Predictors of Psychological Outcomes in Nonheterosexual Individuals

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ABSTRACT. Gay, lesbian, bisexual, pansexual, and queer (GLBPQ) individuals have higher rates of negative psychological outcomes, but the reasons for these trends are unclear. Gay-related stress including internalized homophobia, perceived stigma, and overt discrimination may contribute to these heightened rates, but gay identity may buffer these consequences. GLBPQ individuals (N = 1,169) completed online surveys of gay-related stress, protective factors, and outcomes including depression, anxiety, stress, nonsuicidal self-injury, and suicidality. Hierarchical regressions were used to examine predictive relationships between gay-related stress, gay identity, and negative outcomes. Among gay/lesbian participants, overt discrimination predicted all outcomes; gay identity predicted Center for Epidemiologic Studies Depression Scale (CES-D) depression, Depression Anxiety Stress Scale (DASS) depression, and DASS stress; and internalized homophobia predicted Perceived Stress Scale (PSS) stress ($p < .001$). Among bisexual and pansexual participants, perceived stigma predicted CES-D depression, DASS depression, and Pereceived Stress Scale (PSS) stress, and overt discrimination predicted CES-D depression ($p < .001$). Gay identity predicted reduced negative outcomes among gay and lesbian people, but did not affect bisexual or pansexual people. Gay identity did not interact significantly with overt discrimination, perceived stigma, or internalized homophobia, challenging the hypothesis that it would buffer their effects. These results indicated that the factors may function differently in different populations, highlighting the need for further research on the topic.

Gay, lesbian, bisexual, pansexual[1], and queer[2] (GLBPQ) people have higher rates of many psychological symptoms than heterosexual people. They have elevated rates of mood and anxiety symptoms, with estimates of the increase varying widely from 50% to 570% (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009; Cochran, Sullivan, & Mays, 2003; King et al., 2008). Additionally, GLBPQ men report 4.7 times the rate of panic disorder as heterosexual men (Cochran et al., 2003). GLBPQ individuals are also more likely to meet criteria for multiple disorders, with only 30% of heterosexual men and women having two or more disorders, compared to 54% of GLBPQ women and 49% of GLBPQ men (Cochran et al., 2003; Gilman et al., 2001). GLBPQ women also rated their mental health worse than heterosexual women (Cochran et al., 2003).

Several studies have examined perceived stress as a predictor, but studies examining perceived

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[1]Attracted to people of all genders, including gender identities other than male or female. [2]Nonspecific umbrella term meaning "not heteronormative."

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stress as an outcome in GLBPQ people are rare (Lewis, Derlega, Griffin, & Krowinski, 2003). Life stress results from life events, whereas gay-related stress comes from navigating a society in which GLBPQ people are marginalized and oppressed (Lewis et al., 2003; Meyer, 1995). Both types of stress have been linked to depressive symptoms, highlighting the need for research into how they interact to predict psychological outcomes (Lewis et al., 2003).

GLBPQ individuals have a much greater risk for suicide compared to their heteronormative counterparts, with most studies citing at least a two-fold increase (Gilman et al., 2001; King et al., 2008; Russell & Joyner, 2001). Some studies have placed suicide attempt rates of GLBPQ individuals at five or six times greater than their heterosexual peers, which would represent 20 to 40% of GLBPQ individuals attempting suicide (Almeida et al., 2009; Cambre, 2011; Herrell et al., 1999). One nationally representative survey suggested that experiences of victimization more than double the risk of a suicide attempt in adolescents (Russell & Joyner, 2001). Suicide among GLBPQ youth is so prevalent that organizations and social media campaigns such as The Trevor Project and the It Gets Better Project have emerged specifically to combat it (Jorgensen, 2015; Savage, 2010).

Finally, GLBPQ people have an increased risk of nonsuicidal self-injury (Almeida et al., 2009; House, Van Horn, Coppeans, & Stepleman, 2011; King et al., 2008; Walls, Laser, Nickels, & Wisnecki, 2010). Nonsuicidal self-injury has been less extensively studied than suicidality, but studies have shown that GLBPQ young adults report up to twice the rate of nonsuicidal self-injury as their heterosexual peers, and GLBPQ youth report up to three times the rate (Walls, Laser, et al., 2010). Minority stress and experiences of discrimination significantly predict nonsuicidal self-injury (House et al., 2011; Walls, Laser, et al., 2010). Specifically, participants who reported discrimination, depression, or attempting suicide in the past year were 2.3, 3, and 10 times more likely to cut themselves, respectively (Walls, Laser, et al., 2010).

The purpose of this research was to explore the combination of variables that best predicts distress in GLBPQ persons. Identifying these factors would allow mental health professionals and researchers to design and implement intervention programs to reduce the negative psychological outcomes in this population.

Gay-Related Stress

Gay-related stress is a form of minority stress: the concept that members of minority populations experience chronic psychosocial stress as a result of their minority status and subsequent stigmatization (Brooks, 1981, as cited in Meyer, 1995). Meyer (1995) was the first to propose that minority stress may cause negative psychological outcomes in GLBPQ individuals, finding that it could double or triple their risk. He argued that the root cause of minority stress is the incongruence between the needs, wants, and goals of the mainstream and marginalized populations, and identified external stressors such as discrimination and hate crimes, and internal stressors such as perceived stigma and internalized prejudice (Meyer, 1995). Gay-related stress has been shown to contribute to depressive symptoms separately from general life stressors (Lewis et al., 2003).

One type of gay-related stress is perceived stigma, GLBPQ individuals' "fear of being rejected or discriminated against because of their minority status" (Fingerhut, Peplau, & Gable, 2010, p. 101). Perceived stigma has been shown to be detrimental to the mental health of GLBPQ individuals, as evidenced by positive correlations with demoralization, guilt, suicidality, and depressive symptoms (Lewis et al., 2003; Meyer, 1995). Among lesbian women, perceived stigma has been linked to increased social constraints (i.e., feeling like individuals cannot discuss their sexual orientation with others), emotional distress, gay-related stress, physical symptoms, intrusive thoughts, and internalized homophobia (Lewis, Derlega, Clarke, & Kuang, 2006).

Internalized homophobia, a component of gay-related stress, refers to the negative feelings that GLBPQ individuals have toward themselves because of their GLBPQ status (Herek, Cogan, Gillis, & Glunt, 1998). It has been linked to psychological symptoms in GLBPQ individuals including increased rates of guilt, suicidality, sexual problems, demoralization, depressive symptoms, and perceived stigma, as well as decreased rates of self-esteem and outness (Herek et al., 1998; Meyer, 1995). In GLBPQ women, internalized homophobia has been linked to general psychological distress and maladaptive coping styles (Szymanski & Henrichs-Beck, 2014). Internalized homophobia may partially explain the elevated rates of distress among GLBPQ individuals.

The internal experiences of distress and perceived stigma are presumably at least partially the

result of external forces. GLBPQ individuals are more likely to experience overt discrimination, which is associated with psychological distress (Almeida et al., 2009; Mays & Cochran, 2001). Overt discrimination covers a wide range of acts motivated by anti-GLBPQ prejudice like homophobic slurs, losing or not getting a job, or violent hate crimes. Overt discrimination predicts demoralization, guilt, suicidality, nonsuicidal self-injury, and depressive symptoms (Almeida et al., 2009; Huebner, Rebchook, & Kegeles, 2004; Meyer, 1995). GLBPQ people who experience overt discrimination are twice as likely to report suicidal ideation as those who do not report such discrimination (Huebner et al., 2004). Some researchers have suggested that experiences of overt discrimination could explain the elevated rates of psychological distress among GLBPQ people compared to heterosexual people (Birkett, Espelage, & Koenig, 2009; Huebner et al., 2004; Mays & Cochran, 2001). Therefore, overt discrimination is a crucial factor in any investigation of psychological outcomes in GLBPQ individuals.

Protective Factors

Gay identity, the extent to which GLBPQ individuals feel that they belong to the GLBPQ community, has been shown to offer some protection from the negative effects of gay-related stress (Fingerhut et al., 2010). In early research, gay identity was linked to less perceived stigma, greater outness, and more positive self-perceptions (Frable, Wortman, & Joseph, 1997). Fingerhut et al.'s (2010) work expanded upon these direct effects and revealed negative correlations between gay identity and both perceived stigma and depressive symptoms, respectively. Additionally, the positive correlation between perceived stigma and depressive symptoms disappeared in people with high gay identity (Fingerhut et al., 2010). The current work was a crucial replication of Fingerhut et al.'s (2010) analysis of gay identity as a moderator.

The purpose of the present study was to examine the relationships between gay-related stress, protective factors, and psychological distress in GLBPQ individuals, and to replicate the interaction pattern found by Fingerhut et al. (2010). Given that GLBPQ individuals experience depressive symptoms, anxiety, perceived stress, nonsuicidal self-injury, and suicidal ideation and attempts at higher rates than the general population, it seems likely that gay-related stress including perceived stigma, internalized homophobia, and overt discrimination may contribute to these negative outcomes. Furthermore, gay identity seems to be protective against these effects. Therefore, the hypotheses of the present study were: (a) that perceived stigma, internalized homophobia, and overt discrimination would positively predict negative outcomes; (b) that gay identity would predict fewer negative outcomes; (c) that gay identity would interact with perceived stigma and internalized homophobia, respectively, such that neither would predict negative outcomes in people with high gay identity; and (d) that gay identity would not moderate the relationship between overt discrimination and the outcomes, as in previous research.

Method

Participants

Participants were 1,169 people recruited through a snowball sampling technique. The survey was delivered via Qualtrics and was distributed to contacts in the GLBPQ community via e-mail, online groups, and community events relevant to GLBPQ people. McDaniel College students could complete the study to fulfill a research experience requirement. Finally, the study was advertised with a paid Facebook® advertisement. This ad was targeted toward users who liked pages pertaining to topics relevant or related to GLBPQ people. At the time, Facebook ads could only direct to Facebook pages, so users who clicked on the ad were directed to a Facebook page created for this study. This page prominently displayed the link to the survey itself, and also provided resources related to the outcomes and more information about the project. Recruitment materials requested that people share the survey with eligible others regardless of whether they themselves chose to participate.

On the survey, participants answered demographic questions regarding race/ethnicity, highest level of education, income, and religiosity, and indicated their age, biological sex, gender identity, and sexual orientation. Sexual orientation was determined by participants' selection from a list of options including *gay/lesbian/homosexual*, *bisexual*, *pansexual*, *queer/nonheterosexual*, or *straight/heterosexual*; actual or fantasized sexual or romantic behavior was not considered. Participants could also select *None of those accurately reflect my sexual orientation, which I describe as: [blank]* and fill in their preferred identity. Participants were eliminated from the survey if they were underage, intersex, transgender, heterosexual, or did not select a sex or gender, leaving 940 valid participants (see Table 1).

Most of these (81.8%) were men. Gay and lesbian people made up 72.0% of the sample, followed by bisexual then pansexual people. The mean age was 34.02 (*SD* = 13.998). Ages ranged from 18 to 83 with a median of 30 and an interquartile range of 23. Participants could select as many racial identities as they felt applied to them; the majority (82.98%) selected White/European American.

Materials

Participants completed nine scales regarding gay identity, overt discrimination, perceived stigma, internalized homophobia, depressive symptoms, anxiety, perceived stress, nonsuicidal self-injury, and suicidal ideation. Resources related to all outcomes were available on recruitment materials, a link on the informed consent page, and the debriefing page. See Table 2 for sample items and anchors, and Table 3 for number of items, means, standard deviations, and ranges. All scores were computed as sums; higher scores indicate higher levels of the construct.

Depression, anxiety, and perceived stress. Depression, anxiety, and perceived stress were each measured by the 21-question Depression Anxiety Stress Scale (DASS) developed by Lovibond and Lovibond (1995). The DASS includes three subscales for depression, anxiety, and stress with seven items each. Participants used 4-point Likert-type scale to rate how much each item applied to them. This measure demonstrated reliability in the present study (α = .93 for depression, .84 for anxiety, .88 for perceived stress, and .95 for the total scale).

Depression was also measured by the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Participants used a 4-point Likert-type scale to rate how well each statement described their mood or behavior during the past week. The measure demonstrated reliability in Radloff's (1977) study (α = .85) and the current study (α = .94). Construct validity for the CES-D and DASS depression scales were supported by their strong correlation (r = .87).

Perceived stress was also measured by the Perceived Stress Scale (PSS) as adapted by Cohen and Williamson (1988) to include 10 items. Participants marked how often in the last month they had felt or behaved in ways indicative of stress on a 5-point Likert-type scale. This version showed reliability in the present study (α = .86). The PSS and DASS stress scales were correlated at r = .64, indicating that they may assess different components of stress.

Gay identity. Gay identity was assessed using Phinney's (1992) Multigroup Ethnic Identity Measure as adapted by Fingerhut et al. (2010). This version includes seven items about a participant's feeling of belonging to the GLBPQ community such as "I feel good about being gay/lesbian" (Fingerhut et al., 2010). For the current study, the term *gay/lesbian* was changed to *nonheterosexual* to be inclusive of more identities. Participants rated how much they agreed with these statements on a 5-point Likert-type scale. The measure demonstrated reliability in Fingerhut et al.'s (2010) study (α = .90) and the present study (α = .92).

Internalized homophobia. Internalized homophobia was assessed using the Internalized Homonegativity Scale, originally developed by Martin and Dean (1987) for use with men and adapted for use with women and mixed-sex samples by Herek et al. (1998). For the present study, it was adapted by including gender neutral language and replacing the terms *lesbian/bisexual* or *gay/bisexual* with *nonheterosexual*. Participants rated statements

TABLE 1

Participant Demographics

		Gay and Lesbian Participants	Bisexual and Pansexual Participants				
			Bisexual	Pansexual	Combined	Other	Total
Count		*n* = 677 (72.0%)	*n* = 176 (18.7%)	*n* = 36 (3.8%)	*n* = 212 (22.6%)	*n* = 51 (5.4%)	*n* = 940 (100%)
Age							
	Mean	35.53	30.65	27.36	30.09	30.39	34.02
	Median	32.00	27.00	22.00	26.00	24.00	30.00
	SD	14.24	12.60	11.11	12.40	13.44	14.00
Gender							
	Men	*n* = 609 (90%)	*n* = 115 (65.3%)	*n* = 15 (41.7%)	*n* = 130 (61.3%)	*n* = 30 (58.8%)	769 (81.8%)
	Women	*n* = 68 (10%)	*n* = 61 (34.7%)	*n* = 21 (58.3%)	*n* = 82 (38.7%)	*n* = 21 (41.2%)	171 (18.2%)
Race							
	White/European American	*n* = 562	*n* = 149	*n* = 28	*n* = 177	*n* = 41	*n* = 780
	Black/African American	*n* = 45	*n* = 10	*n* = 3	*n* = 13	*n* = 2	*n* = 60
	Asian/Asian American	*n* = 12	*n* = 9	*n* = 0	*n* = 9	*n* = 6	*n* = 27
	Hispanic/Latino	*n* = 70	*n* = 15	*n* = 6	*n* = 21	*n* = 6	*n* = 97
	Native American	*n* = 20	*n* = 10	*n* = 0	*n* = 10	*n* = 4	*n* = 34
	Other	*n* = 16	*n* = 3	*n* = 2	*n* = 5	*n* = 2	*n* = 23
Highest Level of Education (Mode)		Some college (40.5%)	Some college (41.5%)	Some college (47.2%)	Some college (42.5%)	Some college (51.0%)	Some college (41.5%)

Note. Participants could select multiple races.

on a 5-point Likert type-scale. The scale demonstrated reliability in Herek et al.'s (1998) study (α = .83 for men and .71 for women) and in the present study (α = .88).

Nonsuicidal self-injury and suicidal ideation. The authors wrote the measures for nonsuicidal self-injury and suicidal ideation for the present study. For both suicidal ideation and nonsuicidal self-injury, participants answered four questions: how many times in their life they had attempted it, when they last attempted it, how many times they had seriously considered it, and when they last seriously considered it. For questions of how many times participants had attempted or considered the behavior, they could select *0*, *1*, *2*, or *3+* (coded for scoring as 1, 2, 3, and 4, respectively). For questions of when participants had last attempted or considered the behavior, they could select *never*, *within the last six months*, *within the last year*, *within the last five years*, or *more than five years ago* (coded for scoring as 1, 2, 3, 4, and 5, respectively). Nonsuicidal self-injury was defined as deliberately harming a person's own body without the intent to complete suicide. Responses were coded into numbers as described and summed. Both scales demonstrated acceptable reliability (nonsuicidal self-injury: α = .88; suicidality: α = .81).

TABLE 2

Sample Items and Scale Anchors

Construct	Measure	Sample Item	Anchors
Depression	Center for Epidemiological Studies Depression Scale	I felt sad.	0 = *rarely or none of the time; less than 1 day*; 3 = *most or all of the time; 5–7 days*
	Depression Anxiety and Stress Scale-Depression	I felt that I had nothing to look forward to.	0 = *did not apply to me at all*; 3 = *applied to me very much, or most of the time*
Anxiety	Depression Anxiety and Stress Scale-Anxiety	I felt I was close to panic.	0 = *did not apply to me at all*; 3 = *applied to me very much, or most of the time*
Stress	Depression and Anxiety and Stress Scale-Stress	I found it difficult to relax.	0 = *did not apply to me at all*; 3 = *applied to me very much, or most of the time*
	Perceived Stress Scale	In the last month, how often have you felt nervous and "stressed?"	0 = *never*; 4 = *very often*
Gay Identity	Multigroup Ethnic Identity Measure	I feel good about being nonheterosexual.	1 = *strongly disagree*; 5 = *strongly agree*
Internalized Homophobia	Internalized Homonegativity Scale	I wish I weren't nonheterosexual.	1 = *strongly disagree*; 5 = *strongly agree*
Nonsuicidal Self-Injury and Suicidality	Author Written	See text.	See text
Overt Discrimination	Schedule of Racist Events	How many times have you been called a homophobic name like fag or "dyke?"	1 = *never*; 6 = *almost all of the time*
Perceived Stigma	Homosexual Devaluation and Discrimination Scale	Most people will think less of a person if he or she is nonheterosexual.	1 = *strongly disagree*; 5 = *strongly agree*

Overt discrimination. Overt discrimination was measured using the Schedule of Racist Events (Landrine & Klonoff, 1996) as adapted by Fingerhut et al. (2010). Participants indicated how often they had experienced discrimination on a 6-point Likert-type scale. The measure showed reliability in Fingerhut et al.'s (2010) study (α = .93) and the present study (α = .93).

Perceived stigma. Perceived stigma was assessed using the Homosexual Devaluation and Discrimination Scale, developed by Link (1987) and adapted by Ortiz (2001) and Theuninck (2000) for use with GLBPQ people. This revised version had 11 items to measure GLBPQ people's perceptions of societal attitudes toward nonheterosexuality. The scale was adapted for use in the present study by changing words such as *gay* or *homosexuality* to *nonheterosexual* and *nonheterosexuality* and by making the statements gender neutral. Participants rated their agreement with each statement on a 5-point Likert-type scale. The measure demonstrated reliability in Fingerhut et al.'s (2010) study (α = .85) and the present study (α = .90).

Procedure

All procedures and materials used in the present study were approved by the institutional review board of McDaniel College. All study materials were presented online via Qualtrics, including informed consent, debriefing, and warning alert for answers indicative of possible suicidal or self-injurious behavior. After completing an informed consent form explaining the risks and benefits of participation, participants answered demographic questions about age, race, education, income, religion, sex, gender identity, and sexual orientation. They then completed the above measures, the order of which was randomized for each participant. After completing all measures, participants viewed a debriefing page with an explanation of the study and resources for psychological distress.

Results

All outcome variables correlated with each other. Patterns of correlations for gay identity, perceived stigma, internalized homophobia, and overt

discrimination were consistent with hypotheses (see Table 4). Gay identity, perceived stigma, internalized homophobia, and overt discrimination correlated as expected with most outcome variables (see Table 5). Suicidality and nonsuicidal self-injury were not significantly correlated with gay identity, nor was suicidality significantly correlated with internalized homophobia. Age was correlated with several variables (see Tables 4 and 5). Although some relationships that were significant in past research did not reach significance here, all significant relationships were consistent with existing literature.

Demographic variables were examined using one-way Analyses of Variance (ANOVAs). Because seven ANOVAs were run per group, we divided the customary alpha of .05 by 7, for an adjusted alpha level of .007. There were no significant differences based on race/ethnicity and only one significant difference for religiosity. Religious participants were more likely to report internalized homophobia (M = 17.03, SD = 8.16) than nonreligious participants (M = 14.44, SD = 6.90), $F(1, 687) = 19.90$, $p < .001$, $\eta^2 = .03$. Because religiosity predicted only one outcome, it was not included as a covariate.

There were significant differences found based on gender identity (see Table 6), age, and highest level of education, so these variables were included as covariates in the regression analyses. Participants who had completed some college (M = 19.94, SD = 13.60) had higher CES-D depression scores than participants who had completed a postcollege degree (M = 14.14, SD = 12.29), $F(5, 617) = 3.42$, $p = .007$, $\eta^2 = .03$. Biological sex was not assessed as a predictor because any participant whose biological sex did not match their gender identity was excluded from data analysis; assessing both factors would be redundant.

There were significant differences on the basis of sexual orientation in both predictors and outcomes, so regression analyses were performed separately for gay/lesbian people and bisexual/pansexual people. Too few people wrote in their own identity or identified as queer/nonheterosexual to conduct analyses on these groups with meaningful statistical power. There was also too much variability in what these identities might mean to the individuals espousing them. Some people identify as queer because they prefer it over traditional labels, but others use it as a political marker of solidarity with the GLBPQ community, even if they themselves only engage in heterosexual relationships. The fill-in option had varied responses that could not reasonably be grouped together. Because the queer/nonheterosexual and write-in groups were small and heterogeneous, they were excluded from further analysis.

Hierarchical regressions were conducted to predict each outcome variable separately and conducted separately for gay/lesbian people and bisexual/pansexual people. Because participants could not select *gay* or *lesbian* as separate identities (i.e., the option in the survey was *gay/lesbian/homosexual*), these identities could not be separated further. Bisexual and pansexual people were combined because both identities involve attraction to multiple genders, so the groups may experience similar marginalization from heterosexual people and the gay and lesbian community (Mohr & Rochlen, 1999). Covariates were entered first including gender identity, age, and highest level of education. The next step included perceived stigma, gay identity, overt discrimination, and internalized homophobia. The third step included the interaction between gay identity and perceived stigma, and the interaction between gay identity and overt discrimination. The final step included the interaction between gay identity and internalized homophobia.

Among gay/lesbian participants, overt discrimination was a statistically significant predictor for all outcomes, and gay identity and internalized

TABLE 3

Scale Information

	Number of Items	Possible Score Range	Scoring Method	Gay and Lesbian Participants			Bisexual and Pansexual Participants		
				M	*SD*	Range	*M*	*SD*	Range
1	7	7–35	sum	27.59	7.03	7–35	24.48	6.88	7–35
2	11	11–55	sum[a]	29.44	8.93	11–55	30.47	8.93	11–55
3	9	9–45	sum	14.91	7.37	9–45	17.08	7.78	9–43
4	17	17–102	sum	33.52	12.78	2–96[b]	30.51	11.05	4–67[b]
CES-D	20	0–60	sum[a]	17.33	13.32	0–57	20.92	12.89	0–58
DASS-D				24.88	11.29	14–56	27.57	12.07	14–56
DASS-A	7	14–56	sum, multiply by 2	21.72	8.81	14–54	22.95	8.44	14–50
DASS-S				27.29	10.54	14–56	30.16	10.21	14–54
PSS	10	10–50	sum[a]	22.45	7.10	7–42[b]	24.06	7.55	8–42[b]
NSSI	4	4–18	sum	6.78	4.41	4–18	8.54	4.74	4–18
Suicidality	4	4–18	sum	8.08	4.47	4–18	8.62	4.43	4–18

Note. 1 = Gay Identity; 2 = Perceived Stigma; 3 = Internalized Homophobia; 4 = Overt Discrimination; CES-D = Center for Epidemiological Studies Depression Scale; DASS = Depression Anxiety and Stress Scale; PSS = Perceived Stress Scale; NSSI = nonsuicidal self-injury.

[a]Some scale items were reverse coded before summing. [b]Minimum value outside of possible range due to some participants leaving items blank.

homophobia each predicted a few. Gay identity and overt discrimination significantly predicted DASS depression, $F(7, 396) = 20.22$, $p < .001$, $R^2 = .26$, Cohen's $f^2 = .35$, and DASS stress, $F(7, 389) = 18.30$, $p < .001$, $R^2 = .25$,Cohen's $f^2 = .33$. Gay identity, overt discrimination, and education significantly predicted CES-D depression, $F(7, 372) = 21.63$, $p < .001$, $R^2 = .29$, Cohen's $f^2 = .41$. Internalized homophobia and overt discrimination significantly predicted PSS stress, $F(7, 243) = 7.25$, $p < .001$, $R^2 = .17$, Cohen's $f^2 = .20$. Overt discrimination was the only significant predictor for DASS anxiety scores, $F(7, 396) = 21.51$, $p < .001$, $R^2 = .28$, Cohen's $f^2 = .39$, and suicidality, $F(7, 403) = 12.02$, $p < .001$, $R^2 = .17$, Cohen's $f^2 = .20$. Overt discrimination, age, gender, and education significantly predicted nonsuicidal self-injury, $F(7, 407) = 14.11$, $p < .001$, $R^2 = .20$, Cohen's $f^2 = .25$.

The regression analyses for bisexual/pansexual participants revealed fewer and different predictors of distress. Overt discrimination and perceived stigma significantly predicted CES-D depression, $F(7, 93) = 8.16$, $p < .001$, $R^2 = .38$, Cohen's $f^2 = .61$. Perceived stigma significantly predicted DASS depression, $F(7, 102) = 8.84$, $p < .001$, $R^2 = .38$, Cohen's $f^2 = .61$, and PSS stress, $F(7, 70) = 6.58$, $p < .001$, $R^2 = .40$, Cohen's $f^2 = .67$. No variables significantly predicted DASS stress, DASS anxiety, nonsuicidal self-injury, or suicidality. The beta weights for all predictors for gay/lesbian and bisexual/pansexual participants are presented in Table 7.

Discussion

Correlations between study variables largely supported the hypotheses. All outcome variables were significantly and positively correlated with each other, suggesting that each outcome scale was a valid measure of distress. Overt discrimination and perceived stigma were positively correlated with all measures of distress, consistent with previous research and current hypotheses (Fingerhut et al., 2010). Internalized homophobia was positively correlated with most measures, supporting the hypotheses, but was not significantly associated with suicidality, potentially due to the adapted internalized homophobia scale or self-designed suicidality scale. The pattern of correlations was largely consistent with previous research (Fingerhut et al., 2010) and supported a large body of research indicating that perceived stigma, internalized homophobia, and especially overt discrimination each contribute to negative outcomes, but that gay identity may buffer against these effects.

TABLE 4

Correlations Between Predictor Variables

Predictor	1	2	3	4	Age
1. Gay Identity	1	-.19**	-.53**	.09*	.13**
2. Perceived Stigma		1	.35**	.42**	-.04
3. Internalized Homophobia			1	.10*	-.08*
4. Overt Discrimination				1	-.02
Age					1

Note. *$p < .05$. **$p < .01$.

Predictors for Gay and Lesbian People

Among gay and lesbian participants, overt discrimination was a significant predictor of all outcome variables and the only significant predictor for anxiety and suicidality. This trend was consistent with research indicating that overt discrimination strongly and positively predicts distress (Almeida et al., 2009; Fingerhut et al., 2010; Huebner et al., 2004; Mays & Cochran, 2001; Meyer, 1995; Russell & Joyner, 2001). Fingerhut et al. (2010) found that, unlike perceived stigma, overt discrimination's effects were not attenuated by gay identity, and this lack of moderation was replicated in the current study. The variety of negative outcomes with which overt discrimination was associated, and that gay identity did not protect against it, indicated that overt discrimination is a strong and robust predictor of psychological distress.

Gay identity predicted lower depression and stress, which replicated the findings of Fingerhut et al. (2010) and supported the hypothesis that gay identity would buffer against multiple psychological outcomes. This was consistent with previous research showing gay identity to be a protective factor (Fingerhut et al., 2010; Frable et al., 1997). However, gay identity's lack of predictive power for other outcome variables failed to support the hypothesis, indicating that these outcomes may function differently than perceived stress or depression, or that gay identity cannot be applied so broadly to outcomes of gay-related stress. It is surprising that gay identity was not associated with PSS stress but did predict DASS stress, because these constructs should be similar. However, their modest correlation ($r = .64$) suggests that they may be assessing different components of stress. Future studies should continue to employ multiple measures of stress to clarify the potentially different outcomes among different types of stress. The

current study replicated Fingerhut et al.'s (2010) finding that gay identity does not moderate the effects of overt discrimination, but could not replicate the finding that gay identity moderated the effects of perceived stigma. In the current study, gay identity also did not moderate the effects of internalized homophobia.

Internalized homophobia significantly predicted PSS stress, but no other outcomes. This finding supported the hypothesis that internalized homophobia would predict negative outcomes, but it was surprising that only one outcome was affected in the current study. Internalized homophobia has been linked to many outcomes including depressive symptoms and suicidality in previous research (Herek et al., 1998; Meyer, 1995; Szymanski & Henrichs-Beck, 2014).

Level of education negatively predicted CES-D depression scores and nonsuicidal self-injury, but this may be explained by third variables. People who are racial minorities or members of a lower socioeconomic status exhibit more depressive symptoms, which are linked to nonsuicidal self-injury (Bakken & Gunter, 2012; Walsh, Levine, & Levav, 2012). Because higher education may be less accessible to racial/ethnic minorities and members of lower socioeconomic statuses, the education measure might have assessed these variables by proxy.

Gender identity and age predicted nonsuicidal self-injury. Participating women had significantly higher levels than those who identified as men, consistent with the established trend that women experience psychological distress and nonsuicidal self-injury at higher rates (Bakken & Gunter, 2012; Norman, 2004; Russell & Joyner, 2001). Younger participants also had significantly higher levels of nonsuicidal self-injury, consistent with the previous research (Walls, Laser, et al., 2010). This trend may be because most nonsuicidal self-injury appears in adolescence (Hawton, Saunders, & O'Connor, 2012). As those who self-injure learn other coping mechanisms, the incidence likely tapers off, creating the negative correlation with age.

Predictors for Bisexual and Pansexual People

Most outcomes were not significantly predicted by any input variables among bisexual and pansexual participants. However, perceived stigma significantly and positively predicted PSS stress, DASS depression, and CES-D depression, and overt discrimination predicted CES-D depression. This is consistent with the hypotheses and previous research linking both perceived stigma and overt discrimination to negative outcomes (Lewis et al., 2003; Lewis et al., 2006; Meyer, 1995).

Comparisons Between Groups

Significant predictors for bisexual and pansexual people were different from those for gay and lesbian people. Among bisexual and pansexual people, perceived stigma predicted depression and PSS stress, and overt discrimination predicted CES-D depression. Among gay and lesbian people, overt discrimination predicted all outcomes, and gay identity predicted depression and DASS stress. Some demographic variables reached significance as predictors in the model of gay and lesbian people, but none did in the model of bisexual and pansexual people.

Most interestingly, overt discrimination predicted all types of distress among gay and lesbian people. However, overt discrimination only predicted CES-D depression among bisexual and

TABLE 5

Correlations Between Predictors and Outcomes

Measure	1	2	3	4	Age
CES-D	-.25**	.32**	.30**	.37**	-.13**
DASS Depression	-.26**	.32**	.27**	.34**	-.12**
DASS Anxiety	-.10*	.24**	.18**	.42**	-.14**
DASS Stress	-.16**	.25**	.23**	.35**	-.17**
PSS Stress	-.20**	.21**	.25**	.25**	-.17**
NSSI	-.07	.11**	.08*	.26**	-.27**
Suicidality	.02	.16**	.05	.39**	.00

Note. 1 = Gay Identity; 2 = Perceived Stigma; 3 = Internalized Homophobia; 4 = Overt Discrimination; CES-D = Center for Epidemiological Studies Depression Scale; DASS = Depression Anxiety and Stress Scale; NSSI = nonsuicidal self-injury.

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

TABLE 6

Mean Differences by Gender Identity

Measure	*F*	Male *M*	Female *M*
CES-D	8.15[a]	17.60	21.45
DASS Depression	7.19	24.93	27.94
DASS Anxiety	11.21[a]	21.48	24.37
DASS Stress	11.95[a]	27.18	30.72
PSS stress	11.04[a]	22.31	25.10
NSSI	61.57[b]	6.62	9.95
Suicidality	5.89	7.98	9.00

Note. Because of the number of variables assessed, an adjusted alpha score of .007 was used to prevent type 1 error. CES-D = Center for Epidemiological Studies Depression Scale; DASS = Depression Anxiety and Stress Scale; NSSI = nonsuicidal self-injury.

[a]$p < .007$. [b]$p < .001$.

pansexual people. These results indicated that overt discrimination was a more robust predictor of distress among gay and lesbian people than among bisexual and pansexual people. One possible explanation is that gay and lesbian people are more likely to disclose their sexual orientation to others, or come out, than are bisexual people (Pew Research Center, 2013). A Pew Research poll showed that 77% of gay men and 71% of lesbians were out to "all or most of the important people in their life," but only 28% of bisexual people (2013, p. 5). Researchers have theorized that not coming out protects GLBPQ people from overt discrimination; and therefore, may be linked to more varied experiences of discrimination for bisexual and pansexual people (Poon & Saewyc, 2009).

Whereas overt discrimination was the most effective predictor for distress among gay and lesbian people, perceived stigma was the most effective predictor for bisexual and pansexual people. This may be because bisexual people experience stigma from both heterosexual people and gay and lesbian people, some of whom criticize bisexual people because they can pass for straight or question bisexuality's existence (Mohr & Rochlen, 1999). This form of gay-related stress is unique to bisexual/pansexual people and may explain the group differences in results.

The main effects in the current study were largely consistent with existing literature, but no interactions reached significance, inconsistent with previous research. This may be due to a difference in participants' locations. No data were collected in the current study about location but it is likely that many participants were from Maryland because the study used a snowball sample originating there. Fingerhut and colleagues (2010) sampled highly from California and Arizona, which both have unusually high rates of same-sex couples (Baumle, 2010). Living among many GLBPQ individuals may affect participants' experiences. Future studies should recruit evenly across regions and gather location data.

In several scales including the ones from Fingerhut et al. (2010), the phrase *gay/lesbian* was changed to *nonheterosexual* in the current study to include a wider range of identities. This adaption may have affected the results. People might have found it easier to identify as an identity (gay/lesbian) than as the opposite of an identity (nonheterosexual).

TABLE 7

Beta Weights for Predictor Variables, Separated by Level and Group

	Covariates			Predictors		
	Gay and lesbian					
Measure	Age	Gender	Level of Education	Gay identity	Internalized homophobia	Overt discrimination
CES-D	-.01	.02	-.14*	-.19**	.13	.36**
DASS-D	.01	-.01	-.08	-.28**	.06	.33**
DASS-A	.05	.01	-.10	-.10	.09	.45**
DASS-S	-.07	.03	-.05	-.19**	.10	.37**
PSS	-.09	-.04	-.08	-.07	.22*	.26**
NSSI	-.20**	.14*	-.14*	-.02	.07	.27**
Suicidality	.07	.05	-.10	-.02	.09	.38**
	Bisexual and pansexual					
Measure	Age	Gender	Level of Education	Perceived stigma	Overt discrimination	
CES-D	-.17	.20	.04	.29*	.28*	
DASS-D	-.07	.21	-.01	.35**	.20	
DASS-A	-.13	.23	.06	.17	.21	
DASS-S	-.19	.17	.05	.11	.28	
PSS	-.18	.20	-.02	.38**	.14	
NSSI	-.06	.40**	.12	.06	.17	
Suicidality	.26	.25	.05	.14	.26	

Note. DASS-D = Depression Anxiety and Stress Scale, depression subscale; CES-D = Center for Epidemiological Studies Depression Scale; DASS-A = Depression Anxiety and Stress Scale, anxiety subscale; DASS-S = Depression Anxiety and Stress Scale, stress subscale; PSS = Perceived Stress Scale; NSSI = nonsuicidal self-injury.

*$p < .007$. **$p < .001$.

Limitations and Future Directions

Several limitations should be noted. The study's generalizability is limited because participants were recruited nonrandomly, resulting in a sample that was likely not representative of the population. Because the survey was online, originated at a private college, and spread by word of mouth to other colleges, people of lower socioeconomic statuses, education levels, and associated demographic characteristics (e.g., people of color) were likely underrepresented. Similarly, women were underrepresented in the sample, which limited statistical power for gender comparisons. Future researchers should recruit equally across demographic groups and assess whether findings hold across groups.

Given the small size of the recruitment pool at McDaniel College, the majority of the sample was likely recruited through the Facebook ad. Advertising targeted by Facebook likes, comments, and shares might have drawn in a disproportionate number of people who were comfortable with their sexual orientation, whereas targeting by online search terms might have drawn in people who were ashamed of their sexual orientation. Recruiting one

or both of these extremes might have caused distortions in the results. If the Facebook ad targeted different people than Fingerhut et al.'s (2010) study, this would explain some of the difference in the results.

The present study did not assess outness. Coming out can be stressful and harm relationships, or it can help people find support and comfort in their identity (Iwasaki & Ristock, 2007). Outness also varies by sexual identity; significantly more gay and lesbian people are out than bisexual and pansexual people (Pew Research Center, 2013). Coming out can make someone a target for discrimination, prompting some people not to come out (Poon & Saewyc, 2009). Because of the repercussions of coming out, future research should assess participants' level of outness, reasons for choosing that level of outness, and feelings about their outness.

Finally, given the different outcomes in gay/lesbian and bisexual/pansexual people, these groups should be analyzed separately. The current study combined bisexual and pansexual participants due to small samples, but it is possible that these groups are also distinct from each other. Research is needed including pansexual individuals because most extant literature only addresses bisexual people. Similarly, queer/nonheterosexual and write-in identities were not included in analyses due to small samples, so future research should make efforts to recruit enough people with unique identities to have statistical power. Lastly, further research is needed to establish the validity of using the DASS, CES-D, and PSS with GLBPQ people because many predictor variables predicted stress or anxiety on one scale but not the other.

Implications

Despite these limitations, these results have important implications for clinicians. Overt discrimination is significantly associated with anxiety, depression, stress, nonsuicidal self-injury, and suicidal ideation among gay and lesbian people, and the relationships are not buffered by gay identity. Clinicians should assess the effects of overt discrimination in gay and lesbian people who seek therapy. Perceived stigma predicted stress and depression among bisexual and pansexual people, and also was not buffered by gay identity, so this factor may be helpful to explore with bisexual and pansexual clients presenting with mood disorders.

Policy makers should also be aware of the risks posed by overt discrimination to GLBPQ individuals. Enforcing strong policies against overt discrimination in schools and workplaces may curb the impact. For example, students in schools with gay-straight alliances experience less anti-GLBPQ bullying and violence, suggesting that such organizations may discourage overt discrimination (Goodenow, Szalacha, & Westheimer, 2006; Heck, Flentje, & Cochran, 2011; Walls, Kane, & Wisnecki, 2010). Although similar groups may be difficult to establish outside of schools, they could play an important role in reducing overt discrimination.

The present study contributed to a growing body of evidence indicating that perceived stigma, internalized homophobia, and especially overt discrimination predict psychological distress in persons identifing as GLBPQ. It also explored differences in the experiences of gay/lesbian people and bisexual/pansexual people. Overt discrimination emerged as a stronger predictor of distress among gay and lesbian people, and bisexual and pansexual people seemed more affected by perceived stigma. More research is needed to fully understand these relationships, but with improved efforts to combat gay-related stress, it is possible to reduce its powerful deleterious effects on GLBPQ individuals.

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