all demographic items) to 26% (for an item asking about perceived teacher support and care). Little's MCAR test was significant ( $\chi^2 = 825.80$ ,  $df = 83$ ,  $p < 0.001$ ), also suggesting that the data were not missing completely at random. When considering potential differences in missingness across various demographic indicators, we noted that youth who identified as questioning their sexual orientation had more missing data relative to youth identifying with other sexual orientations, ranging from a 6 to 10% difference across the items. Other demographic group-based differences in missingness were relatively minor or negligible.

## Measures: Independent and Dependent Variables

**Frequency of Past 30-Day Alcohol Use** We measured alcohol use with one item modeled from the YRBS survey (Kann et al., 2016), which stated "During the past 30 days, on how many days did you have at least one drink of alcohol?" Response options were 0 (0 days), 1 (1 or 2 days), 2 (3 to 5 days), 3 (6 to 9 days), 4 (10 to 19 days), 5 (20 to 29 days), and 6 (all 30 days).

**Victimization** Youth reported victimization experiences on four items, preceded by the question, "In your lifetime, how often have any of the following things happened to you because of your sexual orientation or gender identity or because people think you are lesbian, gay, bisexual, transgender, or queer": (a) verbal insults, (b) threats of physical violence, (c) objects thrown at you, and (d) punched, kicked, or beaten. Response

options were *never*, *once*, *twice*, or *three or more times* (scored 0 to 3). Due to the distribution of responses to the latter two items, we dichotomized the scores on each as either never (0) or at least once (1). These four items were indicators of the latent variable of victimization in our analyses, where higher scores reflected more frequent victimization.

**Teacher Support** Three items measured perceived teacher support. One item was modeled from the CDC's Youth Risk Behavior Survey, which asked, "Is there at least one teacher or other adult in this school that you can talk to if you have a problem?" with response options of yes, no, and do not know. We recoded this variable as 0 = no/do not know and 1 = yes. The second item asked, "Do you agree or disagree that your teachers really care about you and give you encouragement and support?" Response options were *strongly disagree*, *disagree*, *agree*, or *strongly agree* (scored 0 to 3). The third item asked, "How many of the teachers and staff at your school do you think are supportive of LGBTQ people?" Response options were *none of them*, *some of them*, *most of them*, or *all of them* (scored 0 to 3). These three items were indicators of the latent variable of teacher support in our analyses, where higher scores reflected greater perceived teacher support.

**Ethnoracial Identity** To measure the ethnoracial identities of our participants, we utilized a check-all-that-applies item: "How would you describe yourself?" Response options were "White, non-Hispanic," "Non-Latino Black or African American," "American Indian or Alaska Native," "Asian or Pacific Islander," "Latino, Hispanic, or Mexican-American," and "Something else." Participants who checked more than one box were categorized as "Multiracial." For the current paper, we included youth who identified as White, Non-Latino Black or African American, Asian or Pacific Islander, Latino, Hispanic, or Mexican American, or Multiracial (our dataset included too few youth identifying as American Indian or Alaska Native, or with another more specific written-in identity for our planned three-way interaction test involving youth's ethnoracial identity).

## Measures: Covariates

**Sexual Orientation** To measure participant sexual orientation, we asked, "How do you describe your sexual identity?" Participants chose one option from the following: "gay or lesbian," "bisexual," "straight, that is, not gay," or "something else." When a participant chose "something else," they were provided with an additional item that allowed them to pick a different sexual orientation, including "pansexual," "asexual," "queer," or "another sexual orientation."

**Table 1** Demographics and descriptive statistics of participant sample

Demographic variables and study measures	Full sample	White, non-Hispanic	Black or African American	Asian or Pacific Islander	Latino, Hispanic, or Mexican American	Biracial or multiracial
<b>Demographic variables</b>						
<b>Sexual orientation</b>						
Gay or lesbian	4136 (37.0)	2861 (37.8)	170 (32.9)	154 (35.6)	446 (38.8)	505 (33.3)
Bisexual	3816 (34.1)	2470 (32.6)	216 (41.9)	179 (41.3)	439 (38.2)	512 (33.8)
Straight	181 (1.6)	128 (1.7)	12 (2.3)	3 (0.7)	14 (1.2)	24 (1.6)
Queer	483 (4.3)	363 (4.8)	12 (2.3)	13 (3.0)	32 (2.8)	63 (4.2)
Pansexual	1538 (13.7)	1007 (13.3)	73 (14.1)	48 (11.1)	144 (12.5)	266 (17.6)
Asexual	525 (4.7)	394 (5.2)	10 (1.9)	19 (4.4)	31 (2.7)	71 (4.7)
Questioning	273 (2.4)	188 (2.5)	12 (2.3)	11 (2.5)	18 (1.6)	44 (2.9)
Another identity	237 (2.1)	165 (2.2)	11 (2.1)	6 (1.4)	25 (2.2)	30 (2.0)
<b>Gender identity</b>						
Male-Identifying	3339 (29.8)	2243 (29.6)	159 (30.8)	125 (28.9)	385 (33.5)	427 (28.2)
Female-Identifying	5074 (45.3)	3414 (45.1)	269 (52.1)	216 (49.9)	532 (46.3)	643 (42.4)
Non-binary	2776 (24.8)	1919 (25.3)	88 (17.1)	92 (21.2)	232 (20.2)	445 (29.4)
<b>Race, Ethnicity</b>						
White, non-Hispanic	7576 (67.7)					
Black or African American	516 (4.6)					
Asian or Pacific Islander	433 (3.9)					
Latino, Hispanic, or Mexican American	1149 (10.3)					
Biracial or multiracial	1515 (13.5)					
<b>Parent education</b>						
Less than high school or GED	326 (3.1)	119 (1.6)	12 (2.3)	14 (3.2)	141 (12.3)	40 (2.6)
High school or GED	1372 (12.9)	822 (10.9)	68 (13.2)	20 (4.6)	268 (23.3)	194 (12.8)
Some college	1783 (16.8)	1115 (14.7)	112 (21.7)	40 (9.2)	230 (20.0)	286 (18.9)
College graduate or higher	7138 (67.2)	5172 (68.3)	287 (55.6)	334 (77.1)	438 (38.1)	907 (59.9)
No response, “unknown,” or “not applicable”	570 (5.1)	348 (4.6)	37 (7.2)	25 (5.8)	72 (6.3)	88 (5.8)
<b>Geographic region</b>						
Northeast	2009 (18.0)	1474 (19.5)	74 (14.3)	85 (19.6)	129 (11.2)	247 (16.3)
Midwest	2682 (24.0)	2063 (27.2)	115 (22.3)	59 (13.6)	134 (11.7)	311 (20.5)
South	4088 (36.5)	2632 (34.7)	287 (55.6)	117 (27.0)	506 (44.0)	546 (36.0)
West	2410 (21.5)	1407 (18.6)	40 (7.8)	172 (39.7)	380 (33.1)	411 (27.1)
Age	$M = 15.53$ $SD = 1.26$	$M = 15.54$ $SD = 1.26$	$M = 15.69$ $SD = 1.20$	$M = 15.51$ $SD = 1.28$	$M = 15.54$ $SD = 1.27$	$M = 15.44$ $SD = 1.26$
<b>Study measures</b>						
Past 30-day alcohol use	$M = 0.74$ $SD = 0.98$	$M = 0.76$ $SD = 0.99$	$M = 0.55$ $SD = 0.79$	$M = 0.63$ $SD = 0.88$	$M = 0.71$ $SD = 0.95$	$M = 0.70$ $SD = 1.00$
Verbal insults	$M = 1.73$ $SD = 1.25$	$M = 1.77$ $SD = 1.25$	$M = 1.47$ $SD = 1.29$	$M = 1.26$ $SD = 1.25$	$M = 1.62$ $SD = 1.25$	$M = 1.84$ $SD = 1.23$
Threats of physical violence	$M = 0.57$ $SD = 0.98$	$M = 0.57$ $SD = 0.98$	$M = 0.49$ $SD = 0.94$	$M = 0.34$ $SD = 0.80$	$M = 0.53$ $SD = 0.96$	$M = 0.68$ $SD = 1.06$
Object thrown	20.1%	19.9%	15.3%	10.9%	21.9%	23.8%
Punched, kicked, or beaten	11.8%	11.6%	9.7%	7.9%	12.6%	13.9%
Teacher or adult at school to talk to	59.2%	59.5%	56.8%	60.7%	57.4%	59.1%
Teachers care, encourage, and support	$M = 2.65$ $SD = 1.22$	$M = 2.63$ $SD = 1.23$	$M = 2.82$ $SD = 1.19$	$M = 2.82$ $SD = 1.09$	$M = 2.70$ $SD = 1.23$	$M = 2.65$ $SD = 1.24$
Teachers supportive of LGBTQ people	$M = 1.53$ $SD = 0.65$	$M = 1.52$ $SD = 0.64$	$M = 1.49$ $SD = 0.68$	$M = 1.65$ $SD = 0.66$	$M = 1.51$ $SD = 0.63$	$M = 1.56$ $SD = 0.67$

For demographic variables, values represent the number of participants who identify with each demographic indicator and percentages are reported within parentheses to reflect the percentage within specific ethnoracial groups. For study measures, values represent the means and standard deviations of the measure for the overall sample and for specific ethnoracial groups, or the percentage of participants in the overall sample or ethnoracial group who responded “yes” to the item



**Gender** One check-all-that-applies item asked whether participants were male, female, transgender boy, transgender girl, nonbinary, genderqueer, or another identity not listed. In our models, we included gender identity as a covariate based on three categories—boys, girls, and non-binary youth—which we constructed using the original check-all-that-applies item and an item that asked youth whether they were assigned male or female at birth. Girls included cisgender and transgender girls, boys included cisgender and transgender boys, and non-binary youth included youth who checked “non-binary” or “genderqueer,” either solely or in combination with other identities. When youth checked “another identity not listed” only, they were included in the non-cisgender (i.e., non-binary) group according to the sex assigned at birth they indicated.

**Parental Education** To measure parental education, we calculated the highest value from one of two items that asked, “Please indicate the highest level of education that your first [second] parent/primary caregiver completed.” Response options were “Less than high school or GED,” “High school or GED,” “Vocational/Technical School (2 years),” “Some college,” “College graduate,” and “Postgraduate degree or higher.” We recoded the new variable with response options of “less than high school,” “high school,” “some college” (including some college and vocational/technical school), and “college graduate or more.”

**Age** Participants reported their current age in years.

**Geographic Region** We measured the region of residence by coding their response to “What state do you live in” four options: “Northeast,” “Midwest,” “South,” and “West.”

## Analytic Approach

We analyzed two zero-inflated Poisson regression models using Mplus 8.3 (Muthén & Muthén, 2019), taking into consideration the large count of “zero” responses (44% of participants reporting no alcohol use in the past 30 days). Model 1 tested our hypothesis that perceived teacher social-emotional support would attenuate the association between victimization and frequency of past 30-day alcohol use. Model 2 tested our hypothesis that the magnitude of this attenuation would vary based on youth’s ethnoracial identity. Past 30-day alcohol use was the dependent variable in both models.

In Model 1, independent variables were youth’s ethnoracial identity (referent group = White, non-Hispanic), their reported level of victimization and perceived teacher social-emotional support as main effects, and the interaction between victimization and teacher social-emotional support. We further adjusted for youth’s age, geographic region

(referent group = Northeast USA), specific sexual orientation (referent group = gay/lesbian), gender identity (referent group = male), and parent’s highest education level.

Victimization and teacher social-emotional support were treated as latent variables in the model, as was their interaction term calculated using the XWITH function in Mplus. The four victimization items were indicators of the latent victimization factor. The three teacher support items were indicators of the latent teacher social-emotional support factor. Because we used a mixture of continuous and categorical indicators, typical fit indices are not available in Mplus (e.g., root-mean-square error of approximation). However, we examined the size and significance of the factor loadings, and all items loaded significantly on their latent factor in the expected direction. To probe significant interactions, we used the model constraint function in Mplus to calculate conditional associations between victimization and alcohol use at lower and higher perceived teacher social-emotional support (based on  $\pm 1$  SD from the mean). For this model and our second model, we report unstandardized coefficient estimates along with their 95% confidence intervals; Mplus does not provide standardized coefficient estimates for these models, given our specification for latent interactions with a count variable as the dependent variable.

In Model 2, independent variables were the main effects of victimization, teacher social-emotional support, and youth’s ethnoracial identity; the two-way interactions between these variables; and their three-way interactions. Model 2 adjusted for the same set of covariates as in Model 1. We calculated the association between victimization and alcohol use (conditional on SGM youth’s perceived teacher social-emotional support) for specific groups of SGM ethnoracial minority youth for whom the magnitude of the conditional association differed from SGM White non-Hispanic youth (i.e., the referent group).

## Results

In Model 1 (see Table 2), as hypothesized, the main effect indicated that greater victimization was associated with more frequent alcohol use ( $b = 0.382$ ,  $p < 0.001$ ; 95% CI [0.304, 0.461]), although the magnitude of the association was qualified by level of teacher social-emotional support ( $b = -0.231$ ,  $p = 0.03$ ; 95% CI [-0.444, -0.017]). The association between victimization and alcohol use was weaker at higher levels of teacher social-emotional support ( $b = 0.300$ ,  $p < 0.001$ ; 95% CI [0.179, 0.42]) than at lower levels of teacher social-emotional support ( $b = 0.465$ ,  $p < 0.001$ ; 95% CI [0.367, 0.564]). The coefficient estimates for all variables in Model 1 are reported in Table 2.

In Model 2 (see Table 3), the interaction between victimization and teacher support differed in size for Latino,

**Table 2** Two-way interaction between victimization and teacher support predicting alcohol use frequency

Independent variables	Unstandardized coefficient estimate	95% Confidence interval
<b>Main effects</b>		
Victimization	0.382***	(0.304, 0.461)
Perceived teacher support	− 0.032	(− 0.214, 0.151)
<b>Race, Ethnicity</b>		
Black or African American	− 0.325**	(− 0.561, − 0.088)
Asian or Pacific Islander	− 0.220	(− 0.538, 0.098)
Latino, Hispanic, or Mexican American	− 0.046	(− 0.186, 0.094)
Biracial or multiracial	− 0.070	(− 0.200, 0.059)
<b>Moderation Effect</b>		
Victimization × T. sup	− 0.231*	(− 0.444, − 0.017)
<b>Covariates</b>		
Age	0.174***	(0.136, 0.211)
Parent highest education level	− 0.023	(− 0.074, 0.028)
<b>Geographic region</b>		
Midwestern USA	− 0.055	(− 0.181, 0.072)
Southern USA	− 0.156**	(− 0.273, − 0.038)
Western USA	0.073	(− 0.058, 0.204)
<b>Sexual orientation</b>		
Bisexual	0.065	(− 0.037, 0.167)
Queer	− 0.057	(− 0.305, 0.191)
Pansexual	− 0.072	(− 0.209, 0.065)
Asexual	0.020	(− 0.354, 0.395)
Questioning	− 0.163	(− 0.473, 0.148)
Straight	0.136	(− 0.217, 0.489)
Another sexual orientation	− 0.003	(− 0.450, 0.443)
<b>Gender identity</b>		
Female gender	0.033	(− 0.077, 0.143)
Non-binary gender	− 0.190**	(− 0.313, − 0.067)

For all race/ethnicity-based effects, White non-Hispanic youth served as the referent group; for sexual orientation, gay/lesbian youth served as the referent group; for gender identity, male-identifying youth served as the referent group; and for geographic region, Northeastern USA served as the referent group

T. sup teacher support

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

Hispanic, or Mexican-American SGM youth relative to White non-Hispanic SGM youth, as indicated by the 3-way interaction effect ( $b = -0.703$ ,  $p = 0.04$ ; 95% CI [ $-1.377, -0.030$ ]). Perceived teacher social-emotional support more strongly attenuated the association between victimization and alcohol use for Latino, Hispanic, or Mexican-American SGM youth than White non-Hispanic SGM youth (see Fig. 1). At lower levels of teacher support, the association between victimization and alcohol use was larger for Latino, Hispanic, or Mexican-American SGM youth ( $b = 0.580$ ,  $p < 0.001$ ; 95% CI [ $0.301, 0.860$ ]) than for White non-Hispanic SGM youth ( $b = 0.383$ ,  $p < 0.001$ ; 95% CI [ $0.259, 0.506$ ]). At higher levels of teacher support, however, the association between victimization and alcohol use was statistically non-significant for Latino, Hispanic, or Mexican-American SGM youth ( $b = 0.009$ ,

$p = 0.96$ ; 95% CI [ $-0.362, 0.379$ ]), while it remained statistically significant for White non-Hispanic SGM youth ( $b = 0.317$ ,  $p < 0.001$ ; 95% CI [ $0.183, 0.452$ ]). The other 3-way interactions were not significant, indicating that the magnitude of the moderating effect of perceived teacher support did not differ to a statistically significant degree for SGM youth identifying with other ethnoracial minority identities relative to White non-Hispanic SGM youth.

## Discussion

This study builds on the SGM youth empirical literature to show that although victimization was associated with frequency of alcohol use, perceived teacher support attenuated this association. Moreover, the magnitude

**Table 3** Three-way interaction between victimization, teacher support, and race/ethnicity predicting alcohol use frequency

Independent variables	Unstandardized coefficient estimate	95% Confidence interval
<b>Main effects</b>		
Victimization	0.350***	(0.259, 0.440)
Perceived teacher support	− 0.049	(− 0.252, 0.153)
<b>Race, Ethnicity</b>		
Black or African American	− 0.326*	(− 0.603, − 0.049)
Asian or Pacific Islander	− 0.253*	(− 0.493, − 0.014)
Latino, Hispanic, or Mexican American	− 0.127	(− 0.281, 0.028)
Biracial or multiracial	− 0.109	(− 0.253, 0.034)
<b>Moderation effects</b>		
Victimization × T. sup	− 0.091	(− 0.346, 0.164)
Victimization × Black	0.397	(− 0.028, 0.823)
Victimization × API	0.063	(− 0.285, 0.412)
Victimization × LHMA	− 0.055	(− 0.310, 0.199)
Victimization × Multiracial	− 0.081	(− 0.359, 0.196)
T. sup × Black	0.939	(− 0.081, 1.958)
T. sup × API	− 0.709	(− 1.675, 0.256)
T. sup × LHMA	− 0.075	(− 0.642, 0.491)
T. Sup × Multiracial	0.255	(− 0.303, 0.813)
Victimization × T. sup × Black	− 0.216	(− 1.512, 1.080)
Victimization × T. sup × API	− 0.062	(− 1.049, 0.926)
Victimization × T. sup × LHMA	− 0.703*	(− 1.377, − 0.030)
Victimization × T. sup × Multiracial	− 0.551	(− 1.257, 0.154)
<b>Covariates</b>		
Age	0.159***	(0.120, 0.198)
Parent highest education level	− 0.031	(− 0.082, 0.020)
<b>Geographic region</b>		
Midwestern USA	− 0.034	(− 0.159, 0.092)
Southern USA	− 0.144*	(− 0.262, − 0.026)
Western USA	0.105	(− 0.021, 0.232)
<b>Sexual orientation</b>		
Bisexual	0.037	(− 0.064, 0.139)
Queer	− 0.045	(− 0.293, 0.202)
Pansexual	− 0.066	(− 0.203, 0.070)
Asexual	0.152	(− 0.167, 0.470)
Questioning	− 0.141	(− 0.465, 0.183)
Straight	0.086	(− 0.305, 0.476)
Another sexual orientation	0.126	(− 0.315, 0.568)
<b>Gender identity</b>		
Female gender	0.051	(− 0.056, 0.157)
Non-binary gender	− 0.205**	(− 0.335, − 0.075)

For all race/ethnicity-based effects, White non-Hispanic youth served as the referent group; for sexual orientation, gay/lesbian youth served as the referent group; for gender identity, male-identifying youth served as the referent group; and for geographic region, Northeastern U.S. served as the referent group

T. sup teacher support; API Asian or Pacific Islander; LHMA Latino, Hispanic, or Mexican American

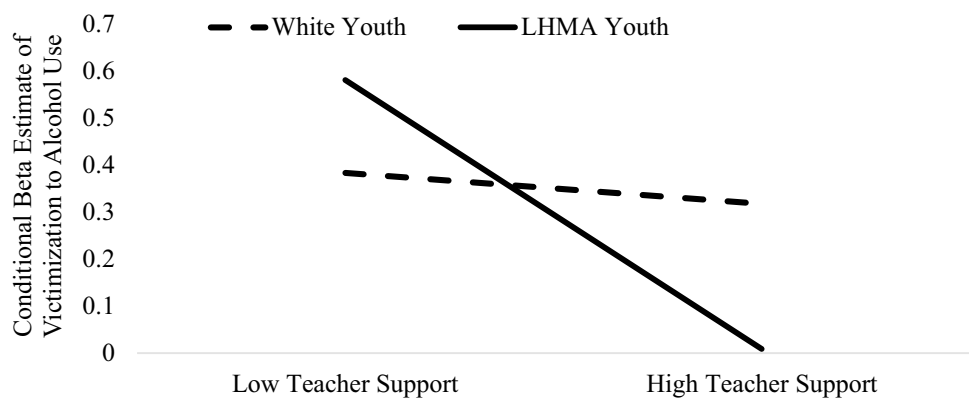
\*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$

of this buffering effect was even stronger for Hispanic/Latinx SGM youth relative to White SGM youth. These findings extend prior work emphasizing the protective role of school-based adult support on health outcomes for

SGM youth (Darwich et al., 2012; Pedro et al., 2017) and suggest important differences in how teacher support may operate to protect against alcohol use among SGM youth and can be used to inform theory and intervention efforts.



**Fig. 1** Plot of the conditional beta estimates (denoted along the y-axis) of victimization as a predictor of past 30-day alcohol use, conditioned on level of perceived teacher support (denoted along the x-axis for  $\pm 1$  standard deviation from the mean), for White youth and Latino, Hispanic, or Mexican-American (LHMA) youth



Our findings provide additional support for minority stress models that connect SGM-specific sources of stress (e.g., bias-based victimization) to greater substance use (Goldbach et al., 2014). Although other research has established temporal relationships between experiences of SGM-specific victimization and mental health outcomes (Burton et al., 2013), our findings provide additional support for the robustness of this relationship among a large and diverse sample of SGM youth. The association between victimization and alcohol use remained significant after adjusting for diverse sexual and gender identities, suggesting that victimization is associated with alcohol use broadly for SGM youth despite important subgroup differences in mean levels of victimization and alcohol use.

As an important qualifier, despite the association between victimization and alcohol use, teacher support attenuated this association. Previous research has documented SGM-specific associations between victimization and alcohol use (e.g., Marshal et al., 2008), and teacher support and alcohol use (e.g., Gower et al., 2018), separately, but our study extends this work to highlight the importance of teachers—in particular for SGM youth of color. Prior research on school-based interventions supports the implementation of teacher-led strategies to address substance use (Das et al., 2016). Particularly for alcohol use, school-based interventions result in greater reductions in substance use among youth as compared with other approaches such as online-delivered and policy-based interventions. A review of school-based mental health interventions also suggested that teacher-delivered interventions resulted in similar effects compared with mental health professional-delivered interventions (Franklin et al., 2012).

Perhaps our most novel finding, although teacher support attenuated the association between victimization and alcohol use for SGM youth in general, this moderating effect was even stronger for Latinx/Hispanic SGM youth. This distinction, and the identification of factors which may contribute to it, warrants further consideration. It is possible that White SGM youth may

have access to a broader range of supportive adults, peers, or supportive settings (e.g., SGM-affirming community centers or faith communities). If so, teachers may have an important but less central or singular role in buffering the effects of their victimization relative to SGM youth of color (in this case, most evident for Hispanic/Latinx SGM youth) for whom teachers may be one of fewer accessible SGM-affirming adults in their lives. Also, given the ongoing racial segregation in many US schools (Logan & Burdick-Will, 2016), White SGM youth may have greater access to or feel more empowered to engage with school-based supports than Hispanic/Latinx SGM youth, again making teacher support all the more important for Hispanic/Latinx SGM youth. In contrast, the magnitude of the attenuating effect of teacher support did not differ for Black, Asian American, or multiracial SGM youth relative to White youth. This does, however, still represent an encouraging finding, in that perceived teacher support has clear promise in mitigating the otherwise negative effects of victimization for alcohol use among diverse SGM youth of color. Ultimately, multi-level investigations are needed in order to examine the impact of school-based factors on alcohol use among diverse SGM youth.

Despite our study elucidating nuances in the protective role of teacher support for diverse SGM youth across the USA, we acknowledge several limitations. First, our data relied on self-report measures, which assume the accuracy of youth reported alcohol use. Some studies, primarily with adults, screen for drugs and alcohol through toxicology tests, but our large anonymous data collection procedure did not allow for this approach. Second, our data are cross-sectional and we are unable to document a long-term relation between teacher support and alcohol use for SGM youth. In addition to this, the causal relationship and temporality concerning teacher support and victimization is unknown. Future longitudinal work should disentangle the casual relationship between teacher support and victimization for SGM youth. Last, our data are not representative of all SGM youth. Our sample

included only youth who had access to the Internet, had time to complete the survey, and spoke English. Oftentimes in Internet-based sampling recruited from social media, these participants tend to be from families with more resources (such as access to the Internet)—in the case of our data collection, participants were also disproportionately White youth. However, our study includes a large representation of SGM youth across the USA.

## Implications for Prevention

Our findings for teacher support have implications for stakeholders invested in reducing health disparities and improving the school environment for SGM students. Certainly, one strategy is to focus on reducing victimization in schools. At the same time, our study indicates we should invest in building teachers' skills and competence to provide support and affirmation of their SGM students at school. For instance, some work suggests that teachers who have received more education on homophobic bullying and self-efficacy are more likely to counteract this behavior (Poteat et al., 2019). Additionally, our study provides evidence for the utility of educating teachers to recognize the unique risks of SGM students, providing training on how to intervene when they witness SGM-related victimization, and the inclusion of in-services focused on integrating SGM-related material into courses. Strategies that situate teachers as allies to SGM youth may increase students' perceived support from teachers. After all, there is evidence that lesbian, gay, and bisexual adults who reported having natural mentors (including teachers) during adolescence were more likely to graduate high school compared with those who did not have these mentors (Drevon et al., 2016). Indeed, prior research also finds that teacher support could promote safer classrooms and school environments not only for sexual minority youth, but also for heterosexual youth (Kutsyuruba et al., 2015; Troop-Gordon, 2015). In sum, to reduce the well documented disparities in alcohol use among SGM youth—with attention to the most vulnerable subgroups, including ethnoracial minorities—stakeholders must invest in both reducing victimization in schools and continuing to prepare teachers in the best practices to support vulnerable SGM youth.

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## Declarations

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Research Involving Human Participants and/or Animals** The research presented uses research on human subjects; IRB approval was obtained. The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

**Informed Consent** The IRB approved a waiver or parental consent; all participants provided assent to participate in this study.

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