

Minority Stress and the Risk of Unwanted Sexual Experiences in LGBQ Undergraduates

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Abstract Sexual assault is prevalent among lesbian, gay, bisexual, and queer (LGBQ) college students, but its relationship to anti-LGBQ stigma has not been established. The goal of the present study was to determine whether minority stress, specifically internalized homophobia, predicted unwanted sexual experiences among LGBQ undergraduates ($N = 763$), whether routine behaviors (number of consensual sexual partners and alcohol use) mediated this relationship, and whether sense of LGBTQ community was a protective factor. Significant proportions of sexual minority men (10 %), women (18 %), and non-binary or transitioning students (19 %) reported an unwanted sexual experience since entering college. Internalized homophobia was associated with greater risk of unwanted sexual experiences. It also had a negative indirect effect on unwanted sexual experience risk through a negative association with number of sexual partners. Alcohol use did not mediate the relationship between internalized homophobia and unwanted sexual experiences. Sense of LGBTQ community was associated with lower risk, mediated by lower levels of internalized homophobia. The relationships between internalized homophobia and unwanted sexual experience risk were similar for women and men. These findings demonstrate that minority stress increases LGBQ students' risk of sexual victimization and that in-group social relationships can mitigate this risk. We argue that minority stress is an

important risk factor for sexual violence. Violence prevention interventions should attempt to reduce internalized homophobia, and colleges and high schools should establish LGBQ-affirming social climates and provide resources for LGBQ students, including targeted violence prevention efforts and programs that foster a sense of supportive community.

Keywords Bisexuality · College students · Gay · Homosexuality · Internalized homophobia · LGBT · Lesbianism · Minority stress · Rape · Sense of community · Sexual assault · Sexual orientation · Stigma

Experiencing sexual violence during college can impair academic success (Jordan et al. 2014) and mental health (Arata and Burkhart 1996; Vrana and Lauterbach 1994). Surveillance data on lesbian, gay, bisexual, and queer (LGBQ) college students indicates that they experience sexual violence at least as often as their heterosexual peers (Hines et al. 2012; Johnson et al. 2016; Martin et al. 2011). However, most research on college sexual violence centers heterosexual women as its potential targets. LGBQ students may experience distinct patterns of sexual violence or be subject to unique risk factors, including the effects of anti-LGBQ stigma.

Limited data on LGBTQ students' unwanted sexual experiences suggest that these events are similar to those described among heterosexual students. As with heterosexual targets, many sexual assaults of LGBTQ students occur while the perpetrator and/or target have been using alcohol, and incidents often begin in public spaces like parties or bars but end in private bedrooms (Menning and Holtzman 2013). The range of tactics used also reflects the variety found in heterosexual students' experiences, ranging from "relentless requests" to physical force (Menning and Holtzman 2013).

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There are no quantitative descriptions of perpetrators' genders or their relationship to targets.

Even less is known about factors that influence LGBTQ students' risk for these events, and the notion that minority stress is associated with risk has not been tested. Internalized homophobia has been linked to intimate partner violence perpetration and victimization among LGBQ undergraduates (Edwards and Sylaska 2013). However, internalized homophobia and other minority stress variables have not been studied as risk factors for non-partner sexual violence, nor have psychological or behavioral risk factors been examined in LGBQ samples.

Internalized Homophobia

Minority stress theory has been widely employed to explain how social stigma affects mental and physical health outcomes among LGBQ people (Frost et al. 2015; Meyer 2003). The theory posits that direct and indirect experiences of stigma have psychological effects on individuals' mental and behavioral health. Several LGBQ minority stress variables have been identified, but *internalized homophobia*—the negative judgments that LGBQ people make of themselves when they receive stigmatizing messages from their cultural context (Meyer 2003)—appears particularly likely to affect the risk of unwanted sexual experiences. Internalized homophobia is associated with intimate partner violence (IPV) victimization, including sexual violence, in same-gender relationships (Balsam et al. 2005; Edwards and Sylaska 2013).

LGBQ women's qualitative descriptions of their responses to attempted assault or coercion differ from those of GBQ men, with men more likely to say that shame or low self-esteem affected their response (Menning and Holtzman 2013). Because internalized homophobia is associated with low self-esteem and feelings of shame (Allen and Oleson 1999), this finding raises the possibility that internalized homophobia plays a greater role among GBQ men than among LBQ women: that is, gender may moderate the relationship between internalized homophobia and unwanted sexual experience risk.

Routine Activities Theory

Routine activities theory (Cohen and Felson 1979) has been proposed as a link between minority stress and higher rates of victimization among certain LGBQ undergraduate subgroups (GBQ men and bisexual women) relative to heterosexuals (Johnson et al. 2016). Routine activities theory posits that routine behaviors affect an individual's risk of victimization by determining how frequently they are exposed to high-risk

environments and/or potential perpetrators. Among college students, routine behaviors frequently proposed as risk factors include substance use and having a greater number of sexual partners (Combs-Lane and Smith 2002).

Number of sexual partners during college is associated with sexual assault risk among college women (Krebs et al. 2007). A routine activities analysis suggests that since many unwanted sexual experiences are preceded by consensual contact with the aggressor (Koss 1989), students with more consensual partners are exposed to more potential aggressors in risky contexts (Combs-Lane and Smith 2002). Minority stress, specifically internalized homophobia, has been associated with greater numbers of sexual partners among young gay and bisexual men (Rosario et al. 2006). This raises the possibility that greater number of sexual partners mediates the hypothesized relationship between internalized homophobia and unwanted sexual experiences.

Routine alcohol use activities, specifically binge drinking and more frequent alcohol use, are also associated with sexual victimization (Combs-Lane and Smith 2002; Krebs et al. 2007), including among LGBQ students (Johnson et al. 2016). They are also associated with internalized homophobia among LGBQ young adults (Baiocco et al. 2010; Rosario et al. 2006). In light of these associations, Johnson et al. (2016) used a routine activities framework to propose that minority stress-induced substance use disparities account for higher levels of sexual assault among sexual minority students. In that analysis, both substance use and lesbian, gay or bisexual (compared to heterosexual) identity were associated with unwanted sexual experience risk, but the association between assault risk and sexual minority status remained robust after controlling for substance use. Minority stress was not measured. Although substance use did not account for the difference in sexual victimization rates between sexual minority and heterosexual students, it could nonetheless mediate the relationship between minority stress and sexual victimization risk, but this possibility remains to be tested.

Psychological Sense of LGBTQ Community

Psychological sense of community describes the subjective sense of membership in a broader social group, such as a community based on LGBTQ identity (Lin and Israel 2012). In-group social connection appears to be a protective factor for minority stress (Doty et al. 2010; Kertzner et al. 2009; Wong et al. 2014). In particular, sense of LGBTQ community has been proposed as an important coping resource for internalized homophobia (Kertzner et al. 2009). If internalized homophobia is indeed associated with sexual victimization risk, having a stronger sense of LGBTQ community could reduce that risk by mitigating internalized homophobia.

Sexual Orientation

Previous research indicates that bisexual orientation, relative to gay/lesbian orientation, does not modify the effects of internalized homophobia or LGBTQ community connection on psychosocial functioning (Balsam and Mohr 2007). However, compared to lesbians and gay men, bisexual adults are typically less connected to LGBTQ communities (Balsam and Mohr 2007; Frost and Meyer 2012). In some studies, bisexuals also report higher levels of internalized homophobia (Herek et al. 1998; Herek et al. 2009), although others find no difference (Balsam and Mohr 2007). We therefore predicted that bisexual/queer/pansexual orientation (relative to lesbian/gay orientation) would be associated with greater risk of unwanted sexual experiences, mediated by weaker sense of LGBTQ community and higher levels of internalized homophobia.

Gender Patterns

Gender norms play key roles in sexual violence against heterosexual women, shaping the beliefs, attitudes and social power dynamics that enable many assaults and coercive events (Armstrong et al. 2006; Bay-Cheng and Eliseo-Arras 2008). Because LGBQ young adults are more likely to engage in consensual same-gender sex (Everett 2013) and given the relationship between sexual violence and consensual sexual activity (Koss 1989), LGBQ young adults' unwanted sexual experiences may exhibit different gender patterns than do heterosexuals'. Lifespan data for LGBQ adults indicate that LBQ women and bisexual men report both male and female perpetrators, whereas gay men report few female perpetrators (Balsam et al. 2005). Based on these data and given the low rates at which women sexually victimize adult males (Fisher and Pina 2013), we predicted that most GBQ men's unwanted sexual experiences would have male perpetrators. In contrast, we predicted that LBQ women would report unwanted sexual experiences with both men and women: Most sexual violence perpetrators are males who target women, and LBQ women may be more frequently exposed to a subset of women who are sexually attracted to and aggressive towards other women.

Current Study

Our primary aim was to determine whether minority stress affects the risk of unwanted sexual experiences and, if so, which factors might affect or account for this relationship. Our hypotheses were as follows:

- H1. Internalized homophobia will predict greater unwanted sexual experience risk.
 - H2. Sense of LGBTQ community will predict lower unwanted sexual experience risk.
 - H3. Lower levels of internalized homophobia will mediate the negative association between sense of LGBTQ community and unwanted sexual experience risk.
 - H4. Greater number of sexual partners will mediate the association between internalized homophobia and unwanted sexual experience risk.
 - H5. Higher levels of alcohol use will mediate the association between internalized homophobia and unwanted sexual experience risk.
 - H6. Bisexual/queer/pansexual orientation (relative to lesbian/gay orientation) will be associated with greater unwanted sexual experience risk, mediated by lower sense of LGBTQ community and greater internalized homophobia.
 - H7. Target gender will moderate the association between internalized homophobia and unwanted sexual experience risk, with a stronger association among men.
- A secondary aim was to identify gender patterns in LGBQ students' unwanted sexual experiences, particularly with respect to perpetrator gender. Our hypothesis was:
- H8. The distribution of perpetrator gender will differ between male and female participants, with female and male perpetrators common among female participants, but only male perpetrators common among male participants.
- In addition to the primary outcome of any unwanted sexual experience, we present models for sexual coercion and sexual assault, making it possible to identify common and differential risk factors for each type of experience. *Coercion* describes sexual contact obtained through verbal tactics, such as lying, threatening to spread rumors, or expressing anger. *Assault* describes sexual contact obtained through physical force, threats of force, or when the target is incapacitated (e.g., by alcohol, drugs, or sleep).

Method

Participants

Participants were eligible if they reported a sexual orientation other than "straight/heterosexual," were at least 18 years of age, were currently enrolled in an undergraduate degree program or its non-U.S. equivalent, and provided informed consent. Of individuals who provided informed consent ($n = 1411$), 72.6 % ($n = 1025$) screened eligible. Participants ($n = 259$) who dropped out before completing the sense of LGBTQ community measure—positioned after the

demographic and behavioral covariates but before the main study variables—were excluded (de Leeuw and Huisman 2003). Those recruited via email lists and Facebook were less likely to drop out before the inclusion cutoff than those recruited from Reddit or Tumblr, $\chi^2(3, N = 1003) = 37.89$, $p < .001$. Sexual orientation identity also predicted drop-out, with lesbian/gay participants most likely to drop out, $\chi^2(2, N = 1025) = 9.12$, $p < .010$. Gender, class year, and race did not predict drop-out.

The final analytic sample ($N = 763$) included 418 (55 %) men, 267 (35 %) women, and 80 (11 %) participants in the “other gender” category. Gay was the most common sexual orientation identity, selected by 346 (45 %) participants. An additional 149 (20 %) participants described themselves as bisexual, 97 (13 %) as lesbian, 105 (14 %) as queer, 39 (5 %) as pansexual, and 30 (4 %) as asexual or a similar identity. The sample included 632 (83 %) White participants and 128 (17 %) participants of color. Most were non-Hispanic ($n = 673$, 88 %). The mean age was 20.69 ($SD = 2.24$, range = 18–38), and 301 (39 %) participants were fourth-year students, compared to 183 (24 %) third-years, 149 (20 %) second-years, and 133 (17 %) first-years. Most participants ($n = 664$, 90 %) attended a college or university in the United States, whereas 71 (8 %) attended a non-U.S. program. Of U.S.-based participants, 292 (40 % of the sample) attended public colleges, whereas 372 (51 %) attended private schools.

Procedure

Participants completed an online survey during January and February of 2015. Recruitment through social media allowed us to reach a large number of LGBTQ young adults, including those who may not be openly LGBTQ in other areas of life. We augmented this recruitment with messages to six college LGBTQ group email lists (five private colleges and one public university) in order to sample students who may not be regular social media users. Recruitment messages invited participants who were “18 or older, currently enrolled in a U.S. college, and describe [themselves] as lesbian, gay, bisexual, queer, pansexual, or a similar non-heterosexual identity” to participate in “a research study on the social and sexual experiences of LGBTQ college students” that will “help us understand how to create safe and welcoming communities for current and future students.”

Advertisements posted to social networking websites (i.e., Facebook, Tumblr, Reddit) generated 626 participants (83 % of the sample), whereas advertisements distributed to the email lists of college LGBTQ organizations generated 125 (17 %). Participants were given a survey link to share with peers, but only 15 (2 %) participants were recruited with this link; we were unable to identify the number of participants recruited by those who re-posted the social network advertisements. Participants were not compensated.

The Yale University Human Subjects Committee approved the study protocol.

Measures

Measures determining eligibility (age, undergraduate class year, and sexual orientation) were presented first, followed by gender, Hispanic ethnicity, race, school name, and residence type. These questions were followed by measures assessing number of sexual partners and alcohol use. The Psychological Sense of LGBT Community scale was presented next, followed by the internalized homophobia scale. To reduce the likelihood that recalling unwanted sexual experiences would affect responses to the sense of community or internalized homophobia measures, the Sexual Experience Survey and questions about the context of unwanted sexual experiences were presented last.

Gender

We measured gender identity and transgender status using the recommended “two-step” approach, assessing both gender identity and sex assigned at birth (The GenIUSS Group 2014). If assigned sex and gender identity were not concordant, participants were asked to report the gender in which most of their college peers knew them. Transgender men and women who reported that most peers knew them as the gender with which they identify ($n = 12$, 2 %) were analyzed as that gender. When they reported that most peers knew them as a different gender, they were analyzed in the “other gender” group. Participants who reported a current gender identity other than man or woman were also assigned to the “other gender” group.

Sexual Orientation

To obtain adequate cell sizes, sexual orientation identities were recoded based on whether they connote same-gender attraction (lesbian/gay), attraction to more than one gender (bisexual/queer/pansexual), or the relative absence of sexual attraction (asexual). Although some young adults with only same-gender attraction describe themselves as queer, the term more often connotes attraction to more than one gender (Savin-Williams 2014).

School Characteristics

We collected data on school characteristics (i.e., size, public/private status, two- or four-year program), because previous studies indicate that students at smaller schools and private institutions report sexual assault at higher rates (Cantor et al. 2015). Participants were asked to provide the name of their school, which was matched with descriptive data on school

size and type (i.e., public vs. private; two-year vs. four-year) from the U.S. Department of Education's Integrated Postsecondary Education Data System. Institutions outside the United States were categorized as "foreign" for school type and treated as missing for degree type.

Internalized Homophobia

Internalized homophobia was measured using the internalized homonegativity subscale of the Lesbian, Gay, and Bisexual Identity Scale (Mohr and Kendra 2011). The scale consists of three items (sample: "I wish I were heterosexual") rated on a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The subscale has displayed convergent validity with a longer internalized homonegativity measure and with conceptually related elements of the Lesbian, Gay, and Bisexual Identity Scale, including negative correlation with concerns about being accepted and positive correlation with concealment of LGB identity (Mohr and Kendra 2011). Scores were obtained by taking the average of the three items, with higher scores indicating higher levels of internalized homophobia. Cronbach alpha was .88.

Sense of LGBTQ Community

Sense of LGBTQ community was measured with the Psychological Sense of LGBT Community Scale (PSOC-LGBT) (Lin and Israel 2012). The scale consists of 22 items (sample: "How much do you feel that you can get help from the LGBT community if you need it?"). Items are rated on a 5-point Likert scale from 1 (*not at all*) to 5 (*extremely*). The scale has demonstrated convergent validity with related constructs including social support from LGBTQ people and attending LGBTQ community events (Lin and Israel 2012). Scores were obtained by computing the mean of each subscale, then computing the mean of all subscales, with higher scores indicating a greater sense of LGBTQ community. Cronbach alpha was .92.

Unwanted Sexual Experiences

Unwanted sexual experiences were measured using a modified version of the revised Sexual Experience Survey-Short Form Version (Koss et al. 2007) based on an adaptation by Barnhart et al. (2014). The adaptation combines anal and vaginal penetration; changes how methods are reported; adds "high" and "asleep" to the incapacitated ("too drunk or out of it") method; and adds an additional method, "Catching you off guard, or ignoring nonverbal cues or looks." These changes were made based on iterative feedback from students via focus groups and an individual comment process (see Barnhart et al. 2014). In addition to these modifications, the measure used here distinguishes between past-year and earlier

events, replacing the question of how many times each event took place. It also asks about being "made to penetrate" another person, because this event is particularly common among men (Stemple and Meyer 2014).

Participants were categorized by the most serious unwanted sexual experience they had experienced since starting college. Participants who reported oral sex, unwanted anal or vaginal penetration, or being made to penetrate were scored as "completed sex act." Participants who reported attempted sex acts only were scored as "attempted sex act." Participants who reported unwanted intimate touching or clothing removal only were scored as "touching." The primary outcome—history of one or more unwanted sexual experiences—included insertive and receptive oral, anal, and vaginal sex acts. It excluded attempt-only events. It did not include non-genital sexual contact because unwanted touching is nearly universal among students who take part in sexualized social spaces like bars and clubs (Fileborn 2014).

Participants with completed sex acts were assigned to the assault and coercion categories based on the methods reported. Participants reporting lies, criticism, social threats, or other verbal pressure tactics were assigned to coercion, whereas participants reporting incapacitation (drugs, alcohol, sleep), physical threats, or force were assigned to assault (Koss et al. 2007). Participants reporting both method types were assigned to both categories; those who reported only the "ignoring nonverbal cues" method were assigned to neither type because this method is not part of the original SES and therefore was not included in scoring guidelines.

Participants who reported any unwanted sexual experience, including unwanted touching, were asked additional descriptive questions about these experiences. Because participants may have had multiple unwanted sexual experiences, multiple responses were permitted for each descriptive question. Participants were asked to report the gender of the perpetrator(s) ("Man," "Woman," or "Another gender"), the location of the incident ("On campus, in a residential building," "On campus, in a non-residential building," "Off campus, at another college or university," "Off campus, not at another college or university," or "Other"). They were also asked to report their relationship to the perpetrator, with the options "Fellow student, no prior relationship," "Acquaintance," "Friend," "Former (at the time of the experience) dating or sexual partner," "Current (at the time of the experience) dating or sexual partner," and "Other," with the opportunity to write in "Other" relationships.

Sexual Partners and Alcohol Use

To assess number of sexual partners, participants gave numeric responses to the question, "How many people have you hooked up or had sex with since starting college?" Drinking frequency and quantity were assessed with measures adapted

from the National Council on Alcohol Abuse and Alcoholism Recommended Sets of Alcohol Consumption Questions (National Institute on Alcohol Abuse and Alcoholism 2003), with options for no past-year drinking and no lifetime drinking combined. Participants were asked, “During the last 12 months, how often did you usually have any kind of drink containing alcohol?” accompanied by a definition of a standard drink. Participants selected a range from nine options, ranging from “Every day” to “None in the past year.” Participants who indicated any past-year alcohol consumption were asked, “During the last 12 months, how many alcoholic drinks did you have on a typical day when you drank alcohol?” and responded by typing a number.

Data Analysis

Data Preparation

Data analysis was conducted using R 3.2. Rates of missing data varied by variable due to drop-out over the course of the survey (partial nonresponse). In the final sample, item missing rates ranged from 0 % for demographic variables to 10 % for internalized homophobia and the Sexual Experiences Survey, positioned at the end of the survey. Under the assumption that data were missing at random, missing data were multiply imputed with fully conditional specification using the “mice” package for R (Buuren and Groothuis-Oudshoorn 2011). The imputed dataset was used for multivariable models, and available case analysis was used for descriptive statistics and chi-square tests (Parent 2013).

To ensure that each participant completed the survey only once, 47 responses with duplicate IP addresses were examined to determine whether they were likely submitted by the same individual (Bauermeister et al. 2012). We expected that some unique participants would share IP addresses because many students on a single campus may be assigned the same address (Teitcher et al. 2015). We believed that false information would be uncommon in these duplicate responses because participants were not compensated (Bowen et al. 2008), so responses that differed on variables unlikely to change during the survey period (e.g., race, class year, sex assigned at birth) were considered unique participants. We determined that 15 individuals had begun the survey two or more times, but only three individuals submitted more than one response that reached the inclusion threshold. Three responses, one from each repeat individual, were removed from the sample, for a usable sample of 763 participants.

Descriptive Statistics

Unwanted sexual experience characteristics were tabulated by participants’ gender. Chi-square tests were conducted to determine whether the proportion of participants reporting each

descriptive category differed by participants’ gender, and Cramer’s V was calculated using the “lsr” package for R (Navarro 2015). Unadjusted associations between other demographic, behavioral, and psychosocial study variables and unwanted sexual experience risk were calculated using chi-square tests for categorical variables and two-sample t -tests for continuous variables.

Regression Analysis

To exclude the possibility of confounding by recruitment method, we first modeled recruitment method as a predictor of unwanted sexual experience risk. Results (not shown) were non-significant after gender was entered into the model, so recruitment method was not included in subsequent analyses.

Multivariable regression models were created for each outcome (any unwanted sexual experience, assault, and coercion) using the demographic, behavioral, and psychosocial predictors. First, demographic and school characteristics significant in the chi-square analysis were entered into the model together, and characteristics that were no longer near significant ($p < .10$) for any model were removed. Behavioral variables significant in chi-square analyses (i.e., drinking frequency and number of sex partners) were then added as ordinal categorical predictors. Finally, psychosocial variables (i.e., internalized homophobia, sense of LGBTQ community) were added. We used these multiple regression models to test Hypothesis 1 (internalized homophobia associated with greater risk), Hypothesis 2 (sense of LGBTQ community associated with lower risk), Hypothesis 6 (bisexual/queer/pansexual orientation associated with greater risk), and Hypothesis 7 (gender moderates relationship between internalized homophobia and risk).

To test Hypothesis 3 (internalized homophobia mediates association between sense of LGBTQ community and risk), Hypothesis 4 (greater number of sexual partners mediates association between internalized homophobia and unwanted sexual experience risk), and Hypothesis 5 (higher levels of alcohol use mediate association between internalized homophobia and unwanted sexual experience risk), we estimated and tested indirect effects using the Medflex package for R (Steen et al. 2015) with bootstrapped standard errors. This approach has higher power compared to other tests of mediation (Shrout and Bolger 2002). We also tested indirect effects for the reverse model, with sense of LGBTQ community mediating the effect of internalized homophobia on unwanted sexual experience risk, because this model was also theoretically plausible. Finally, to test Hypothesis 7 (gender moderates internalized homophobia’s association with risk), we jointly tested interaction terms between gender and internalized homophobia, with results from each imputation pooled using the testModels function from the “mitml” package for R (Grund et al. 2016; Li et al. 1991).

Results

Associations with Unwanted Sexual Experiences

Table 1 presents descriptive statistics and bivariate associations with unwanted sexual experience, defined as a completed sex act. A substantial minority of participants—36 (10 %) men, 42 (18 %) women, and 14 (19 %) in the “other gender” group—reported an unwanted sexual experience of this type. Average age and class year were higher in the unwanted sexual experience group (Cohen’s $d = .40$ for age and Cramer’s $V = .17$ for class year). School size and type were significantly associated with unwanted sexual experiences, with students at smaller and private schools at greatest risk (Cramer’s $V = .14$ for size and Cramer’s $V = .13$ for type). Drinking frequency was associated with unwanted sexual experiences (Cramer’s $V = .15$) and with assault (Cramer’s $V = .18$), but not with coercion, whereas typical number of drinks was not associated with any of the outcomes. Having a greater number of sexual partners during college was associated with all outcomes (Cramer’s $V = .30$ for any unwanted sexual experience, Cramer’s $V = .27$ for assault, and Cramer’s $V = .23$ for coercion).

Gender was significantly associated with unwanted sexual experiences, with women and “other gender” participants at increased risk relative to men (Cramer’s $V = .13$). Sexual orientation (gay/lesbian, bisexual/queer/pansexual, or asexual) did not predict outcomes. Internalized homophobia and sense of LGBTQ community were not significant predictors of the outcomes.

The multiple regression models (Table 2) adjusted for gender, class year, and school type. School size and age were non-significant once school type and class year were added so they were removed. Number of sexual partners and drinking frequency were included, as were internalized homophobia and sense of LGBTQ community. After adjustment, gender remained a significant predictor of all three types of unwanted sexual experience. Women had 3.57 times the odds of an unwanted sexual experience compared to men, 95 % CI [2.02, 6.32], and the “other gender” group had 5.04 times the odds compared to men, 95 % CI [2.18, 11.66].

Internalized Homophobia

Partially confirming Hypothesis 1, internalized homophobia was significantly associated with any unwanted sexual experience and coercion, although it was not significant for assault. A one-standard-deviation increase in internalized homophobia was associated with 1.49 times the odds of any unwanted sexual experience, 95 % CI [1.14, 1.94], and 1.94 times the odds of experiencing coercion, 95 % CI [1.29, 2.92]. This indicates that students with greater levels of internalized

homophobia are at greater risk of unwanted sexual experiences after controlling for demographic and behavioral variables.

LGBTQ Community

Sense of LGBTQ community was not directly significant in any of the three multivariable models. However, because we hypothesized that internalized homophobia mediated sense of LGBTQ community’s relationship with unwanted sexual experience risk, we tested its unique effect by fitting a model without internalized homophobia. In this model, sense of LGBTQ community had a significant negative association, $b = -.33$, $z = 2.21$, $p = .03$, with unwanted sexual experience risk, supporting Hypothesis 2 with the caveat of removing the influence of internalized homophobia. This value corresponds to an odds ratio of .72, 95 % CI [.53, .93], for a one-standard-deviation increase in sense of LGBTQ community, and indicates that students with a stronger sense of LGBTQ community are at lower risk of unwanted sexual experiences.

Turning to a mediated model, sense of LGBTQ community’s indirect effect on unwanted sexual experience risk through internalized homophobia was statistically significant, $b = -.12$, $z = -2.29$, $p = .02$. These results suggest that, as hypothesized (Hypothesis 3), sense of LGBTQ community’s negative association with unwanted sexual experience risk is mediated by internalized homophobia. To address an alternative possibility, we tested the reverse mediation model in which sense of LGBTQ community mediates internalized homophobia’s effect on unwanted sexual experience risk. Inconsistent with this alternative, internalized homophobia did not have a significant indirect effect on unwanted experience risk through sense of LGBTQ community, $b = .06$, $z = 1.42$, $p = .15$, suggesting that internalized homophobia does not cause lower risk of unwanted sexual experiences by reducing sense of LGBTQ community.

Number of Sexual Partners and Alcohol Use

Internalized homophobia’s indirect effect on unwanted sexual experience risk through number of sexual partners was statistically significant, $b = -.10$, $z = -2.23$, $p = .03$. Contradicting Hypothesis 4, which predicted that greater numbers of sexual partners would mediate the relationship between internalized homophobia and unwanted sexual experience risk, internalized homophobia was associated with lower numbers of sexual partners, which in turn predicted lower risk of unwanted sexual experience.

Turning to alcohol use as a predictor of unwanted sexual experience, mediation by drinking frequency, and not by drinking quantity, was tested because drinking quantity was not significant in any of the bivariate models. Internalized homophobia’s indirect effect on unwanted sexual experience risk through drinking frequency was not statistically

Table 1 Bivariate associations between participants' characteristics and unwanted sexual experience

	Unwanted sexual experience (any)				Assault				Coercion						
	No	Yes	%	OR	p	No	Yes	%	OR	p	No	Yes	%	OR	p
(a) Demographics															
Gender															
Man	341	36	9.5	1.00	.005	352	25	6.6	1.00	.019	366	11	2.9	1.00	.037
Woman	194	42	17.8	2.05		203	33	14.0	2.29		216	20	8.5	3.08	
Other	58	14	19.4	2.29		62	10	13.9	2.27		65	7	9.7	3.58	
Class year					<.001					.051					.050
First	116	4	3.3	.14		117	3	2.5	.16		119	1	.8	.09	
Second	114	17	13.0	.61		118	13	9.9	.69		120	11	8.4	1.03	
Third	148	18	10.8	.50		151	15	9.0	.62		162	4	2.4	.28	
Fourth	216	53	19.7	1.00		232	37	13.8	1.00		247	22	8.2	1.00	
Sexual orientation					.121					.399					.172
Lesbian/Gay	358	45	11.2	1.00		368	35	8.7	1.00		387	16	4.0	1.00	
Bi/Queer/Pan	213	42	16.5	1.57		224	31	12.2	1.46		236	19	7.5	1.95	
Asexual	23	5	17.9	1.73		26	2	7.1	.81	.139	25	3	10.7	2.90	.749
Race					.143										
White	98	10	9.3	.61		103	5	4.6	.39		103	5	4.6	.79	
Other	491	82	14.3	1.00		510	63	11.0	1.00	.091	540	33	5.8	1.00	.367
Ethnicity					.326										
Non-Hispanic	525	78	12.9	1.00		547	56	9.3	1.00		571	32	5.3	1.00	
Hispanic	69	14	16.9	1.37		71	12	14.5	1.65		77	6	7.2	1.39	
(b) School characteristics															
School size					.003					.031					.032
Less than 5000	143	39	21.4	2.23		153	29	15.9	1.96		164	18	9.9	2.92	
5000–9999	42	7	14.3	1.37		43	6	12.2	1.44		46	3	6.1	1.73	
10,000–19,999	155	18	10.4	.95		162	11	6.4	.70		166	7	4.0	1.12	
20,000 or more	172	21	10.9	1.00		176	17	8.8	1.00	.453	186	7	3.6	1.00	.507
Degree type					.273										
Two-year	27	3	10.0	.66		28	2	6.7	.59		27	3	10.0	1.86	
Four-year	485	82	14.5	1.00		506	61	10.8	1.00	.042	535	32	5.6	1.00	.408
School type					.005										
Public	234	25	9.7	.50		241	18	6.9	.49		248	11	4.2	.58	
Private	278	60	17.8	1.00		293	45	13.3	1.00		314	24	7.1	1.00	
Foreign	58	4	6.5	.32		59	3	4.8	.33		60	2	3.2	.44	
(c) Behavior															

Table 1 (continued)

	Sex partners during college																						
	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>
None	146	1	20.54 (2.3)	.7	<.001	146	1	21.44 (2.2)	.06	<.001	147	0	21.71 (2.2)	.10	<.001	147	0	21.71 (2.2)	.00	.002	.0	.00	.002
One	115	7	2.19 (1.5)	5.7	<.001	117	5	2.45 (1.3)	.53	<.001	120	2	2.69 (1.3)	.62	<.001	120	2	2.69 (1.3)	.50		1.6	.50	
Two to four	139	16	17.20 (3.9)	10.3	<.001	145	10	16.68 (4.2)	1.00	<.001	150	5	16.40 (4.2)	1.00	<.001	150	5	16.40 (4.2)	1.00		3.2	1.00	
Five to nine	89	28	2.19 (1.5)	23.9	<.001	96	21	2.45 (1.3)	2.73	<.001	107	10	2.69 (1.3)	3.17	<.001	107	10	2.69 (1.3)	2.80		8.5	2.80	
Ten or more	103	38	17.20 (3.9)	27.0	<.001	112	29	16.68 (4.2)	3.21	<.001	121	20	16.40 (4.2)	3.75	<.001	121	20	16.40 (4.2)	4.96		14.2	4.96	
Drinking frequency																							
None	68	6	2.19 (1.5)	8.1	<.001	73	1	2.69 (1.3)	.43	<.001	71	3	2.69 (1.3)	.09	<.001	71	3	2.69 (1.3)	.51		4.1	.51	
Less than once/month	110	8	2.19 (1.5)	6.8	<.001	113	5	2.69 (1.3)	.35	<.001	115	3	2.69 (1.3)	.28	<.001	115	3	2.69 (1.3)	.32		2.5	.32	
One to three times/month	158	19	17.20 (3.9)	10.7	<.001	163	14	16.68 (4.2)	.58	<.001	169	8	16.40 (4.2)	.54	<.001	169	8	16.40 (4.2)	.58		4.5	.58	
One to two times/week	175	36	2.19 (1.5)	17.1	<.001	182	29	2.69 (1.3)	1.00	<.001	195	16	2.69 (1.3)	1.00	<.001	195	16	2.69 (1.3)	1.00		7.6	1.00	
More than twice/week	83	23	17.20 (3.9)	21.7	<.001	87	19	16.68 (4.2)	1.35	<.001	98	8	16.40 (4.2)	1.37	<.001	98	8	16.40 (4.2)	.99		7.5	.99	
Typical number of drinks																							
None	69	6	2.19 (1.5)	8.0	.580	74	1	2.69 (1.3)	.49	.580	72	3	2.69 (1.3)	.11	.228	72	3	2.69 (1.3)	.46		4.0	.46	
One or two	174	31	17.20 (3.9)	15.1	.580	182	23	16.68 (4.2)	1.00	.580	188	17	16.40 (4.2)	1.00	.228	188	17	16.40 (4.2)	1.00		8.3	1.00	
Three	112	17	2.19 (1.5)	13.2	.580	114	15	2.69 (1.3)	.85	.580	124	5	2.69 (1.3)	1.04	.228	124	5	2.69 (1.3)	.45		3.9	.45	
Four	76	17	2.19 (1.5)	18.3	.580	82	11	2.69 (1.3)	1.26	.580	86	7	2.69 (1.3)	1.06	.228	86	7	2.69 (1.3)	.90		7.5	.90	
Five or more	149	21	17.20 (3.9)	12.4	.580	152	18	16.68 (4.2)	.79	.580	164	6	16.40 (4.2)	.94	.228	164	6	16.40 (4.2)	.40		3.5	.40	
(d) Continuous variables																							
Age	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	No	Yes	<i>M (SD)</i>	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>
Internalized homophobia	20.54 (2.3)	21.44 (2.2)	21.44 (2.2)	107.8	<.001	20.57 (2.3)	21.49 (2.2)	21.49 (2.2)	-3.40	<.001	20.59 (2.5)	21.71 (2.2)	21.71 (2.2)	-2.93	.005	20.59 (2.5)	21.71 (2.2)	21.71 (2.2)	-2.66	.011	40.9	-2.66	.011
Sense of LGBTQ community	2.19 (1.5)	2.45 (1.3)	2.45 (1.3)	113.3	.114	2.21 (1.4)	2.32 (1.3)	2.32 (1.3)	-1.59	.114	2.20 (1.5)	2.69 (1.3)	2.69 (1.3)	-.59	.557	2.20 (1.5)	2.69 (1.3)	2.69 (1.3)	-1.99	.054	40.2	-1.99	.054
	17.20 (3.9)	16.68 (4.2)	16.68 (4.2)	125.9	.242	17.13 (4.2)	17.14 (3.6)	17.14 (3.6)	1.17	.242	17.17 (4.1)	16.40 (4.2)	16.40 (4.2)	-.03	.977	17.17 (4.1)	16.40 (4.2)	16.40 (4.2)	1.10	.276	41.4	1.10	.276

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

Table 2 Multiple regression models of unwanted sexual experience odds by demographic, behavior, and psychosocial predictors

	Unwanted sexual experience [any]		Assault		Coercion	
	AOR [95 % CI]	<i>p</i>	AOR [95 % CI]	<i>p</i>	AOR [95 % CI]	<i>p</i>
(a) Demographic						
Gender		<.001		<.001		<.001
Man	1.00		1.00		1.00	
Woman	3.57 [2.02, 6.32]		3.63 [1.93, 6.80]		7.08 [2.87, 17.48]	
Other	5.04 [2.18, 11.66]		5.20 [1.97, 13.70]		10.34 [3.08, 34.70]	
Class year		.261		.487		.014
First-year	1.00		1.00		1.00	
Sophomore	.47 [.15, 1.49]		.72 [.20, 2.62]		.43 [.05, 3.87]	
Junior	1.26 [.64, 2.48]		1.66 [.77, 3.56]		2.98 [1.17, 7.61]	
Senior	.70 [.37, 1.32]		1.04 [.52, 2.08]		.43 [.14, 1.38]	
School type		.078		.249		.779
Public	1.00		1.00		1.00	
Private	1.76 [1.01, 3.07]		1.62 [.84, 3.12]		1.33 [.54, 3.26]	
International	.76 [.23, 2.47]		.84 [.22, 3.17]		.92 [.17, 4.97]	
(b) Behavior						
Number of sex partners	2.29 [1.79, 2.94]	<.001	2.14 [1.61, 2.85]	<.001	3.25 [2.12, 4.97]	.002
Drinking frequency	.99 [.76, 1.28]	.935	1.39 [1.01, 1.91]	.044	.84 [.57, 1.24]	.380
(c) Psychosocial						
Internalized homophobia	1.49 [1.14, 1.94]	.003	1.28 [.95, 1.73]	.099	1.94 [1.29, 2.92]	.001
Sense of LGBTQ community	.79 [.59, 1.07]	.123	.92 [.66, 1.28]	.618	.79 [.50, 1.25]	.320

Psychosocial variables were standardized. Odds ratios represent a change of one standard deviation in the predictor

significant, $b = .00$, $z = -.11$, $p = .91$. This finding contradicts Hypothesis 5, which hypothesized that higher levels of alcohol use would mediate the relationship between internalized homophobia and unwanted sexual experience risk. Rather, it suggests that the relationship between internalized homophobia and unwanted sexual experience risk cannot be explained by different levels of alcohol use.

Targets' Sexual Orientation and Gender

Bisexual/queer/pansexual orientation, relative to gay/lesbian orientation, was not associated with unwanted sexual experience risk, $b = .10$, $t = .32$, $p = .75$. This finding does not support Hypothesis 6, which predicted that bisexual/queer/pansexual sexual orientation would be associated with greater unwanted sexual experience risk. Instead it suggests that gay/lesbian and bisexual/queer/pansexual students are at similar risk for unwanted sexual experiences.

To test for possible moderation by gender in a multivariable model predicting unwanted sexual experience risk, we examined the interaction term between gender and internalized homophobia, finding that it was not significant, $F(2, 103.0) = .28$, $p = .76$. This finding contradicts Hypothesis 7, that gender would moderate the relationship

between internalized homophobia and unwanted sexual experience risk, with a stronger relationship among men. Instead, it indicates that the strength of the relationship between internalized homophobia and risk for unwanted sexual experience is similar for college women and men.

Targets' and Perpetrators' Gender

Table 3 presents data on unwanted sexual experience characteristics by participant gender. This table includes data on all types of unwanted sexual experiences, including unwanted touching and attempted sex acts. Overall, 230 (87 %) of the 264 participants with unwanted sexual experiences reported male perpetrators; most of the remaining perpetrators were female. Failing to support Hypothesis 8, the proportions of male and female perpetrators did not differ significantly by participants' gender: $\chi^2(2, N = 264) = .56$, $p = .79$ for male perpetrators and $\chi^2(2, N = 264) = 3.42$, $p = .19$ for female perpetrators. However, participants in the "other gender" group were more likely to report perpetrators who were a gender other than male or female, $\chi^2(2, N = 264) = 13.65$, $p < .01$, Cramer's $V = .23$.

Perpetration by an intimate partner varied by participant gender, with men (22 %) least likely and the "other gender" (55 %) group most likely to report an unwanted sexual experience with

Table 3 Unwanted sexual experience characteristics by participants' gender

	Men (<i>n</i> = 128) <i>n</i> (%)	Women (<i>n</i> = 107) <i>n</i> (%)	Other (<i>n</i> = 29) <i>n</i> (%)	All (<i>n</i> = 264) <i>n</i> (%)	$\chi^2(2)$	<i>p</i>	<i>v</i>
Most serious event							
Touching	58 (45.3)	53 (49.5)	8 (27.6)	119 (45.1)	4.44	.122	.130
Attempted sex act	34 (26.6)	12 (11.2)	7 (24.1)	53 (20.1)	8.89	.017	.184
Completed sex act	36 (28.1)	42 (39.3)	14 (48.3)	92 (34.8)	5.77	.056	.148
Perpetrator gender							
Man	112 (87.5)	94 (87.9)	24 (82.8)	230 (87.1)	.56	.790	.046
Woman	21 (16.4)	19 (17.8)	9 (31.0)	49 (18.6)	3.42	.188	.114
Other	1 (.8)	3 (2.8)	4 (13.8)	8 (3.0)	13.65	.002	.227
Relationship to perpetrator							
Acquaintance	72 (56.3)	57 (53.3)	18 (62.1)	147 (55.7)	.75	.719	.053
Friend	24 (18.8)	32 (29.9)	9 (31.0)	65 (24.6)	4.63	.093	.132
Current/former partner	28 (21.9)	35 (32.7)	16 (55.2)	79 (29.9)	13.17	.001	.223
Other	27 (21.1)	13 (12.1)	6 (20.7)	46 (17.4)	3.48	.167	.115
Location							
On campus	53 (41.4)	59 (55.1)	16 (55.2)	128 (48.5)	4.98	.084	.137
Off campus	88 (68.8)	62 (57.9)	20 (69.0)	170 (64.4)	3.27	.217	.111
Method							
Ignoring cues	83 (64.8)	79 (73.8)	24 (82.8)	186 (70.5)	4.63	.105	.132
Lies or pressure	16 (12.5)	23 (21.5)	6 (20.7)	45 (17.0)	3.64	.166	.117
Anger or criticism	22 (17.2)	35 (32.7)	6 (20.7)	63 (23.9)	7.91	.024	.173
Incapacitated	52 (40.6)	65 (60.7)	21 (72.4)	138 (52.3)	14.76	<.001	.236
Threats	3 (2.3)	6 (5.6)	4 (13.8)	13 (4.9)	6.80	.032	.160
Force	8 (6.3)	11 (10.3)	6 (20.7)	25 (9.5)	5.89	.049	.149

Characteristics are reported at the participant level. Column percentages may sum to more than 100 % because some participants reported multiple USEs with differing characteristics. χ^2 tests were conducted across gender for each characteristic individually (e.g., threats reported vs. not reported)

a current or former partner, $\chi^2(2, N = 264) = 13.17, p < .01$, Cramer's $V = .22$. There were no significant differences in the other relationship types. Participants' gender also did not predict whether unwanted sexual experiences took place on or off campus,

There were also gender differences in method: a lower proportion of men indicated an incapacitated event type, $\chi^2(2, N = 264) = 14.76, p < .01$, Cramer's $V = .24$, and students in the "other gender" group were particularly likely to report both threats, $\chi^2(2, N = 264) = 6.80, p = .03$, Cramer's $V = .16$, and force, $\chi^2(2, N = 264) = 5.89, p = .049$, Cramer's $V = .15$. Women were most likely to report anger or criticism, $\chi^2(2, N = 264) = 7.91, p = .02$, Cramer's $V = .17$. There were no significant differences in the "ignoring cues" or "lies or pressure" methods.

Discussion

In sum, our analyses supported three of the eight hypotheses. As expected, unwanted sexual experience risk was directly

associated with internalized homophobia (Hypothesis 1) and inversely associated with sense of LGBTQ community (Hypothesis 2). Furthermore, internalized homophobia mediated the relationship between sense of LGBTQ community and unwanted sexual experience risk (Hypothesis 3). A test of the reverse model was not significant, suggesting that the mediation relationship operates in the direction hypothesized.

The remaining five hypotheses were not supported. Internalized homophobia had a negative indirect effect on unwanted sexual experience risk through number of sexual partners, rather than the positive effect that was hypothesized (Hypothesis 4). There also was no evidence for the hypothesis that internalized homophobia would have an indirect effect on unwanted sexual experience risk through drinking frequency (Hypothesis 5). We did not find support for the hypothesis that bisexual/queer/pansexual orientation would affect risk, instead finding similar risk among gay/lesbian and bisexual/queer/pansexual students (Hypothesis 6). Neither did we find evidence for the hypothesis that gender would moderate the effects of internalized homophobia on unwanted sexual experience (Hypothesis 7). The proportion of students reporting

female (versus male) perpetrators did not differ significantly by participant gender, contradicting our hypothesis that GBQ men's unwanted sexual experiences occur primarily with men whereas LBQ women experience aggression by both men and women (Hypothesis 8).

Our study is the first known to identify an association between minority stress, specifically internalized homophobia, and the risk of unwanted sexual experiences among LGBQ students. This finding is consistent with the theory that higher levels of minority stress may put LGBQ students at risk for sexual violence. Our study is also the first known to find that sense of LGBTQ community is associated with lower risk of unwanted sexual experiences, partially mediated by reduced internalized homophobia. The internalized homophobia association is consistent across men and women, and it does not appear to create differences in risk between gay/lesbian and bisexual/queer/pansexual students.

In our analyses, alcohol use partially explained variation in sexual assault risk among LGBQ students (although it was not associated with unwanted sexual experiences overall), but it did not mediate the association between minority stress and unwanted sexual experience risk. Furthermore, although we predicted that higher levels of internalized homophobia would be associated with having more sexual partners, we found that internalized homophobia was associated with having fewer partners. Accordingly, internalized homophobia had a negative indirect effect on unwanted sexual experience risk through lower numbers of sexual partners. Because the previously identified positive association between internalized homophobia and number of partners was observed in an ethnically diverse sample of young gay and bisexual men (Rosario et al. 2006), differences in our sample—the inclusion of women and non-binary participants, the restriction to college students, and the larger proportion of White, non-Hispanic participants—might account for this contrasting result.

Our findings suggest that both alcohol use and number of sexual partners may play a role in LGBQ students' risk of unwanted sexual experiences, but they do not support the theory that internalized homophobia increases risk by promoting either of these activities. Accordingly, the results do not support routine activities theory as an explanation for the overall positive association between internalized homophobia and unwanted sexual experience risk. It is possible that other unmeasured routine activities, such as using drugs other than alcohol (Tewksbury and Mustaine 2001), play a role in this relationship. It is also possible that alternate theories can better account for the positive association.

The theory of behavioral response to threat offers one such alternative. This theory posits that individuals vary in their responses to sexual aggression, and these responses can be broadly categorized as either immobile (e.g., freezing or crying), diplomatic (e.g., negotiating or changing the subject), or assertive (e.g., physical resistance or leaving the area); assertive

responses are associated with lower risk of completed sexual assault (Anderson and Cahill 2015). Certain intrapersonal factors, including fear of rejection and self-blame, predict non-assertive responses (Anderson and Cahill 2015; Norris et al. 1996; Nurius et al. 2000). Together, minority stress theory and behavioral response to threat provide a pathway through which anti-LGBQ stigma could increase sexual victimization. Stigma experiences could have psychological consequences that reduce the likelihood of assertive responses to threat, increasing the chance of a completed assault. Furthermore, research on gay men has linked higher levels of internalized homophobia to reduced likelihood of assertive interpersonal behavior (Pachankis et al. 2008), suggesting that it could reduce assertive responses to sexual victimization threat.

If assertive behavioral responses are indeed the mechanism for this association, a more general psychological factor may mediate the relationship between minority stress and non-assertive responses. Self-esteem has been linked to internalized homophobia (Allen and Oleson 1999) and, in qualitative research, to less-assertive threat responses among male GBQ college students (Menning and Holtzman 2013). Rejection sensitivity, the extent to which one anxiously expects and readily perceives rejection (Wang and Pachankis 2016), is another strong candidate. High levels of rejection sensitivity are associated with sexual victimization among adolescents (Young and Furman 2008) and with less-assertive projected responses to sexual aggression (Norris et al. 1996). Gay-related rejection sensitivity, that is, anxiously expecting and readily perceiving rejection as a result of one's sexual orientation, is associated with internalized homophobia, less-assertive interpersonal behavior, and higher rates of risky condom-less sex with casual partners, potentially suggesting less assertiveness in condom use negotiation (Wang and Pachankis 2016). General or sexual orientation-related rejection sensitivity might mediate the proposed association between internalized homophobia and assertive behavioral responses, a possibility awaiting future research.

Behavioral response threshold, the stage at which a person takes action to avoid an identified threat (e.g., reacting assertively to unwanted attention at a party versus when alone with the perpetrator), could also mediate the association between minority stress and unwanted sexual experiences. Higher behavioral response thresholds for sexual aggression are associated with increased risk of rape among college students (Messman-Moore and Brown 2006). Considering not only the response itself, but also the stage at which it is enacted, may be important when understanding how intrapersonal factors like internalized homophobia affect sexual victimization. Response threshold may be particularly relevant under conditions of strong rejection sensitivity. A person with higher rejection sensitivity may be less willing to respond assertively until an aggressor's malignant intent is abundantly clear—at which point the response may be less effective or trauma may have already occurred.

Overall, participants of all genders mainly reported perpetrators who were known to them, whether as partners, acquaintances or friends. This raises the possibility that not only students' responses to immediate threats, but also a longer-term pattern of responses and behaviors, could affect their risk. Potential perpetrators who know the target may identify internalized homophobia (or its possible sequelae, such as reduced assertiveness) and target them accordingly. They may use coercion tactics that play on stigma, such as threatening to "out" the target, or they may simply infer that targets who are less assertive overall will not resist or report sexual violence. Alternately, perpetrators in high-stigma environments might be more likely to target LGBQ targets as a whole because they believe these targets will not seek or receive support in redressing violence.

Some gender differences did emerge in our results, notably in the methods used and the targets' relationships to the perpetrators. For the "other gender" group, high rates of perpetration by current or former partners suggest that anti-transgender stigma may be a particular risk factor for partner abuse, at least among transgender young adults who are also LGBQ. It is possible that students predisposed to abuse their dating partners may target transgender students due to their heightened social vulnerability. Echoing the notion that high-stigma environments may allow perpetrators to target LGBQ students, higher levels of criminalized tactics (i.e., incapacitation, threats and force) against "other gender" students could reflect perpetrators' belief that these students will not report assaults, or will not be taken seriously if they do.

Partners made up nearly a third of perpetrators overall, reinforcing the importance of addressing partner abuse among LGBQ young adults. In light of evidence that internalized homophobia is associated with intimate partner violence perpetration among young adults (Edwards and Sylaska 2013), this pattern offers another environmental explanation for the link between minority stress and victimization: High-stigma environments could cause more internalized homophobia for both targets and their partners, but the partner's internalized homophobia may be the primary cause of the abuse. On the individual level, students in high-stigma environments may be less likely to leave an abusive partner who is their main source of sexual orientation affirmation, an example of non-assertive responses to threat.

Assertive responses to threat are of particular interest in light of the finding that a 12-h program designed to increase women's behavioral resistance reduced the risk of completed rape by 46 % over one year (Senn et al. 2015). Although that study did not measure specific behavioral responses, the program's success suggests that assertive responses can be both significantly protective and responsive to intervention. The intervention reduced rape attempts, as well as completed rape, suggesting that perpetrators may be less likely

to target women who received the training. These results imply that perpetrator targeting is an important factor, but that this targeting may be based on individual traits, which are responsive to intervention. The promise of resistance programs underscores the importance of determining whether assertiveness accounts for a minority stress effect on unwanted sexual experience risk—and whether programs of this type should directly address internalized homophobia.

The finding that sexual orientation did not predict levels of internalized homophobia or sense of LGBTQ community contradicts previous findings among adults (Balsam and Mohr 2007; Frost and Meyer 2012; Herek et al. 1998; Herek et al. 2009). It may be that bisexual/queer/pansexual participants in this sample had access to LGBTQ communities where their sexual orientation is relatively prevalent and affirmed. It is also possible that grouping bisexual-, queer-, and pansexual-identified participants obscured differences among these subgroups, although analyses with narrower categories also produced non-significant results.

The similar rates of male and female perpetration for targets of each gender were unexpected and may obscure underlying differences. Because most women with unwanted sexual experiences reported male perpetrators, heterosexual men probably commit the bulk of sexual assaults against LGBQ college women. A significant minority of women reported perpetrators who were female or another gender; these are likely intra-LGBQ events, because there is currently no evidence that heterosexual women regularly victimize other women. Research among adult GBQ men suggests that heterosexual aggressors exist, but GBQ perpetrators predominate (Davies 2002). We speculate that GBQ men's unwanted sexual experiences with female perpetrators are mostly with heterosexual women, who may employ coercion related to sexual orientation. For instance, a woman may tell a man that everyone will believe he is gay if he does not have sex with her (Struckman-Johnson and Struckman-Johnson 1994). Considering high rates of bias-motivated victimization among transgender and gender non-conforming people (Grant et al. 2011), coupled with the large proportion reporting partners as perpetrators, we suspect both LGBTQ and non-LGBTQ perpetration in the "other gender" category.

Despite these differences, targets' gender did not moderate the association between internalized homophobia and unwanted sexual experience risk. Given that LGBQ women primarily experience aggression from different-gender perpetrators, whereas GBQ men primarily experience it from same-gender perpetrators, the lack of moderation suggests that internalized homophobia is associated with risk for both same- and different-gender victimization. More generally, it suggests that research and interventions on sexual violence against LGBQ students may appropriately include students of all genders, although there may be cases where a gender-tailored approach is helpful.

Although we identified partial mediation by internalized homophobia, there are other possible explanations for the relationship between sense of LGBTQ community and unwanted sexual experience risk. For instance, young adults who have less social experience with LGBTQ peers (suggesting weaker sense of LGBTQ community) may be more likely to believe that aggressive behavior is normal in LGBQ contexts, and therefore less likely to respond assertively to it (Braun et al. 2009a; Potter et al. 2012).

LGBTQ community could also be protective through the actions of peers. Bystander intervention has been proposed as an important component of campus sexual violence prevention (McMahon and Banyard 2011). One component of sense of LGBTQ community is the belief that one receives assistance from LGBTQ people when in need (Lin and Israel 2012), and peer groups that engender this belief may exhibit more protective behavior (Banyard et al. 2005). When young adults' unwanted sexual experiences begin where LGBTQ peers are present, or when they are ongoing (such as in a violent intimate partnership), an LGBTQ community may be an important source of bystander support.

Limitations and Future Research Directions

We propose that minority stress increases the risk of unwanted sexual experiences, but it is also plausible that sexual victimization increases internalized homophobia and reduces sense of LGBTQ community. Alternately, the variables may have changed since the unwanted sexual experience for unrelated reasons, introducing error. Longitudinal studies could reduce this error by measuring predictors closer to the time of the event, and they could definitively establish the temporal relationship between minority stress and unwanted sexual experiences, strengthening the case for causality.

Although we have proposed assertive behavior as an explanation for the link between minority stress and sexual victimization, we did not measure it here. Future research on minority stress and sexual violence should assess whether assertiveness and/or behavioral responses to risk partially or fully mediate the relationship between these experiences. Furthermore, it should examine potential mediators of such an association, including self-esteem, general rejection sensitivity, and sexual orientation-specific rejection sensitivity.

Given the possibility that additional factors besides internalized homophobia link sense of LGBTQ community and unwanted sexual experience risk, other potential mediators should be examined. Future research should measure perceived LGBTQ community norms—both injunctive and descriptive—as risk factors for sexual violence. It should also explore rates and patterns of bystander intervention within LGBTQ communities, particularly on college campuses.

A confounding or mediation relationship with non-LGBTQ-specific sense of community may also be present. We examined

sense of LGBTQ community because of evidence that in-group social connection (such as sense of community, community connectedness, and social support) is protective against minority stress, the main subject of our study (Doty et al. 2010; Kertzner et al. 2009; Wong et al. 2014). However, in previous research among lesbian women, general sense of community appeared to confound the relationship between sense of lesbian community and depression away from the null (McLaren 2009). Future research should examine campus-wide or overall sense of community, along with social support, as protective factors for LGBTQ students.

Unwanted sexual experience rates from our sample should not be interpreted as prevalence estimates due to the convenience sampling strategy. Recruitment from LGBTQ-oriented online groups and mailing lists may have under-sampled students who are less interested in engaging with other LGBTQ people, although students may use LGBTQ online communities when they are unsatisfied with their LGBTQ social connections on campus. Furthermore, because incentives were not offered, interest in LGBTQ topics and a sense of altruism towards LGBTQ people may have driven participation—potentially generating a sample with a stronger-than-average sense of LGBTQ community.

White students were greatly overrepresented in the sample, a common limitation of research with sexual minorities, which frequently relies on online convenience samples (Galupo et al. 2014). Race/ethnicity did not predict unwanted sexual experiences, but the underrepresentation of students of color could have affected associations among the variables, such as the relationship between internalized homophobia and number of sexual partners. Future research should consider the roles of race and ethnicity in LGBQ minority stress and sexual violence, given evidence that racism within LGBTQ communities can affect health risk behaviors (Han et al. 2015). It should also consider whether racial and ethnic minority stress plays a role similar to that of LGBQ minority stress.

Students at private institutions were also overrepresented, likely because we were more successful in obtaining contact information for private college LGBTQ groups than for public ones. School type (public, private or foreign) predicted unwanted sexual experiences in the bivariate model, but was non-significant in the multivariable models. Private colleges' social climates may differ from those of public colleges in factors like student body size, affluence, visibility of LGBQ students, on-campus residence, and the roles of Greek organizations. Future research should consider whether these differences affect LGBQ students' experiences with sexual violence.

Using online communities for recruitment could have introduced bias in the results. In particular, the Tumblr online community is popular among young adults with salient LGBTQ identities (Fox and Warber 2015; Oakley 2016), and is also known for supportive attitudes towards sexual

violence survivors (Rentschler 2014). Tumblr users might have been more likely to disclose unwanted sexual experiences and also to score high on sense of LGBTQ community or lower on internalized homophobia. This pattern could have made the association between unwanted sexual experience risk and internalized homophobia, or the inverse association with sense of LGBTQ community, appear weaker than they actually are.

Although we compared perpetrators' and targets' genders, we did not collect data on perpetrators' sexual orientations, limiting our ability to draw conclusions about LGBQ and non-LGBQ perpetration. Future studies should collect more detailed data on perpetrators, including information about their sexual orientations.

Practice Implications

Colleges should ensure that sexual violence prevention interventions targeting general audiences are LGBQ-inclusive (Potter et al. 2012). In light of evidence that LGBQ-specific factors affect risk, these programs should incorporate LGBQ-specific messaging. For instance, they should emphasize that same-gender violence is equally serious, and point out that both LGBQ and heterosexual sexual aggressors may exploit anti-LGBQ stigma. Delivering these messages to both LGBQ and heterosexual students ensures that they reach LGBQ students who do not participate in LGBTQ community activities; doing so also contributes to an LGBQ-inclusive campus climate. Furthermore, programs should make clear that people of any gender can be both targets and perpetrators of sexual violence, although this need not preclude a discussion of gender-based power dynamics or the reasons for disproportionate male perpetration.

LGBQ-targeted violence prevention programming is also indicated. Individual risk reduction programs should employ strategies that mitigate internalized homophobia and increase sense of LGBTQ community. Approaches that focus on rejection sensitivity and assertive responses to threat should be considered. In addition, bystander intervention trainings and other workshops can be offered within LGBTQ student groups, and they may broaden their scope to include helping peers cope with internalized homophobia.

Finally and crucially, institutions should address minority stress by creating LGBTQ-affirming climates on campus. First, because internalized homophobia is the product of cultural stigma against LGBQ people, reducing anti-LGBQ stigma on campus is a clear opportunity for intervention. Second, colleges should create opportunities for LGBTQ students to build peer relationships that generate a sense of community, ensuring that programs are accessible across gender, race, socio-economic status and other identities. Third, because anti-LGBQ victimization in high school is strongly related to mental health through the college years (Russell et al. 2011),

anti-stigma efforts at the high-school level may improve outcomes during college.

Conclusions

The present results suggest that minority stress may put LGBQ students at risk for sexual violence, potentially by reducing their ability to respond effectively to threats. They indicate that anti-LGBQ stigma should be considered not only in bias-motivated assaults, but also in a broader range of violence against LGBQ young adults. The role of minority stress does not appear to be explained by sexual or substance use behaviors. Instead, we suggest that differences in assertiveness—either during, before or after an event takes place—could underlie the association. High-stigma environments could also promote both internalized homophobia and sexual victimization, possibly because they lead perpetrators to expect less-assertive responses from LGBQ victims.

Our results also show that LGBTQ communities may be protective, particularly when they help LGBQ young adults cope with stigma. In this light, we reiterate Braun et al. (2009b, p. 119) call for gay (here, LGBTQ) communities based on “an ethic of care and mutual responsibility.” These communities may not only reduce internalized homophobia and its consequences, but also reduce sexual aggression by instituting mutuality and care as sexual norms (Carmody and Willis 2006).

Research focusing on reducing individual risk for sexual violence is inherently unsatisfying: It naturally suggests interventions that change potential targets' behavior rather than the environment that subjects them to violence. Projects designed to decrease aggression, hold perpetrators accountable, and promote bystander intervention should remain a priority. However, given the possibility that certain responses to threat make sexual violence less likely, understanding what predicts these responses is vital. Moreover, linking sexual violence to minority stress gives high schools, colleges, and communities another concrete reason to eliminate anti-LGBQ stigma. In this case, too, it is the environment that must change.

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