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Experiences of Anti-Bisexual Prejudice in a Bisexual Adult Sample and the Impact on Mental and Physical Health

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Experiences of Anti-Bisexual Prejudice in a Bisexual Adult Sample and the Impact on Mental and Physical Health

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Dedication

I dedicate my dissertation to all my wonderful friends. Without them, I doubt I would have accomplished so much. To my cohort mates - Daniela, Ayse, Laura, Whitney, Ji Sun, and Kanwar - who taught me more about growth, humanity, and vulnerability than any other experience or training. To all of the other friends I met in Knoxville, both inside and outside the graduate program. I came to Knoxville a shy, ultra-introverted hermit, and am leaving Knoxville a shy, ultra-introverted hermit with friends. Lastly, to John, who upon first meeting me, thought I was a jerk. Thank you for not giving up on getting to know me, and in many ways, I owe you my life. Thank you all for being a presence in my life!

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Abstract

This cross-sectional study examined the relationships between minority stress (e.g. anti-bisexual experiences and internalized biphobia), trauma and depressive symptoms, and self-reported physical health for a sample of online-recruited, bisexual adults. Using a minority stress framework that included physical health and conceptualizing experiences of discrimination/prejudice as a type of trauma, a model was hypothesized in which experiences of anti-bisexual discrimination would uniquely relate to trauma-related symptoms (as would exposure to other, general traumatic events) and indirectly impact physical health through these trauma symptoms. Also, it was predicted that anti-bisexual experiences would directly relate to internalized biphobia, with internalized biphobia, then, associating with depressive symptoms, and depressive symptoms significantly relating to physical health. Indirectly in this model, anti-bisexual experiences and internalized biphobia would impact physical health. Results indicated partial support for this hypothesized model. Anti-bisexual experiences related to physical health, mediated by trauma symptoms, and in the final model, also related to depressive symptoms mediated by trauma symptoms. No support was found for the hypothesized relationship between internalized biphobia, depressive symptoms, and physical health. Twenty percent of the variance was explained for physical health. Overall, results support the notion that experiencing discrimination and prejudice associates with trauma-symptoms that generally thought to derive from life-threatening events, and has implications for physical well-being, too.

Keywords: discrimination, prejudice, trauma, physical health, bisexuals

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Chapter 1: Introduction

Early conceptualizations of trauma were restricted to a single event that deeply impacted the worldview assumptions of an individual. The earliest appearance of post-traumatic stress disorder, or PTSD, in the lexicon of psychologists was in the third edition of the *Diagnostic and Statistical Manual for Mental Disorders* (*DSM-III*; American Psychiatric Association, 1980), which stated that PTSD developed "following a psychologically distressing event" such as combat, natural disasters, and serious car accidents. Today, the most recent (i.e. fifth) edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-5; American Psychiatric Association, 2013) elaborates on what qualifies as a "distressing" event, and how a person might be exposed to one. According to the DSM-5, in order to meet diagnosis for PTSD, the distressing event must have exposed a person to: actual or threatened death, serious injury, or threatened sexual violence. The DSM-5 further classifies a person's experience of trauma as direct exposure, witnessing the traumatic event, indirect trauma (e.g., hearing that a close relative was almost killed in a car accident), or repeated/extreme indirect exposure (e.g., a first responder or social worker who constantly deals with child abuse cases).

One concern with these conceptualizations of trauma is that they exclude exposure to repeated, "smaller" or non-life threatening offenses, such as prejudicial remarks and repeated interpersonal hostility that is not necessarily "life-threatening." Root (1992) expanded the DSM definitions of trauma to include experiences she termed *insidious traumas*, or repeated devaluations endured by a person who belongs to, or is perceived to belong to, a social identity group other than the dominant groups that hold power in society (e.g., White people, men, middle-class people, heterosexual people, able-bodied people). Widening the definition of

trauma to include acts of discrimination and prejudice helps depathologize the presence of trauma-related symptoms in marginalized groups by focusing on environmental and interpersonal antecedents (Sanchez-Hucles, 1998). Research is beginning to show that exposure to multiple instances of insidious trauma can mirror PTSD in both symptoms and severity (Jenifer, 2010; Swift, 2010; Szymanski & Balsam, 2010). In one striking example from a study interviewing racial and ethnic minorities' experiences of racism (Lowe, Okubo, and Reilly, 2013), a Korean American graduate student told a story where she had been treated rudely by a White male coworker who mistook her for an international student whom he assumed was lost and could not speak English. Hurt and enraged, she processed this experience with a therapist using an "empty chair" technique where she had an opportunity to replay this racist event. However, instead of picturing the White male coworker, she imagined a male child who picked on her a child, a memory she had completely repressed, and began to shout like she was a child again herself. This story reveals the connection between exposure to prejudice and trauma-related symptoms (e.g., dissociation, flashbacks, intense distress).

As a population, sexual minorities are more vulnerable to experiencing potentially traumatic environmental and interpersonal stressors compared to their heterosexual counterparts (Meyer, Schwartz, & Frost, 2008). Therefore, the insidious trauma framework may be particularly useful in examining different environmental stressors that lesbian, gay, and bisexual (LGB) individuals encounter. Indeed, Balsam (2003) and Neisen (1993) conceptualized *heterosexism*, broadly, as ongoing traumatic exposure to stigma that influences LGB people's psychological well-being and functioning. A study examining non-life threatening traumatic events experienced by LGB people (e.g., harassment and unemployment), found that including these events increased the rates of diagnosis of PTSD when relaxing the criteria of the diagnosis

that requires that the traumatic event have been life-threatening (Alessi, Meyer, & Martin, 2013). It is worth noting that when events that are not conventionally thought of as traumatic (e.g., non-life threatening or non-threatening to physical safety) are asked about in research, symptoms parallel PTSD diagnoses derived from life-threatening traumata.

Within the LGB population, those who identify as bisexual may be at particular risk for encountering discrimination and prejudice. Notably, bisexual individuals face discrimination on the basis of their sexual orientation from both heterosexual people and other sexual minorities(e.g., Deihl & Ochs, 2010). For example, bisexuals may be misjudged as being "unsure" of their sexual orientation, or likely to commit infidelity or have sexually-transmitted diseases (Burleson, 2005, Eliason, 2001; Spalding & Peplau, 1997). This double-bind may explain findings that bisexual men and women are at higher risk for PTSD than both heterosexual populations (9% higher), and gay men and lesbian women (7% higher) (Alessi, Meyer, et al, 2013). Though this difference was not statistically significant, bisexual men and women were still one and a half times more likely to be diagnosed with PTSD than heterosexuals. This higher prevalence bolsters the argument that research is needed that focuses on specific factors that contribute to, and factors that may prevent, PTSD in bisexual persons.

Discrimination and Trauma

Experiences of discrimination, traumatic stress, and prevalence rates of PTSD diagnoses have begun to be examined in minority populations (e.g., Alessi, Martin, Gyamerah, & Meyer, 2013; Alessi, Meyer, et al., 2013; Szymanski & Balsam, 2010; Wei, Wang, Heppner, & Du, 2012). Notably, both external, *objective* discrimination; and self-appraised, *subjective* experiences of discrimination correlate with poorer physical and mental health outcomes across studies (see Hatzenbuehler, 2009; Szymanski, Kashubeck-West, & Meyer, 2008). Different

methods have been used to examine the presence of prejudice and discriminatory (i.e. heterosexist and biphobic) events, including self-report measures (e.g., Szymanski & Balsam, 2010), and rater interpretations of narratives written about the event (Alessi, Meyer, et al., 2013). For example, interviews conducted with racial and ethnic minority individuals (Lowe et al., 2013), revealed that race-based trauma had impacted their lives, with consequences ranging from nightmares, flashbacks, and depression to anger and avoidance (i.e., traditional PTSD symptoms). Sexist discrimination leads to similar consequences. In a sample of lesbian, bisexual, and heterosexual women veterans, the experience of sexist events in the past year significantly increased the odds of meeting criteria for PTSD (Lehavot & Simpson, 2014).

Experiences of discrimination have also been found to relate to a wide range of both physical and mental health outcomes, such as headaches (Woodford, Howell, Kulick, & Silverschanz, 2012); nonprescription medicine use and physician visits (Huebner & Davis, 2007); chronic disease (Frost, Lehavot, & Meyer, 2013); depression (Dyar, Feinstein, & London, 2014; Zakalik & Wei, 2006); social anxiety (Feinstein, Goldfried, & Davila, 2012); and substance use (Hatzenbuehler, Nolen-Hoeksema, & Erikson, 2008). However, little research has examined the relationship(s) between discrimination, trauma-related symptoms, and physical health and mental health. A few studies in the literature, so far, have examined the consequences of perceived (racial/ethnic) discrimination and trauma-related symptoms on health risk behaviors (Cheng & Mallinckrodt, 2015; Flores, Tschann, Dimas, Pasch, & de Groat, 2010). All studies found evidence that perceived discrimination affected participants deleteriously by increasing self-reported trauma-symptoms. As a result, participants engaged in risky health behaviors, such as smoking and maladaptive alcohol use. Regarding mental health outcomes, Torres and Taknint (2015) examined trauma symptoms as a mediator between ethnic

discrimination and depression for Latino/a adults, and found a significant mediation effect for trauma symptoms. These recent efforts conceptualizing racism and ethnic discrimination as a traumatic experience and how they impact mental and physical health has yet to fully expanded to sexual orientation-based prejudice and similar health outcomes, a gap hoped to be addressed with this research

Sexual orientation and trauma. Prior research has shown that LGB individuals are less likely to report sexual orientation-based hate crimes they have experienced than other, non-bias crimes that they have experienced (Herek, Gillis, & Cogan, 1999). For example, Herek et al. found that bisexual women reported only 35% of hate-crime victimizations, but 68% of other crimes not associated with their sexual orientation. Similarly, they found that bisexual men reported only 24% of sexual orientation-related victimization, but 62% of other crimes. Sexual minority men were significantly more likely than sexual minority women to be verbally harassed, threatened, chased or followed, have objects thrown at them, and spat on. Bisexual men and women experienced more vulnerability and fear that they would be victims of future crimes. Herek et al. (1999) also considered the negative mental health consequences of hate-crime victimizations compared to non-bias events and found no significant differences between the two types of crimes. Gay men and lesbian women who were victims of a hate crime experienced more depression, anger, traumatic stress, anger, and less positive affect than those who were victims of crime not perceived to based on the participants' sexual orienation. For bisexuals, no differences were found between groups, but the authors noted that the small sample size likely affected these results.

A handful of recent studies on sexual minority men and women clearly show a relationship between sexual orientation discrimination and trauma symptoms. For LGB youth,

sexual orientation victimization positively associated with post-traumatic stress symptoms (Dragowski, Halkitis, Grossman, & D'Augelli, 2011). Interestingly, the relationship between verbal harassment and stress was stronger than the relationship between physical harassment and stress (r = .25 and r = .15, respectively); and verbal harassment, when controlling for internalized homophobia, childhood gender atypicality, and stressful life events, still positively related to traumatic stress. Similar findings emerged in a cohort of adult lesbian women, wherein recent heterosexist discrimination and sexual orientation-based hate crime victimization both uniquely associated with PTSD symptoms (Szymanski & Balsam, 2010). Lastly, sexual orientation-based hate crimes and heterosexist discrimination were found to be related to reported trauma symptoms in a sample of LGB participants, and it was suggested that future research examine these effects of minority stress in other LGB populations, such as bisexuals (Bandermann & Szymanski, 2014).

Minority Stress Model

Building upon a surge of evidence of the existence of mental health disparities between the LGB population and heterosexuals, Meyer (2003) proposed the *minority stress model*. The minority stress model contends that individuals from stigmatized social identity groups encounter a unique form of stress in the form of prejudice and discrimination from their stigmatized position within a society. Originally developed as an explanation of the increased prevalence rates of suicidality, alcohol use, and mental health problems among the LGB population, minority stress theory includes two forms of stressors: *distal* (i.e., objective, externally-based forms of stress) and *proximal* (i.e., subjective, person-appraised forms of stress). Distal stressors specific to the LGB population might include rejection from family and friends, physical assault based on sexual orientation, and being denied a job due to one's sexual

orientation. Examples of proximal stressors that are particularly salient for LGB individuals include internalized heterosexism (IH; i.e., when an LGB person inwardly directs anger, shame, and resentment about sexual minorities she or he has received in a heterosexist system; Szymanski et al., 2008), concealment, and fear of rejection. Distal stress overlaps with proximal stress in that experiences of one form of stress may impact the other. For example, being fired at work for being gay, lesbian, or bisexual (a distal stressor) may increase concealment and expectations of rejection (proximal stressor). Expectations of rejection, then, might lead to susceptibility to feeling rejected in personal relationships. Meyer acknowledges that the distal-proximal distinction is not categorical, but rather a continuum with distal stressors being less reliant on individual perception, and proximal stressors being a product of other psychological characteristics. However, by using this distinction, researchers can examine psychological processes that may impact whether LGB persons develop proximal-forms of minority stress when they experience distal stress, in addition to examining the unique effects of both (Hatzenbuehler et al., 2008; Szymanski & Ikizler, 2013).

Depression and symptoms indicative of depression are one of the more common mental health outcomes studied in relation to minority stress (e.g. Dyar et al., 2014; Feinstein et al., 2012; Szymanski & Ikizler, 2013). Feinstein et al. examined the relationship between experiences of discrimination, gay-related rejection sensitivity, and internalized homonegativity (i.e. IH) with depression, and found that all three related to depressive symptoms. In addition, their model suggests that the effect of experiences of discrimination on depressive symptoms is partially mediated by IH. Further, Dyar et al. (2014) collected a sample of bisexual women who were partnered in either same-sex or different-sex relationships, and measured the extent to which the participants experienced binegative exclusion, frequency of assumed lesbian identity,

rejection by LG women and men, and depression symptoms. For bisexual women in different-sex relationship, exclusion and rejection from LG individuals fully mediated the relationship between partner sex and depressive symptoms. This group also experienced an overall higher level of depressive symptoms. Szymanski and Ikizler (2013) also found that heterosexist discrimination related to depression, but that this relationship between the two was fully mediated by IH in a sample of gay men.

Newer evidence suggests that IH may also relate to traumatic stress. In a college student sample, higher levels of shame experienced near the traumatic incident partially mediated the relationship between traumatic events and later developed PTSD symptoms (La Bash & Papa, 2013). Though IH was not explicitly measured, IH is a type of shame, and it follows that following an heterosexist event, some LGB individuals may respond by blaming themselves for the incident or feel inadequate/inferior. In a different study, LGB participants coped with heterosexist discrimination (but not sexual orientation0based hate crimes) through internalization strategies, and in turn, internalizing led to a slight increase in post-traumatic stress (Bandermann & Szymanski, 2014). Taken together with the literature showing a relationship between traumatic stress and depression (Lehavot & Simpson, 2014; Rutter, Weatherill, Krill, Orazem, & Taft, 2013; Torres & Taknint, 2015), this study aims to explore how internalized biphobia relates these two mental health domains.

Minority stress and physical health. Sexual minorities, who face social stress due to stigma and prejudice, may be particularly susceptible to poor health outcomes, and though research on the impact of minority stress on mental health is prevalent, increasing attention is being devoted to relationships between minority stress and *physical* health for sexual minorites (Dragowski et al, 2011; Lehavot & Simoni, 2011). Additionally, the Institute of Medicine (IOM,

2011) issued a report detailing the current health status of LGBT people, and recommended that research into minority stress and LGBT people's physical health become a priority research agenda for NIH funding. The report noted throughout that minority stress models could offer insight into physical health inequities, and urged researchers to conduct studies that measure and explore the relationship between minority stress variables and physical health outcomes.

In addition to the IOM (2011) report, a recent meta-analysis highlighted several health disparities between the lesbian, gay, and bisexual men and women and heterosexual comparison groups, including disparities in disability status, arthritis, hypertension, eating and dieting problems, heart disease, breast cancer, lifetime diagnoses of asthma, and many more (Lick, Durso, & Johnson, 2013). Lick et al. (2013) proposed a model to explain physical health disparities between LGB and heterosexual populations. In the model, sociocultural stressors, such as discrete acts of prejudice, discriminatory health care policies, and limited access, are associated with physical health status, as mediated by appraisal style (e.g. rejection sensitivity, vigilance), psychological and physiological stress responses, and health behaviors. The authors note that these unique forms of minority stress act on the LGB population in addition to general forms of stress, particularly chronic stress, a statement closely ties in with Meyer's (2003) minority stress model for mental health. In their recommendations, the authors asserted that more research is needed to illuminate the relationship between mental and physical health, and suggested that research have a clear, theoretically-founded link between both domains, rather than treating one as a confound. In addition, the authors notes that few studies explore direct links between minority stressors, general stress, and physical health outcomes among a solely lesbian, gay, and/or bisexual sample.

As previously mentioned, few studies have examined the impact of minority stress on physical health, but there is burgeoning evidence of this relationship (Denton, Rostosky, & Danner, 2014; Frost et al., 2013; Huebner & Davis, 2007; Lehavot, Walters, & Simoni, 2010). For example, Huebner and Davis (2007) found that perceptions of anti-gay discrimination positively related to the number of physician visits for gay men; however, this relationship depended on the level of education of the participant. Specifically, for gay men with higher education levels, experiencing discrimination, number of hospital visits, and nonprescription medicine use linearly and positively associated However, at lower education levels, the relationship was curvilinear, forming a U-shape. The authors noted that this pattern mirrored findings for African-American men (Krieger & Sidney, 1996), and hypothesized that not recognizing or reporting discrimination may have additional consequences above recognizing *some* discrimination, such as somatization, or lack of use of active coping skills (e.g. social support). Frost et al. (2013) found similar results relating minority stressors to physical health in a broader sample of LGB people. In their study, types of minority stress were categorized as either "externally rated" (i.e. distal) or "subjectively appraised" (i.e. proximal), and health was measured twice with a year interval in between. Distal minority stressors that occurred across the lifespan correlated with physical health problems that had occurred within the past year. Proximal minority stressors (e.g., concealment, outness, or IH) related to subjective and objective measures of health, but when accounting for health at baseline, these effects disappeared. Lastly, Denton et al. (2014) examined perceived discrimination, proximal forms of minority stress (e.g., expectations of rejection, IH, and concealment), coping styles, and physical symptoms severity, and found that concealment and emotional-focused coping self-efficacy were significant moderators between discrimination and symptoms severity. IH mediated the

relationship between discrimination and emotion-focused/social-based coping self-efficacy, but did not impact symptom severity.

Current Study

Using the frameworks of minority stress theory to physical health and well-being (Lick et al., 2013; Meyer, 2003), the current study aimed to examine how discrimination and prejudice impacts the mental and physical health bisexual men and women. Specifically, using structural equation modeling (SEM), this study assessed how distal (e.g., experiences of discrimination, exposure to traumatic events) and proximal (e.g., internalized biphobia) forms of minority stress impact psychological well-being and, consequently, the physical health of bisexual individuals. The hypothesized model is presented in Figure 1. Based on prior research (Bandermann & Szymanski, 2014; Dragowski et al., 2011; Szymanski & Balsam, 2010), it is hypothesized that experiences of anti-bisexual discrimination and exposure to traumatic life events will be uniquely and positively associated with post-traumatic stress symptoms, but that anti-bisexual discrimination alone will relate to internalized biphobia (IB). It is also hypothesized based on the literature that post-traumatic stress will directly relate to poorer health outcomes (Cheng & Mallinckrodt, 2015; Flores et al., 2010); and that IB will relate to poorer health as well, but as mediated by depressive symptoms (Denton et al., 2014; Lick et. al., 2013; Newcomb & Mustanski, 2010) and trauma symptoms. Lastly, because of the high comorbidity rates of PTSD and major depressive disorder in community samples (Breslau, Chilcoat, Kessler, & Davis, 1998) and the fact that trauma symptoms elevate risk for other emotional problems (Shah, Shah, & Links, 2012), it is predicted that more reported trauma symptoms will relate to more reported depressive symptoms. This study aims to improve the existing literature by focusing exclusively on the bisexual population - a specific recommendation of the IOM report (2011) - and by

including measures that specifically capture experiences on anti-bisexual prejudice. In addition, this study includes both measures of physical and mental health and minority stressors. SEM lends itself to analyzing the relationships between multiple variables at once and for testing models, such as the minority stress and psychological mediation model.

Chapter 2: Methods

Participants

Participants were women and men over the age of 18 (M = 29.2, SD = 12.3) who identified as bisexual or sexual orientation closely linked to bisexuality. A total of 971 participants started the suvey. First, the dataset was analyzed for patterns of missingness to determine the appropriate method for dealing with missing data. Missingness was assessed at the subscale level when appropriate, since subscale means would be used to create latent variables for structural equation modeling in the primary analysis. Missing data ranged from a low of 34.2% for Physical Functioning to a high of 50.3% for the General Traumatic Experiences scale. Next, participants were divided into two groups: (a) those missing more than 10% of survey items (13 or more), and (b) those missing less than 10% of items (12 or less). A one-way ANOVA between groups was run to determine if subscale means differed significantly by amount of missing data. Out of 19 subscales, only two were statistically different from one another: anti-bisexual experiences related to sexual instability from heterosexuals, $F(1, 520)=5.81$, $p < .05$ and perceptions of general health, $F(1, 637)=5.09$, $p < .05$. According to Schlomer, Bauman, and Card (2010), this indicates that data are missing at the level of *missing at random*, which has implications for the type of imputation method that are appropriately accurate. However, this also opens up the possibility that the data is *missing not at random*, or MNAR. MNAR can only be assessed conceptually due to fact the association between missingess and how the participant would have responded cannot be established statistically. In the case of this data, there does not seem to be any theoretical or conceptual reason as to why there is an association between missingness and values on the subscale regarding sexual instability stereotypes against bisexuals from heterosexuals or general health, particularly when

subscales on the same measure are unrelated to missingness. For this reason, we considered the data MAR for the purposes of choosing imputation methods.

With type of missingness pattern established, the next step is to handle the missing data. Schlomer et al. (2010) showed that both multiple imputation (MI) and full information maximum likelihood (FIML) robustly impute missing data to up to 20% of the data missing. Using this as our cutoff, 470 participants were dropped from the total sample to create an analytic sample of *n* = 501. Finally, four participants were missing information about exposure to traumatic events, and because of the dichotomous nature of the items, the data was not imputed, leaving a final sample of *n* = 487 for modeling purposes. Thirty-six percent (*n* = 176) identified as male, 51% (*n* = 250) as female, 4% (*n* = 17) as transgender-only, 2% (*n* = 8) as transgender male, 1% (*n* =6) as transgender female, 1% (*n* = 4) as male and female, and < 1% (*n* = 2) as male and female and transgender, and 5% (*n* = 24) left the item blank. Regarding educational level, 2% (*n* = 9) of the sample did not have a high school diploma or equivalent degree, 34% (*n* = 164) had their high school diploma or equivalent degree, 11% (*n* = 54) had their associate's degree or similar, 31% (*n* = 151) had a bachelor's degree, 14% (*n* = 69) had their master's degree, and 8% (*n* = 39) had their doctoral degree. Regarding race/ethnicity, 82% (*n* = 400) were White, 10% (*n* = 47) were bi/multiracial, 3% (*n* = 15) put themselves as "other", 2% (*n* = 8) were Asian-Americans, 2% (*n* = 8) were African-American/Black, 1% (*n* = 6) did not answer the question, and 1% (*n* = 3) were American Indian/Native American. In addition, 9% (*n* = 43) identified as Hispanic or Latino/a. Lastly, 41 participants (8.4) chose "other" as an option for sexual orientation and put in a text box provided a sexual orientation that is regarded as an attraction to multiple genders (e.g. polysexual, pansexual, bi-romantic, etc.), and were included in the final sample.

Power analysis. Structural equation modeling requires large samples of over 200, even for fairly simple models. Testing a model with five latent variables (anti-bisexual prejudice, trauma-related symptoms, internalized biphobia, depression symptoms, and general physical health) measured with 20 observed variables (number of dimensions and subscales across all measures and covariates) requires a minimum of 463 participants to detect small effect sizes at a base power of $\beta = .80$, $\alpha = .05$ (Cohen, 1988; Soper, 2013; Westland, 2010). Based on the recommendations of Westland (2010), whose review of research studies using SEM revealed a severe lack of power and underestimation of the number of subjects needed to detect effects, we aimed to collect a minimum of 463 participants. Westland compared the suggested sample size based on an algorithm designed to compute the lower-bound for samples sizes to the actual sample sizes used in research papers and found that 80% drew their conclusions from sample sizes too small. Though it was reasoned that sample size should be determined using several sources of information (e.g., normality, statistical tests used), recommendations for researchers were to meet the lower bound for number of participants.

Measures

General traumatic events. Exposure the traumatic events was measured using the Trauma History Screen (THS; Carlson et al, 2011). The THS assesses trauma with 14 items that share in common traits such as suddenness, lack of controllability, and strong negative valence. Example items include," A really bad car, boat, train, or airplane accident," and "Sudden death of a family member." Participants indicate if the event has occurred by marking *yes* or *no*. Then, if they answered *yes*, respondents indicate how many times the event has happened to them. Participants then are asked, "Did any of these events bother you emotionally?" to which they respond *yes* or *no*. Finally to assess for *persisting posttraumatic distress* (PPD), participants

indicate how many of the events caused emotional distress for longer than month. Events that are emotionally upsetting are labeled *traumatic stressors* (TS), while events that are not emotionally upsetting are labeled *high magnitude stressors* (HMS).Stressors that are both emotionally upsetting and persist longer than a month are labeled as PPDs. To increase variability in possible scores while simultaneously accounting for extreme cases, exposure to traumatic events will be operationalized as the sum of unique trauma experiencd. Test-retest reliability has been shown to be high for PPD scores, ranging from .73 to .95, and Kappa coefficients ranged from moderate (.55) to high (.84).

Perceived anti-bisexual prejudice. Perceived anti-bisexual prejudice was assessed using the Anti-Bisexual Experiences Scale (ABES; Brewster & Moradi, 2010). The ABES is a 17-item measure that assesses bisexual persons' perceptions of prejudice from both heterosexual (ABES-H) and lesbian and gay (ABES-LG) people. Frequency of anti-bisexual experiences are measured using a 6-point scale, ranging from 1 (*never*)to 6 (*almost all of the time*). Exploratory and confirmatory factor analyses from the original measure development study revealed three dimensions of prejudicial treatment: sexual orientation instability (e.g., "People have not taken my sexual orientation seriously because I am bisexual"), sexual irresponsibility (e.g., "People have assumed that I will cheat in a relationship because I am bisexual), and interpersonal hostility (e.g., "I have been excluded from social networks because I am bisexual"). Test-retest reliability for a 2-3 week period was above .70 for all subscales on both the heterosexual and lesbian/gay versions of the ABES, and Cronbach's alpha was above .80 for the entire 17-item measure, and for each subscale across versions (Brewster & Moradi, 2010). The validity of the scale was supported with positive correlations with stigma awareness, such that perceiving more anti-bisexual events was related to increased awareness that bisexuality is a stigmatized identity.

For this study, the internal consistency for the heterosexual version of the survey was .94 for sexual orientation instability, .89 for sexual irresponsibility, and .91 for interpersonal hostility. For the lesbian/gay version of the scale, the internal consistency was reported to be .98 for sexual orientation instability, .91 for sexual irresponsibility, and .95 for interpersonal hostility.

Internalized biphobia. Internalized biphobia was measured with five items from the internalized homonegativity subscale of the Lesbian, Gay, and Bisexual Identity Scale (LGBIS; Mohr & Fassinger, 2000), which measures respondents' negative views and feelings about themselves as bisexual. Sheets and Mohr (2009) reworked the LGBIS to be used with bisexual individuals. Items such as, "I am glad to be a bisexual person"(reverse coded) are rated on a Likert-type scale from 1 (*disagree strongly*)to 7 (*agree strongly*). Appropriate items were reverse scored and item ratings averaged, with higher scores indicating greater internalized biphobia. Cronbach's alphas of .77 and .85were found with samples of bisexual individuals (Brewster & Moradi, 2010; Sheets & Mohr, 2009). Regarding validity, internalized homonegativity scores were correlated negatively with bisexuality-specific social support in a sample of bisexual individuals (Sheets & Mohr, 2009). For this sample, the items had good internal reliability (α = .81)

Post-traumatic disorder symptoms. PTSD symptoms were measured with the PTSD Checklist - Civilian survey (PCL-C; Weathers, Litz, Herman, Huska, and Keane, 1993). The PCL is a self-report measure assessing the 17 symptoms of PTSD based on diagnostic criteria from *the Diagnostic and Statistical Manual of Mental Disorders*(4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000). Respondents are asked to consider general, stressful experiences in their everyday lives and to rate the degree to which they were bothered by each symptom in the past month. Individual items are rated on a 5-point scale ranging from 1 (*not at*

all) to 5 (*extremely*), and item scores are summed for an overall score. Scores for the three symptom clusters, re-experiencing (i.e., "repeated, disturbing memories, thoughts, or images of a stressful experience"), avoidance and emotional numbing (i.e., "avoiding thinking about or talking about a stressful experience or avoiding having feelings related to it," and "feeling emotionally numb or being unable to have loving feelings for those close to you since the event"), and hyperarousal (i.e., "feeling jumpy or easily startled since the event"),are also calculated by summing the items in those clusters. This measure has been shown to exhibit high internal consistency, high test-retest reliability, high convergent validity with other measures of trauma and PTSD, and good sensitivity and specificity (Weathers et al., 1993). The scale has been used with sexual minority women (Szymanski & Balsam, 2010), and exhibited good internal consistency with this study's sample (α = .85 for hyperarousal, α =.88 for avoidance, and α = .90 for re-experiencing symptoms).

Depressive symptoms. The Center for Epidemiologic Studies Depression Scale (CES–D; Radloff, 1977) is a 20-item self-report measure designed to assess symptoms of depression. Respondents are presented with symptoms (e.g., "I was bothered by things that usually don't bother me") and asked to indicate how often they have felt that way during the past week. Each item was rated on a 4-point Likert-type scale 0 (*rarely or none of the time*), 1 (*some or a little of the time*, 2 (*occasionally or a moderate amount of time*), and 3 (*most or all of the time*). Total scores were computed by summing the responses to each of the items (after reverse-scoring the appropriate items). Total scores can range from 0 to 60, with higher scores indicating greater depressive symptoms. Good internal consistency and convergent and discriminant validity were reported, and convergent validity was supported through predicted patterns of correlations with

other self-reported measures of depression, clinical ratings of depression, and other variables related to the construct (Radloff, 1977). The internal consistency was $\alpha = .94$ for this study.

General physical health. The Short Form Health Survey(SF-36; Ware & Sherbourne, 1992) measures is a 36-item instrument used to assess health-related quality of life in eight domains: physical functioning, role limitations because of physical health problems, bodily pain, social functioning, general mental health, role limitations because of emotional problems, vitality, and general health perceptions. Only those subscales pertaining to physical health were used for this study (physical functioning, role limitations due to physical health problems, bodily pain, and general health perceptions) Examples of items include, "During a typical day, does your health now limit you in vigorous activities, such as running, lifting heavy objects, participating in strenuous sports," and, "During a typical day, does your health now limit you in bending, kneeling, or stooping?" Overall scores are transformed into a scale ranging from 0 (*least favorable health state*) to 100 (*most favorable health state*). Internal consistency and test-retest reliability have been cited in the adequate range (Mendlowicz & Stein, 2000). The alpha's for the physical health subscales fell within the acceptable range, from $\alpha = .80$ (general health perceptions) to $\alpha = .90$ (role limitations due to physical health problems) for this study.

Procedure

Two forms of web-based sampling were used to recruit participants for the current study. First, emails describing the research and containing an invitation to participate and a link to the Internet-based survey were sent to professional organizations with an LGBT-interest (e.g., Division 44 of the American Psychological Association: The Society for the Psychological Study of Lesbian, Gay, Bisexual, and Transgender Issues) and other online groups with a focus on bisexual and sexual minority issues (e.g., Reddit boards, Yahoo groups). Listserv managers or

leaders of the groups were asked to share the invitation to participate and the link to the survey with members of their organization via their electronic mailing list. In addition, ads were posted on popular social media websites (e.g., www.facebook.com), inviting bisexual individuals age 18 and over to participate in a “Study on Stressful Events and Health” focusing on bisexual individuals' well-being. Three separate ads were placed, one each targeting individuals who indicated on their profiles that they were women “interested in women” and "interested in men," that they were men “interested in men” and "interested in women," or that they “like” "#LGBT." Interested participants recruited through the email announcements were provided with a link to a website with the online informed consent statement, followed by the survey. Participants recruited through the ad on Facebook clicked the embedded hyperlink within the ad, which took take them directly to the study. An item asking about sexual orientation in the demographic portion of the survey was used to increase the likelihood that only bisexual individuals completed the survey. The question asked participants to indicate which of six terms best describe their sexual orientation and gender identity: *bisexual woman, bisexual man, lesbian woman, gay man, heterosexual woman,* or *heterosexual man.* Individuals who indicated that their identity sexual orientation was anything other than *bisexual* or similar sexual orientation that described an attraction to multiple genders (participants who indicated "other" were allowed to take the survey) were thanked for their interest in survey, informed that it is intended for bisexual men and women only, and directed out of the survey. Participants had a chance to enter a raffle for a gift card to a popular retailer in the amount of $25.00

Chapter 3: Results

Descriptive statistics for observed variables and correlations among primary study variables (observed and latent) as well as primary analyses were estimated using Mplus 7.2, which uses FIML to impute missing values. Model fit for the confirmatory factor analysis and structural equation model was evaluated using the following criteria, CFI > .90, RMSEA < .08, and SRMR < .08 (Bentler, 1990; Hu & Bentler, 1999; Little & Card, 2013).

Latent variables were created for anti-bisexual prejudice, internalized biphobia, trauma symptoms, perceptions of general health, and depression. For anti-bisexual prejudice, trauma symptoms, and perceptions of general health, the measures' subscales served as the observed variables constructing the latent variables. For depression, three parcels were created using the serpentine method, collapsing high and low reliability items into each of the three parcels. For internalized biphobia, each item was loaded onto a single factor for the CFA. Age, education, and exposure to traumatic events were entered as covariates and as observed variables for the structural modeling portion of the analysis (traumatic events was only loaded onto traumatic symptoms). We first conducted a confirmatory factor analysis (CFA) to examine the measurement properties of the proposed model. We used the factor identification method and set the scale of each latent variance to 1 (Little, Slegers, & Card, 2006) to obtain standardized estimates. The CFA contained the full set of study variables, including covariates (i.e., age and education) revealed poor model fit (CFI = .89, TFI = .86 RMSEA = .094, CI = 0.088 - .100). Modification indices showed that having the subscale *general health* load onto the depression latent variable would improve model fit by $\Delta\chi^2$=119.73, and correlating the error variances between items 1 and 5 and items 2 and 4 on the internalized biphobia scale would improve model fit by $\Delta\chi^2$= 140.70 and $\Delta\chi^2$= 217.96, respectively. Rerunning the CFA with these changes

yielded good model fit (CFI = .95, TFI = .94, RMSEA = .061, CI = .055 - .068). Correlations among study variables were estimated in the CFA model. Next, in the context of a single model, we examined between all variables in the hypothesized model (see Figure 1).

Table 1 presents mean scores, standard deviations, ranges, skewness, and kurtosis for observed predictor and outcome variables. Correlations among primary study variables are presented in Table 2. Notably, scores on all three subscales of the ABES were positively correlated with all three subscales on the PCL-C (range r = .25 to r =.33, p < .01). Scores on the LGBIS correlated positive with two subscales on the ABES, sexual orientation instability and interpersonal hostility (r =.11 and r = .10, p < .05), and with depression scores (r = .21, p < .01). Lastly, scores on the PCL-C and CES-D significantly correlated with the physical health outcome measure, with the absolute value of correlations ranging from r = .15 to r = .59. All correlations were significant in the expected direction.

Primary Analyses

Results from the structural equation model were tested for the model hypothesized in Figure 1. Overall, the model fit met standards for good model fit (CFI = .94, TFI = .93, RMSEA = .066, CI = .059 - .072). Anti-bisexual experiences emerged as a significant predictor of trauma symptoms and internalized biphobia (β = .33, p < .001; β =.16, p < .01, respectively) , but was not a significant predictor of depressive symptoms or perceptions of health (β = .04, p = .18; β = -.04, p = .50, respectively). Internalized biphobia was significantly related to trauma symptoms (β = 17, p < .01), but not significantly related to any to depressive symptoms or reported physical health (β = .04, p = .26; β = .09, p = .12, respectively). Trauma symptoms were significantly to related to depressive symptoms and physical health (β =.89, p < .001; β = -.31, p

< .05, respectively), and, lastly, depressive symptoms were not significantly related to physical health outcomes (β = -.13, p =.30).

Since the initial model revealed a mixture of significant and nonsignificant regression weights, the model was pruned to create a more parsimonious working model. The direct paths from anti-bisexual experiences and internalized biphobia to self-reported physical health were nonsignificant and the direct path from anti-bisexual experiences to depressive symptoms was nonsignificant as well; as such, they were pruned from the model. The other nonsignificant paths (e.g. internalized biphobia on depressive symptoms) were kept in the model for conceptual reasons discussed later in the discussion section. The indirect effects of anti-bisexual experiences and internalized biphobia on physical health were also computed using the Sobel test. This second model, presented in Figure 2, had good fit statistics overall (CFI = .94, TFI = .93, RMSEA = .065, CI = .058 - .071), and all of the paths retained their respective significance or nonsignificance from the first model. In this final model, 20% of the variance was accounted for physical health, 30% for trauma symptoms, 3% for internalized biphobia, and 77% for depressive symptoms. The Sobel test for indirect effects yielded an overall significant total indirect effect for anti-bisexual experiences on reported physical health and depression through trauma symptoms (z = -.14, p < .001; z = .29, p < .001). The specific significant pathway for physical health included the pathway from anti-bisexual experiences through trauma symptoms (z = -.11, p < .05), and the specific significant pathway for depression was anti-bisexual experiences through trauma as well (z =.29, p < .001). Internalized biphobia also had a significant effect on physical health through trauma symptoms (z = -.06, p < .05). The indirect effects for anti-bisexual experiences on physical health were nonsignificant through trauma and depression (z = -.03, p = .38) but significant when acting through internalized biphobia and

depression ($z = .02$, $p < .05$). Lastly, the specific indirect effect for anti-bisexual experience on depression was nonsignificant when mediated by internalized biphobia ($z = .01$, $p = .29$).

Chapter 4: Discussion

The results of the study partially support the theoretical model that minority stress (e.g. anti-bisexual prejudice and internalized biphobia) affects mental health which, in turn, impacts physical health. These results provide support for the notion of discrimination-as-traumatic, also labeled insidious trauma (Root, 1992), wherein experiencing discrimination and prejudice can elicit responses in some individuals that mirror responses to life-threatening events (Jenifer, 2010, Swift, 2010, Szymanski & Balsam, 2010). This study was the first to look at prejudicial events experienced by an all bisexual sample and their relationships with trauma-related symptoms and physical health. In addition, it was found that internalized biphobia also impacts physical health by increasing trauma-related stress, which coincides with similar findings (Dragowski, et al., 2011). Furthermore, this study investigated the applicability of minority stress theory (Meyer, 2003) to bisexuals' experiences of prejudice and discrimination, and the framework proposed by Lick et al.(2013), which states that the deleterious mental health consequences of minority stress, and the connection between mental and physical health may explain physical health disparities between the LGB and heterosexual population.

The hypothesized model examining anti-bisexual experiences, internalized biphobia, traumatic stress, depressive symptoms, and physical outcomes was mostly supported. In the final model, anti-bisexual experiences was associated with more reported symptoms of post-traumatic stress disorder and higher levels of internalized biphobia. Trauma symptoms, in turn, were positively associated with depressive symptoms and negatively associated with self-reported physical health. Internalized biphobia was also significantly related to physical health through trauma symptoms, albeit a much smaller effect size than the impact of anti-bisexual experiences. Internalized biphobia was not significantly related to depressive symptoms in the final model,

and in addition, depressive symptoms were not significantly related to reported physical health. Lastly, the indirect effects of anti-bisexual experiences on both depressive symptoms and physical health were significant when considering trauma-related stress as a mediator variable.

One contribution of this study is that we found that experiences of biphobia significantly relate to trauma symptoms, even when accounting for "typical" traumatic experiences (e.g. car crashes, physical and/or sexual abuse). Prior research, both quantitative and qualitative, in this area had begun to reveal the connection between racist (Jenifer, 2010; Swift, 2010) and heterosexist devaluations (Szymanski & Balsam, 2010) and traumatic stress. This study extends our understanding of the relationship between discrimination and trauma to bisexual men and women, a population that has received little individualized attention with respect to minority stressors and mental health. In addition, this study reaffirms the link between prejudice and discrimination and internalization heterosexism/biphobia. As Meyer (2003) proposed and subsequent studies (e.g., Hatzenbuehler et al., 2008; Lehavot & Simoni, 2011; Szymanski & Ikizler, 2013) supported, distal stressors (e.g. experiencing discrimination) lead to the formation of proximal stressors (e.g. concealment, internalized homonegativity), and this study supports notion by the significant finding that anti-bisexual experiences and internalized biphobia covary.

Another contribution of this study was the significant indirect effect of anti-bisexual experiences on physical health through trauma-related symptoms. Specifically, bisexual men and women who frequently encounter stereotypes and interpersonal hostility regarding their sexual orientation also report more negative coping responses in the form of trauma-related symptoms, which include hyperarousal, avoidance, and re-experiencing. This uptick in traumatic stress then has negative consequences on physical health, compromising perceptions of general health, ability to perform physical tasks, and amount of pain experienced. The results of this study are

consistent with a component of Lick et al.'s (2013) conceptual model that situate sociocultural stressors as the cause of worse health in the LGB population, mediated partly by psychological health. Also, it is important to note that anti-bisexual experiences, as measured in this study, excluded some types of distal minority stressors, including physical violence and employment discrimination, which likely also play a role in physical health as well. This study supports the need for further exploration in the area of minority stress' impact on physical health, and is it encouraged that future research examines multiple forms of minority stress simultaneously to determine the cumulative impact of stigma.

In this study, we did not find the hypothesized indirect effect of anti-bisexual experiences on physical health through depressive symptoms, nor the hypothesized direct effect of depressive symptoms on physical health. One significant contributing factor to this was the dual-loading of perceptions of general health onto the latent constructs of overall physical health and depressive symptoms. Conceptually, it follows that an aspect of depressed mood is a negative view-of-self, which would include physical health, and supports the notion that psychological and physical functioning are intertwined. In addition to negative self-perceptions, diagnostic criteria for depression include behaviors that could directly impact a person's health, such as hypersomnia/insomnia, unhealthy eating habits, or suicidal behavior, assessed by the CES-D. It is important to note that the dual loading of this factor did have an overall positive effect on model fit, and did meet minimal statistical standards for the size of the factor loading (>.40). Nonetheless, future researchers should be mindful of the overlap that could occur between measures of psychological and physical well-being.

Lastly, this study examined the relationships between minority stress, traumatic stress, and depression that had not been explored with a sexual minority sample, but had been examined

in studies examining racial/ethnic minority discrimination and trauma and/or depressive symptoms. Notably, Torres and Taknint (2015) found that ethnic discrimination experienced by Latino adults significantly related to traumatic stress symptoms, and that higher rates of traumatic stress predicted higher rates of reported depressive symptoms. The results of this study mirror those results within the context of biphobia and heterosexism, with a significant indirect relationship between anti-bisexual experiences and depression symptoms through traumatic stress. However, contrary to the hypothesized model, internalized biphobia did not directly relate to depressive symptoms, nor did internalized biphobia mediate the relationship between anti-bisexual experiences and depressed mood. This is not consistent with a prior meta-analysis that found an overall small-to-moderate effect size between internalized biphobia and depressive symptomatology (c.f. Newcomb & Mustanski, 2010). We offer a few explanations as to why this might have occurred in this study. First, the scale used to assess internalized biphobia, a subscale of the LGBIS (Mohr and Fassinger, 2000), was originally constructed for use with gay men and lesbian women. Subsequent articles looking at internalized biphobia with this scale reworded the language of the items for a bisexual sample (Sheets & Mohr, 2009). However, shame about one's *bi*sexual orientation may qualitatively differ than shame regarding gay/lesbian identity, which is supported by the underwhelming factor loadings (range of .48 to .76) of the five items onto an internalized biphobia latent construct. For example, some bisexuals may wish to be either straight *or* gay/lesbian, feel like they are betraying the LG community by being in heterosexual relationship, or feel a sense identity confusion about themselves on a general level because of messages that bisexuals are confused or "don't know what they want." Future researchers should display caution when rewording a scale created to capture a type of minority stress for bisexuals when the original scale was developed with an LG sample. Second, the average age (*M*

= 29.2) of participants was low, and younger sexual minorities generally assess with lower amounts of internalized homo/biphobia than older cohorts (Newcomb & Mustanski, 2010). It is possible that we lacked inadequate variance to analyze the relationships between internalized biphobia with depressed mood and physical health. It might be that younger bisexuals may internalize messages differently and less severely than older bisexual adults. Despite the nonsignifcant finding for these pathways involving this scale, these results do illustrate the role minority stress plays in negative mental health outcomes for a sexual minority sample, and advances understanding of the mechanisms through which discrimination may impact one's psychological well-being. Future researchers would be behooved to: (a) develop a scale of internalized biphobia constructed and validated with and for bisexuals, and (b) use recruitment methods that increase the likelihood of a study reaching older bisexuals adults.

Limitations

One limitation of the current study was the use of convenience sampling through the Internet as a recruitment strategy, affecting the generalizability of the results. Though recruiting participants online can help researchers reach LGB participants who typically are hard-to-reach,(Epstein & Klickenberg, 2002; Meyer & Wilson, 2009) Internet users tend to be younger, be more educated, have higher socioeconomic status, and White (Fox, 2005; Gosling, Vazire, Srivastava, & John, 2004). This has implications for whom the results of this study can and should be generalized, since there are well-documented racial/ethnic (Dolezar, McGrath, Herzig, & Miller, 2014), age-related (Shephard, 1997), and socioeconomic disparities (Lichtenstein, Harris, Pedersen, & McClearn, 1993) in physical and mental health as well. Though it was possible to account for the effects of age and education in this study, the lack of racial and gender diversity in this sample disallowed appropriate between-group analyses. In addition to

affecting the generalizability of the study, the online recruitment strategy likely explains the high percentage of missingness in our sample. Because clicking on a Facebook ad requires low investment and a participant can easily drop out whenever they want to, many participants left the survey, particularly towards the beginning. To address some of the missingness, we used listwise deletion due to the fact that imputation methods produce biased results when the percentage missing reaches 50%, and it is known that these imputation methods can handle 20% missingness when MAR. (Schlomer et al., 2010). However, the possibility exists that participants who were deleted listwise differ in meaningful ways than those who data was complete or imputed. We urge future researchers in this area to diversify their locations of recruitment so that their studies may include diverse demographic characteristics, and to plan for large amount of missingness when using online recruiting methods.

Another limitation of the study includes its cross-sectional design, which prevents causal inference to be made about the relationships between variables. However, previous longitudinal studies have supported the directional impact of perceived discrimination and internalized homophobia on psychological well-being (c.f. Newcomb & Mustanski, 2010; Schmitt, Branscombe, Postmes, & Garcia, 2014). It is certain, though, that a longitudinal design would more sufficiently elucidate the cause and effect relationship between distal and proximal forms of minority stress for bisexuals, negative psychological outcomes, and physical health. Experimental research designs could also test some basic assumptions of minority stress models. For example, a study could compare LGB participants cortisol levels in response to stressful situations that are unrelated or related to their sexual orientation, while also measuring psychological constructs that could moderate or mediate differences between groups (e.g., prior experiences with discrimination, LGB identity saliency, appraisal style, etc). With cross-

sectional research laying the groundwork, we hope future (better funded) studies begin the task of thorough exploration of minority stress, mental, and physical health.

Practical Implications and Conclusion

Understanding and addressing health disparities, both mental and physical, are critical to the roles of psychologists. Practicing clinicians and medical personnel need to consider the potentially traumatizing nature that prejudice and discrimination may have for LGB patients. Additionally, the fact that bisexuals encounter rejection and stereotypes from heterosexuals *and* gays and lesbians means that psychologists working with bisexual clients should familiarize themselves with bisexual-specific support groups and resources, including those online. Professionals should also guard themselves against making stereotyped judgments and remarks to clients based on their bisexual identity. It cannot be emphasized enough that the majority of the items on the ABES were "simply" statements spoken by others, and not physical harm or homo/biphobic slurs. Further multicultural training may be necessary for psychologists and others with whom they work with to make themselves aware of potentially anti-bisexual biases (separate from anti-lesbian and/or gay biases). Psychologists who find themselves in the role of advocate should consider the possible institutional and societal needs where they are competent to intervene to increase the acceptance of bisexuals and decrease the likelihood of encountering prejudice.

In conclusion, this study highlights how minority stress, notably anti-bisexual experiences, acts on trauma-related symptoms, depressive symptoms, and physical health. Mediated by traumatic-related symptoms, prejudicial experiences deleteriously impacted the self-reported health in a sample of bisexuals, bolstering theoretical models that name minority stress as the cause of health disparities. This study also addresses a research disparity of sorts,

bringing attention to the concerns and needs of bisexuals, who must sometimes navigate hostile environments in heterosexual and LG spaces. It is important that psychologists, both researchers and practitioners continue to examine the insidious nature of anti-bisexual discrimination, and the health and well-being of bisexual men and women in order to begin to address existing health disparities and to work toward social justice.

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Appendices

Table 1. Descriptive Statistics for Predictor, Outcome, and Control Variables

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
GTE-Total	487	0.00	12.00	3.38	2.44	0.85	0.52
ABP-SOI	491	1.00	6.00	3.01	1.26	0.35	-0.71
ABP-SI	491	1.00	6.00	2.39	1.24	0.76	-0.21
ABP-IH	491	1.00	6.00	2.29	1.15	0.98	0.41
SF-P	491	0.00	100.00	74.08	21.20	-0.85	0.44
SF-GH	491	0.00	95.00	39.14	21.12	0.33	-0.59
SF-PF	491	0.00	100.00	87.41	17.66	-2.26	5.70
SF-RLPH	486	0.00	100.00	77.93	34.88	-1.34	0.28
CESD	491	1.00	3.80	2.07	0.68	0.35	-0.78
IB	491	1.00	5.00	1.86	0.78	1.00	0.96
PCL-Re	490	1.00	5.00	2.10	1.04	0.89	-0.19
PCL-Av	489	1.00	5.00	2.27	1.07	0.63	-0.62
PCL-Hy	489	1.00	5.00	2.40	1.02	0.59	-0.48
Education	490	1.00	6.00	3.45	1.34	0.24	-1.03
Age	471	18.00	84.00	29.20	12.31	1.47	1.62

Note: GTE-Total = # of traumatic events reported; ABP-SOI = anti-bisexual prejudice - sexual orientation instability; ABP-SI = sexual irresponsibility; ABP-IH = interpersonal hostility; SF-P = short-form - pain; SF-GH = general health; SF-PF = physical functioning; SF-RLPH = role limitations due to physical health; CESD = Center for Epidemiological Studies - Depression; IB = internalized biphobia; PCL-RE = PTSD Symptom Checklist - re-experiencing; PCL-AV = avoidance; PCL-HY = hyperarousal.

Table 2. Correlations among Predictor, Outcome, and Control Variables

	ABP-SOI	ABP-SI	ABP-IH	GTE	SF-PF	SF-RL	SF-P	SF-GH	CESD	IB	PCL-RE	PCL-AV	PCL-HY
ABP-SOI	1.00												
ABP-SI	.72**	1.00											
ABP-IH	.73**	.75**	1.00										
GTE	.26**	.35**	.31**	1.00									
SF-PF	-0.07	-.13**	-.21**	-.20**	1.00								
SF-RLPH	-0.07	-.12**	-.14**	-.23**	.47**	1.00							
SF-P	-0.07	-.12**	-.16**	-.24**	.55**	.60**	1.00						
SF-GH	.18**	.15**	.25**	.25**	-.49**	-.43**	-.56**	1.00					
CESD	.27**	.21**	.30**	.16**	-.21**	-.29**	-.31**	.59**	1.00				
IB	.11*	0.06	.10*	0.05	-0.08	-0.01	-0.02	.11*	.21**	1.00			
PCL-RE	.31**	.29**	.33**	.27**	-.16**	-.27**	-.30**	.44**	.66**	.16**	1.00		
PCL-AV	.32**	.26**	.32**	.26**	-.15**	-.25**	-.26**	.500**	.79**	.19**	.77**	1.00	
PCL-HY	.28**	.25**	.30**	.23**	-.21**	-.29**	-.34**	.52**	.81**	.18**	.72**	.81**	1.00

Note: * = $p < .05$, ** = $p < .01$; GTE = # of traumatic events reported; ABP-SOI = anti-bisexual prejudice - sexual orientation instability; ABP-SI = sexual irresponsibility; ABP-IH = interpersonal hostility; SF-P = short-form - pain; SF-GH = general health; SF-PF = physical functioning; SF-RLPH = role limitations due to physical health; CESD = Center for Epidemiological Studies - Depression; IB = internalized biphobia; PCL-RE = PTSD Symptom Checklist - re-experiencing; PCL-AV = avoidance; PCL-HY = hyperarousal.

Table 3. Confirmatory Factor Analysis

Variables	Standardized Loading	
	1	2
ABP		
ABP-SOI	0.828	0.828
ABP-SI	0.858	0.858
ABP-IH	0.880	0.881
IB		
IB-1	0.911	0.748
IB-2	0.559	0.640
IB-3	0.394	0.475
IB-4	0.453	0.518
IB-5	0.920	0.756
PCLC		
PCLC-Av	0.910	0.910
PCLC-Hy	0.898	0.898
PCLC-Re	0.810	0.810
CESD		
D-1	0.917	0.920
D-2	0.935	0.933
D-3	0.891	0.892
SF-GH		0.412
SF		
SF-P	0.791	0.824
SF-RLPH	0.685	0.699
SF-PH	0.666	0.687
SF-GH	-0.732	-0.517

Note. Fit statistics for model 1: CFI = .901, TFI = .874, RMSEA = .088 [.082, .094]. Fit Statistics for Model 2: CFI = .962, TFI = .951, RMSEA = .055 [.048, .062]; ABP-SOI = anti-bisexual prejudice - sexual orientation instability; ABP-SI = sexual irresponsibility; ABP-IH = interpersonal hostility; SF-P = short-form - pain; SF-GH = general health; SF-PF = physical functioning; SF-RLPH = role limitations due to physical health; CESD = Center for Epidemiological Studies - Depression; D = parcel for CES-D; IB = internalized biphobia; PCL-RE = PTSD Symptom Checklist - re-experiencing; PCL-AV = avoidance; PCL-HY = hyperarousal. Modification indices indicated that adding SF-GH to the CESD latent construct would improve fit by $\Delta\chi^2$=119.73, and that covarying items 1 and 5 and items 2 and 4 would improve mode fit by $\Delta\chi^2$= 140.70 and $\Delta\chi^2$= 217.96, respectively.

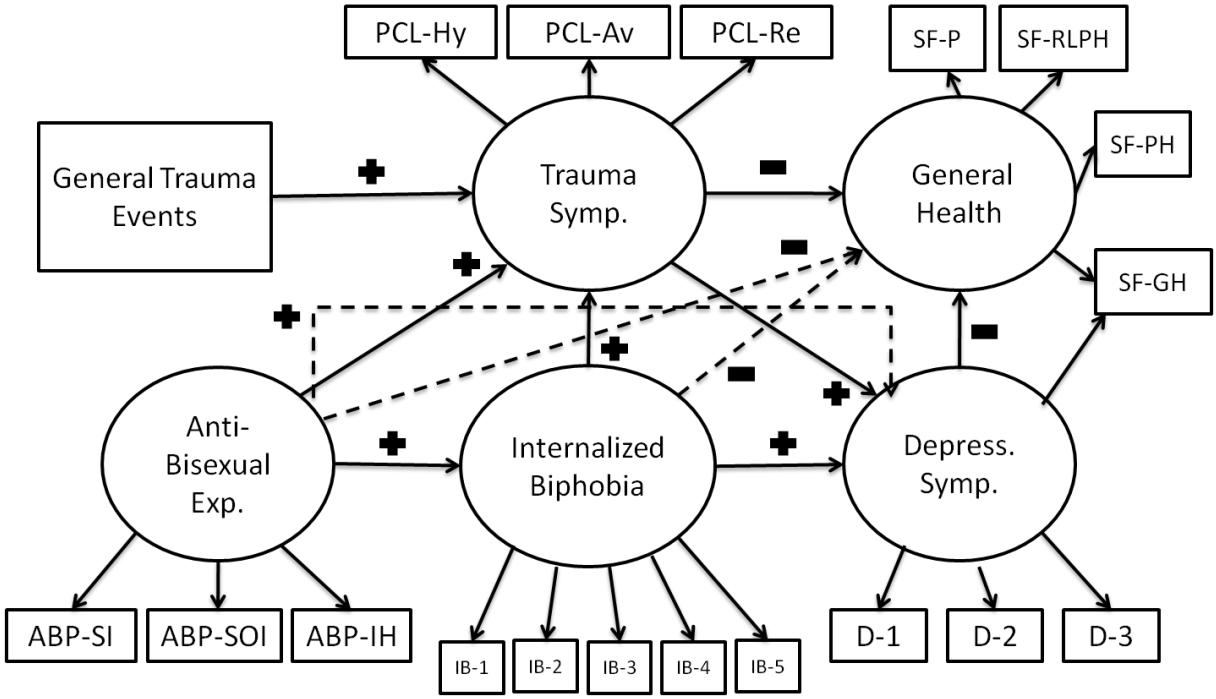

Figure 1. Hypothesized Model

Note: Solid lines represent pathways that are hypothesized to be significant; dashed lines represent the indirect effects of predictor variables on outcome variables that are hypothesized to be insignificant and dropped from the final model. Paths where a positive association was predicted are represented with a plus sign (+), and paths where a negative association was predicted are represented with a minus sign (-). IB = Internalized Biphobia item. D = parcel for CES-D. ABP-SOI = anti-bisexual prejudice - sexual orientation instability; ABP-SI = sexual irresponsibility; ABP-IH = interpersonal hostility; SF-P = short-form - pain; SF-GH = general health; SF-PF = physical functioning; SF-RLPH = role limitations due to physical health; CESD = Center for Epidemiological Studies - Depression; D = parcel for CES-D IB = internalized biphobia; PCL-RE = PTSD Symptom Checklist - re-experiencing; PCL-AV = avoidance; PCL-HY = hyperarousal.

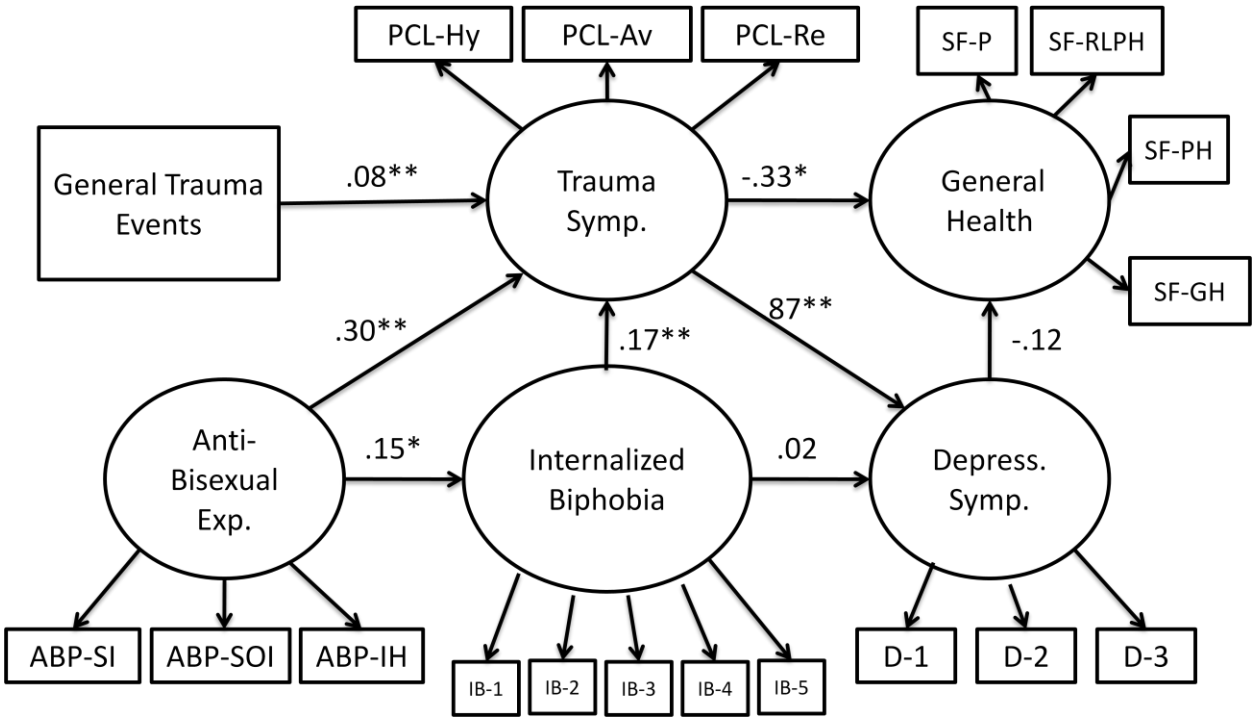

Figure 2. Final model depicting relationship between predictor and outcome variables

Note: * $p < .01$, ** $p < .001$; CFI = .94, TFI = .93, RMSEA = .065, CI = .058 - .071, $n = 487$; age and education entered as covariates. ABP-SOI = anti-bisexual prejudice - sexual orientation instability; ABP-SI = sexual irresponsibility; ABP-IH = interpersonal hostility; SF-P = short-form - pain; SF-GH = general health; SF-PF = physical functioning; SF-RLPH = role limitations due to physical health; CESD = Center for Epidemiological Studies - Depression; D = parcel for CES-D IB = internalized biphobia; PCL-RE = PTSD Symptom Checklist - re-experiencing; PCL-AV = avoidance; PCL-HY = hyperarousal.

Vita

James Arnett was born in Memphis, TN to the parents of Sondra Carmony and James Arnett. He is their only son, but was raised alongside family friends, cousins, and foster siblings. He attended Bartlett Elementary, White Station Middle, and White Station High school for his primary education. He then obtained a Bachelors of Art degree in Psychology from the University of Memphis in 2010. He accepted an offer the same year for the University of Tennessee's Counseling Psychology doctoral program, and obtained his Masters of Art degree in Counseling Psychology in 2013. He is continuing his degree at Appalachian State University's counseling center, where he will complete a one year internship before being conferred his PhD in December 2016.