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Depression and Attempted Suicide among LGBTQ College Students: Fostering Resilience to the Effects of Heterosexism and Cisgenderism on Campus

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Little is known is about the impacts of covert and overt discrimination and the protective factors for depression and suicide among LGBTQ students. Using multivariable regression analyses of a national sample of cisgender lesbian, gay, bisexual, and queer students and trans students (n = 776), we examined the association between mental health and microaggressions, victimization, psychological resilience, pride, and outness. In models of all risk and protective factors, interpersonal microaggressions was a risk factor for depression and attempted suicide among cisgender LGBQ students and was also a risk factor among trans* students for depression. In all but 1 model, resilience was a protective factor. Resilience moderated the microaggressions–suicide relationship among cisgender LGBQ students, whereas pride moderated the victimization–depression relationship among trans* students.*

Research indicates that mental health problems and psychological distress are more prevalent among sexual and gender minority college students than among their peers (Effrig, Bieschke, & Locke, 2011; Kisch, Leino, & Silverman, 2005; Oswalt & Wyatt, 2011).

According to minority stress theory, chronic stress associated with marginalization on the basis of one's sexual or gender identification underpins these disparities (Meyer, 2003). National research suggests that lesbian, gay, bisexual, trans*, and queer (LGBTQ) students experience heterosexism and/or cisgenderism on campus, ranging from derogatory comments to violence, and tend to have negative perceptions of the campus climate (Rankin, Weber, Blumenfeld, & Frazer, 2010). It bears noting that LGBTQ students have historically called their identities by many terms (for an overview, see Marine, 2011); throughout this article we use the term *trans**—itself contested and under construction (see Nicolazzo, 2017a)—to be inclusive of identities beyond transgender, such as genderqueer, gender nonconforming, and two-spirit (Tompkins, 2014). *Heterosexism* is a cultural ideology that perpetuates sexual stigma by denying and denigrating any nonheterosexual form of behavior, identity, relationship, or community (Herek, 2004). Similarly, *cisgenderism* refers to the denial and denigration of individuals' gender identities that do not align with sex assigned at birth,

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as well as resulting behavior, expression, and community (Lennon & Mistler, 2014). These oppressive systems are inherent in cultural institutions, such as language and law, and are also conveyed through both subtle and blatant forms of discrimination.

Minority stress theory also emphasizes factors that might contribute to resilience in the context of adversity. Resilience generally refers to the quality of being able to survive and potentially thrive in the face of adversity, mitigating the negative impact of stress on health. Assets, such as positive coping skills, and resources, like community connections, might buffer targeted individuals from the negative effects of discrimination (Meyer, 2003).

Research on LGBTQ student experiences continues to grow, including exploring the link between heterosexism and mental health (Silverchanz, Cortina, Konik, & Magley, 2008; Woodford, Kulick, Sinco, & Hong, 2014). Little is known, however, about the relationship between cisgenderism and mental health among trans* students. Also, minimal attention has been given to consequences of subtle expressions of discrimination, such as *microaggressions*—“everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, that communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership” (Sue, 2010, p. 3)—especially among trans* students. In addition, little research has examined resilience in the context of microaggressions (Woodford, Chonody, Kulick, Brennan, & Renn, 2015).

In this study of sexual and gender minority students, we examined the role of discrimination, both subtle and blatant, on student depression and attempted suicide. We also explored the role of individual-level factors that may promote well-being when these minority students experience such stressors. In doing so we acknowledge and resist the historical

pathologizing of minoritized sexualities and genders in society and in higher education (see Dilley, 2002), while also acknowledging the very real consequences of minority stressors in the lives of LGBTQ college students.

DISCRIMINATION AND WELL-BEING

Research suggests that among gender and sexual minority students, subtle discrimination, such as slurs and negative comments, are more common than violence and other forms of overt discrimination (Rankin et al., 2010; Woodford, Han, Craig, Lim, & Matney, 2014; Woodford, Kulick, et al., 2014). Recent empirical attention has been given to microaggressions and other forms of subtle, often unintentional, discrimination targeting sexual minorities and trans* individuals (Nadal et al., 2011; Nadal, Davidoff, Davis, & Wong, 2014; Wright & Wegner, 2012), including among sexual minority students (Platt & Lenzen, 2013; Pryor, 2015; Woodford, Chonody, et al., 2015; Woodford, Joslin, Pitcher, & Renn, 2017). Microaggressions can be expressed interpersonally, as in conversations with peers or class discussions, or environmentally through exclusionary policies or a hostile institutional climate. They include microinsults that convey insensitivity and rudeness toward the target or demean the person’s identity (e.g., LGBTQ people are hypersexual), microinvalidations that dismiss or nullify a person’s identity (e.g., being transgender or genderqueer is only a phase), and microassaults that derogate someone’s identity (e.g., avoiding working with a genderqueer student). Microinsults and microinvalidations are generally subtle and unintentional, whereas microassaults tend to be explicit and purposeful (Sue, 2010). Qualitative (Platt & Lenzen, 2013) and quantitative (Woodford, Howell, Silverschanz, & Yu, 2012; Woodford, Kulick, et al., 2014;

Wright & Wegner, 2012) studies show that, although often portrayed as minor events, microaggressions can negatively affect targeted individuals.

Quantitative research suggests that trans* college students experience more discrimination than their cisgender peers (Rankin et al., 2010). Similarly, other research suggests cisgender students experience more victimization and have higher rates of psychological distress than those who identify as men or women (Effrig et al., 2011). Rankin and colleagues (2010) also found that subtle forms of discrimination that resemble microaggressions, such as being ignored, were more prevalent than physical violence. These researchers, however, did not examine students' mental health. Qualitative studies suggest that trans* students also often face structural discrimination, such as lack of access to gender-inclusive facilities, which can contribute to anxiety and concerns about engaging openly in campus life (Nicolazzo, 2016, 2017b; Pryor, 2015). These barriers parallel systemic environmental microaggressions (Woodford et al., 2017) and structural cisheterosexism (e.g., name change policies, health insurance exclusions) that Spade (2015) identified as forms of administrative violence that limit the life chances of trans* people. To the best of our knowledge, Effrig et al. (2011) conducted the only quantitative study of trans* students' experiences with discrimination and mental health; however, these researchers inquired only about blatant interpersonal victimization ("experiencing unwanted sexual contact, and experiencing harassing, controlling, or abusive behaviour," p. 149) and did not examine the relationship with mental health.

Collectively, these studies and their roots in minority stress theory suggest that experiencing heterosexism/cisgenderism can place LGBTQ students at risk for negative outcomes. To better understand the impact of contemporary

heterosexism/cisgenderism, it is important to investigate both subtle and conspicuous forms. In this study we examined interpersonal and environmental microaggressions, as well as blatant interpersonal victimization among sexual and gender minority students. Gender and sexuality are different, yet often overlapping, identities, which are largely conflated throughout research and praxis (Renn, 2010). Thus, to bring much-needed specificity to the topic, we examined the groups separately.

RESILIENCE

Resilience theory suggests that personal assets (e.g., positive coping skills, self-esteem) and external resources (e.g., social support, community involvement) can promote strength in the context of adversity (Fergus & Zimmerman, 2005). Researchers have examined resilience among gender (Nicolazzo, 2016, 2017b) and sexual (Woodford, Kulick, & Atteberry, 2015) minority students; however, more research is needed, especially comparative studies involving both groups. It is also important to understand how such factors might have differential buffering effects depending on the type of discrimination experienced (i.e., covert or overt).

In this study, we adopted a protective conceptualization of resilience in which assets and resources help to buffer targeted students from the negative effects of heterosexism/cisgenderism (Fergus & Zimmerman, 2005). We see resilience in two ways: (a) broadly as the psychological capacity to bounce back from stressful situations (Smith et al., 2008) and (b) possessing personal qualities that may enable this process (Fergus & Zimmerman, 2005). Psychological resilience has been studied among many groups, including trans* adults (Breslow et al., 2015). To the best of our knowledge, this conceptualization of

resilience has not been quantitatively examined among LGBTQ students. Qualitative research suggests that trans* students develop various *practices of resilience*, or personalized strategies to negotiate their environments, which allow them to successfully navigate institutional cisgenderism (Nicolazzo, 2016, 2017b).

Concerning personal assets, research suggests that self-esteem moderates the effects of heterosexist harassment among sexual minority students, specifically in terms of alcohol abuse, but not depression or anxiety (Woodford, Kulick, et al., 2015). It also is possible that LGBTQ-specific assets may buffer LGBTQ students from discrimination. Though a risk factor for poor mental health (Meyer, 2003; Weber, 2008), internalized homophobia (i.e., internalizing anti-gay attitudes) can also moderate the discrimination–distress relationship (Velez, Moradi, & Brewster, 2013). Affirmative identification with one’s sexual identity (or gender identity), that is, a sense of internalized pride, may perform the same function. Similarly, disclosure about one’s sexual minority identity is generally considered to be linked to positive mental health (Herrick, Egan, Coulter, Friedman, & Stall, 2014; Meyer, 2003); thus, it may help to buffer students from the effects of heterosexism. The same relationship may exist among trans* students. Garvey and Rankin (2015) found a correlation between higher levels of trans* student outness and higher use of campus resources; however, we were unable to find any research focusing on trans* students’ outness as a predictor for mental health outcomes. Given the impact of mental health on college students’ personal well-being and academic development, and the pervasiveness of heterosexism and cisgenderism on college campuses, research into factors that promote sexual and gender minority students’ resilience to subtle and blatant discrimination is needed. It is especially important to examine

malleable factors that can be enhanced through support programs.

PURPOSE

To advance knowledge of the risk and protective factors related to LGBTQ students’ mental health, specifically depression and attempted suicide among cisgender LGBQ students and trans* students (as two separate groups), we asked: What is the relationship between various types of heterosexism/cisgenderism on campus (LGBQ/trans* environmental microaggressions, LGBQ/trans* interpersonal microaggressions, LGBQ/trans* victimization) and depression and attempted suicide? What is the relationship between protective factors (psychological resilience, LGBTQ pride, LGBTQ outness) and these mental health outcomes? How do these factors protect students from the effects of each type of heterosexism/cisgenderism on campus? Specifically, we hypothesized that microaggressions, both environmental and interpersonal, and victimization would increase the risk for depression and attempted suicide in each group. We also hypothesized that resilience, pride, and outness would protect students from poor mental health and also buffer them from the negative effects of discrimination on campus.

METHODS

Participants

Participants consisted of 776 self-identified LGBTQ students (562 identified as cisgender and sexual minorities, referred to as cisgender LGBQ, and 214 identified as trans*) from 37 states representing all U.S. Census regions: Midwest 67.6%, Northeast 14.6%, West 10.2%, South 6.6%; 0.6% did not provide state or attended a school outside of the United States. Most participants (71.4%) attended

public schools, and most schools (56.9%) had doctoral programs. The majority of participants (25.6%) attended schools with student populations greater than 30,000, although a range of small and medium-sized schools were represented (2,500 students or fewer 16.6%; 2,501–8,000 students 15.7%; 8,001–15,000 students 16.0%; 15,001–30,000 students 16.4%). Demographic information about the two subsamples is displayed in Table 1.

Procedures

We extracted data from an anonymous online survey conducted in 2013 as part of the National Study of LGBTQ Student Success. Eligibility for the original study was restricted to individuals 18 years of age or older who identified as a sexual and/or gender minority and who were current or former (within the past year) college students (screening questions assessed each criteria). Given the lack of a national sampling frame for LGBTQ students, we recruited a convenience sample through three phases. First, we recruited participants at the February 2013 Midwest Bisexual Lesbian Gay Transgender Ally College Conference in Lansing, Michigan. Though the conference draws participants nationwide, the majority of attendees were from the Midwest. Interested conference participants either completed the survey at the conference (laptops provided), or after the conference (postcards advertising the survey were distributed). Second, to recruit participants beyond the conference, conference attendees were asked to distribute study postcards to peers on their campuses. Third, to obtain the most geographically diverse sample possible, we distributed notices about the study through LGBTQ listservs and networks. Participants who completed the survey at the conference were given a coupon for a coffee at a local coffee shop. All participants had the opportunity to join a drawing for an iPad.

Given our interest in understanding the

effects of discrimination on campus among cisgender sexual minority students and trans* students as two separate groups, we divided the sample by gender identity (cisgender or trans*) based on students' responses to the screening questions and a demographic question about gender identity.

Measures

We use LGBTQ for measures applicable to sexual and gender minority students, LGBQ for those applicable to cisgender sexual minorities, and trans* for those applicable to trans* students. After reverse-scoring appropriate items, we averaged all items comprising multi-item scales such that higher scores reflect more of the phenomenon of interest.

Mental Health. To determine depression, we used the depression module of the Patient Health Questionnaire (PHQ–9; Spitzer, Kroenke, & Williams, 1999) to assess reported level of symptoms. This scale reflects nine DSM-IV diagnostic criteria, and participants indicate the frequency of being bothered by particular symptoms (e.g., “feeling down, depressed, or hopeless”) over the past 2 weeks on a 4-point Likert-type scale from 0 (*not at all*) to 3 (*nearly all the days*); theoretical range 0–27. Scale scores of 0–4, 5–9, 10–14, 15–19, and 20 or higher indicate minimal/no, mild, moderate, moderately severe, and severe levels of depression (Spitzer et al., 1999). Previous testing demonstrated the scale's validity and reliability (Kroenke, Spitzer, & Williams, 2001). It was previously used with students, including sexual and gender minorities, in the national Healthy Minds Study (<http://healthymindsnetwork.org>). The scale's internal reliability was excellent in our study: cisgender LGBQ $\alpha = .88$, trans* $\alpha = .92$.

We measured attempted suicide using the question, “During the past 12 months, how many times have you attempted suicide?” with responses: *0 times, once, twice, 3 times, 4*

TABLE 1.
Descriptive Statistics for Study Variables

Categorical Variables	Cisgender LGBQ Students		Trans* Students	
	<i>n</i>	%	<i>n</i>	%
Attempted Suicide				
No	442	78.6	147	68.7
1 or more attempts	27	4.8	20	9.3
Missing	93	16.5	47	22.0
Race				
White	395	70.3	155	72.4
People of Color	139	24.7	40	18.7
Missing	28	5.0	19	8.9
Conference Attendee				
No	267	47.5	99	46.3
Yes	287	51.1	113	52.8
Missing	8	1.4	2	0.9
Gender Identity				
Man	247	44.0	29	13.6
Woman	315	55.0	29	13.6
Genderqueer	0	0.0	81	37.9
Two-Spirit	0	0.0	8	3.7
Transgender	0	0.0	30	14.0
Other identity	0	0.0	14	6.5
Missing	0	0.0	23	10.7
Sexual Orientation				
Gay: man-loving-man	203	36.1	19	8.9
Lesbian: woman-loving-woman	116	20.7	26	12.1
Bisexual/Other	218	38.7	146	68.2
Missing	25	4.4	23	10.7
Continuous Variables (% missing: cisgender / trans*)				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Depression (17.1% / 22.4%)	7.68	5.78	9.20	6.94
Age (0.0% / 0.0%)	22.68	5.46	22.83	5.37
LGBQ/Trans* environmental microaggressions (7.1% / 12.6%)	2.37	1.29	2.30	1.22
LGBQ/Trans* interpersonal microaggressions (7.5% / 16.8%)	1.40	1.19	1.38	1.22
LGBQ/Trans* victimization (5.7% / 5.6%)	0.24	0.53	0.32	0.63
Resilience (16.5% / 22.0%)	3.28	0.81	3.02	0.88
LGBTQ pride (15.8% / 22.0%)	3.54	0.58	3.64	0.59
LGBTQ outness (0.0% / 0.0%)	2.53	1.13	2.57	1.10

times, 5 times, more than 5 times.). We divided responses into “no attempt” and “at least one attempt,” given concerns about skewness with the original distribution.

Heterosexism and Cisgenderism on Campus. We examined the prevalence of LGBTQ/ trans* environmental microaggressions, LGBTQ/ trans* interpersonal microaggressions, and LGBTQ/trans* victimization. For each measure, participants reported the frequency of specific incidents on campus within the past year (or since coming to campus if less than one year) using a 6-point scale from 0 (*never*) to 5 (*very frequently*). Among cisgender LGBTQ students, the environmental (sample item: “I received information about sexual health that was limited to heterosexual sex”) and interpersonal (“I was told that being lesbian, gay, bisexual, or queer is ‘just a phase’”) microaggressions were measured using the respective 5-item and 15-item subscales from the LGBTQ Microaggressions on Campus Scale (Woodford, Chonody, et al., 2015). Earlier psychometric testing that utilized data from another sample and the current one established the scale’s validity, including factorial (EFA and CFA), convergent, discriminant, and predictive, and found it to be internally reliable (Woodford, Chonody, et al., 2015). In our sample, Cronbach’s alphas were .81 and .94 for the environmental and interpersonal subscales, respectively.

For trans* students, we used seven items to assess environmental microaggressions (“I did not have access to bathrooms where I felt comfortable as a trans* person”) and 18 items for interpersonal microaggressions (“People said or implied that my birth sex is my ‘real’ sex/gender”). Earlier psychometric testing using data from this study and another one demonstrated the scale’s factorial (EFA), convergent, discriminant, and predictive validity, and internal reliability (Woodford et al., 2018). Cronbach’s alpha in the current sample was .80 for environmental microaggressions

and .95 for interpersonal microaggressions.

We assessed victimization (e.g., verbal and physical threats and assaults) for both the subsamples using parallel scales (LGBTQ/trans*) adapted from the Sexual Orientation Victimization Questionnaire (Herek, 1993). The original scale was used with gay, lesbian, and bisexual students (D’Augelli, 1992; Herek, 1993) and later adapted for use with LGBT youth with a Cronbach’s alpha of .87 (Lui & Mustanski, 2012). We adapted the scale to be inclusive of queer and gender queer identities: “Someone physically assaulted (e.g., punched, kicked, or beat) me because they knew or assumed I was lesbian, gay, bisexual, or queer [transgender or gender queer].” The scale demonstrated excellent internal reliability in our study; cisgender LGBTQ $\alpha = .90$, trans* $\alpha = .88$. Exploratory factor analysis with Oblimin rotation produced single-factor solutions (loadings: cisgender LGBTQ .629 to .837; trans* .529 to .897).

Protective/Buffering Factors. We measured psychological resilience through the Brief Resilience Scale, which is a reliable and valid measure of one’s ability to bounce back in stressful situations (Smith et al., 2008). Participants indicated their agreement to items such as “I tend to bounce back quickly after hard times” on a 5-point Likert scale. Cronbach’s alphas were .89 for our cisgender LGBTQ sample and .91 for our trans* sample. Because we could not locate a brief scale to assess internalized views about being a sexual/gender minority individual, using adapted items from Mayfield’s (2001) Internalized Homonegativity Inventory for Gay Men, we developed a 2-item scale assessing LGBTQ pride: “I’m proud to be LGBTQ” and “I believe being LGBTQ is an important part of me”; participants responded using a 5-point Likert scale. Internal consistency for our sample was acceptable: cisgender LGBTQ $\alpha = .74$, trans* $\alpha = .82$. Informed by previous

research (Woodford & Kulick, 2015), we measured outness by asking participants to report on a 5-point scale from 0 (*not out to anyone in this group*) to 4 (*out to all*) “How out are you as an LGBTQ person to members of [the group]?” with six groups listed (e.g., friends who are not LGBTQ). Cronbach alphas in our study were .89 for the cisgender LGBQ and .88 for trans*. Exploratory factor analysis using Oblimin rotation conducted with each group produced single-factor solutions (loadings: cisgender LGBQ .706 to .862; trans* .689 to .874).

Controls. Controls included age, conference attendee, gender identity, sexual orientation, and race. Measures from Rankin and colleagues (2010) were used to assess gender identity (6 categories) and sexual orientation (11 categories); race was assessed using 8 categories. These variables included “another category (please specify).” Because of the low number of students in particular categories, we dichotomized gender identity and race, and created two dummy variables for sexual orientation.

Data Analysis

The overall analytical sample consisted of 776 participants (of the 952 who took the survey) who remained after data cleaning and who reported less than 50% missing data on all variables in the survey (no significant differences were found on any key variables based on removing those with more than 50% missing data). We examined patterns of missingness among the two analytical samples. For cisgender students, the most common pattern of missingness observed across all cases was no missing data, suggesting that data were missing at random. For trans* students, the most common pattern of missingness suggested that trans* students were likely missing data for gender expression. This variable assesses one’s self-perceived gender expression on a continuum from 1 (*totally feminine*) to 9

(*totally masculine*). Some trans* students may reject this continuum, whereas others may be unsure how they identify, resulting in a high degree of missingness. Because missingness patterns were different across subsamples, the issue of missing data was addressed through the use of Monte Carlo multiple imputation (20 imputations) in SPSS (version 22.0), with separate imputations conducted for each sample. All presented analyses were conducted using the imputed data.

For each group, we generated descriptive statistics and bivariate correlations, and ran multivariable regression models for hypothesis testing (linear for depression and binary logistic regression for suicide). To understand the unique effects of each type of discrimination, separate models were run for each heterosexism/cisgenderism variable, followed by a model inclusive of all types. All models included protective factors. To examine the potential buffering effects, we then tested interactions using the product of mean-centered versions of each protective factors and discrimination variable. Due to shared variance explained by the discrimination variables, we investigated the moderation effects using separate models for each discrimination type. For brevity, we do not show interaction models. For post hoc analysis, we evaluated regression slopes at low and high values (i.e., 1 standard deviation below/above the mean). Multicollinearity was explored using tolerance and variance inflation factor (VIF) values for the first imputed dataset (highest values: tolerance 0.98; VIF 3.99); no concerns existed.

RESULTS

Table 1 displays the descriptive statistics for the study variables. Among the cisgender LGBQ sample, the overall mean depression score was 7.68 ($SD = 5.78$). Nearly 5% of these students reported attempting suicide in the past year.

TABLE 2. Multivariable Linear Regressions Examining Depression Among Cisgender LGBQ and Trans* Students

	Model 1			Model 2			Model 3			Model 4		
	B	SE		B	SE		B	SE		B	SE	
Cisgender LGBQ Students (n = 562)												
Heterosexism variables												
LGBQ environmental microaggressions	0.85 ^{†††}	.21					0.15	.31				
LGBQ interpersonal microaggressions			1.10 ^{†††}	.23			0.80 [†]	.36				
LGBQ victimization					1.81 ^{††}	.52	0.79	.56				
Protective variables												
Resilience	-2.79 ^{†††}	.31	-2.76 ^{†††}	.31	-2.94 ^{†††}	.31	-2.75 ^{†††}	.31				
LGBTQ pride	0.03	.48	0.01	.47	0.42	.48	0.09	.47				
LGBTQ outness	0.18	.27	0.07	.27	-0.04	.28	0.05	.27				
R ²		.26		.27		.26		.28				
Trans* Students (n = 214)												
Cisgenderism variables												
Trans* environmental microaggressions	0.97 [†]	.41					-0.77	.71				
Trans* interpersonal microaggressions			1.58 ^{†††}	.40			1.91 [†]	.82				
Trans* victimization					2.45 ^{††}	.75	0.91	1.02				
Protective variables												
Resilience	-3.61 ^{†††}	.59	-3.61 ^{†††}	.56	-3.59 ^{†††}	.58	-3.60 ^{†††}	.55				
LGBTQ pride	-0.05	.94	0.31	.93	0.31	.90	0.48	.94				
LGBTQ outness	-0.43	.54	-0.55	.54	-0.25	.54	-0.50	.55				
R ²		.30		.34		.31		.35				

Notes. Controls: race, age, gender, sexual orientation, and conference attendee. R² calculated with the first imputed dataset.

† p < .05. †† p < .01. ††† p < .001.



FIGURE 1. Interaction of LGBTQ Pride × Victimization on Depression Among Trans* Students

Note. Higher depression scores indicate greater presence/severity of depression symptoms.

LGBQ environmental microaggressions were the most common, followed by interpersonal microaggressions and then victimization. The prevalence of each discrimination type among trans* students was similar to the cisgender LGBQ sample; however, trans* students reported a significantly higher depression score, $M = 9.20$, $SD = 6.94$, $t(635) = 2.75$, $p = .006$. Reports of attempted suicide also differed significantly, $\chi^2(1) = 7.17$, $p = .007$, with 9.3% of trans* students reporting attempted suicide.

Depression

Cisgender LGBQ Students. As displayed in Table 2 (Models 1, 2, and 3), LGBQ environmental microaggressions, LGBQ interpersonal microaggressions, and LGBQ victimization were significantly associated with increased reports of depressive symptoms, whereas resilience was significantly associated with reports of lower

depressive symptoms in each model. In Model 4 (inclusive of all heterosexism variables), LGBQ interpersonal microaggressions and resilience remained significant. In this model, for every one-unit increase in the frequency of encountering interpersonal microaggressions, one's depression score is predicted to increase by 0.80 points. In contrast, every one-unit increase in resilience is predicted to decrease depression symptoms score by 2.75 points. No interactions were significant.

Trans Students.* In Models 1, 2, and 3 (Table 2), trans* environmental microaggressions, trans* interpersonal microaggressions, and trans* victimization, respectively, were significantly related to increased depressive symptoms, and resilience was associated with decreased depressive symptoms. Both trans* interpersonal microaggressions and resilience remained significant in Model 4, with results

TABLE 3.
Multivariable Logistic Regression Examining Attempted Suicide Among Cisgender LGBQ and Trans* Students

	Model 1		Model 2		Model 3		Model 4	
	AOR	95% CI	AOR	95% CI	AOR	95% CI	AOR	95% CI
Cisgender LGBQ Students (n = 562)								
Heterosexism variables								
LGBQ environmental microaggressions	1.74 [†]	[1.09, 2.78]					0.80	[0.41, 1.56]
LGBQ interpersonal microaggressions			2.12 ^{††}	[1.37, 3.28]			2.08 [†]	[1.05, 4.14]
LGBQ victimization					2.91 ^{††}	[1.54, 5.47]	1.78	[0.92, 3.42]
Protective variables								
Resilience	0.30 ^{†††}	[0.16, 0.56]	0.28 ^{†††}	[0.15, 0.53]	0.24 ^{†††}	[0.12, 0.46]	0.25 ^{†††}	[0.13, 0.50]
LGBTQ pride	0.68	[0.30, 1.52]	0.60	[0.27, 1.36]	0.97	[0.42, 2.22]	0.74	[0.31, 1.79]
LGBTQ outness	0.85	[0.53, 1.37]	0.81	[0.49, 1.34]	0.70	[0.43, 1.14]	0.72	[.042, 1.23]
R ²	.43		.45		.40		.46	
Trans* Students (n = 214)								
Cisgenderism Variables								
Trans* environmental microaggressions	1.13	[0.66, 1.91]					0.55	[0.22, 1.39]
Trans* interpersonal microaggressions			1.53	[0.96, 2.44]			1.81	[0.72, 4.53]
Trans* victimization					2.93 [†]	[1.20, 7.17]	2.59	[0.80, 8.36]
Protective Variables								
Resilience	0.50 [†]	[0.26, .95]	0.50 [†]	[0.26, .96]	0.53	[0.27, 1.04]	0.51	[0.26, 1.01]
LGBTQ pride	0.93	[0.33, 2.66]	0.95	[0.35, 2.60]	1.04	[0.36, 2.99]	1.18	[0.37, 3.72]
LGBTQ outness	0.86	[0.48, 1.53]	0.85	[0.46, 1.56]	0.91	[0.48, 1.71]	0.89	[0.47, 1.71]
R ²	.21		.23		.26		.27	

Notes. Controls: race, age, gender, sexual orientation, and conference attendee. R² = Nagelkerke pseudo R², calculated with the first imputed dataset. AOR = adjusted odds ratio.

† p < .05. †† p < .01. ††† p < .001.

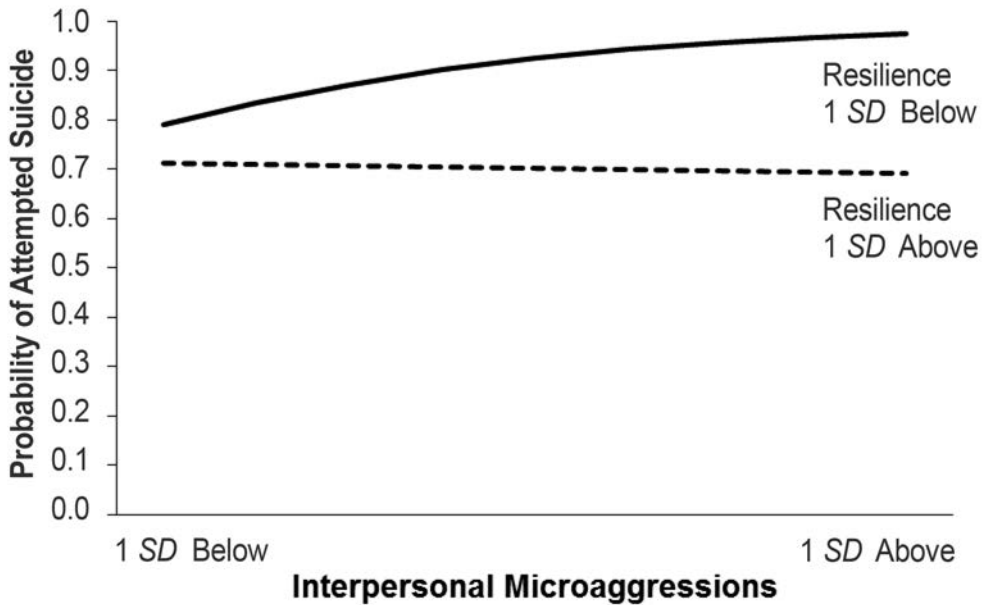


FIGURE 2. Interaction of Resilience \times Interpersonal Microaggressions on Attempted Suicide Among Cisgender LGBTQ Students

Note. Attempted suicide in the past year.

suggesting that depressive symptoms scores will increase by 1.91 points with every unit increase in reported interpersonal microaggressions, and decrease by 3.60 points with each unit increase in resilience.

We found a statistically significant interaction between trans* victimization and pride ($B = 3.40$, $SE = 1.29$, $p = .009$; model not shown). In Figure 1, the line representing participants with high pride shows a sharp and statistically significant incline when going from low to high victimization ($B = 3.75$, $SE = 0.99$, $p < .001$). The line for those with low pride has a nonsignificant slope ($B = -0.20$, $SE = 1.25$, $p = .87$). No other significant interactions were found.

Attempted Suicide

Cisgender LGBTQ Students. In Models 1, 2, and, 3 (Table 3), each heterosexism variable was significantly associated with increased adjusted odds of reporting attempted suicide, and resilience was significantly associated with decreased adjusted odds. In Model 4,

interpersonal microaggressions and resilience remained significant. In this model, interpersonal microaggressions was associated with a 108% increase in the adjusted odds of reporting attempted suicide, whereas resilience was associated with 75% decrease in the adjusted odds of reporting attempted suicide.

A statistically significant interaction was found for LGBTQ interpersonal microaggressions and resilience (AOR = 0.54, 95% CI [0.33, 0.89], $p = .02$). In Figure 2, the slope for the line capturing participants with high resilience is not statistically significant when going from low to high microaggressions ($B = 0.32$, $SE = .43$, $p = .47$). In contrast, the slope for the line representing students with low resilience is significant ($B = 0.84$, $SE = 0.25$, $p = .001$). No other significant interactions were observed (models not shown).

Trans Students.* Among each of the cisgenderism variables in Models 1, 2, and 3 (Table 3), only victimization was statistically significantly, with results indicating that greater victimization was associated with

increased adjusted odds of reporting attempted suicide. Resilience was significantly associated with decreased adjusted odds of reporting attempted suicide in Models 1 and 2. In Model 4, none of the risk or protective variables were significant. None of the interactions attained significance (models not shown).

DISCUSSION

Mental health among college students is a national concern, and sexual minority and trans* students are considered high-risk groups; however, little is known about risk, protective, and buffering factors among LGBTQ students. In this study, we hypothesized that interpersonal and environmental microaggressions and interpersonal victimization would increase the risk for depressive symptoms and attempted suicide among cisgender LGBQ students and trans* students. We also hypothesized that psychological resilience and LGBTQ pride and outness would foster students' mental health and buffer them from the negative effects of discrimination. Among our racially and institutionally diverse national sample, we found partial support for our hypotheses. The findings illuminate important commonalities and differences in the nature of mental health among cisgender LGBQ and trans* students, and noteworthy differences among trans* students in terms of risk factors across outcomes when adjusting for each form of cisgenderism. The results advance minority stress research and can inform interventions tailored to the needs of sexual and gender minority students.

Nearly 10.0% of the trans* students and 5.0% of cisgender LGBQ students in this study reported attempting suicide in the past year. These rates are considerably higher than those documented in national studies of college students, with prevalence rates between 0.6% and 1.3% (American College Health Association, 2014; Eisenberg,

Hunt, & Speer, 2013). Mean depression scores among both subsamples (cisgender LGBQ $M = 7.68$, trans* $M = 9.20$) are also considerably higher than those found in earlier research (Eisenberg, Golberstein, & Hunt, 2009; Lamis, Malone, Langhinrichsen-Rohling, & Ellis, 2010; exception: Garlow et al., 2008). These disparities, coupled with various negative outcomes associated with depression and attempted suicide, especially death, reinforce the contributions of this study. To the best of our knowledge, this is the first study to investigate the risk, protective, and buffering factors associated with depression and behavioral suicide among sexual and gender minority college students.

In terms of our hypotheses related to heterosexism and cisgenderism, important differences emerged across the groups. Among cisgender LGBQ participants, when controlling for only one type of heterosexism at a time, the results indicate that experiences of blatant and subtle heterosexism were each associated with increased risk for depression and attempted suicide, and these models suggested that blatant victimization might have the most dramatic impact on both mental health indicators. When simultaneously controlling for each form of heterosexism, interpersonal microaggressions maintained statistical significance for each outcome. For trans* students, when controlling for each type of discrimination separately, each was significantly associated with increased risk for depression, with interpersonal microaggressions maintaining statistical significance in the full model. In contrast, in terms of suicide, victimization was significant when adjusting for only this form of cisgenderism.

Social stress theory, racial discrimination research, and existing LGBTQ microaggression research may be helpful in understanding these results. Stress researchers posit that minoritized groups face unique stressors in society due to

a “mismatch” between the person and their social environment (Lazarus & Folkman, 1984, p. 234). This mismatch is at the core of minority stress and, in the case of sexual and gender minority students, can be experienced as microaggressions and victimization. Such stressors can lead to cognitive, emotional, and biological reactions that could negatively affect mental health (Cohen, Kessler, & Gordon, 1995). Qualitative studies have documented such reactions when LGBTQ (Nadal et al., 2011; Platt & Lenzen, 2013) and trans* (Nadal et al., 2014) individuals face microaggressions.

Some argue that racial discrimination, when understood as oppression that manifests through daily assaults on one’s sense of self and violence, is stressful and possibly traumatizing (Carter, 2007; Carter, Forsyth, Mazzeula, & Williams, 2005). Racist events that are emotionally and psychologically threatening, similar to other traumatic experiences, can lead to traumatic stress (Carlson, 1997). Carlson suggested that such stress can occur if one perceives the incident as negative, if it is experienced as sudden, and if one lacks control during the incident. Verbal and physical threats and assaults and other forms of victimization likely reflect each of these qualities. Thus, understanding victimization as a traumatic event can help to explain why victimization is a risk factor for depression and attempted suicide among trans* students and cisgender LGBTQ students in the victimization-only models.

It is interesting and somewhat surprising to find microaggressions to be statistically significant among cisgender LGBTQ students for both outcomes, but significant only for depression among trans* students. In both subsamples, interpersonal microaggressions retained statistical significance in the full models for depression, and the same occurred for suicide among the cisgender LGBTQ sample. It is possible that microaggressions, especially interpersonal ones that may be

perpetrated by acquaintances or friends (Sue, 2010), may be perceived as negative and have a negative effect as everyday reminders of one’s marginalized status (Meyer, 2003; Woodford, Kulick et al., 2014). That is, despite their everyday nature, parallel to victimization, microaggressions can contribute to chronic stress and have a cumulative effect contributing to increased risk for both depression and suicide among cisgender LGBTQ students and for depression among trans* students. Previous research suggests that heterosexist microaggressions, rather than victimization, is a driving force for psychological distress among LGBTQ students (Woodford, Kulick, et al., 2014). Further, qualitative research suggests that interpersonal microaggressions may be more likely to be internalized than overt discrimination and indirect environmental microaggressions (Nadal et al., 2011), which is supported by our full-model results for depression across both groups and for suicide among cisgender LGBTQ students.

Qualitative studies have documented similar negative reactions to trans* microaggressions, including feelings of distress and strain (Nicolazzo, 2016; 2017b), which could contribute to increased risk for depression, but not necessarily attempted suicide, as our results suggest. This is intriguing, as is finding no significant risk or protective variables in the full model for this group, which could be due to statistical issues related to sample size and issues related to shared variance in the full model.

In terms of protective/buffering variables, psychological resilience was negatively associated with depression scores for both groups. Likewise, resilience was associated with lower odds for suicide in all models among cisgender LGBTQ students and select models among trans* students. Furthermore, resilience demonstrated a significant interaction with interpersonal microaggressions on attempted suicide among cisgender LGBTQ students. Specifically, the

interaction results suggested that students with low levels of resilience were particularly vulnerable to interpersonal microaggressions, with greater risk when these students reported high levels of microaggressions. In contrast, the effect of interpersonal microaggressions was not significant among those with high resilience. Overall, these results suggest that increasing resilience among gender and sexual minority students may lower their risk for depression and attempted suicide; however, in the case of LGBQ interpersonal microaggressions, possessing the ability to bounce back can protect cisgender LGBQ students from the negative effects of these minority stressors in terms of depression.

None of the LGBTQ-identity factors exhibited a main effect with either dependent variable, but a significant interaction between pride and victimization for depressive symptoms was found among trans* students. Post hoc analysis indicated that those who report high pride and high victimization scores tended to report higher depression scores, whereas the level of victimization did not affect the victimization–depression relationship among those reporting low pride. Developing trans* pride is a milestone to healthy trans* identity (Beemyn & Rankin, 2011), but our results suggest it can disadvantage trans* students who experience high rates of victimization. It is possible that this may have to do with the sharp discrepancy between the positive feelings associated with identity pride and the negative messages and threats inherent in blatant discrimination. Research is needed to examine this finding further.

LIMITATIONS AND FUTURE RESEARCH

In addition to methodological strengths (e.g., large overall sample that enabled comparison between cisgender LGBQ and trans* students), several noteworthy limitations exist. Using

a cross-sectional design means we cannot determine causation; nevertheless, the relationships we observed are consistent with minority stress theory and previous research (exceptions noted). Data were self-reported; thus some students may not have recalled details accurately and may have overestimated or underestimated their experiences; however, self-reporting contributes to anonymity, which is important when collecting sensitive information. The sample was relatively large, included an array of institutional types, was racially diverse, and was national in scope. Since most participants identified as White and were from the Midwest, the findings may not reflect the experiences of all students in all regions. Further, we collapsed some groups (e.g., race, sexual orientation, gender), thus we are not able to capture differences within these groups. Greater diversity in future studies will enable exploring the role of race, gender, and campus climate on LGBTQ students' mental health. Although recruiting students attending an LGBTQ conference or connected to LGBTQ online networks produced a large and diverse national sample, it is possible that students involved in these activities may possess more strengths and assets than those who are more isolated. The results may not apply to LGBTQ students who are not involved in these activities. Using Facebook and other popular social media tools in future research for recruitment may address this concern. Finally, some of our measures were adapted or created for the study. We judged these measures to have face validity and conducted other testing, when possible. Future scale development is needed. Although the factor structure, validity, and reliability of the trans* microaggressions measure have been examined (Woodford et al., 2018), we recommend that it undergo additional psychometric testing, including confirmatory factor analysis.

Research examining other risk and protective factors for depression and attempted

suicide is needed, especially among trans* students, given the significantly higher scores/rates we documented. We recommend that attention be given to structural factors, such as campus resources and policies. Other areas of mental health, for example anxiety, perceived stress, and suicidal ideation, as well as academic indicators, plus the nature of psychological resilience and other forms of resilience also need more study.

IMPLICATIONS AND CONCLUSIONS

Existing research on the mental health of LGBTQ college students provides valuable information, yet researchers continue to seek a clearer understanding of risk and protective factors that may buffer students from the effects of discrimination. This study extends minority stress theory research by investigating subtle and blatant discrimination, as well as intrapersonal assets and characteristics. The results highlight important differences between cisgender LGBQ students and trans* students in terms of risk factors, especially in regard to suicide, as well as moderating factors.

All forms of discrimination, particularly interpersonal microaggressions (given their enduring relationship in the full models for depression in both subsamples and suicide among cisgender LGBQ students) need to be addressed in clinical/support interventions and reduced—and ultimately eliminated—on campus to foster positive mental health among LGBTQ students. Although interpersonal microaggressions may not be risk factors for attempted suicide in our trans* sample, they are positively correlated ($r = .59, p < .01$) with victimization (the only significant risk factor identified), thus they may contribute to trans* victimization; therefore, we suggest that

prevention efforts also address interpersonal trans* microaggression.

Psychological resilience had a main effect on depression among each group and on suicide among cisgender LGBQ students and in select models among trans* students. It also moderated the interpersonal microaggressions–suicide relationship among cisgender students. Overall, the results suggest that by strengthening psychological resilience among LGBTQ students, campuses can help to promote positive mental health among students. We recommend that this work be done simultaneously with efforts to reduce the prevalence of discrimination. We recommend that policies, including student codes of conduct, address overt and subtle heterosexism and cisgenderism. We also recommend that educational programs help campus members understand the nature and consequences of contemporary heterosexism and cisgenderism, if and how they may perpetuate LGBTQ discrimination, and to share strategies for effective bystander intervention.

Finally, the moderation results indicate that reducing the prevalence of victimization will be particularly important in protecting trans* students with high levels of pride from the negative stressors of victimization and the risk for depression. These results also direct practitioners to explore trans* students' level of pride in that it may shape how they are affected by high levels of victimization. Educators, administrators, and researchers may find our results useful as they work to foster positive mental health among LGBTQ students.

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