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### Discrimination and Mental Health Among Sexual Minority College Students: The Type and Form of Discrimination Does Matter

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## **Discrimination and Mental Health Among Sexual Minority College Students: The Type and Form of Discrimination Does Matter**

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*Research indicates that interpersonal discrimination contributes to mental problems among sexual minorities. However, little attention has been given to subtle discrimination and witnessing discrimination. This study examines the relationship among sexual orientation, experiencing and witnessing hostility (e.g., verbal threats), incivility (e.g., dirty looks), heterosexist harassment (e.g., homophobic names), and moderate/high anxiety and depression symptoms among college students. Results indicated that experiencing hostility, incivility, and heterosexist harassment each partially mediated the relationship between sexual minority status and anxiety. Similar relationships were found for experiencing incivility and heterosexist harassment and depression. Witnessing hostility and heterosexist harassment partially mediated anxiety among sexual minority students.*

*Keywords* sexual orientation, discrimination, campus climate, minority stress, depression, anxiety

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Despite growing acceptance of same-sex sexuality, especially among young people (Andersen & Fetner, 2008) and the inclusion of sexual orientation in many colleges' anti-discrimination policies (Rankin, 2005) sexual minority students continue to be stigmatized and experience discrimination (Rankin, Weber, Blumenfeld, & Frazer, 2010). Minority stress theory suggests that stigma and interpersonal discrimination are risk factors for mental health problems among sexual minorities (Meyer, 2003). Studies indicate that psychiatric distress and mental health problems and disorders tend to be more prevalent among sexual minority students than their heterosexual peers (DeBord, Wood, Sher, & Good, 1998; Kisch, Leino, & Silverman, 2005; Oswalt & Wyatt, 2011; Soet & Sevig, 2006; Westefeld, Maples, Buford, & Taylor, 2001). Consistent with minority stress theory, research generally finds a positive association between interpersonal discrimination and poor mental health outcomes among sexual minorities (Haas et al., 2010; Meyer, 1995), including youth and students (D'Augelli, Pilkington, & Hershberger, 2002; Silverschanz, Cortina, Konik, & Magley, 2008).

Similar to other minority stress research, studies engaging sexual minorities tend to examine blatant forms of discrimination, such as physical violence and threats, while overlooking the role of mundane, everyday discrimination, such as unfair treatment (Meyer, Oullette, Haile, & McFarlane, 2011). Contemporary sexual prejudice (similar to other modern prejudices) tends to be manifested in nonassaultive, covert, and sometimes ambiguous ways (Nadal, Rivera, & Corpus, 2010), such as anti-gay jokes and slurs. Recently, scholars have started to examine sexual orientation microaggressions (Nadal et al., 2010; Sue, 2010a, 2010b; Woodford, Howell, Silverschanz, & Yu, 2012). Parallel to the assertion that modern day racism and sexism are expressed through incivility, that is, low-intensity, discourteous behaviors (Cortina, 2008), it is possible that contemporary sexual prejudice is enacted in analogous ways. Research indicates that subtle discrimination is more prevalent than overt forms of mistreatment for minority identities (Gomez & Trierweiler, 1999; Swim, Pearson, & Johnston, 2007), including sexual minority students (Jewell & Morrison, 2010; Rankin et al., 2010). Among a national sample of lesbian, gay, bisexual, and queer college students, those who reported harassment on campus reported experiencing subtle mistreatment (e.g., hearing derogatory remarks, such as "that's so gay" 68%, being deliberately ignored/excluded 45%, having observed others staring 45%, having felt isolated/left out 41%) more frequently than blatant discrimination, especially extreme forms (e.g., target of physical violence 4%; Rankin et al., 2010). Similar to being a victim of violence, being treated unfairly, snubbed, or being called homophobic names can cause a stress reaction that can build over time. Chronic exposure to stress can contribute to health disparities between heterosexuals and sexual minorities (Meyer, 2003; Meyer et al., 2011).

Though often overlooked in research conducted with sexual minorities (and other minority groups), the social environment also includes

mistreatment targeting others. In the field of workplace sexual harassment research, witnessing, overhearing, or being aware of others being sexually harassed is referred to as ambient sexual harassment (Glomb et al., 1997). Research suggests, analogous to the experience of the targeted victim, ambient sexual harassment can increase bystanders' stress and risk for various negative outcomes (Glomb et al., 1997; Miner-Rubino & Cortina, 2004). For minority groups, ambient mistreatment may convey a poor fit between one's minority identity and the social context, which may increase one's risk for poor health and mental health (Meyer et al., 2011; Seyle, 1982).

To advance understanding of how various aspects of the college campus climate are associated with mental health outcomes, specifically anxiety and depression, among sexual minority students, we examine overt hostility as well as subtle discrimination, namely incivility and heterosexist harassment, in their personal (i.e., targeted) and ambient (i.e., witnessed) forms. Alongside the normative challenges of college, sexual minority students often face additional stressors, including interpersonal discrimination as they develop their identities as young adults and sexual minorities (Bilodeau & Renn, 2005; Rankin et al., 2010). Supportive relationships and environments are important for healthy development, generally, and are especially critical for minority sexual identity formation given the hegemony of heterosexism (Bilodeau & Renn; McCarn & Fassinger, 1996). The problems and issues associated with anxiety and depression, including suicidal ideation (Garlow et al., 2008; Kisch et al., 2005; Wilcox et al., 2010), self-injury (Serras, Saules, Cranford, & Eisenberg, 2010), substance use/misuse (Ford & Jasinski, 2006; Lord, Brevard, & Budman, 2011), and lower educational achievement and performance (Oswalt & Wyatt, 2011; Weissman et al., 1999) reinforce the importance of examining these particular mental health outcomes among students, especially high-risk subgroups.

## INCIVILITY AND HETEROSEXIST HARASSMENT

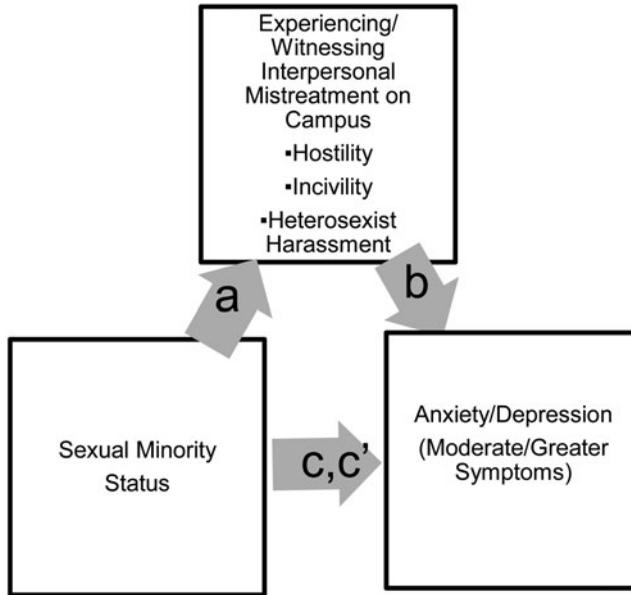
Incivility refers to "low-intensity deviant behavior with ambiguous intent to harm the target. . . Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others" (Andersson & Pearson, 1999, p. 457). Being treated with disrespect or excluded from activities are examples of incivility. Research suggests that women and racial minorities experience incivility more frequently than individuals from dominant groups (Cortina, 2008; Cortina, Magley, Williams, & Langhout, 2001). In the workplace, incivility has been found to be associated with increased psychological distress and other negative outcomes, such as lower job satisfaction (Cortina et al., 2001). Similar results have been found among college students (Caza & Cortina, 2007). In terms of sexual orientation, in an earlier study drawn

from the dataset used in this study, we found that experiencing incivility mediated sexual minority students' risk for problematic drinking (Woodford, Krentzman, & Gattis, 2012). The role of incivility on anxiety and depression of sexual minorities has not been investigated.

Heterosexist harassment refers to "insensitive verbal and symbolic (but non-assaultive) behaviors that convey animosity toward non-heterosexuality" (Silverschanz et al., 2008, p. 180). Being called "fag" or "dyke" and being criticized for atypical gender expression are examples of heterosexist harassment. Unlike incivility, heterosexist harassment is explicitly connected to minority sexuality. Though sexual minorities are the primary targets of heterosexism, heterosexuals can also be subjected to heterosexism (Burn, 2000). Silverschanz and colleagues found that experiencing heterosexist harassment is positively correlated with anxiety and depression among both sexual minority and heterosexual students.

Few outcome studies have investigated ambient forms of discrimination among sexual minorities. In one study, lesbian, gay, and bisexual youth retrospectively reported the frequency of both direct and vicarious sexual orientation victimization that occurred in high school; but, when examining the relationship between past victimization and current mental health, the researchers only explored direct victimization (D'Augelli et al., 2002). In an earlier study, we found that ambient hostility mediated the relationship between minority sexual orientation status and problematic drinking; however, a similar relationship was not found for ambient incivility (Woodford, Krentzman, et al., 2012). Silverschanz et al. (2008) examined the relationship between ambient heterosexist harassment and anxiety and depression (finding positive relationships with anxiety among sexual minorities and both anxiety and depression among heterosexuals); however, these researchers' measure of ambient heterosexist harassment included items assessing both anti-gay behaviors targeting others and untargeted anti-gay sentiments (e.g., gay jokes). It is possible that the stress reaction associated with witnessing or being cognizant of another person being mistreated may qualitatively differ from that associated with overhearing untargeted negative remarks. Therefore, in the current study attention is limited to incidents targeting other individuals.

To expand the extant literature concerning minority stress and anxiety and depression among sexual minorities, specifically among sexual minority college students, we investigate personal and ambient hostility, incivility, and heterosexist harassment. Extant research suggests that any individual, regardless of their sexual orientation, may experience these forms of discrimination, which may be a risk factor for mental health problems. Based on minority stress theory, when compared with heterosexual students, the mental health of sexual minority students may be at increased risk because the stress associated with personal/ambient hostility, incivility, and heterosexist harassment will be combined with the persistent stress associated with



**FIGURE 1** Mediation paths. Paths a, b, c, and c' are represented in Table 3.

membership in a stigmatized minority group. Our primary research question is: Does personal/ambient hostility, incivility, and heterosexist harassment mediate the relationship between sexual minority status and anxiety and depression? Since students who experience psychological distress symptoms on a moderate or greater basis are more likely to experience a need for treatment and/or actually seek support (Eisenberg, Golberstein, & Gollust, 2007), we investigate students' risk for moderate or greater reported symptoms for anxiety and for depression. To address the research question, as specified in Figure 1, the following hypotheses are tested:

- H1. Sexual minority students will be at increased risk for moderate/greater anxiety symptoms and moderate/greater depression symptoms compared to heterosexual students.
- H2. Sexual minority students will be at increased risk for personal/ambient hostility, incivility, and heterosexist harassment compared to heterosexual students.
- H3. Students, regardless of sexual orientation, who experience personal/ambient hostility, incivility, and heterosexist harassment will be at increased risk for moderate/greater anxiety symptoms and moderate/greater depression symptoms.
- H4. Greater exposure to personal/ambient hostility, incivility, and heterosexist harassment is associated with increased risk for moderate/greater anxiety symptoms and moderate/greater depression symptoms among sexual minority students compared to their heterosexual counterparts.

## METHODS

## Participants and Procedures

The data for this study were drawn from a cross-sectional campus climate study conducted with full- and part-time students attending a large, public, research university located in the Midwest. An advisory committee consisting of students, staff, faculty, and alumni provided guidance for the original study. Data were collected using an anonymous online survey. Students were invited to provide feedback about their perceptions of the campus climate, which was defined as “the actions and attitudes within a university that influence whether people feel welcomed and valued as members of the community.” Sexuality was not referenced in study recruitment or the informed consent materials. The study received Institutional Review Board approval. All participants were offered an opportunity to enter a raffle for one of fifty \$50 cash cards.

The sample consisted of 2,428 students (18% sexual minority). As reported in Table 1, most participants were White, female, and with an average age of early twenties. There were no statistically significant group differences between sexual minority and heterosexual students in terms of age and race, but a slightly larger proportion of females ( $p = .007$ ) were in the sexual minority group.

Students had to be at least 18 years of age to join the study. To recruit a sufficient number of sexual minorities into the study, a multifaceted

**TABLE 1** Mental Health, Interpersonal Mistreatment, and Demographic Characteristics by Sexual Minority Status ( $n = 2,428$ )

Variable	% or <i>M</i> ( <i>SD</i> )		<i>Significance</i> Mean Difference
	Sexual Minority ( $n = 426$ )	Heterosexual ( $n = 2,002$ )	
Mental Health Anxiety			
Moderate/greater symptoms	24.41%	17.18%	<.001
Depression			
Moderate/greater symptoms	20.19%	12.79%	<.001
Interpersonal Mistreatment on			
Campus Personal			
Hostility	11.74%	7.40%	0.003
Incivility	41.08%	28.92%	<.001
Heterosexist harassment	26.53%	9.74%	<.001
Ambient			
Hostility	31.69%	20.27%	<.001
Incivility	61.50%	57.84%	0.164
Heterosexist harassment	61.97%	48.55%	<.001
Demographics			
Age	23.28 (5.2)	23.09 (5.9)	0.556
White	73.94%	71.58%	0.323
Female	66.90%	59.92%	0.007

sampling strategy was implemented: (1) a census of sophomore and junior undergraduates ( $N = 11,342$ ), (2) a random sample of 8,000 graduate students, and (3) a convenience sample of sexual minority students involved in lesbian, gay, bisexual, and transgender (LGBT) student organizations. The host university does not record information about students' sexual orientation, thus, it was not possible to conduct a stratified sample based on sexual orientation.

Using official university email addresses students in the census and random sample were contacted and invited to participate in the study. Reminder messages were sent 7 and 14 days later. The invitation and reminder messages included the survey link. Just over 5,000 students activated the survey link, and 3,762 agreed to participate; however, 1,361 were excluded from the sample (761 answered no questions, 600 provided partial data), thereby reducing the sample to 2,401.

To recruit students involved in LGBT organizations an invitation to join the study was posted on the list serve for leaders of LGBT student organizations, and the leaders were asked to forward the message to their organizations' members. Reminder messages were posted 7 and 14 days later for distribution to organizational members. The survey link was included in the invitation and reminder messages. Students were asked to complete the survey if they were at least 18 years of age and they had not been previously invited to join the study. Seventy-three students agreed to join the study; however, only 27 surveys contained sufficient data to be useable.

We combined the undergraduate, graduate, and LGBT student groups for this study (final  $n = 2,428$ ), and compared heterosexual students with sexual minority students.

## Measures

The advisory committee and staff from the host institution's LGBT student services office and the Division of Student Affairs assisted with survey development. Further, feedback about the content and online design and presentation of the survey was gathered from a group of recent graduates. The survey's format and interface mirrored those of the host institution's campus-wide student satisfaction and learning outcome surveys.

### SEXUAL ORIENTATION

Based on seminal research by Kinsey, Pomeroy, and Martin (1948), participants were asked "what is your sexual orientation?" and selected from six categories: completely lesbian or gay, mostly lesbian or gay, bisexual, mostly heterosexual, completely heterosexual, and not listed. For this analysis, similar to other studies (Chakraborty, McManus, Brugha, Bebbington, & King,

2011; Silverschanz et al., 2008; Ueno, 2010) we created two groups: sexual minority students and heterosexual students. The sexual minority group ( $n = 426$ ) consisted of those who selected completely lesbian or gay ( $n = 56$ ), mostly lesbian or gay ( $n = 36$ ), bisexual ( $n = 73$ ), or mostly heterosexual ( $n = 261$ ), and the heterosexual group comprised students who selected completely heterosexual ( $n = 2,002$ ). We included those who selected mostly heterosexual in the sexual minority group for conceptual and empirical reasons. Conceptually, we believe that by choosing mostly heterosexual, a respondent selected an identity category that is not a part of the sexual majority and likely considers him or herself to be a sexual minority. Further, based on group size, in comparison with the completely heterosexual group, mostly heterosexual respondents are a minority group. Additionally, analyses comparing three groups (completely heterosexual, mostly heterosexual, and lesbian, gay, and bisexual [LGB]) using the data of the present study found the mostly heterosexual group to be statistically different from the completely heterosexual counterparts on measures of depression ( $p = .02$ ) and anxiety ( $p = .03$ ); whereas no statistically discernible differences between mostly heterosexual and LGB groups were identified.

#### INTERPERSONAL MISTREATMENT

After reviewing the literature and in consultation with the advisory group and LGBT office and student affairs staff, we constructed measures assessing personal and ambient hostility, incivility, and heterosexist harassment (see Table 2). Survey respondents were asked how often they had witnessed, heard, or knew about (ambient discrimination) and personally experienced each behavior on campus in the past 12 months (or since at the university if less than 12 months). Response options for both witnessed and personally experienced questions were: never, once, two to three times, four to nine times, and 10 or more times.

A substantial number of respondents across both groups did not report personally experiencing or witnessing these behaviors, causing the distribution of each variable to be positively skewed (personal hostility 8.89, ambient hostility 4.73, personal incivility 2.75, ambient incivility 1.25, personal heterosexist harassment 4.05; ambient heterosexist harassment 1.20); therefore, we dichotomized each variable to indicate experience of mistreatment (no = 0, yes = 1).

#### ANXIETY AND DEPRESSION

We used the anxiety ( $\alpha = .82$ ) and the depression ( $\alpha = .86$ ) subscales from the Brief Symptom Inventory (Derogatis, 1993). Respondents were asked to

**TABLE 2** Questions Forming the Incivility, Hostility and Heterosexist Harassment Measures**Hostility**

- I've heard of people who have received offensive or threatening phone calls, e-mails, or online messages.
- I know someone whose personal property was vandalized.
- I know someone who has been followed in a threatening manner.
- I've seen/heard someone being verbally threatened, bullied, or intimidated.
- I've seen someone being physically threatened, bullied, or assaulted.

**Incivility**

- I've seen someone being stared at, sneered at, or given dirty looks.
- I've seen someone ignored, left out of group activities, or given the silent treatment.
- I've seen someone being treated rudely or "put down."

**Heterosexist Harassment**

- I've heard other people called homophobic names (such as "fag" or "queer") because someone thought they were not heterosexual enough.
- I've heard someone else being criticized for not being masculine enough (if male), or not feminine enough (if female).
- I know of someone who has been pressured to keep quiet about their sexual orientation.

*Notes:* Survey respondents were initially asked how often they had witnessed each of the above behaviors on campus in the past 12 months (or since at the university if less than 12 months). These responses formed the "ambient" measures. They were next asked "how many times has this happened to you?" These responses formed the "personal" measures. Response options for all items were never, once, 2–3 times, 4–9 times, and 10 or more times.

indicate the frequency of being bothered by six specific symptoms associated with each disorder (e.g., anxiety "nervousness or shakiness inside;" depression "feeling blue") over the past week. Response categories were not at all, a little bit, moderately, quite a bit, and extremely. To investigate students' risks for moderate or greater reported symptoms, we dichotomized both dependent variables as follows: if "not at all" or "a little" was selected for all items the variables were collapsed into 0 = no symptoms/less than moderate symptoms, and in cases where "moderately," "quite a bit," or "extremely" was selected for one of the six items the variables were collapsed into 1 = moderate/greater symptoms.

**Data Analysis**

A summary of the sample characteristics was generated using descriptive analyses. Exploratory analyses examined differences between sexual minority and heterosexual students. The strengths of individual paths depicted in Figure 1 were estimated using logistic regression: (1) the path from the independent variable (sexual minority status) to the dependent variables (anxiety/depression) (path *c*); (2) the path from the independent variable (sexual minority status) to the mediator (interpersonal mistreatment) (path *a*); (3) the path from the mediator (interpersonal mistreatment) to the

dependent variable (anxiety/depression) (path *b*); (4) the path from the independent variable (sexual minority status) to the dependent variables (anxiety/depression), when accounting for interpersonal mistreatment (path *c'*). Demographic covariates (age, race, and gender) were included in all models as control variables.

Bootstrapping methods (2,000 iterations) were applied to evaluate the mediating role of each of the six mistreatment variables in the link between sexual minority status and mental health outcomes. This procedure is recommended over conventional methods, such as the causal steps approach (Baron & Kenny, 1986) or the Sobel test (Sobel, 1982), because it directly tests the significance of hypothesized mediation paths without imposing any normality assumptions of the sampling distribution, but instead computes an empirical approximation (Preacher & Hayes, 2008). Furthermore, simulation studies have found that bootstrap methods decrease the chance of Type 1 error and provide greater power (MacKinnon, Lockwood, & Williams, 2004). Statistical analyses were performed using Stata/SE version 12.0.

## RESULTS

Significantly more sexual minority students reported moderate or greater levels of anxiety and depression symptoms than their heterosexual peers (both  $p < .001$ ). Likewise, sexual minority students were more likely to report interpersonal mistreatment on campus for each form of personal mistreatment as well as ambient hostility and ambient heterosexist harassment (all  $p < 0.01$ ).

### Mediation Analysis

Table 3 displays the results for the individual paths as presented in Figure 1. Demographic characteristics were controlled in all models.

#### SEXUAL MINORITY STATUS AND MENTAL HEALTH (PATH C)

Sexual minority status was a significant predictor of both mental health outcomes. The odds of sexual minority students reporting moderate or greater levels of anxiety symptoms was 1.57 times greater than that compared to their heterosexual counterparts. Similarly, the odds of reporting moderate or greater levels of depression symptoms among sexual minority students were 1.73 times greater than that of their heterosexual peers.

**TABLE 3** Tests of Specifications for Each Path of the Mediation Analysis ( $n = 2,428$ )

Test of Path c: Association of sexual minority status on moderate/greater anxiety and moderate/greater depression symptoms			
Path c	AOR	95% CI	<i>P</i>
DV: Anxiety			
Sexual minority	1.57	(1.19, 1.99)	<.001
DV: Depression			
Sexual minority	1.73	(1.28, 2.27)	<.001
Test of Path a: Association between sexual minority status and interpersonal mistreatment			
Path a	AOR	95% CI	<i>P</i>
DV: Personal hostility	1.65	(1.15, 2.30)	.004
Sexual minority			
DV: Personal incivility	1.73	(1.36, 2.14)	<.001
Sexual minority			
DV: Personal heterosexual harassment	4.57	(3.23, 6.00)	<.001
Sexual minority			
DV: Ambient hostility	1.84	(1.46, 2.30)	<.001
Sexual minority			
DV: Ambient incivility	1.16	(0.94, 1.46)	.199
Sexual minority			
DV: Ambient heterosexual harassment	1.87	(1.48, 2.32)	<.001
Sexual minority			
Test of Path b: Association between interpersonal mistreatment and moderate/greater anxiety and moderate/greater anxiety depression symptoms			
Path b	AOR	95% CI	<i>P</i>
DV: Anxiety			
Personal hostility	1.97	(1.41, 2.72)	<.001
Personal incivility	2.37	(1.92, 2.97)	<.001
Personal heterosexual harassment	2.05	(1.52, 2.70)	<.001
Ambient hostility	1.43	(1.13, 1.81)	.002
Ambient incivility	1.53	(1.25, 1.94)	<.001
Ambient heterosexual harassment	1.59	(1.29, 1.97)	<.001
DV: Depression			
Personal hostility	1.64	(1.12, 2.35)	.009
Personal incivility	2.55	(2.03, 3.27)	<.001
Personal heterosexual harassment	1.69	(1.22, 2.38)	.002
Ambient hostility	1.37	(1.07, 1.77)	.013
Ambient incivility	1.20	(0.95, 1.54)	.126
Ambient heterosexual harassment	1.22	(0.97, 1.55)	.087

*(Continued on next page)*

**TABLE 3** Tests of Specifications for Each Path of the Mediation Analysis ( $n = 2,428$ )  
(Continued)

Test of Path c': Association between sexual minority status and moderate/greater anxiety and moderate/greater anxiety depression symptoms, controlling for interpersonal mistreatment

Path c'	AOR	95% CI	P
DV: Anxiety			
Sexual minority	1.52	(1.16, 1.95)	.001
Personal hostility	1.91	(1.37, 2.63)	<.001
DV: Anxiety			
Sexual minority	1.42	(1.07, 1.83)	.010
Personal incivility	2.31	(1.86, 2.89)	<.001
DV: Anxiety			
Sexual minority	1.38	(1.05, 1.78)	.016
Personal heterosexual harassment	1.88	(1.38, 2.51)	<.001
DV: Anxiety			
Sexual minority	1.51	(1.15, 1.93)	.002
Ambient hostility	1.37	(1.09, 1.75)	.007
DV: Anxiety			
Sexual minority	1.55	(1.18, 1.98)	<.001
Ambient incivility	1.52	(1.24, 1.92)	<.001
DV: Anxiety			
Sexual minority	1.48	(1.12, 1.89)	.003
Ambient heterosexual harassment	1.54	(1.24, 1.91)	<.001
DV: Depression			
Sexual minority	1.70	(1.25, 2.22)	<.001
Personal hostility	1.57	(1.06, 2.26)	.018
DV: Depression			
Sexual minority	1.56	(1.15, 2.08)	.002
Personal incivility	2.46	(1.95, 3.17)	<.001
DV: Depression			
Sexual minority	1.60	(1.19, 2.11)	.001
Personal heterosexual harassment	1.48	(1.07, 2.10)	.022
DV: Depression			
Sexual minority	1.68	(1.23, 2.22)	<.001
Ambient hostility	1.30	(1.01, 1.69)	.044
DV: Depression			
Sexual minority	1.72	(1.28, 2.26)	<.001
Ambient incivility	1.19	(0.94, 1.52)	.149
DV: Depression			
Sexual minority	1.70	(1.25, 2.23)	<.001
Ambient heterosexual harassment	1.16	(0.92, 1.47)	.196

Notes: Models controlled for age, gender and race.

DV = dependent variable; AOR = adjusted odds ratio; CI = confidence interval.

SEXUAL MINORITY STATUS AND INTERPERSONAL MISTREATMENT (PATH A)

Being a sexual minority was a risk factor for personally experiencing and witnessing each interpersonal mistreatment variable, with the exception of ambient incivility ( $p = .199$ ). Specifically, relative to heterosexual students,

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sexual minority students had greater odds of reporting personal hostility (adjusted odds ratio [AOR] = 1.65), personal incivility (AOR = 1.73), and personal heterosexual harassment (AOR = 4.57). Sexual minority respondents had almost double the odds of reporting ambient hostility (AOR = 1.84) and ambient heterosexual harassment (AOR = 1.87).

#### INTERPERSONAL MISTREATMENT AND MENTAL HEALTH (PATH B)

All personal experiences of hostility (AOR = 1.97), incivility (AOR = 2.37), heterosexual harassment (AOR = 2.05) were positively associated with greater odds of reporting moderate or greater levels of anxiety symptoms. The same pattern was found for ambient hostility (AOR = 1.43), ambient incivility (AOR = 1.53), and ambient heterosexual harassment (AOR = 1.59). For depression, the three forms of personal mistreatment (hostility AOR = 1.64, incivility AOR = 2.55, heterosexual harassment AOR = 1.69), ambient incivility (AOR = 1.37), and ambient heterosexual harassment (AOR = 1.22,  $p = 0.087$ ) were associated with greater odds of moderate or greater depression symptoms.

#### SEXUAL MINORITY STATUS AND MENTAL HEALTH, ACCOUNTING FOR MISTREATMENT (PATH C')

As reported in the final section of Table 3, the relationship between sexual minority status and moderate or greater anxiety symptoms was significant, while accounting for each form of personal mistreatment (hostility AOR = 1.52, incivility AOR = 1.42, heterosexual harassment AOR = 1.38) as well as each form of ambient mistreatment (hostility AOR = 1.51, incivility AOR = 1.55, heterosexual harassment AOR = 1.48). Similarly, the relationship between sexual minority status and moderate or greater depression symptoms was significant for each form of personal mistreatment (hostility AOR = 1.70, incivility AOR = 1.56, heterosexual harassment AOR = 1.60) and ambient mistreatment (hostility AOR = 1.68, incivility AOR = 1.72, heterosexual harassment AOR = 1.70).

#### MEDIATION EFFECT OF INTERPERSONAL MISTREATMENT

Table 4 presents the tests of statistical significance of the mediated paths using bootstrap methods. Results indicated that compared with heterosexual students, sexual minority students were more likely to personally experience hostility, incivility, and heterosexual harassment, and to witness ambient hostility and heterosexual harassment, and each of these forms of mistreatment was associated with increased odds of moderate/high levels of anxiety symptoms. The other mediation pathway testing ambient incivility was not statistically significant; however, the sign of the indirect effect was in the hypothesized direction.

**TABLE 4** Tests of Statistical Significance of the Hypothesized Mediated Paths ( $n = 2,428$ )

Mediated Paths (path ab)		Indirect Effect	Bootstrap Standard Error	$p$
<b>SM</b> → <b>Personal hostility</b>	→ <b>Anxiety</b>	<b>0.010</b>	<b>0.004</b>	<b>0.025</b>
<b>SM</b> → <b>Personal incivility</b>	→ <b>Anxiety</b>	<b>0.024</b>	<b>0.006</b>	< <b>0.001</b>
<b>SM</b> → <b>Personal heterosexual harassment</b>	→ <b>Anxiety</b>	<b>0.035</b>	<b>0.009</b>	< <b>0.001</b>
<b>SM</b> → <b>Ambient hostility</b>	→ <b>Anxiety</b>	<b>0.009</b>	<b>0.004</b>	<b>0.019</b>
SM → Ambient incivility	→ Anxiety	0.003	0.003	0.237
<b>SM</b> → <b>Ambient heterosexual harassment</b>	→ <b>Anxiety</b>	<b>0.015</b>	<b>0.005</b>	<b>0.002</b>
SM → Personal hostility	→ Depression	0.007	0.004	0.064
<b>SM</b> → <b>Personal incivility</b>	→ <b>Depression</b>	<b>0.025</b>	<b>0.006</b>	< <b>0.001</b>
<b>SM</b> → <b>Personal heterosexual harassment</b>	→ <b>Depression</b>	<b>0.022</b>	<b>0.009</b>	<b>0.025</b>
SM → Ambient hostility	→ Depression	0.008	0.004	0.057
SM → Ambient incivility	→ Depression	0.001	0.002	0.372
SM → Ambient heterosexual harassment	→ Depression	0.005	0.004	0.215

Notes: SM = Sexual minority. Anxiety and depression were both scored 0 = no symptoms/less than moderate symptoms, 1 = moderate/greater symptoms. Significant paths in bold.

Regarding depression, only the personal incivility and heterosexual harassment were significant mediators. The observed relationships between minority sexuality status, these forms of personal mistreatment, and depression were associated with greater odds of moderate/higher depression symptoms; personal hostility was significant at a level of a trend ( $p = .064$ ). None of the ambient forms of mistreatment were statistically significant mediators (ambient hostility was significant at a level of a trend,  $p = .057$ ); yet, the direction of each relationship was as hypothesized.

## DISCUSSION

This study extends empirical understanding of the potential consequences of interpersonal discrimination among sexual minority students by demonstrating that risks for mental health problems can occur when subjected to subtle discrimination or witnessing, overhearing, or knowing about the mistreatment of others. Previous studies have demonstrated that overt prejudice, such as violence is positively associated with negative mental health outcomes among sexual minority targets (D’Augelli et al., 2002; Haas et al., 2010; Meyer, 1995, 2003). However, blatant forms of discrimination are only one component of contemporary sexual prejudice (Nadal et al., 2010); few studies consider the role of subtle discrimination on sexual minority individuals’ health and wellbeing (Meyer et al., 2011; Silverschanz et al., 2008; Woodford, Howell et al., 2012; Woodford, Krentzman et al., 2012).

We found partial support for our hypotheses (see above). Consistent with H1 and earlier studies (Oswalt & Wyatt, 2011; Soet & Sevig, 2006; Westefeld et al., 2001), the results suggested that sexual minority students were significantly more likely to report poorer mental health, specifically

moderate/high anxiety and depression symptoms, compared to heterosexual students. The findings partially support H2. Compared with heterosexual students, sexual minority students were at increased odds of reporting personal hostility, incivility, and heterosexist harassment. Similar results were found for both ambient hostility and heterosexist harassment. Although sexual minority students reported witnessing incivility more often than heterosexual students (62% vs. 58%, respectively), the difference was not statistically significant. Earlier research found minority sexual orientation status to be a risk factor for targeted mistreatment, including subtle forms (Rankin et al., 2010; Silverschanz et al., 2008). The findings regarding rates of heterosexist harassment, both personal and ambient, are similar to Silverschanz et al.'s (2008) results. Ambient forms of hostility and incivility have not been previously investigated with students beyond this dataset, thus direct evidence supporting our findings is unavailable. However, given that sexual minority students experience hostility and incivility significantly more often than heterosexual students, they may also witness such incidents more often. The data support this proposition, although, as noted, the between-group difference for ambient hostility was not statistically significant. It may be possible that sexual minority students frequent spaces on campus where mistreatment occurs, including to others, more frequently; thus, sexual minorities are exposed to the mistreatment of others more often. Another possible explanation is that sexual minority students may have more minority peers than heterosexual students do; hence, because of their social networks, sexual minorities may be exposed to more ambient hostility and incivility. It also may be the case that because they are a part of a marginalized group, sexual minority students could have an increased sensitivity to mistreatment and may notice discrimination targeting others more often than heterosexual students do. Additional research is needed to explore these potential explanations.

Partial support was also generated for H3 in that the results suggest that students, regardless of sexual orientation, were negatively affected by an unwelcoming campus environment. In particular, those who reported experiencing personal mistreatment (all types) were at elevated risk for moderate/greater anxiety and depression symptoms compared to students who did not report these experiences. With regard to ambient mistreatment, all forms of mistreatment predicted anxiety; however, they had lower adjusted ratios compared to personal mistreatment. For depression, only ambient hostility was a significant predictor with depression (although ambient heterosexist harassment showed marginal support).

Most noteworthy, in regard to the mediating role of personal/ambient mistreatment on campus (H4), the findings imply that specific experiences of personal/ambient mistreatment on campus partially mediated the relationship between sexual minority status and particular mental health outcomes. Specifically, the results indicated that sexual minority students were more likely to experience each form of personal mistreatment, ambient hostility,

and ambient heterosexist harassment, and each of which was associated with increased risk for moderate/higher anxiety symptoms. Similar relationships were seen for moderate/higher depression symptoms, although personal and ambient hostility mediated the link between sexual minority status and depression at a level of a trend.

These findings are congruent with the intersection between sexual orientation, interpersonal discrimination, and mental health outcomes hypothesized in minority stress theory (Meyer, 2003). By examining incivility and heterosexist harassment—two forms of subtle discrimination popular on campus—and ambient forms of discrimination, this study addresses important gaps in extant minority stress research concerning subtle discrimination (Meyer et al., 2011). It is possible that targeted discrimination, regardless of the severity, involves a stress response within the victim, which, in turn, may contribute to poorer mental health. The stress response for direct threats and violence is likely fairly intense and immediate; whereas, subtle discrimination, especially incivility, may engender a more subdued response, yet it is not less serious. Further, given that mundane mistreatment is a commonplace experience, it is possible that these concomitant responses cumulate over time, and in addition to the other stresses associated with minority sexual orientation, they eventually take their toll on the individual. Minor stressors, such as those associated with incivility, may be symbolic indicators of one's stigmatized, out-group minority status and "the symbolic meaning of these occurrences may have a stronger impact than the actual occurrence" (Meyer et al., 2011, p. 205). Similar to hostility, personal experiences of incivility and heterosexist harassment may remind a sexual minority student of her out-group status on campus and convey a sense of incongruence between the individual and the larger social environment. A sense of fit or harmony between the social environment and the individual are the foundation of good health (Lazarus & Folkman, 1984; Seyle, 1982). The current results imply that personal mistreatment in any form may lead to a poor fit or disharmony, which may increase risk for mental health problems.

Likewise, the results imply that ambient hostility can involve stress for the bystander. In the case of anxiety, both personal and ambient hostility were risk factors for moderate/greater anxiety symptoms among sexual minority students. This suggests that ambient hostility may have similar negative outcomes as that experienced by the victim. In addition to the possibility that witnessing, overhearing, or knowing about violence and other hostile behaviors targeting others being a reminder of one's marginalized status, related research in the field of workplace sexual harassment posits that bystanders may have other stress-related reactions, including concern about also being a target, feeling helpless and overwhelmed, and feeling empathy for the victim (Glomb et al., 1997). Finding ambient incivility and heterosexist harassment not to be significantly associated with the outcomes is intriguing. The pervasiveness of incivility and heterosexist harassment, including in their

targeted forms, may help to account for these findings. That is, the occurrence of personal incivility and heterosexist harassment on campus may foster resilience to their ambient forms, whereas, personal hostility is experienced at much lower rates, thus increasing bystanders' vulnerability to hostility targeting others in the social environment.

### Limitations and Future Research

Alongside methodological assets (e.g., using an anonymous survey to collect sensitive data, inclusion of large heterosexual comparison group), this study has limitations. The use of cross-sectional design precludes determination of causality. The results may be generalized only to student populations with similar demographics. Since the host institution does not record demographic information about students' sexual orientation, the representativeness of sexual minority and heterosexual participants cannot be assessed. Concerns also exist about the sample and response rates. In terms of the census and random samples, given the use of an anonymous Internet-based survey (Dillman, Smyth, & Christian, 2009) we are unable to determine if students who did not activate the survey link received the invitation/reminder emails or if they were disinterested in joining the study. Based on the number of students invited to participate in the study through the census and random samples, the response rate is 13% (average response rate for campus-wide student satisfaction and learning-outcome surveys at the host institution is 10%). Based on those known to have received the survey, the response rate is 49%. Finally, the use of a convenience sample questions generalizability to the host institution.

In terms of the use of mediation analysis, the validity of the distinction between "full" and "partial" mediation has recently been called into question (Preacher & Kelley, 2011). It is important to note that in all cases the relationship between sexual minority status and mental health was significant even when the mediating effect of interpersonal mistreatment was accounted for, indicating partial mediation and suggesting that other mediational processes remain to be identified. It will be important for future studies to investigate perceptions of discriminatory events. With respect to ambient discrimination, in addition to documenting the specific nature and type of mistreatment, examining the observer's closeness with the targeted victim will be useful. Future research should also investigate possible gender, gender expression, and racial differences, as well as possible within-group differences among sexual minorities (Vrangalova & Savin-Williams, 2012).

### CONCLUSION AND IMPLICATIONS

By advancing understanding of the intersection between sexual orientation, various types and forms of discrimination on campus, and mental health

among college students, our results can inform clinical and policy interventions, especially those tailored to sexual minority students. Findings suggest that targeted experiences of mistreatment, both mundane, everyday discrimination and blatant hostility, as well as forms of vicarious discrimination can contribute to increased risks for poor mental health among sexual minority students. To promote and support students' health and wellbeing, including academic success, it is critical that colleges create safe and inclusive spaces for *all* students, especially sexual minorities (Rankin et al., 2010). Given recent high-profile suicides among college students related to LGBT bullying, considerable efforts are being made to prevent overt violence and harassment on college campuses nationwide. These efforts are important and will hopefully reduce the increased risk for anxiety and depression that sexual minority students experience, however this study's results indicate that programs and policies that address subtle forms of discrimination, such as incivility and heterosexist harassment are also needed to support students' mental health.

Alongside these initiatives, it is important to support sexual minority students through counseling and other campus initiatives. Intake assessments should inquire about various types of interpersonal mistreatment, and help students develop appropriate coping mechanisms. Through gay-straight alliances (GSAs) and ally and safe space programs, interested members of the university community can provide support to sexual minority students (and interrupt discrimination on campus; Woodford, Kolb, Radeka, & Javier, in press). It is important to train program participants in how to provide culturally competent support. Also, considering the results concerning ambient mistreatment (see path b), especially ambient hostility and heterosexist harassment and the risk for moderate/high anxiety symptoms among sexual minority students, institutions should appropriately train and support allies and facilitators of GSAs in order to avoid the possible negative effects of ambient mistreatment for themselves and other alliance members. By reducing the prevalence of both overt and subtle forms of discrimination on campuses, and effectively supporting students, especially sexual minorities who experience personal and ambient mistreatment, colleges can promote students' mental health, which in turn may prevent the negative outcomes linked with anxiety and depression, and ultimately help students reach their full potential.

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