Minority Stress, Relationship Satisfaction, and Psychological Distress in Same-Gender Relationships

by

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Abstract

I tested hypothesized relationships between sexual minority stress theory (Brooks, 1981; Meyer 1995), Bodenmann's (1995) stress-divorce-model, and Cohen's social support/stress buffering hypotheses by using hierarchical multiple regression analysis, Variables of interest included perceived stigma, internalized stigma, outness, relationship satisfaction, and psychological distress, as well as if relationship satisfaction buffered the effects of minority stress on psychological distress. Perceived stigma, outness, and relationship satisfaction were not significant predictors of psychological distress, but internalized stigma was a significant predictor of psychological distress (β = .37) and may be a key target for clinical interventions at individual, group, and macro-levels, which are reviewed in Chapter 5. Relationship satisfaction did not buffer the effects of minority stress on psychological distress. Although there were several significant bivariate relationships between demographic variables and psychological distress, cohabitating was the only demographic variable that remained significant throughout regression analyses, specifically those who lived together reported higher psychological distress (β = .17) than those who did not. Future research might benefit from including measures of discrimination and concealment or strategic outness; using other measures of perceived stigma, psychological distress, and relationship satisfaction (or another measure of social support) for those in same-gender relationships; expanding to longitudinal designs to understand changes over time between minority stressors like internalized stigma and psychological distress; conducting in-person surveys to reduce the likelihood of bots and fraudulent responses, or having countermeasures in place for online surveys; recruiting a representative sample of those in same-gender relationships, and exploring how participant identities interact with sexual orientation, minority stressors, and psychological distress.

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Chapter 1. Introduction

Recent estimates showed about 5% of people in the U.S. identified as lesbian, gay, bisexual, or transgender (LGBT) (Newport, 2018). People have been discriminated against based on their sexual orientation, such as losing promotion and job opportunities, receiving lower quality medical care and other services or being denied completely, and being harassed, including physical violence and death (Almeida et al., 2009; Costa et al., 2014; Mays & Cochran, 2001). Discrimination generates increased perceptions of stigma (Kaniuka et al., 2019; Ragins, 2008). Alongside overt discrimination, sexual orientation stigma is a result of heteronormative beliefs and experiences that result in other sexual orientations or identities being invisible (Butler, 1990; Herek, 2004, 2007). Experiences of discrimination can carry over into psychological health; Meyer (2003) found that gay men and lesbian women are about 2.5 times more likely to have had a mental disorder (OR = 2.41) at any point over their lifetime compared to heterosexual counterparts.

More recently, there have been changes to reduce discrimination for people who are in same-gender relationships. This coincides with decreased social stigma regarding sexual orientation (Brown, 2017) and changes in U.S. law regarding the definition of marriage to include people of the same gender (*Obergefell v. Hodges*, 2015). This decision came about after decades of new laws being passed and contested regarding "domestic partnership," "civil unions," and marriage, with the first domestic partnership law being passed in 1984 in Berkeley, California (Georgetown Law Library, n.d.).

Corresponding with changes in marriage equality laws, relationship satisfaction of people in same-gender relationships has become a construct of interest in the satisfaction literature over the last few decades. Research on relationship satisfaction dates to the early 1900s, but

researchers focused on what is commonly referred to as “traditional” marriage between a man and woman. In this document, in some cases in order to match the original language of other authors, this type of relationship may be referred to as other-gender, or heterosexual, relationships. Foundational works on traditional marriage include Davis’ (1929) survey of 2200 women and their experiences with same-sex emotional and sexual relationships while in college, and Terman and colleagues’ (1938) creation of a marital happiness scale using married and divorced couples and examining correlations of marital happiness with factors like personality, demographics, and sex.

Since the early twentieth century, researchers focused on worse or lower *relationship satisfaction* as one of the main contributors to the end of relationships (e.g., Jacobson, 1985) and as the hegemonic construct in relationship literature (Fincham et al., 2018). Recently, researchers doing empirical work on relationship satisfaction have (1) examined interventions to improve relationship satisfaction, (2) identified predictors or correlates of relationship satisfaction, or (3) found differences between satisfied and unsatisfied couples, generally in “traditional” marriages. Fincham and colleagues (2018) noted that the dominance of the construct of relationship satisfaction may partially or fully be a function of Western expectations of marriage. That is, a Western marital relationship is idealized as the primary relationship in which people seek companionship, support, and love. However, relationship satisfaction’s prevalence in the literature may be appropriate beyond cultural values: Fincham & Beach (2018), based on their literature review (Fincham & Beach, 1999, p.579), remarked that relationship distress, divorce, and separation are “associated with just about any physical or mental health problem one cares to name.” For example, relationship satisfaction has been positively associated with physical health and inversely related to death regardless of age, sex, health status, time of follow-up, and cause

of death (Holt-Lunstad et al., 2010). One example of the potential adverse effects of poor relationship satisfaction is Fagan and Rector's (2000) estimate that about half of parents who divorce go into poverty, with incomes dropping as much as 50 percent. It is possible that the social support and affiliation received by being in a strong, healthy, and satisfying relationship is one factor that can mitigate the adverse effects of minority stress and discrimination.

This idea is consistent with improving relationship satisfaction as a key area of intervention for physical and mental health professionals. Relationship satisfaction research suggests it has far-reaching effects on mortality (Holt-Lunstad et al., 2010), finances (Gladding, 2014; Veroff et al., 1981), depression and suicide (Till et al., 2016), and substance use (Proulx et al., 2007). About 40% of the problems for which people seek help from a mental health professional in the United States concern their spouse or marriage, a proportion that is twice the size of any other single problem area (Veroff et al., 1981). In fact, Gladding (2014) estimated that Americans spend more than $300 million on marriage and family therapy a year.

Predicting relationship satisfaction may rely on perception and the frequency of negative behaviors in a relationship; several reviews (e.g., Gottman & Notarius, 2000; Kelly et al., 2003; Weiss & Heyman, 1997) have reported that dissatisfied couples' self-reported relationship satisfaction scores are more affected by their spouses' daily behaviors than satisfied couples. Additionally, there are cognitive and affective components that distinguish between dissatisfied and satisfied couples, such as beliefs, expectations, and attributions (Fincham, 2001), and physiological, non-verbal, and self-reported affective states toward one's partner (Gottman et al., 2000).

Although the original research on relationship satisfaction focused on other-gender couples or "traditional" marriages, newer foundational works, such as Peplau and Fingerhut's

(2007) comparison of relationship satisfaction between same-gender and other-gender couples, found much in common. According to Peplau and Fingerhut (2007), these similarities include wanting the same things in relationships, like shared identities and interests, and affection; meeting partners in the same places, and going on dates in similar ways. However, there are likely important differences in relationship satisfaction for same-gender couples because of continued discrimination and stigma against sexual minorities. To fully understand relationship satisfaction of people in same-gender relationships, one must understand how couples function in the context of stigma towards sexual minorities. Sexual minority stress theory, which will be explained in more detail in Chapter 2, describes the stress one might experience because their sexual orientation identity clashes with the values and beliefs of members of the majority in a social environment (e.g., Brooks, 1981; Meyer, 1995; Rich et al., 2020).

The proposed study will further the understanding of psychological distress and relationship satisfaction of sexual minorities by testing a model that examines theoretical links between measures of sexual minority stress, relationship satisfaction, and psychological distress in a sample of people in same-gender relationships. Psychological distress is often defined as symptoms of a mental disorder; in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V; American Psychiatric Association, 2013, p. 20), a mental disorder is defined as a "syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or development processes underlying mental functioning." Chapter 2 will review sexual minority stress theory in detail to explain how constructs, such as perceived stigma, internalized stigma, outness, and psychological distress, conceptualized as symptoms of mental disorders such as depression and anxiety, are believed to be mitigated by relationship satisfaction in people who

are in same-gender relationships. I will then review the current status of empirical studies testing predictions of sexual minority stress theory. Chapter 3 will describe the proposed study methods in detail. Chapter 4 will report the results of this study, and Chapter 5 will discuss the implications of the study findings, design limitations, and lessons learned for future researchers.

Chapter 2. Literature Review

This chapter will define relationship satisfaction for sexual minorities and sexual minority stress theory. Then the chapter will show how minority stressors experienced by same-gender couples might be linked theoretically to relationship satisfaction and psychological distress. This review will also describe the current state of empirical evidence from investigations with samples of people in same-gender relationships, guided by minority stress and relationship theories.

Relationship Satisfaction

Relationship satisfaction is a historically difficult concept to define – measures of it might include one or multiple dimensions of other constructs like quality, adjustment, or distress (Fincham et al., 2018). For the purposes of this study, relationship satisfaction will be defined as a single dimension of the overall perception of one's relationship, which includes both positive and negative evaluations. For relationship satisfaction, there is a rich research history that dates to the early 1900s, with research by Davis (1929) and Hamilton (1948) and the role that sex has on relationship satisfaction and success, followed by research on marital success (Terman et al., 1938). Since then, researchers have focused on worse or lower relationship satisfaction as one of the main contributors to the end of relationships (Jacobson, 1985) and relationship satisfaction is considered by some as the foundational construct in relationship literature (Fincham et al., 2018). Relationship satisfaction of individuals in same-gender relationships has been increasingly studied over the last few decades, with foundational works showing many commonalities between same-gender and other-gender couples (Peplau & Fingerhut, 2007), both positive, such as problem-solving styles and relationship satisfaction (e.g., Kurdek, 1998), and negative, such as types of conflict (e.g., Metz et al., 1994), and domestic violence (e.g., Potoczniak et al., 2003).

Although there are many common features of relationship satisfaction between same-gender and other-gender couples, it is vital to understand the unique features of relationship satisfaction of same-gender couples that may be related to the higher levels of stress experienced by sexual minorities. For people in same-gender relationships, these stressors may be general stressors or additional minority stressors that are experienced only due to perceptions about a person's same-gender relationship or attraction. A general stress-divorce-model was developed from research on German other-gender couples, but has since been used with same-gender couples from other nations (Meuwly & Randall, 2019). Stress is increasingly being viewed in the literature as a dyadic or socioenvironmental construct (Randall & Bodenmann, 2017). Bodenmann's (1995) stress-divorce-model of relationships theorizes that external stressors carryover to create internal stress in a relationship. Stressors from outside the relationship, labelled as external stressors, can generate stress in the relationship, labelled as internal stress. According to Bodenmann (1995), this spillover has adverse consequences for relationship satisfaction, including feeling disconnected, poor communication, spending less time together, worsened health, maladaptive thoughts and behaviors like anxiety and rigidity, and, possibly, the end of the relationship. For people in same-gender relationships, minority stress theory can be used to explain how sexual minority identity can be linked to specific (vs. the general stress-divorce model) stressors related to perceived and internalized stigma and decreased outness, and make predictions about how these constructs may be linked to psychological distress, like depression and anxiety, which in turn may be reduced or mitigated by satisfactory relationships.

Sexual Minority Stress Theory

Sexual minority stress theory (Brooks, 1981; Meyer, 1995) refers to the stress one might experience because their identity or identities as a member of a sexual minority group clash with

the values and beliefs of members of the majority in a social environment. Sexual minority stress theory (Brooks, 1981; Meyer, 1995) builds on a long history of conceptual models of stress. This history includes Selye's works on stress (1956) and using stress for good (1975), with his work popularizing the word "stress" in research. His work on noxious stimuli, whether it be physical, chemical, or something else, had diagnostic implications: Selye (1956) identified "general adaptation syndrome," which included shrinkage and expansion within emotional centers of the brain, as well as ulcers, as consequences of stress. These stages included 1) alarm, or fight or flight, 2) resistance or adaptation to the stress, where one's ability to cope adaptively or maladaptively comes into play, and 3) exhaustion, which may cause physical or psychological damage to the individual when they experience chronic stress.

Later Selye (1975) expanded his work on stress to include two types: *eustress* (good stress) and *distress* (bad stress). He also described the potential health-related effects of each and provided recommendations for individuals, such as people have differing capabilities for handling stress and that stress can be managed by helping others and being loved and included by a community. After this Selye (1982) also hypothesized that individual perception of stressors can predict adaptation to and management of change, with possible consequences of maladaptive coping including exhaustion, failure of previously effective coping strategies, physical stress responses and changes in the body's response to stress, and burnout. By extension, the concept that perception may affect coping with stress has direct implications for minority stress constructs like perceived stigma and internalized stigma.

Selye's work led to Pearlin and colleagues' (1981) work on stress processes: how life events, chronic stressors, self-concept, coping ability, and social resources come together to create them, and, later, Pearlin's (1999) reflections on cyclical stress processes, chronic stressors,

environmental and societal stressors, and the feedback loops that exist between them. Importantly, Pearlin's (1999) definition of stress as anything which activates the body's stress response mechanisms contributed to Meyer's (2003) inclusion of minority stress variables as stressors. In fact, Pearlin's (1999) work on the effects of variables like social class, race, gender, and ethnicity contributed to the broader scientific consensus that social experiences can be both short-term and chronic stressors that affect daily living, resources available (arguably a prototypical definition of privilege), and the specific types of stressors they experience. He also emphasized the importance of viewing research into different stress processes like psychopathology and suicide not as deviations from the "norm," but a consequence of an individual's unique stress system.

Lazarus (1966) proposed a theory of stress which included cognitive appraisal processes to determine whether a situation is appraised as threatening (stressful), and coping, or how one goes about responding to the threatening or stressful situation. Lazarus (1966) also defined two ways of coping: *problem-focused coping,* focused on resolving the problem at hand, and *emotion-focused coping,* focused on reducing and/or managing associated emotional distress. Folkman and Lazarus (1980) then focused on understanding how people cope in both problem-focused and emotions-focused ways. Lazarus and Folkman (1984) discussed the role of society and social interactions in creating and managing stress in its first chapter, which demonstrated the shifting attitudes in the stress research from an individual process to a group, or social, process. Lazarus (1991) later linked emotions to stress, coping strategies, and social consequences of distress. From here, Lazarus (1999) argued that relational meaning was a key factor alongside his cognitive appraisal model, which connects to research discussed later on social support as a coping mechanism (Brondolo et al., 2009; Cohen, 2004; Harrell, 2000).

Building on the evolution of stress-processes to include social factors like inclusion/exclusion and social support, several authors proposed that discrimination or racism could be understood as stress. For example, Harrell (2000) reviewed stress and racism literature and proposed a biopsychosocial model to understand how individual, familial and social, societal, and environmental factors can contribute to and attenuate minority stress in people of color. Consistent with Lazarus' (1999) emphasis on social meaning in understanding stress, Brondolo and colleagues' (2009) review of literature on coping with racism suggested that social support is one of the key mechanisms by which people of color could address discrimination and other racist experiences. Additionally, these authors suggested that a person's identities can be protective in themselves; they cited research suggesting that identity factors may act as buffers against minority stress by shifting appraisal of these events from individual or behavioral factors to broader systemic and racial factors, as well as by providing a group to which those who experience minority stress can connect with and draw support from. The impact of race and other intersecting identities and overlapping systems of oppression and privilege (Atewologun, 2018) were not directly addressed in this body of work, but are important for an individual's experiences of discrimination stress and coping and will be discussed later.

Carver and Connor-Smith (2010), in their review of personality and coping literature, also discussed other ways researchers have categorized coping, including *approach coping*, or coping that directly deals with the stressor or associated emotions, and *avoidance coping*, or coping through attempts at escaping the associated distress. Another important distinction in coping that Carver and Connor-Smith (2010) discuss is *accommodative coping*, or adjusting one's internal response to stressors, and *meaning-focused coping*, or reminding oneself of the possible benefits of stressful experiences.

Further building on the works of Lazarus (1966; 1999), Cohen (2004) argued in his literature review that coping by using social support may be beneficial in two possible ways: direct effects and stress buffering. *Direct effects* means that a relationship provides a source of satisfying interactions, perceived predictability or stability, and a sense of self-esteem. A stable, healthy relationship can encourage positive emotions and reduce negative emotions. The "direct" effect refers to the idea that benefits are present at all levels of stress. In contrast, with *stress buffering*, a satisfying relationship is only beneficial for people with high stress, that is people without a stable relationship may be less able to adapt to stress due to a limited range of coping resources. For people with low stress, relationship satisfaction or having a stable relationship may not be related to psychological distress or health.

Refocusing on those in same-gender relationships, Meyer (1995) defined *minority stress* as including several similar and related constructs: perceived stigma, internalized stigma, and outness. *Perceived stigma* is defined by Goffman (2009) as a person's perception of negative social attitudes toward a distinguishing characteristic of a person or group. *Internalized stigma*, which has also been called internalized homophobia or internalized heterosexism, is an internalization of these negative beliefs about one's identities, such as when a gay man has negative attitudes about gayness (Herek et al., 1998; Newcomb & Mustanski, 2010). Due to heteronormative assumptions, people in same-gender relationships must decide whether to disclose their stigmatized identity or to actively conceal it (Bosson et al., 2012). *Outness* refers to how open one is about sexual orientation (Meidlinger & Hope, 2014); an important note is that research has focused mostly on outness for those who identify as LGBTQ+, but outness regarding sexual orientation is a process for these orientations as well as those who identify as heterosexual.

Meyer's (1995) minority stress model describes how sexual minority stress can lead to psychological distress. *Psychological distress* refers to symptoms of psychopathology or mental disorders, such as depression, anxiety, and substance use, although for the purposes of this dissertation, psychological distress will refer to symptoms of mental disorders, and in particular depressive and anxious mental disorders. The DSM-V (American Psychiatric Association, 2013, p. 20) definition of a mental disorder is a "syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or development processes underlying mental functioning." However, in addition to the burdens of minority stressors, there also may be positive or protective aspects of sexual minority status, such as group solidarity and cohesion (Meyer, 2003). Social support broadly, and having at least one strong, meaningful relationship, has long been identified as one of the many types of resources for coping with general stress (e.g., Cohen, 2004; Cohen & Syme, 1985) and minority stress (Rostosky & Riggle, 2017).

Finally, Atewologun's (2018) discussion of intersectionality theory suggests that sexual minority stress effects may be buffered or compounded by the various identities interacting within systems of oppression and/or privilege. In Atewologun (2018), intersectionality is defined as a consequence of the interactions between two or more systems of oppression – the concept captures the idea that a person's lived and social experience can be expressed as a function of the interaction between multiple systems of power. This is especially important to consider when reviewing literature; research on same-gender romantic relationships has focused predominantly on White, lesbian or gay, highly educated participants. Brondolo and colleagues (2009) suggested in their literature review that racial/ethnic identities may be protective against minority stress by shifting appraisal of these events from individual or behavioral factors to broader

systemic and racial factors, as well as by providing a group to which those who experience minority stress can connect with and draw support from. On the other hand, it is possible that people with multiple marginalized identities may experience compounding stressors due to multiple types of discrimination and overlapping systems of oppression.

The next section will review findings from empirical research on links between constructs from sexual minority stress theory with relationship satisfaction and psychological distress.

Perceived Stigma, Internalized Stigma, and Outness

Relationship Satisfaction

Of the studies that examined links between proximal stressors and relationship satisfaction in same-gender relationship samples, most examined internalized stigma. Doyle and Molix (2015) reported that perceived stigma ($r = -.12$) and internalized stigma ($r = -.21$) were inversely related to relationship satisfaction in their meta-analysis of 35 studies of 10,745 participants in same-gender relationships. Doyle and Molix's (2021) second-order meta-analysis (Doyle & Molix, 2015; Cao et al., 2017) exploring minority stress' effects on relationship satisfaction reported small effect sizes for perceived ($r = -.10$) and internalized stigma ($r = -.17$). Studies have also examined whether outness is positively related to relationship satisfaction in same-gender couples. In their systematic review of the outness research between 2000 and 2016, Rostosky and Riggle (2017) reported that outness had a small, but significant positive association with relationship satisfaction ($\beta = .04$; d from .09 to .75).

Psychological Distress

According to minority stress theory, perceived stigma should be positively related to psychological distress, which has been supported in the handful of studies that tested this hypothesis in sexual minority samples. Talley and Bettencourt (2011) surveyed 79 young (M = 19.1 years), predominantly White (90%) gay men and women and found that perceived stigma was associated with worsened depressive symptoms (r = .32). Berghe and colleagues (2010) surveyed 820 young (M = 21.5 years) LGB people (61% men, 39% women) and found that perceived stigma was positively related to depressive symptoms (β = .18). Relatedly, Lelutiu-Weinberger and colleages (2013) surveyed a slightly older (M = 28.8 years), racially diverse [Black (18%), Latino (28%), White (42%), Other/Mixed (12%)] sample of gay (91%) and bisexual (9%) men and found that perceived stigma predicted increased anxious symptoms (β = .16). Finally, Kaniuka and colleagues (2019) surveyed 496 middle-aged (M = 35 years), mostly White (82%) LGBTQ+ [gay/lesbian (47%), heterosexual (6%), bisexual, pansexual, or queer (40%), asexual (3%)] people and found that perceived stigma was associated with increased depressive (r = .32) and anxious (r = .34) symptoms.

Internalized stigma should also be positively related to psychological distress. The links between internalized stigma and psychological distress have been examined in many more studies than perceived stigma. A meta-analysis of 31 studies between 1986 and 2008 with 5831 LGB participants in their early 30s (M = 32.7 years), showed that internalized stigma had a significant, small to moderate (r = .26) positive relationship with psychological distress, defined as symptoms of depressive or anxiety disorders (Newcomb & Mustanksi, 2010).

Since this meta-analysis, multiple authors reported that minority stress is associated with increased psychological distress. Lea and colleagues' (2014) surveyed 572 men (n = 318) and women (n = 254) attracted to the same-gender and reported that internalized and perceived

stigma were associated with increased general psychological distress, measured using the Kessler Psychological Distress Scale (K10; Kessler et al., 2002). Similarly, Feinstein and colleagues (2012) surveyed 467 gay men (*n* = 249) and lesbian women (*n* = 218) and found that internalized and perceived stigma were associated with increased psychological distress, measured using the CES-D (Radloff, 1977). Velez and colleagues (2017) surveyed 813 sexual minority adults, with 318 racial and ethnic minority participants to examine the potential of race as a moderating factor between minority stress and psychological distress, measured using the Hopkins Symptom Checklist-21 (Green et al., 1988). They found that perceived and internalized stigma were associated with increased psychological distress, while outness was associated with decreased psychological distress, and that racial and ethnic minority participants were not at increased risk for increased psychological distress.

Most research suggests that outness has a small to moderate association with decreased psychological distress. Morris and colleagues (2001), in their study of 2401 middle-aged (*M* = 36), White (75%) lesbian and bisexual women who were mostly in relationships with women (65%), aimed at predicting psychological distress (measured using the Brief Symptom Inventory; Derogatis & Spencer, 1982) in lesbian and bisexual women, reported that outness was inversely related to psychological distress (*r* = -.13). Riggle and colleagues (2008) surveyed 553 middle-aged (*M* = 36.8 years), mostly White (88.6%) gay men and lesbian women (63.3%) in long-term relationships (*M* = 7.46 years) to understand themes related to the positive aspects of being out and embracing their sexual orientation. They reported better well-being, social support systems, and feelings of belongingness to a community. Finally, Riggle and colleagues' (2017) survey of 373 predominantly White (83%) LGB people also found that outness was inversely related to depressive symptoms (*r* = -.19), measured using the CES-D (Radloff, 1977).

Psychological Distress and Relationship Satisfaction

Most of the research about psychological distress and relationship satisfaction has examined simple correlations between the two constructs. These studies generally show moderate to large correlations between psychological distress and relationship satisfaction. A recent survey of 235 lesbian and gay (53%) Italian people who were mostly under 30 (50%), in a long-term relationship ($M = 4.07$ years) by Lampis and colleagues (2021) found that psychological distress, measured using the OQ-45 (Lambert et al., 1996), and relationship satisfaction were negatively correlated ($r = -.48$). Totenhagen and colleagues' (2018) diary-study of 81 same-gender couples showed a small inverse correlation ($r = -.07$) between daily stress and relationship satisfaction, defined as less love in the relationship. Whitton and Kuryluk (2014) surveyed 571 middle-aged ($M = 40.9$ years), mostly White (86.5%), gay and lesbian (88.4%), US adults (62% women) in long-term (median = 7.5 years), same-gender relationships and found a negative association ($r = -.33$) between depressive symptoms and relationship satisfaction measured using the Couples Satisfaction Index (Funk & Rogge, 2007). Vencill and colleagues (2018) surveyed 53 mostly White (96%) women (81%) who were 30 years old ($M = 30.26$ years) and identified as bisexual, queer, and/or pansexual and were in relationships with people who did not identify as bisexual (mostly heterosexual (62%) men (55%)). They found that depression and anxiety, measured using the Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995), were negatively correlated with relationship satisfaction ($r = -.42$ and -.38, respectively).

Direct Effect of Relationships on Stress

Cohen (2004) reviewed literature including decades of stress and social support research and reported that social support is consistently associated with decreased psychological distress

in studied samples. Focusing on those in same-gender relationships, only a small number of studies have tested whether social support or relationship satisfaction had a direct effect on psychological distress. A study (Berghe et al., 2010) of 820 Flemish people under 26 (*M* = 21.5 years) who were interested in or in same-gender relationships found that having a supportive relationship (described as "confidant support," which could include a romantic/sexual partner) regarding same-gender orientation-specific issues was related to decreased depressive symptoms, measured using the CES-D (Radloff, 1977). Lehavot and Simoni's (2011) survey of 1381 lesbian and gay women (72% in same-gender relationships) had similar results: social support was associated with decreased depressive and anxious symptoms, measured using the CES-D Short Form (Andresen et al., 1994) and the GAD-7 (Spitzer et al., 2006), respectively. These findings are consistent with research on parents in same-gender relationships; Goldberg and Smith (2011) sampled 90 same-gender adopting couples (52 lesbian couples, 38 gay male couples) and found that higher perceived relationship quality, measured using the Relationship Questionnaire (Braiker & Kelly, 1979), was related to decreased depressive symptoms, measured using the CES-D (Radloff, 1977), and anxious symptoms, measured using the State-Trait Anxiety Inventory (Spielberger, 1983).

Buffering Effect of Relationships on Stress

I was not able to locate any studies that explicitly tested the stress buffering effects of relationship satisfaction in the context of sexual minority stress, but several studies have tested whether being in a romantic relationship (compared to not being in a relationship) or general social support buffered general stress for people in same-gender relationships. There were mixed findings from two studies that tested whether being in a same-gender relationship buffered stress. One study (Feinstein et al., 2016) examined nationally representative (U.S.) data from 577 gay,

lesbian, or bisexual adults and found that minority stress/discrimination was related to having an anxiety disorder, but did not find that being in a same-gender relationship buffered the effect of minority stress. A study (Baams et al., 2014) of 309 same-gender attracted Dutch young people (age 16-24 years) found that being in a romantic relationship had a significant, moderate stress-buffering effect on the link between psychological distress (assessed as well-being with the European Social Survey scale; Huppert et al., 2009) and perceived stigma ($\beta = .32$), assessed with expectations of rejection, but not with internalized stigma ($\beta = .09$).

Three studies tested whether social support, measured dimensionally as perceived emotional/instrumental support or social connection, buffered stress in samples that were all or mostly people in same-gender relationships, and found consistent support for stress-buffering of social support. A study (Doty et al., 2010) of 98 LGB youth between 18 and 21 years old found that emotional and instrumental social support from family and friends, measured using the Social Support Behaviors Scale adapted for sexual minorities (Vaux et al., 1987), regarding their sexuality buffered the negative effect minority stress had on general emotional distress, measured using the BASC-2 (Reynolds & Kamphaus, 2004). Power and colleagues (2015) survey of 324 Australian lesbian, gay, and bisexual parents (86% female) found that strong feelings of social connections, measured using Dalgard and colleagues' (1995) Family Connection and Friendship Connection scales, moderated the effect minority stress had on general psychological distress, measured using the six-item Kessler scale (K6; Kessler et al., 2002). A study of 1305 lesbian, gay, and bisexual men and women (63% in romantic relationships; Verrelli et al., 2019) found that perceived social support for marriage equality, measured using their own scale, from family, friends, and colleagues moderated the effect

minority stress had on psychological distress. These authors measured anxiety, depression, and stress using the Depression, Anxiety, and Stress Scale (Dass-21; Henry & Crawford, 2005).

Rationale

Those in same-gender relationships, according to minority stress theory (Brooks, 1981; Meyer, 1995), are expected to have greater risk for more stress and distress due to having minority identities that conflict with majority culture and beliefs than heterosexual people. Bodenmann's (1995) stress-divorce-model suggests that stress outside relationships can create stress within the relationship. A strong relationship, measured by proxy using relationship satisfaction, should allow people in same-gender relationships to cope with general (Cohen & Syme, 1985) and minority stressors (Rostosky & Riggle, 2017) through direct effects like satisfying interactions, stability, and increased self-esteem (Cohen 2004). However, Cohen (2004) also theorized that relationships might act as a stress buffer, where these effects are only present when people are experiencing high levels of stress; people in an unstable relationship or in low stress may not experience the same coping benefits associated with relationships. Although there is some evidence that being in a same-gender relationship or having social support may be directly related to psychological distress, and that having social support buffers the association between stress and distress for people in same-gender relationships, there have been no studies that tested whether relationship satisfaction functions as a proxy measure of social support. Understanding how relationship satisfaction, as a general measure of healthy, stable relationship, works for sexual minorities would suggest a modifiable focus for intervention.

To summarize, perceived and internalized stigma both typically have medium-sized associations with psychological distress, and small associations with relationship satisfaction.

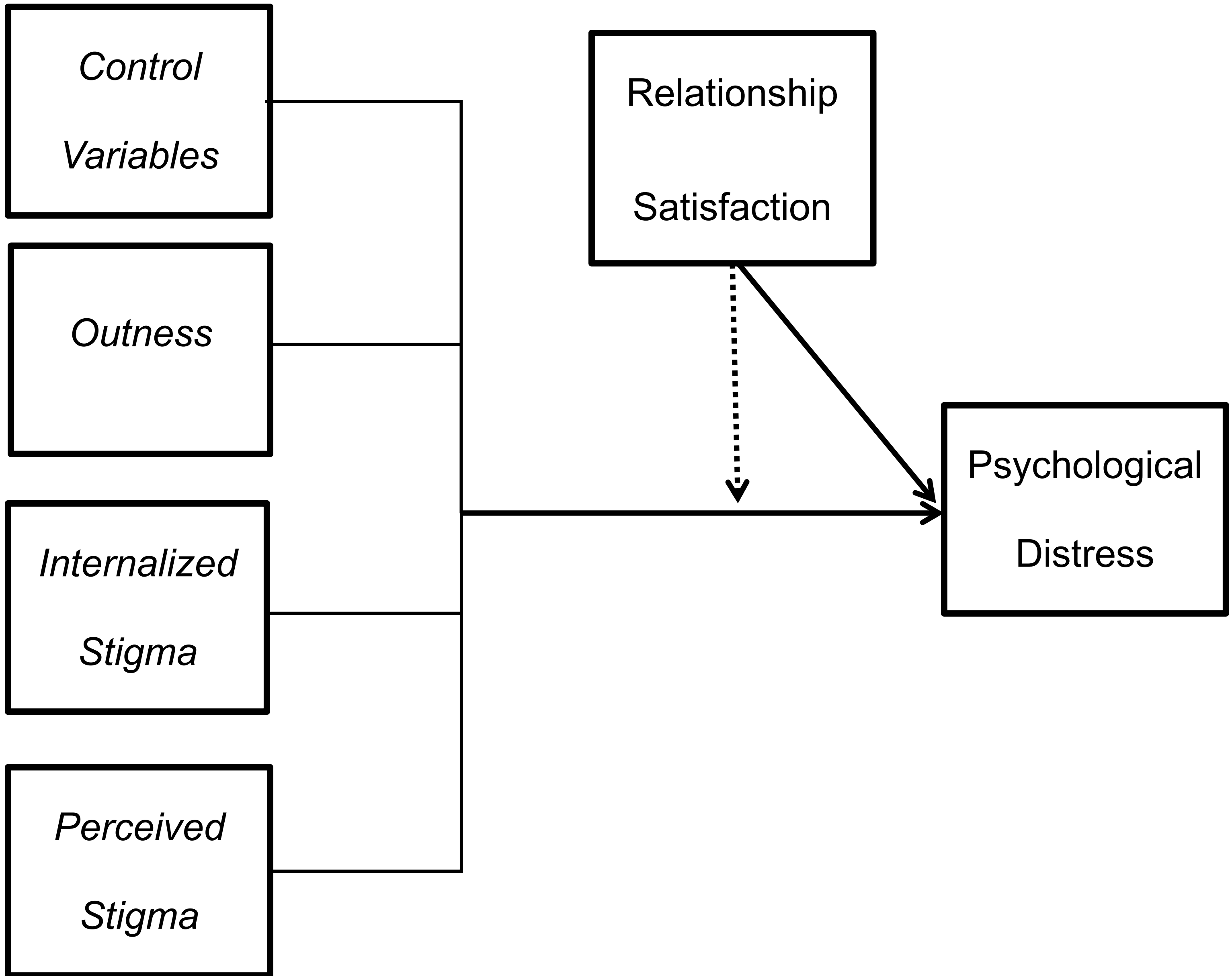
Outness appears to have moderate links to psychological distress, but the findings for relationship satisfaction are more complicated, i.e., outness has a small association with increased relationship satisfaction. Finally, the literature has found large correlations between relationship satisfaction and psychological distress, and some evidence for stress-buffering from being in a relationship, but no reviewed studies explicitly examined whether relationship satisfaction could buffer the effect of minority stress on psychological distress for people in same-gender relationships. In the current study, I aimed to further understanding regarding the interplay between minority stressors, relationship satisfaction, and psychological distress by examining theoretically specified variables from both minority stress (Brooks, 1981; Meyer, 1995) and relationship satisfaction theory (Bodenmann, 1995). Understanding the role that minority stress constructs, such as perceived stigma, internalized stigma, and outness, and relationship satisfaction have on psychological distress is important to inform interventions for people in same-gender relationships, and in particular whether interventions to improve relationship satisfaction have promise to address sexual minority stress. Additionally, this study contributes to research clarifying the role that each minority stressor plays regarding relationship satisfaction and psychological distress. Specifically, I hypothesize that:

1. Greater perceived stigma will be related to greater psychological distress.
2. Greater internalized stigma will be related to greater psychological distress.
3. Greater outness will be related to lower psychological distress.
4. Greater relationship satisfaction will be related to lower psychological distress.
5. Greater relationship satisfaction will buffer the relationship between perceived stigma and psychological distress, such that greater relationship satisfaction is associated

with a smaller negative relationship between perceived stigma and psychological distress.

6. Relationship satisfaction will buffer the relationship between internalized stigma and psychological distress, such that greater relationship satisfaction is associated with a smaller negative relationship between internalized stigma and psychological distress.
7. Relationship satisfaction will buffer the relationship between outness and psychological distress, such that greater relationship satisfaction is associated with a larger positive relationship between outness and psychological distress.

Figure 1: Predicted Minority Stress-Relationship Satisfaction Model



Chapter 3. Method

Procedures

Participant Recruitment

I identified publicly available email addresses of leaders of U.S. LGBTQ+ groups, both university affiliated, such as Syracuse University's Qolor Collective, and non-university affiliated, such as PFLAG. These two examples of groups are not inclusive of all groups that were included in the study – I emailed about 1000 groups across the country in an attempt to gather a more regionally and racially diverse sample. Examples of groups included SOJOURN in Atlanta, Georgia, and Selma, Alabama's TKO Society for African American LGBTQ+ people. I sent an email describing the study to these leaders and asked them to forward the recruitment email to individuals in their group or organization. Interested individuals could click a weblink in the email to read an Information Letter and continue to the online Qualtrics survey if they agreed to participate. Individuals were eligible to participate if they 1) were at least 18 years of age and 2) reported being in a same-gender romantic relationship. This language was chosen, rather than LGBTQ+ identified people specifically, to recruit a more representative sample. After establishing eligibility, Qualtrics software administered measures of sexual minority stress, relationship satisfaction, and psychological distress to participants in a random order. The survey ended with demographic questions.

Sample Size Determination

I conducted an a priori power analysis with G*Power version 3.1 (Faul et al., 2009) to find the minimum sample size required to test hypotheses. Results indicated the required sample size to achieve 80% power for detecting a small effect based on the mean effect size ($f^2 = .068$)

from previous research cited in the literature review with a significance criterion of $\alpha = .05$, was $N = 219$ for multiple regression with 7 predictors.

Human Subjects Protection

All study procedures received IRB approval before the study began. Participation in this study was voluntary. The first 207 participants received a five U.S. dollar Amazon gift card, which was the amount awarded through a departmental research grant ($1,035) to compensate the minimum number of participants needed according to power analysis (Faul et al., 2009) at the dissertation proposal, before the number of predictor variables increased. Upon clicking the weblink to participate, interested individuals read an Information Letter and continued to the online Qualtrics survey if they agreed to participate. Participants could end their participation early and were not required to answer any questions that they did not want to answer. I provided resources for support at the end of the survey due to the potential distress associated with answering questions about psychological distress and minority stress.

Participants

The final sample was 248 participants. Of the 947 participants who completed the survey, Qualtrics security features detected 470 participants that were likely bots, duplicated, or fraudulent responses. These participants were removed according to Qualtrics' recommended cut-offs (Qualtrics, 2022) for duplicates, fraud, and Recaptcha scores. Of the remaining 477, four were excluded because they indicated that they were under the age of 18, 11 were excluded because they did not report that they were in a romantic relationship with someone of the same gender, and 1 participant did not complete at least 70% of the CSI-4, leaving 461 participants. Of the remaining 461, 213 were excluded because they completed the survey in under five minutes, which was much faster than expected from pre-distribution survey testing and other participants

in this sample (*M* = 322s; approximately 6 minutes; outlier-corrected *SD* = 167s; approximately 3 minutes). I established a conservative cut-off of 5 minutes to exclude those who might have skimmed the survey after consulting and distributing the survey to research lab members, and because two standard deviations included a completion time of 0 seconds, which would be impossible. This left 248 participants and exceeded the sample size requirement of 219 from the power analysis in G*power (Faul et al., 2009). Participant characteristics are in Table 1.

Measures

This section describes the questions that participants were asked in the online survey, as well as research supporting their use in studies of same-gender relationships. There was no missing data at the scale level and all missing data at the item level were missing completely at random, suggesting no need for additional special strategies for handling the data at the scale level (Graham et al., 2013). For consistency across measures, I applied Mohr and Fassinger's (2000) recommendation for scoring the Outness scale at the item level to all psychometric scales, that is, the average of all items that participants responded to is the total score if there were no more than 25% missing items, e.g., three missing items on a 12-item scale. Items and instructions for each of the measures are shown in Appendices.

Demographic Questionnaire

I created a demographic questionnaire (See Appendices) to obtain background information, including Gender, Relationship Status, Sexual Orientation, Race/Ethnicity, Education, Relationship Duration, Age, and Income. Several demographic variables, e.g., gender, race/ethnicity, were combined for analysis to form aggregate variables due to very few participants with some responses. Dummy-coded variables were created for categorical variables

in the regression analyses. The reference groups are noted below for variables with more than two levels, and with two levels, the group noted as 0 was the reference group.

Gender was transformed into (0) men, (1) women, and (2) TGQ+ (due to small numbers of participants with these identities, I collapsed participants who identified as transgender men and women, genderqueer or nonconforming men and women, only genderqueer or gender nonconforming, or some other gender identity). For regression analysis, I created two dummy-coded variables for women and TGQ+, with men as the reference group. Participants were given the option to select all gender identities that applied. 116 (47%) identified as cisgender men and 116 (47%) participants identified as cisgender women, of the 16 (7%) who identified as TGQ+, one (<1%) identified only as a man, with sex assigned at birth being female; one (<1%) identified as a gender non-conforming man with sex assigned at birth being female, four (2%) identified as women and as transgender, four (2%) identified only as gender queer, four (2%) identified as gender queer and something else, including identifying as a woman, demigirl, anti-gender, and gender non-conforming, and two (1%) identified only as gender non-conforming.

Relationship Status, for regression analysis, was transformed into one dummy-coded variable, with (0) not cohabitating as the reference group and (1) cohabitating (being in a cohabitating relationship, married, or in another type of relationship). More than half (60%, n = 147) of participants reported being in a committed relationship. 34% (n = 84) reported that they were cohabitating; 5% (n = 13) married; 1% (n = 2) reported another relationship status, while 1% (n = 2) did not indicate relationship status but did indicate they were in a romantic relationship with someone of the same gender.

Race was transformed into (0) identifying as White, (1) identifying as Black/African American, and (2) Other/unknown (collapsed due to the small number of participants who

identified as Hispanic, Middle Eastern/North African, multiracial, Pacific Islander, or declined to answer about one's race). For regression analysis, I created two dummy-coded variables for Black/African American and Other/Unknown, with White as the reference group. Participants were 78% (*n* = 191) White, 12% (*n* = 29) Black or African American, and of the 11% (*n* = 28) Other/unknown, 8% (*n* = 19) Hispanic/Latino/a/x, 2% (*n* = 4) multiracial, less than 1% Middle Eastern/North African (*n* =2), Pacific Islander (*n* = 1), or did not indicate their race or ethnicity (*n* = 2).

Sexual Orientation was collapsed into four groups: (0) gay, (1) lesbian, (2) bisexual, and (3) SPQ (people who identified as straight/heterosexual, pansexual, and queer). For regression analysis, I created three dummy-coded variables for lesbian, bisexual, and SPQ participants, with gay being the reference group. More than half (*n* = 135, 54%) of participants identified as gay; 32% lesbian, (*n* = 80), 10% of participants identified as bisexual (*n* = 24); 2% identified as straight, (*n* = 4); 1% identified as queer (*n* = 3); and less than 1% identified as pansexual, (*n* = 2).

Education was collapsed into (0) earning a high school degree/GED or not completing school and (1) assoc+ (receiving an Associate's degree, Bachelor's degree, Master's Degree, Ph.D, or other graduate degree). For regression analysis, I created one dummy-coded variable for assoc+, with earning a high school degree/GED or not completing school being the reference group. Participants most frequently (39%, *n* = 97) reported earning a high school degree or GED. Less than 1% (*n* = 1) reported that they had not earned any degree. 33% (*n* = 81) earned an associate's degree; 19% (*n* = 48) earned a bachelor's degree; 7% (*n* = 18) earned a master's degree, and 1% (*n* = 3) earned a Ph.D. or other post-master's degree..

Relationship Duration was transformed into months for data analysis. Participants reported relationship duration in both months and years (e.g., 1 year and 3 months). On average,

participants had been with their partner for 30 months (*M* = 29.76, 95% between 2-58). Twenty participants did not indicate the duration of their relationship.

Age was self-reported in years. Participants were, on average, about 30 years old (*M* = 28.58; *SD* = 5.30, 95% between 19 and 39 years). The oldest participant reported that they were 68 years old.

Income. The average annual income for this sample was $36,206. However, 70 participants did not report their income and, subsequently, this variable was not used in analyses.

Table 1. Descriptive statistics for demographic variables (N = 248).

Variable	*N*	*%*
Gender		
Woman	116	47
TGQ+	16	7
Man	116	47
Relationship Status		
Not cohabitating	147	59
Cohabitating	101	41
Sexual Orientation		
Lesbian	80	32
Bisexual	24	10
SPQ	9	4
Gay	135	54
Race/Ethnicity		
Black/African American	29	12
Other/unknown	28	11
White	191	77
Education		
Associate's or higher	150	61
High school/GED/None	98	40
	M	*SD*
Relationship Duration, months	29.76	29.28
Age, years	28.58	5.30
Income, USD	36206	21077

Note: Percentages are rounded for clarity and do not sum to 100%. Gender (TGQ+) includes men and women who also identified as transgender, genderqueer and gender nonconforming, and those who identified only as gender queer, gender nonconforming, or indicated another identity. Relationship status (cohabitating) includes those in a cohabitating relationship, those who are married, or those in another type of relationship (e.g., polyamory). Sexual Orientation (SPQ) includes those who identify as straight/heterosexual, pansexual, and queer. Race (Other/unknown) includes those who identified as Hispanic/Latino/a/x, Middle Eastern/North African, multiracial, Pacific Islander, or declined to answer. Education (Associate's or higher) includes those who earned their associate's, bachelor's, master's, Ph.D., or other post-master's degree. Income is included in this table but not in other analyses due to missing data.

Perceived Stigma

Perceived stigma was measured using a 12-item adapted version of the Gay-Related Rejection Sensitivity Scale (GRRSS; Pachankis et al., 2008). The 12 items are vignettes, and were rated from 1, "very unconcerned" or "very unlikely" to 6, "very concerned" or "very likely" on two scales: (1) how likely it is that this vignette occurred due to one's sexual orientation, and (2) how concerned or anxious one might feel because of the role their sexual orientation might play in the situation. The ratings for each item of these two scales were multiplied together, summed, and then divided by 12 to create a total score with higher scores meaning more perceived stigma. An example vignette is, "You've been dating someone for a few years now, and you receive a wedding invitation to a straight friend's wedding. The invite was addressed only to you, not you and a guest." This scale has demonstrated discriminant validity from internalized stigma in that it was more related to rejection than non-rejection sensitivity-related measures (Pachankis et al., 2008). Wang and Pachankis (2016) reported an internal consistency alpha = .91 in a sample of gay and bisexual men; Carlton (2021) modified the scale for transgender people and reported an alpha of .92, and Feinstein and colleagues (2012) similarly adapted the scale for both lesbian women and gay men, by removing two of the 14 items that were specifically for gay men, and reported an alpha of .92. The adaptations to the measure in this proposal focused on making the vignettes agendered. A Qualtrics function was used to present participants with the version of the questionnaire that matched their selected sexual orientation from the eligibility question. "You go to a party and you and your partner are the only *gay* people there. No one seems interested in talking to you," for example, would be adapted to, "… are the only [*participant's self-identified sexual orientation*] people there." Cronbach's alpha for this sample was .83.

Internalized Stigma

Internalized stigma was measured using a modified Internalized Homophobia Scale-Revised (IHP-R; Herek et al., 1998). The IHP-R uses five self-report Likert-type items, which were generated from an interview format created by Martin and Dean (1988, cited in Herek et al., 1998). For this study, the wording differed slightly to account for the sexual orientations of participants. A Qualtrics function was used to present participants with the version of the questionnaire that matched their selected sexual orientation from the eligibility question. Items (e.g., "I wish I weren't [*participant's self-identified sexual orientation*]", and "I have tried to stop being [*participant's self-identified sexual orientation*] in general.") were rated from 1, "*disagree strongly*," to 5, "*agree strongly*." The total was the mean of all items, with higher scores indicating higher levels of internalized stigma. IHP scores correlate with increased psychological distress in LGB people (Herek et al., 1998). Cronbach's alphas ranged from .71 to .85 in previous research (Herek et al., 1998; Herek & Glunt, 1995; Meyer, 1995; Meyer & Dean, 1998). Cronbach's alpha for scores using a modified version of the scale was .74 in previous research (Ballester et al., 2021) and was .72 in this sample.

Outness

Outness was assessed with Mohr and Fassinger's (2000) Outness Inventory (OI), an 11-item Likert-type self-report questionnaire designed to measure how open lesbian, gay, and bisexual individuals are about their sexual orientation with people in their family, everyday life, and religion, which correspond with the three subscales of Out to Family, Out to World, and Out to Religion. Responses to each item range from 1, "*person definitely does not know about your sexual orientation status"* to 7, "*person definitely knows about your sexual orientation status, and it is openly talked about*." A response of non-applicable is also available if a participant does

not have that type of relationship. The average of all items that participants responded to is the total score. Mohr and Fassinger (2000) reported that OI scores were negatively related to participants' efforts to keep their sexual orientations private and were positively related to community identification in mostly White sexual minority samples. Higher scores indicate higher levels of outness, ranging from 1 to 7. Cronbach's alphas in past research have been satisfactory, ranging from .80 to .92 (Balsam et al., 2008; Balsam & Szymanski, 2005; Lewis et al., 2005; Todosijevic et al., 2005). Cronbach's alpha for the total outness score with this sample was .81.

Relationship Satisfaction

Relationship satisfaction was measured with the four-item Couples Satisfaction Index (CSI-4; Funk & Rogge, 2007). Most items, with the exception of, "please indicate the degree of happiness, all things considered, of your relationship" are rated from 0, "*never*" or "*not at all"* to 5 "*all the time*" or "*completely true*." Item scores were summed to create a total score ranging from 0 to 21, with higher scores indicating higher levels of satisfaction. According to the authors, a score below 13.5 on the CSI-4 suggests relationship dissatisfaction. This scale was developed using item response theory and included items from multiple scales of relationship satisfaction, demonstrated increased power for detecting differences in relationship satisfaction than other scales, and had convergent and construct validity when compared with other satisfaction measures (Funk & Rogge, 2007). It has been used with people in same-gender relationships (Covington, 2021; Ho, 2019; Minten, 2017; Neilands et al., 2020; Nguyen & Pepping, 2022), with internal consistency reliability ranging from $\alpha = .83$ to .94. Cronbach's alpha for the entire sample was .66, while it was .77 for lesbian and gay participants and .58 for those who identified as bisexual, straight, pansexual, and queer.

Psychological Distress

To measure depressive and anxious symptoms, participants completed the Patient Health Questionnaire-4 (PHQ-4; Kroenke et al., 2009). This is a four-item depression and anxiety scale designed to briefly capture symptoms in the last two weeks. Item responses are from 0 (*not at all*) to 3 (*nearly every day*) and were summed to a total score, with higher scores indicating increased severity of anxious and depressive symptoms. Kroenke and colleagues (2009) reported appropriate construct validity when compared to long-form measures of anxiety (GAD-7; Spitzer et al., 2006) and depression (PHQ-9; Kroenke et al., 2001) regarding mean disability days, severity, and mean physician visits. They also reported that using the composite PHQ-4, rather than separating the two-item anxiety and depression measures, was more highly correlated to Medical Outcomes Study Short-Form General Health Survey, which measures mental health and levels of functioning (SF-20; Stewart et al., 1988). Al-Ajlouni and colleagues (2020) reported Cronbach's alpha of .87 in their sample of gay, bisexual, and other men who have sex with men. It has been used with lesbian, gay, and bisexual men and women during the COVID-19 pandemic (Raj et al., 2020), with reported Cronbach's alpha of .81. Additionally, it has been used in the past with LGBTQ+ people, with reported alpha of .91 (Ogolsky et al., 2019). Cronbach's alpha for the current sample was .61.

Analytical Approach

Preliminary analyses tested order effects of measure administration, assumptions of regression, and calculated bivariate relationships between variables. I used one-way ANOVA to explore possible differences in measure administration order (i.e., order effects) on psychological distress and relationship satisfaction. I then tested assumptions of regression. Regression assumes that the data are normally distributed for the outcome variable or variables and that the

data are homoscedastic: variance in the data is the same for all data points, Additionally, regression assumes that the relationships between predictors and outcomes is linear and that there is not multicollinearity between predictor variables. A histogram, plot of standardized residuals, descriptive statistics to view skewness (tilt) and kurtosis (peak) of the data, and a Shapiro-Wilk W test was examined to test normality of the outcome variable (psychological distress); alternate procedures for analysis (e.g., square root transformation of the outcome) would have been used if this assumption was violated, but it was not. Regression residuals were examined for skewness and kurtosis using an alpha of .01 (z = 2.58). Standardized residuals of psychological distress were not skewed (z = -2.04) or kurtotic (z = 0.09). A visual examination of a histogram and plot of the standardized residuals also suggested that psychological distress was approximately normal, even though the Shapiro-Wilk test showed a significant departure from normality (W (248) = 0.963, p < .001). Given that the Shapiro-Wilk test showed significant abnormality of the data, and it is considered a sensitive and recommended measure of normality (Strunk & Mwavita, 2021; Thode, 2002), especially with sample sizes over 200 (Thode, 2002), I reviewed recommendations for handling potentially abnormal data (Strunk & Mwavita, 2021) and concluded that, since skew and kurtosis were within 4 standard deviations of their standard errors, I could continue as planned with analyses. Homoscedasticity is also an assumption; to test this, I examined error scatterplots. Examination of error plots suggested that the data met the assumption of homoscedasticity. Regression assumes a linear relationship between variables and the absence of multicollinearity between independent variables. Visual examination of scatterplots suggested linearity of the data. To test multicollinearity, tolerance and VIF tables were generated in SPSS and examined for high correlations. Tolerance correlations were greater than .2, VIF values were less than 5, and variance proportions were less than .90 for variables in

the model. The assumption of independence is the most difficult to test directly. To increase the possibility of meeting this assumption, I did not enroll participants with very close connections, e.g., only one member of a couple could enroll. As preliminary tests of relationships, I used one-way ANOVA for categorical control variables and correlations for continuous control variables. In the ANOVA, I used Bonferroni-corrected post-hoc tests for all independent variables with more than two levels. Results of preliminary ANOVA are in Table 2 and preliminary correlations are in Table 3.

Hypothesis Tests. I used hierarchical multiple regression analysis to test hypothesized relationships. I interpreted effect sizes using β, where values between .1 and .24 are small, between .24 and .37 are medium, and greater than .37 are large (Cohen , 2013).

The first step in the model included gender, relationship status, sexual orientation, age, race/ethnicity, education, relationship duration, and age. These control variables were added because many have been linked to relationship satisfaction or psychological distress in samples of LGBTQ+ people or people in same-gender relationships (e.g., Moradi et al., 2010; Newcomb & Mustanksi, 2010; Thies et al., 2016; and Morandini et al., 2017).

Step 2 of the regression analysis entered the minority stress variables (perceived stigma, internalized stigma, and outness) to test hypotheses 1-3. Step 3 of the regression analysis entered relationship satisfaction to test hypothesis 4. Step 4 tested moderation in hypotheses 5-7, described below in detail.

Step 4 of the regression analysis tested moderation by entering the interaction terms, i.e., the product of each of three sexual minority stress variables with relationship satisfaction: perceived stigma x relationship satisfaction, internalized stigma x relationship satisfaction, outness x relationship satisfaction. If interactions were significant, I would have probed

interactions, i.e., the stress-buffering effect, with Hayes' (2017) PROCESS macro for SPSS. Hayes' (2017) PROCESS macro for SPSS automates the process of centering or standardizing the variables to avoid potentially problematic multicollinearity before calculating the interaction term, i.e., the product of the predictor (one of three sexual minority stress variables) and moderator (relationship satisfaction) (Aiken & West, 2003). Then, interaction points generated by the macro would have been plotted graphically to examine the moderating effect relationship satisfaction had between minority stress and psychological distress. A simple-slopes test (bound between +- 1 *SD*) would have been conducted to determine if the interaction points differed significantly from expected (Garson, 2017). Additionally, I would have used the Johnson-Neyman technique to understand the range of significant and insignificant effects the interaction between minority stress and relationship satisfaction had on psychological distress (Montoya, 2016).

Chapter 4. Results

Preliminary Analyses

Order Effects

Results from one-way ANOVA to explore possible differences in measure administration order on psychological distress and relationship satisfaction showed no evidence for order effects. That is, there were no significant relationships between psychological distress and the order of administration for the Outness Inventory (OI, $F_{4,243} = 0.85$, $p = .495$), Perceived Stigma on the Gay-Related Rejection Sensitivity Scale (GRRSS; $F_{4,243} = 0.42$, $p = .797$), Relationship Satisfaction on the Couples Satisfaction Index (CSI-4; $F_{4,243} = 0.67$, $p = .613$), the modified Internalized Homophobia Scale-Revised (IHP-R; $F_{4,243} = 0.91$, $p = .457$), or Psychological Distress on the Patient Health Questionnaire (PHQ-4; $F_{4,243} = 0.17$, $p = .956$). There was also no significant relationship between relationship satisfaction and the order of administration of the Outness Inventory (OI, $F_{4,243} = 1.67$, $p = .159$), Perceived Stigma on the Gay-Related Rejection Sensitivity Scale (GRRSS; $F_{4,243} = 0.88$, $p = .478$), Relationship Satisfaction on the Couples Satisfaction Index (CSI-4; $F_{4,243} = 0.76$, $p = .550$), modified Internalized Homophobia Scale-Revised (IHP-R; $F_{4,243} = 1.39$, $p = .237$), or Psychological Distress on the Patient Health Questionnaire (PHQ-4; $F4_{,243} = 1.46$, $p = .214$).

Bivariate Relationships with Psychological Distress

I used one-way ANOVA for categorical control variables (see full results in Table 2) and correlations for continuous control variables (Table 3). In ANOVA, I used Bonferroni-corrected post-hoc tests for all IVs with more than two levels.

Psychological Distress. Psychological distress was associated with sexual orientation ($F3_{,244} = 2.87$, $p = .037$), specifically SPQ participants had higher distress than gay ($p = .022$),

lesbian ($p = .032$), and bisexual ($p = .001$) participants; race/ethnicity ($F_{2,245} = 3.60$, $p = .029$), specifically White participants had lower distress than those in the Other/Unknown group ($p = .007$), and was inversely associated with relationship duration ($r = -.19$, $p = .002$). Psychological distress was not significantly associated with age ($r = .06$, $p = .320$) or income ($r = .05$, $p = .477$). Psychological distress was positively correlated with internalized stigma ($r = .34$, $p < .001$), and inversely correlated with outness ($r = -.17$, $p = .007$), and relationship satisfaction ($r = -.13$, $p = .037$), but not significantly correlated with perceived stigma ($r = .05$, $p = .459$).

Minority Stress and Relationship Satisfaction. Outness was positively correlated with perceived stigma ($r = .22$, $p < .001$) and inversely correlated with internalized stigma ($r = -.48$, $p < .001$). Relationship satisfaction was positively correlated with perceived stigma ($r = .21$, $p = .001$), and outness ($r = .32$, $p < .001$), and inversely correlated with internalized stigma ($r = -.48$, $p < .001$).

Table 2. Summary of preliminary ANOVA results for categorical control variables ($N = 248$).

Psychological Distress	Mean	SD	*F*
Gender			2.17
Man	5.43	2.33	
Woman	6.06	2.30	
TGQ+	6.00	2.78	
Relationship Status			1.71
Cohabitating	6.00	2.17	
Not Cohabitating	5.60	2.47	
Sexual Orientation			**2.87***
Gay	5.50	2.22	
Lesbian	5.95	2.31	
Bisexual	6.88	2.63	
SPQ	5.00	3.28	
Race/Ethnicity			**3.60***
White	5.98	2.13	
Black/African American	5.07	2.69	
Other/Unknown	5.00	3.16	
Education			1.18
Associate's or higher	5.89	2.42	
High school/GED/None	5.56	2.26	

Note: $*p < .05$; $**p < .01$. Gender (TGQ+) includes transgender men and women, gender queer and gender nonconforming people, and those who identified as some other identity. Relationship status (cohabitating) includes those in a cohabitating relationship, those who are married, or those in another type of relationship (e.g., polyamory). Sexual Orientation (SPQ) includes those who identify as straight/heterosexual, pansexual, and queer. Race (Other/unknown) includes those who identified as Hispanic/Latino/a/x, Middle Eastern/North African, multiracial, Pacific Islander, or declined to answer. Education (Associate's or higher) includes those who earned their associate's, bachelor's, master's, Ph.D., or other post-master's degree.

Table 3. Descriptive statistics and correlations for sexual minority stress variables, relationship satisfaction, and psychological distress (N = 248).

	Variable	M	SD	Scale Range	Sample Range	1	2	3	4	5
1	Perceived stigma	11.75	4.04	1-36	3.75-32.33	-				
2	Internalized stigma	2.80	.79	1-5	1-4.6	-.12	-			
3	Outness	4.00	1.04	1-7	1.27-7	.22**	-.48**	-		
4	Relationship Satisfaction	12.06	3.42	0-21	4-21	.21**	-.48**	.32**	-	
5	Psychological Distress	5.76	2.36	0-12	0-12	.05	.34**	-.17**	-.13*	-

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

Hypothesis Tests

I used hierarchical multiple regression analysis to test hypothesized relationships. Step 1 tested relationships between control variables (gender, relationship status, sexual orientation, age, race/ethnicity, education, relationship duration, and age) with psychological distress. Step 2 entered the minority stress variables (perceived stigma, internalized stigma, and outness) to test hypotheses 1-3. Step 3 entered relationship satisfaction to test hypothesis 4. Step 4 tested moderation (interactions between minority stress variables and relationship satisfaction) in hypotheses 5-7. Full results of hierarchical regression analyses are in Table 4.

Step 1: Control Variables

Step 1 was significant ($F_{11,236} = 2.69$, $p < .01$, $R^2 = .11$). Gender, sexual orientation, education, and age were not significantly related to psychological distress. Psychological distress had a small, significant positive association with relationship status; specifically, distress was higher for those cohabitating ($b = 0.34$, $SE = 0.13$, $\beta = .17$, $p = .010$) than for participants who were not cohabitating. Psychological distress also had a small, significant inverse association with race/ethnicity, specifically participants with other/unknown race/ethnicity had lower distress than White participants ($b = -0.42$, $SE = 0.21$, $\beta = -.13$, $p = .042$), and relationship duration ($b = -0.01$, $SE < 0.01$, $\beta = -.21$, $p = .015$).

Step 2: Hypotheses 1-3

In Step 2, I entered minority stress variables to test hypotheses 1-3. Step 2 significantly increased the explained variance in psychological distress ($\Delta F_{3,233} = 10.28$, $p < .001$, $R^2 = .22$, $\Delta R^2 = .10$). After entering minority stress variables, psychological distress no longer had a significant association with race/ethnicity ($b = -0.31$, $SE = 0.20$, $\beta = -.10$, $p = .109$), or relationship duration ($b = -0.01$, $SE < 0.01$, $\beta = -.14$, $p = .090$).

Hypothesis 1: Perceived stigma will be related to greater psychological distress.

Perceived stigma did not have a significant association with psychological distress (b = 0.13, SE = 0.07, β = .13, p = .053).

Hypothesis 2: Internalized stigma will be related to greater psychological distress.

Internalized stigma had a medium-sized, significant association with psychological distress, such that those with higher internalized stigma reported greater psychological distress (b = 0.35, SE = 0.07, β = .34, $p < .001$).

Hypothesis 3: Outness will be related to lower psychological distress. Outness did not have a significant association with psychological distress (b = 0.04, SE = 0.07, β = .04, p = .589).

Step 3: Hypothesis 4

In Step 3, I entered relationship satisfaction to test ***Hypothesis 4: Relationship satisfaction will be related to lower psychological distress.*** This step was statistically significant, but did not account for additional variance in psychological distress ($\Delta F_{1,232}$ = 0.07, p = .786, R^2 = .22 ΔR^2 = .00). Relationship satisfaction did not have a significant association with psychological distress (b = 0.02, SE = 0.07, β = .02, p = .786).

Step 4: Hypotheses 5, 6, and 7

Relationship satisfaction will buffer the relationships between perceived stigma, internalized stigma, outness, and psychological distress. In Step 4, the interactions between relationship satisfaction and perceived stigma, internalized stigma, and outness were added to test hypotheses 5-7. Step 4 did not significantly increase the variance explained in psychological distress ($\Delta F_{3,229}$ = 0.90, p = .440, R^2 = .23 ΔR^2 = .01).

Hypothesis 5: Relationship satisfaction will buffer the relationship between perceived stigma and psychological distress. Relationship satisfaction did not significantly interact with perceived stigma (b = 0.05, SE = 0.05, β = .06, p = .386).

Hypothesis 6: Relationship satisfaction will buffer the relationship between internalized stigma and psychological distress. Relationship satisfaction did not significantly interact with internalized stigma (b = -0.02, SE = 0.08, β = -.02, p = .831).

Hypothesis 7: Relationship satisfaction will buffer the relationship between outness and psychological distress. Relationship satisfaction did not significantly interact with outness (b = 0.06, SE = 0.07, β = .07, p = .403).

Table 4. Hierarchical regression analyses predicting psychological distress (N = 248).

Predictor	R^2	ΔR^2	*b*	*SE*	β	*p*
Step 1	.11	.11*				
Gender (woman)			0.03	0.22	.02	.884
Gender (TGQ+)			0.11	0.31	.03	.730
Relationship Status (cohabitating)			**0.34**	**0.13**	**.17**	**.013**
Orientation (lesbian)			0.11	0.22	.05	.614
Orientation (bisexual)			0.48	0.29	.14	.092
Orientation (SPQ)			0.08	0.38	.02	.833
Race (Black/African American)			-0.25	0.21	-.08	.218
Race (other/unknown**)**			**-0.42**	**0.21**	**-.13**	**.042**
Education (assoc+)			0.13	0.13	.06	.337
Relationship Duration			**-0.01**	**0.00**	**-.21**	**.015**
Age			-0.01	0.02	-.04	.636
Step 2	.22	.10**				
Gender (woman)			0.07	0.21	.03	.751
Gender (TGQ+)			0.30	0.30	.07	.323
Relationship Status (cohabitating)			**0.35**	**0.13**	**.17**	**.010**
Orientation (lesbian)			0.09	0.22	.04	.676
Orientation (bisexual)			0.46	0.27	.14	.091
Orientation (SPQ)			0.01	0.37	.00	.982
Race (Black/African American)			-0.28	0.20	-.09	.154
Race (other/unknown)			-0.31	0.20	-.10	.109
Education (assoc+)			0.12	0.13	.06	.354
Relationship Duration			-0.01	0.00	-.14	.090
Age			-0.01	0.02	-.06	.446
Perceived Stigma			0.13	0.07	.13	.053
Internalized Stigma			**0.35**	**0.07**	**.34**	**< .001**
Outness			0.04	0.07	.04	.589
Step 3	.22	.00				
Gender (woman)			0.05	0.22	.03	.818
Gender (TGQ+)			0.27	0.31	.07	.382
Relationship Status (cohabitating)			**0.35**	**0.13**	**.17**	**.010**
Orientation (lesbian)			0.10	0.22	.05	.640
Orientation (bisexual)			0.48	0.28	.14	.088
Orientation (SPQ)			0.01	0.37	.00	.979
Race (Black/African American)			-0.28	0.20	-.09	.149
Race (other/unknown)			-0.32	0.20	-.10	.106
Education (assoc+)			0.12	0.13	.06	.365
Relationship Duration			-0.01	0.00	-.14	.095
Age			-0.01	0.02	-.06	.455
Perceived Stigma			0.12	0.07	.12	.060
Internalized Stigma			**0.36**	**0.08**	**.34**	**< .001**
Outness			0.04	0.08	.04	.631
Relationship Satisfaction			0.02	0.07	.02	.786

Step 4	.23	.01				
Gender (woman)			0.10	0.22	.05	.664
Gender (TGQ+)			0.29	0.31	.07	.354
Relationship Status (cohabitating)			**0.35**	**0.13**	**.17**	**.010**
Orientation (lesbian)			0.04	0.23	.02	.844
Orientation (bisexual)			0.38	0.29	.11	.194
Orientation (SPQ)			-0.03	0.37	-.01	.935
Race (Black/African American)			-0.27	0.20	-.09	.167
Race (other/unknown)			-0.31	0.20	-.10	.118
Education (assoc+)			0.13	0.13	.06	.335
Relationship Duration			-0.01	0.00	-.16	.062
Age			-0.01	0.02	-.05	.521
Perceived Stigma			0.10	0.07	.10	.198
Internalized Stigma			**0.38**	**0.08**	**.37**	**< .001**
Outness			0.03	0.08	.03	.699
Relationship Satisfaction			0.00	0.08	.00	.974
Perceived Stigma x Relationship Satisfaction			0.05	0.05	.06	.386
Internalized Stigma x Relationship Satisfaction			-0.02	0.08	-.02	.831
Outness x Relationship Satisfaction			0.06	0.07	.07	.403

Note: **Bolded** items $p < .05$. Reference groups are as follows: Gender (Men); Relationship Status (Not Cohabitating); Orientation (Gay); Race (White); Education (High School or Lower). Gender (TGQ+) includes transgender men and women, genderqueer and gender nonconforming people, and those who identified as some other identity. Relationship status (cohabitating) includes those in a cohabitating relationship, those who are married, or those in another type of relationship (e.g., polyamory). Sexual Orientation (SPQ) includes those who identify as straight/heterosexual, pansexual, and queer. Race (Other/unknown) includes those who identified as Hispanic/Latino/a/x, Middle Eastern/North African, multiracial, Pacific Islander, or declined to answer. Education (assoc+) includes those who earned their associate's, bachelor's, master's, Ph.D., or other post-master's degree.

Exploratory Follow-up Analyses

I conducted several exploratory analyses after hypothesis testing reported above. Specifically, these exploratory analyses were testing (1) interactions between selected demographic characteristics and minority stress variables, (2) whether simplified regression models with fewer predictor variables had better fit than the originally proposed model, and (3) if relationship satisfaction mediated the link between internalized stigma and psychological distress.

Exploratory Interaction Tests

I wanted to explore significant demographic variable X minority stress interactions based on previous research suggesting that variables like gender, race, or sexual orientation may influence the relationships of minority stressors and distress (e.g., bisexual orientation X internalized stigma; Moradi et al., 2010; Thies et al., 2016). These exploratory regressions used a Bonferroni corrected significance level of $\alpha = .0028$ because there were 18 interaction terms to test. The interactions were added as Step 5 of the full regression model and did not significantly increase variance explained in psychological distress ($\Delta F_{18,211} = 1.83$, $p = .024$, $R^2 = .33$ $\Delta R^2 = .11$).

Exploratory Simplified Regression Models

I tested the first simplified regression model with only demographic predictors, i.e., sexual orientation, relationship duration, and race, that were significantly related to psychological distress in preliminary analyses (Table 2). I then compared model fit between the simplified and full (i.e., original) regression models, and retained the better-fitting model. The standard error of the estimate (SEE) was lower (indicating better fit) in the full regression model (*SEE* = 0.914) than in the simplified model (*SEE* = 0.925).

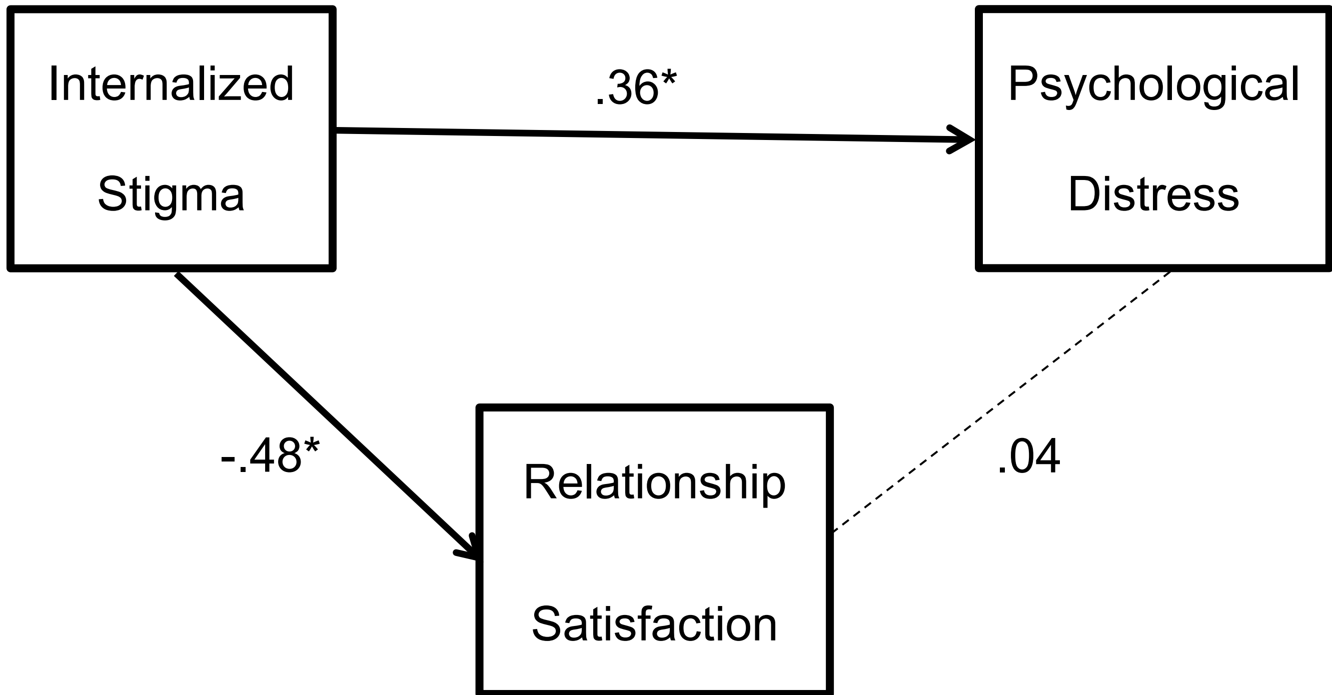
I tested a second simplified regression model with relationship status (cohabitating or not), the only demographic predictor that was significantly related to psychological distress in regression analysis. The standard error of the estimate was lower (indicating better fit) in the full regression model (*SEE* = 0.914) than in the simplified model (*SEE* = 0.937).

Exploratory Mediation Analysis

I then explored if relationship satisfaction might mediate the relationship between internalized stigma and psychological distress in a simplified path analysis model using a method with multiple regression analyses (K. Strunk, personal communication, 2017). First, I ran a regression to understand how internalized stigma independently predicted psychological distress (total effect; path A to C). This model was significant ($F_{1,246} = 33.05$, $p < .001$, $R^2 = .12$). Internalized stigma had a medium, significant association with higher psychological distress (b = 0.36, SE = 0.06, β = .34, $p < .001$). Then, I ran a regression with internalized stigma and relationship satisfaction as predictors of psychological distress. This model was significant ($F_{2,247}$ = 16.67, $p < .001$, $R^2 = .12$). Internalized stigma had a medium, significant positive association with psychological distress (direct effect; adjusted path A to C) (b = 0.38, SE = 0.07, β = .36, $p <$ .001) but relationship satisfaction was not related to psychological distress (path B to C) (b = 0.04, SE = 0.07, β = .04, p = .542). I then tested if internalized stigma significantly predicted relationship satisfaction (path A to B). This model was significant ($F_{1,246} = 72.76$, $p < .001$, R^2 = .23). Internalized stigma had a large, significant inverse association with relationship satisfaction (b = -0.49, SE = 0.06, β = -.48, $p < .001$). Relationship satisfaction was not related to psychological distress, so the indirect effect, calculated as the product of the path coefficients from A to B and from B to C was not significantly different from zero, and the magnitudes of coefficients of the total effect and direct effect were not different, suggesting no mediation.

Figure 2 below shows the simplified path model for internalized stigma and relationship satisfaction.

Figure 2: Simplified Minority Stress-Relationship Satisfaction Model



Note: Solid lines indicate statistically significant relationships ($p < .05$) and dashed lines indicate non-significant relationships ($p > .05$). *$p < .001$.

Chapter 5. Discussion

This study aimed to further understanding of minority stressors, relationship satisfaction, and psychological distress, by examining links between psychological distress and theoretically specified variables from both minority stress (e.g., Brooks, 1981; Meyer, 1995) and relationship satisfaction theories (e.g., Bodenmann, 1995) in one study. Having these variables in one study was expected to expand knowledge because previous research examined links between either (a) psychological distress and minority stress, or (b) psychological distress and relationship satisfaction, but not psychological distress and both minority stress and relationship satisfaction. Understanding the role that minority stress constructs, such as perceived stigma, internalized stigma, and outness, and relationship satisfaction have on psychological distress is important to inform interventions for people in same-gender relationships, and in particular whether interventions to improve relationship satisfaction have promise to address sexual minority stress. Only one hypothesis was supported, specifically, that internalized stigma was moderately and positively related to psychological distress. Perceived stigma, outness, and relationship satisfaction were not significantly related to psychological distress, and there were no significant interactions on psychological distress between relationship satisfaction and minority stress variables. One control characteristic of participants had a small association with psychological distress in the hierarchical regression, that is, those in a cohabitating relationship had higher psychological distress than those not living with their partner/spouse.

The following paragraphs discuss results of the hypotheses, starting with the only significant minority stress relationship, i.e., internalized stigma and psychological distress, before moving on to discussing hypotheses in order.

Hypotheses

Hypothesis 2: Internalized Stigma Will Be Related to Greater Psychological Distress

Internalized stigma was moderately significantly related to psychological distress, which is consistent with previous research (e.g., Feinstein et al., 2012; Lea et al., 2014; Newcomb & Mustanksi, 2010). This finding, when paired with the other findings that outness, perceived stigma, and relationship satisfaction were not significantly related to psychological distress, suggests that internalized stigma may be the main variable of interest within the sexual minority stress model with respect to psychological distress. Overall, this finding fits with five studies that connected internalized stigma to psychological distress, when testing multiple minority stress constructs simultaneously to predict psychological distress (Berghe et al., 2010; Feinstein et al., 2012; Lea et al., 2014; Talley & Bettencourt, 2011; Velez et al., 2017).

There are several potential mechanisms that might drive the relationship between internalized stigma and psychological distress that are consistent with the broader stress literature connecting threatening or negative identity-related cognitive appraisals to psychological distress (Lazarus, 1966; Lazarus, 1991; Lazarus & Folkman, 1984; Harrell, 2000). Meyer (1995) reported relationships between internalized stigma and demoralization, suicidality, guilt, and sexual difficulties, which may be processes that mediate the effect of internalized stigma on psychological distress. Additionally, Meyer (2003) theorized that internalized stigma and related negative self-perceptions may work on psychological distress through worsened self-blame or relationship conflict. Others have suggested that internalized stigma may affect psychological distress by being a focus of rumination and self-criticism, increased hypervigilance, and concerns about being accepted by those around you (Timmins et al., 2020).

There are also theoretical precursors to internalized stigma. For example, Meyer (1995) connected the origins of internalized stigma to prejudice and discrimination from ones' communities and societies, so it is theoretically possible that internalized stigma mediates the relationship between witnessed or experienced discrimination and psychological distress. That is, according to minority stress theory (Brooks, 1981; Meyer, 1995) internalized stigma may be one of the, if not the primary, mechanisms by which discrimination and prejudice affect psychological distress. People who experience discrimination internalize the negative ideas as a way to preempt harmful attitudes and behaviors they may encounter from others (Meyer, 2003). Future longitudinal research with people in same-gender relationships should examine (1) how discrimination experiences lead to internalized stigma, and (2) the specific mechanism(s) by which internalized stigma affects psychological distress.

Although these results do not fully establish a causal relationship, research suggests there are several avenues to reduce distress of people in same-gender relationships by reducing internalized stigma. The following paragraphs describe individual, group, and macro-level interventions that are designed to reduce internalized stigma of people in same-gender relationships that clinicians and other professionals involved in healthcare, policy, and communities might use. *Individual interventions* are defined as interventions done in individual psychotherapy or interventions targeting one person. *Group interventions* are for multiple people, such as in group therapy. *Macro-level interventions* are interventions that reach a larger community or population, e.g., lobbying for political and legal change, advocating for same-gender relationships, or any intervention focused on creating systemic change for people in same-gender relationships.

Individual interventions such as individual psychotherapy may be helpful at reducing internalized stigma (Brondolo et al., 2009; Cohen, 2004; Harrell, 2000). There are several example interventions from a cognitive behavioral model adapted for sexual minority people to reduce or mitigate the effects of internalized stigma. These interventions typically build on Harrell's (2000) biopsychosocial model of minority stress, Lazarus and Folkman's (1984) stress and coping model, and/or Meyer's (1995) sexual minority stress model.

One set of related interventions called RISE (Releasing Internalized Stigma for Empowerment; Lin and Israel, 2012) were originally developed to reduce internalized stigma of sexual minority men and later adapted more broadly for lesbians, gay men, bisexuals, and transgender people (Lin et al., 2019). As an example, one online RISE intervention was tested in a randomized trial with 641 bisexual adults (Israel et al., 2019). The tested intervention had four modules to identify the sources of negative beliefs and challenge negative stereotypes by viewing affirming media and writing one's support to a hypothetical person who is experiencing minority stress. Module 1 had clients gauge the validity of stereotypes about bisexual people and were then given research evidence that challenged the stereotypes. Module 2 had clients read a list common negative messages bisexual people might have received and they were asked to identify which they had received and which of these they had been able to reject. In Module 3, clients watched a video of a bisexual person discussing their experiences of bisexual stigma and how they learned to accept themselves. They then read a vignette about a young adult who was struggling to accept that they may be bisexual and were asked to write a comforting, supportive message to this person. In Module 4, clients read a list of positive statements about being bisexual, watched a slideshow that included bisexual affirming images, and listened to upbeat music. In this trial, RISE resulted in a small reduction (Cohen's $d = .24$) in internalized stigma

when compared to a control group who were given the same instructions regarding general stress.

Another example of an intervention that is designed to reduce psychological distress for people who are experiencing internalized stigma is ESTEEM (Effective Skills to Empower Effective Men; Burton et al., 2019; Pachankis, 2014). The ESTEEM intervention's goal is to restructure or replace internalized stigma with healthy beliefs about oneself based on the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (Barlow et al., 2010). ESTEEEM has multiple intervention activities, including (1) psychoeducation about the effects of minority stress, (2) psychoeducation about emotions, coping in general, and maladaptive coping like emotional avoidance; (3) identifying one's experiences of minority stress and connecting it to one's psychological distress, substance use, risky sexual behavior, avoidance of others, and conflict with others; (4) building emotional awareness; (5) practicing cognitive reappraisal to shift from self-blame to minority stress regarding one's psychological distress; (6) role-playing previous interactions with others that they avoided; (7) developing behavioral experiments to cope with minority stress after the intervention, and (8) reviewing this information and setting goals for oneself. In a randomized control trial with 54 young gay and bisexual men, ESTEEM was effective at reducing psychological distress, as well as several other variables, and although the intervention did not significantly reduce internalized stigma, men with higher internalized stigma had greater reductions in depression (Cohen's $d = \sim 1.00$) than men with lower levels of internalized stigma (Pachankis et al., 2015; Millar et al., 2016).

Group interventions. One example of a promising group intervention to increase resilience to sexual minority stress is Project PRIDE (Promoting Resilience in Discriminatory Environments; Smith et al., 2017). Project PRIDE was an 8-session group therapy intervention

whose focus was to increase resilience to discrimination and reduce internalized stigma by providing psychoeducation about minority stress (Brooks, 1981; Meyer, 1995) and stress and coping (Lazarus & Folkman, 1984). The group used Socratic questioning and had several mechanisms of action, including identifying triggers of substance use, creating goals regarding healthy coping strategies, and cognitive restructuring. In a pilot study with 33 gay and bisexual men aged 18 to 25 (Smith et al., 2017), from pre-treatment to post-treatment, Project PRIDE showed small-sized reductions in internalized stigma (Cohen's $d = .21$) and depression (Cohen's $d = .23$). Future PROJECT PRIDE research might benefit from exploring this intervention's efficacy with more than men in same-gender relationships.

Macro-level interventions may be effective at reducing internalized stigma by providing community and system-level changes in which those in same-gender relationships are included, protected, and supported by those around them and those in power. Given the socially driven nature of internalized stigma through experiencing discrimination from other people or systems, it stands to reason that the responsibility of "fixing" these concerns lies on the harmful systems that perpetuate discrimination and prejudice. These kinds of interventions could be systemic interventions to reach a wide-range of individuals or changes to policy or legislation.

Systemic interventions might include Public Service Announcements (PSA) similar to the anti-smoking advertisements showing former smokers who must speak with an electronic voice after esophageal cancer. As one example of a PSA around same-gender discrimination, Kalla and Broockman (2022) conducted a field experiment on television advertisements for LGBTQ+ non-discrimination. Specifically, they produced an ad in which an apparently older, White, heterosexual, married Christian couple who run a small business identify the importance of LGBTQ+ acceptance as being consistent with their faith and good for their business. Voters in

California, Colorado, Michigan, North Carolina, Tennessee, and Wisconsin were recruited by mail, assessed for prejudicial attitudes before being shown the experimental advertisement, exposed to the pro-LGBTQ+ commercial while they watched television over the span of three weeks, and then assessed for prejudicial attitudes. Voters reported lower LGBTQ+ prejudice after watching the experimental PSA.

Finally, consultation, and lobbying for legislation focused on highlighting and reducing these consequences, alongside continued executive, legislative, and judicial support of same-gender relationships might create an enduring sociocultural shift toward more support and less discrimination for those in same-gender relationships. One example of mental health professionals providing expert testimony by citing appropriate minority stress research that resulted in macro-level change for same-gender people was the test of Proposition 8, an amendment to California's constitution which banned same-gender marriage in California (described as same-sex marriage in the amendment). *Perry v. Schwarzenegger* (2010) was a case between two same-gender couples, Kristin Perry and Sandra Stier, and Paul Katami and Jeffrey Zarrillo, vs. the defendants, California's Governor Arnold Schwarzenegger, Attorney General Jerry Brown, two Department of Public Health officials, and the two clerks who denied these couples licenses. The American Psychological Association, alongside the California Psychological Association, filed an amicus brief to the court with extensive research normalizing same-gender relationships as part of human sexuality and not detrimental to children's development or mental health. The result of this case was that Proposition 8 was overturned, re-legalizing same-gender marriage in California.

Hypothesis 1: Perceived Stigma Will Be Related to Increased Psychological Distress

Contrary to hypothesis, perceived stigma was not related to psychological distress. It is possible that perceived stigma is not related to psychological distress, although this interpretation is not consistent with the majority of previous research that found a small positive relationship between perceived stigma and psychological distress (e.g., Berghe et al., 2010; Feinstein et al., 2012; Kaniuka et al., 2019; Lea et al., 2014; Lelutiu-Weinberger et al., 2013; Talley & Bettencourt, 2011, Velez et al., 2017). One possible explanation for this non-significant result could be that perceived stigma does not explain variation beyond internalized stigma. However, several of the previous studies also tested both types of stigma in analyses, including Berghe and colleagues (2010), Feinstein and colleagues (2012), and Lea and colleagues (2014), which argues against that possibility. Compared to the aforementioned studies, this study included additional control variables such as relationship duration or cohabitation, which may have accounted for the variance in psychological distress that otherwise would have been explained by perceived stigma.

Another possible explanation is that the measure of perceived stigma in this study, The Gay-Related Rejection Sensitivity Scale (GRRSS; Pachankis et al., 2008), did not assess the construct of perceived stigma in the same way as other studies. Specifically, the GRRSS is the only perceived stigma measure that has multiple vignettes and asks respondents to make attributions about others' intent (See Appendix for list of items). In contrast, other measures forgo the vignettes and ask for more global attributions, for example the sexual-orientation adapted Stigma Consciousness Questionnaire (Pinel, 1999) measures how others may generally perceive them (e.g., "Most people have a problem viewing (*X* sexual orientation) as equals"); the Stigma Scale (Meyer et al., 2006), which measures participants' global perceptions of others (e.g. "Most people think less of LGBTQ+ people"); a Gay-Related adaptation (Frost et al., 2007)

of the HIV Stigma Scale (Berger et al., 2001), which measures perceived stigma in relation to coming out/disclosing sexual orientation (e.g., "I regret having told some people my sexual orientation."), and Mohr and Kendra's (2011) Acceptance Concerns subscale from the revised Lesbian, Gay, and Bisexual Identity Scale, which measures discomfort with the idea of stigma as well as cognitive aspects of perceived stigma (e.g., "I think a lot about how my sexual orientation affects the way people see me"). These measures either ask about other people's perceptions about sexual orientation or about one's personal feelings about their sexual orientation, such as coming out to others, which might measure internalized stigma more than perceived stigma.

Based on the heterogeneity of perceived stigma measures, I suggest that a consensus on methodological approach to measuring perceived stigma should be implemented before any major conclusions about the construct can be drawn. A possibly more accurate measure of perceived sexual orientation stigma might include global perceptions of stigma like the Stigma Scale (Meyer et al., 2006), and items measuring affective, cognitive, and behavioral components of perceived stigma (e.g., "I replay interactions with others in my head to determine if they treated me differently due to my sexual orientation."). Including vignettes like the GRRSS (Pachankis et al., 2008) might have been tapping attitudes or perceptions about family life or specific people because some questions asked respondents to rate specific people's biases (e.g., at a family gathering) instead of perceptions of general stigma. A measure validity study could look at covariance between the multiple measures of perceived stigma and test whether and to what extent a latent perceived stigma variable influences item responses, and how much influence the latent variable has on vignette-based measures of perceived stigma. In addition,

cognitive interviews with respondents could also help determine if their understanding of items matched expectations of scale developers.

Hypothesis 3: Outness Will Be Related to Decreased Psychological Distress

The results did not provide evidence for the hypothesis that outness would be related to decreased psychological distress, which was not consistent with previous research (e.g., Morris et al., 2010; Riggle et al., 2017). As with perceived stigma, this non-significant finding may have been due to outness not explaining variation above internalized stigma, consistent with one study (Ballester et al., 2021) that found no associations with outness after controlling for internalized stigma. Alternatively, the absence of significant findings could have been due to differences in the measurement of outness. The outness measure in this study asked about disclosure to specific persons on the Outness Inventory (Mohr & Fassinger, 2000; see items in Appendix). Other scales were constructed to assess more general attitudes about outness or disclosure, for example, Morris and colleagues' (2010) self-created measure, which measured more general attitudes about outness (e.g., "It is important for me to 'be out' to straight people I know").

Another potential explanation for the lack of association of outness with psychological distress may be due to a conceptual shift in understanding the effects of outness, specifically that strategic outness/strategic concealment may be a better conceptualization of the construct than Meyer's (1995) original idea that disclosure was always beneficial. *Strategic* refers to how people may deliberately conceal their identities as a way of avoiding distress in specific circumstances or moments, even if they are more generally out (McLean, 2007). In situations where people are choosing to conceal their sexual orientation to avoid specific negative reactions, concealment or making decisions about coming out may be an empowering form of

decision-making about sharing personal information in the context of discrimination and broader societal oppression of people in same-gender relationships, and as such would not be related to psychological distress. McLean (2007) argued that although disclosing one's identity has typically been assumed by researchers to be a universally good thing, qualitative research with bisexual men and women suggested that they are well aware of both the positives (e.g., social support, belonging to a community) and negatives (e.g., being stereotyped as a "confused" gay or lesbian person) of coming out indiscriminately and were strategic about their disclosures to others based on context. Therefore, a single global level of outness, as assessed in this study, may not be an accurate description of this construct. Future research should examine outness and strategic disclosure in various relationship contexts to better understand its effects.

Hypothesis 4: Relationship Satisfaction Will Be Related to Decreased Psychological Distress

The results did not provide evidence for the hypothesis that relationship satisfaction would be related to decreased psychological distress, which is not consistent with previous research (Lampis et al., 2021; Totenhagen et al., 2018; Whitton & Kuryluk, 2014; Vencill et al., 2018) that found relationship satisfaction was related to psychological distress. The first potential explanation to consider is that relationship satisfaction is not related to psychological distress beyond the effects of internalized stigma for people in same sex relationships. However, arguing against this possibility, both Totenhagen and colleagues (2018) and Whitton and Kuryluk (2014) included measures of internalized stigma. Specifically, Totenhagen and colleagues (2018) included Martin and Dean's (1987) Internalized Homophobia Scale, which Herek (1998) adapted into the Internalized Homophobia Scale – Revised; Whitton and Kuryluk (2014) used Wright

and Perry's (2006) Sexual Identity Distress Scale, which, unlike the IHP-R, includes both positive and negative perceptions of one's sexual orientation.

Measurement limitations are another possible explanation for the lack of significant associations between relationship satisfaction and distress. Internal consistency reliability for the relationship satisfaction measure in this sample was low ($\alpha = .66$), much lower than the range in previous studies ($\alpha = .83$ to .94; Covington, 2021; Ho, 2019; Minten, 2017; Neilands et al., 2020; Nguyen & Pepping, 2022) with samples in same-gender relationships. This poor reliability suggests imprecision that could have limited statistical power, and the ability to detect a "true" relationship, i.e., increasing the likelihood of Type II error. Interestingly, internal consistency reliability was particularly low for those who identified as bisexual, straight, pansexual, and queer ($\alpha = .58$), compared to satisfactory reliability for gay and lesbian participants ($\alpha = .77$), so it is possible that the items do not hold together as expected for people in same-gender relationships who do not identify within a dichotomous system of sexual orientation and instead hold non-binary sexual orientations, like bisexual, pansexual, and queer. Similarly, one participant reported that they were in a polyamorous relationship, but it is unclear how polyamory or other types of open relationships affect responses to measures of relationship satisfaction. Future studies should examine how members of various, understudied groups view relationship satisfaction, and whether the items on the CSI-4 or other measures of relationship satisfaction fit their ideas about a positive relationship. Given the potential for measures to perform differently depending on participant characteristics, future research with large samples could examine three-way interactions or moderation in subgroups such as gay, lesbian, bisexual, or non-binary.

It is also possible that the poor reliability was more an artifact of using a four-item measure because internal consistency assessed with Cronbach's alpha is dependent on the number of items (Cronbach, 1951). Consistent with this idea, a few previous studies used longer measures of relationship satisfaction. For example, Lampis and colleagues (2021) used a 24-item measure, and Vencill and colleagues (2018) used a 7-item measure. On the other hand, researchers have reported significant associations using measures with fewer items, like Totenhagen and colleagues (2018), who used a one-item measure measuring satisfaction in the last 24 hours, or Whitton and Kuryluk (2014), who reported acceptable internal consistency using the 4-item CSI-4 (Funk & Rogge, 2007) with Cronbach's alpha of .84. It should be noted that the four-item measure (PHQ-4; Kroenke et al., 2009) of psychological distress (i.e., two items for depression, two items for anxiety) also had poor internal consistency reliability (α = .61) in my study. Kroenke and colleagues (2009) reported that the composite PHQ-4 was a better correlate of mental health when compared to separate two-item depression and anxiety scales. However, in future research using the PHQ-4, it could be beneficial to explore if one of the two subscales contributes primarily to lower alphas. Past studies (Lampis et al., 2021; Riggle et al., 2017) that sampled people in same-gender relationships often used longer measures of psychological distress, such as the 20-item CES-D (Radloff, 1977) and the 45-item OQ-45 (Lambert et al., 1996), and both were more reliable (α = .86 and .90, respectively). Measurement reliability/validity studies of measures with fewer items are needed for people in same-gender relationships. Although two or three studies are not dispositive and there is some evidence to continue using fewer item measures, future studies with participants in same-gender relationships should err on the side of caution and consider the use of measures of psychological distress that have more items per construct to reduce the possibility of type II errors.

Another possibility to consider is that relationship satisfaction and sexual minority stress have more complex interactions than those that were tested in this study. Of the minority stressors, internalized stigma may explain the association between relationship satisfaction and psychological distress in same-gender relationships. Specifically, being in a long-term, satisfying same-gender relationships is likely to reduce internalized stigma against same-gender relationships by providing evidence that counters negative beliefs about same-gender relationships. This idea is consistent with the proposed mechanisms of action of several interventions to reduce stigma that were described above (e.g., RISE; Israel et al., 2019; Lin & Israel, 2012; Lin et al., 2019). Future research could test this potential mediation by examining whether changes in relationship satisfaction over time are linked to internalized stigma, and subsequently psychological distress.

Clinically, it is still unclear whether focusing on relationship satisfaction, or aspects of satisfaction that were not tapped by the CSI-4 (Funk & Rogge, 2007), could be an effective strategy for managing psychological distress for clients who are in same-gender relationships. Clinicians might benefit from open exploration with each client on the role their romantic relationship may play in their psychological distress associated with minority stressors. Given the theoretical importance of relationship satisfaction in Bodenmann's (1995) stress-divorce-model and value as an outcome on its own, future research might benefit from continued investigation of same-gender couples' relationship satisfaction. That is, relationship satisfaction may not be a worthwhile focus for interventions to reduce psychological distress, but relationship satisfaction could be related to other important constructs, such as well-being or relationship conflict.

In this study, there was no evidence that relationship satisfaction served as a proxy for social support. That is, relationship satisfaction did not buffer the effect of sexual minority stress, which would have been shown by significant interactions with internalized or perceived stigma. Having no evidence for interactions between relationship satisfaction and internalized or perceived stigma is somewhat consistent with previous research, e.g., Feinstein and colleagues (2016) suggested that being in a same-gender relationship did not buffer the effects of minority stress on psychological distress, measured via anxiety, for lesbian and gay participants, while it did act as a buffer for bisexual participants. However, this is not consistent with other research by Baams and colleagues (2014), who found that being in a same-gender romantic relationship interacted with perceived stigma to reduce its effects on psychological distress, or by other researchers suggesting that social support buffered negative effects from minority stressors on psychological distress (Doty et al., 2010; Power et al., 2015; Vaux et al., 1987; Verelli et al., 2019). Future research could test whether relationship satisfaction is associated with types of dyadic social support that are themselves associated with decreased psychological distress.

These findings do not rule out other types of social support as a buffer, however. Future studies with people in same-gender relationships could examine buffering and direct effects of other types of social support assessed, such as perceived social support (e.g., Baams et al. (2014), measured by how much social support participants experienced from friends or family); closeness of relationships (e.g., Doty et al.'s (2010) sexual minority-adapted Social Support Behaviors Scale (e.g. "*X* person would comfort me, give me advice, try to cheer me up;" Vaux et al., 1987)), or Verelli and colleagues (2019), who asked participants to rate how close they felt to important people in their lives and how likely they perceived them to vote in favor of marriage equality. Another way social support has been measured in the cited literature is as perceived

connectedness to social networks, measured by Power and colleagues (2015) using Dalgard and colleagues' (1995) Family Connection and Friendship Connection scale (e.g., "How strongly do you feel attached to your close family?"). These measures, or other measures of support constructs like perceived support or closeness, might be useful to include as potential buffers in future studies of the effect of sexual minority stress on psychological distress.

It is also possible that if one examined the link between actual discriminatory events, instead of internalized stigma, and psychological distress, then relationship satisfaction might have buffering effects more similar to social support. That is, partners might be more able to provide help to counter actual discriminatory events by providing social support (Cohen, 2004) or helping their partner appraise the discrimination as being related to the other person's appraisal of one's marginalized identity rather than one's personal value (Brondolo et al., 2009). In contrast, internalized stigma, by definition, is more of a personal belief and may be difficult to buffer with provision of resources or assistance with coping. Discrimination, defined as stressful identity-related events by Meyer (1995) is more similar to a common way to conceptualize stress (or stressors) in the stress and coping literature, e.g., as measured on the Social Readjustment Rating Scale (Holmes & Rahe, 1967), which asks respondents to mark if any of the listed stressful events, such as change in social activities, occurred in the last year. Future research could test whether relationship satisfaction buffers against discrimination—that is, specific stressful events—in samples of people in same-gender relationships by measuring discrimination with a measure like Balsam and colleagues' (2013) Daily Heterosexist Experiences Questionnaire (e.g., "Being verbally harassed by strangers because you are LGBT").

There was one other surprising finding about the effects of relationships: those who lived together (cohabitating) had higher psychological distress compared to those who did not.

Although this relationship had a small, significant association throughout all steps of the regression analysis, cohabitation did not have a significant bivariate relationship with distress in the preliminary analyses. These results suggest that *suppression* may have occurred. Suppression is similar to mediation and confounding (MacKinnon et al., 2000), and means that a variable becomes a significant predictor of an outcome variable only when other variables with shared variation are in the model. More specifically, a suppressor variable can *increase* the apparent magnitude of relationships between another predictor variable (in this case, cohabitating) and the outcome (in this case, psychological distress) when added to the regression equation. Confounding is the opposite: when a confounder is added to a regression model, the magnitude of the predictor-outcome relationship is *reduced*. In this case, likely candidates to be suppressor variables may have been race/ethnicity and/or relationship duration because both of these variables were significantly related to psychological distress and were entered in the same step as cohabitation. Of these, relationship duration seems conceptually to be the most closely related to cohabitation, i.e., people in longer relationships may be more likely to move in together. Arguing against this possibility, in an exploratory regression, cohabitation was significantly but marginally (p = .049) related to psychological distress even with relationship duration removed, which suggest that there are additional variables or even a combination of variables that are leading to suppression in this case. Testing every possible combination of covariates is beyond the scope of this study, but future research could continue to examine complex interplay of relationship dynamics and psychological distress.

This result is also counter to Cohen's (2004) theories about relationships improving one's ability to cope with stressors when considering the possibility that participants who live together or are married might have had more time and practice providing social support to each other than

those in committed relationships. However, this assumes that people who are cohabitating are in positive relationships, when they may actually be experiencing more distress by being in their relationship. It is also possible that couples in same gender relationships who live together experience more discrimination and stigma from others in their neighborhood or elsewhere because they are more visibly part of a same-gender couple. It could also be that both partners experience discrimination separately and create intra-relationship stress by seeking social support from each other. Additional research is needed to determine if relationship status should remain in future explorations of minority stressors' effects on psychological distress, and/or how to accurately model meaningful relationship factors.

Limitations

The findings of this study should be interpreted in light of limitations due to the study's design elements. The following paragraphs discuss issues of inclusion and exclusivity, in data collection, and of cross-sectional, self-report data.

While similar, sexual minority stress theory and gender minority stress theory are not identical. Assuming so may contribute to the systemic invalidation and erasure of gender minorities in psychological research (Tan et al., 2019). Testa and colleagues (2015) proposed a gender minority stress framework that expands on Meyer's minority stress theory to include gender minorities and identifies gender minority stress as a product of social norms privileging cisgender people. Although I made efforts to recruit a more diverse sample than past research (e.g., Riggle et al., 2017; Talley & Bettencourt, 2011), sampling still resulted in very small numbers of people who were not White gay men (see Table 1). Using the term "same-gender relationships" in the recruiting materials rather than "same-sex," "gay," or "lesbian" relationships was an intentional choice to be more inclusive toward those who may not be in

traditionally defined “gay,” “lesbian,” or “same-sex” relationships. However, this creates its own exclusion issues for those whose sexual orientation is not necessarily associated with gender (e.g., pansexual). Currently, there is no consensus on how to group or combine gender and sexual orientation without inadvertently creating exclusion in research. To increase representation from members of relatively smaller groups in this sample (e.g., more people identified as gay than pansexual in this sample), and better understand possible demographic differences, future research should use purposive or stratified sampling techniques. For example, researchers could partner with identity-specific organizations such as the Center for Applied Transgender Studies, or the National Center for Black Equity, to recruit greater numbers of participants from groups of people who identified as transgender or Black/African American, respectively.

In this study, the relatively small numbers of participants from minoritized groups meant that analysis required condensing some demographic variables, e.g., race/ethnicity, into “other” categories. This process likely meant that variation within groups was missed and may have inadvertently contributed to the large body of past research that does not include voices of minoritized people. Further, in this study I attempted to collect data about transgender identities by asking about sex assigned at birth and current gender identity. It is possible that not including a separate question asking specifically about transgender identity reduced accuracy, as participants may have identified themselves only as men, women, or another gender. Future research should have more specific and precise measures of transgender identities to increase accuracy and validity of findings.

One way to ensure that minoritized voices are included in research is working with multiple regional teams of researchers and other stakeholders throughout the United States (or other nations) to increase generalizability of interpretations and allow for more purposeful

recruitment. For example, rather than one person identifying same-gender organizations across the nation, a more diverse group of co-investigators or community advisors would most likely allow for more diverse ideas about framing demographic or other questions to accurately capture the identities held by a range of people. This also comes with an increase in time spent surveying participants and organizations, in compensation for researchers' efforts, and in logistical issues associated with managing large teams of people.

Intersectionality is another theoretical framework related to representation of marginalized or minoritized identities, and may be understood with a question posed by Atewologun (2018): how might systemic oppression through heterosexism be compounded or attenuated by other factors like racism, transmisogyny, and other forms of discrimination held by people who hold minoritized or marginalized identities? Specifically for minority stress theory, Meyer (2010) described those in same-gender relationships with two minority identities as experiencing "double jeopardy," meaning an increased likelihood of experiencing psychological distress as a function of living within multiple, overlapping systems of oppression. Meyer (2010) also recognized the possibility that the intersection of sexual orientation and another minoritized identity could be protective due to resilience developed from prior exposure to discrimination, social/community connections, or pride in one's ethnic/racial identity or identities. Intersectional oppression and privilege muddy understanding of the relationship between discrimination, other minority stress variables, and psychological distress. This study's quantitative approach to understanding these relationships may not have been appropriate to test the multiplicity of potential interactions, given the quite large sample size required to power them. Qualitative inquiry is likely a richer, more fruitful approach to explore people's complex experiences navigating multiple social systems, and often can better represent the varied and unique

perspectives of people with smaller samples than quantitative studies. A longer-term program of quantitative research with smaller, purposive samples may also prove useful to understand intersecting systems. For example, studies of participants in same-gender relationships, specifically within a single ethnic group and controlling for possible intersecting compounding variables, like age or location, could disentangle the interactions between sexual minority stress and racial/ethnic discrimination. Or samples delimited to participants who are gender minorities in same-gender relationships could begin to counter the small number of studies that sample gender minorities in psychological research (Tan et al., 2019).

An example of the complexity of multiple identities within this study is that all the associations between demographic variables and psychological distress that were shown in the preliminary bivariate analyses were no longer significantly related to psychological distress after including minority stress variables in the hierarchical regression model. On one hand, this could be an artifact of the small numbers of participants with minoritized identities in this sample. Alternatively, these findings suggested that demographic differences in psychological distress may have been mediated by internalized stigma. This is consistent with the notion that internalized stigma is a critical variable for understanding psychological distress in people in same-gender relationships, and future studies could test this possibility with a larger, longitudinal sample. Future research may benefit from exploring how internalized stigma possibly intersects with discrimination and systems of oppression related to gender, sexuality, and/or race/ethnicity to affect psychological distress; for example, how might experiences of psychological distress differ, if at all, for those who identify as transgender and a racial/ethnic minority in a same-gender relationship, and those who identify as cisgender, straight, and are in a same-gender relationship?

There were several important issues regarding recruitment with the online survey. Many responses were flagged by Qualtrics' security measures as duplicates, fraudulent, or bots. To reduce the possibility of bots in the future, I would administer the surveys to participants who had already completed an interview, or have participants complete surveys in a lab or observed setting. Ideally, I would have redone data collection so that interview and survey data were collected in-person or through video conferencing so that I knew for certain I was interacting with a real person and could tell if they were paying attention, although it comes with increased compensation for staff and participants and increased time spent collecting data. It is important to note that 213 participants were excluded for completing the survey quicker than the established cut-off time of five minutes, based on means and timing pilot survey completion rates. Including survey options that requires responses be filled out, or double-checking that participants intended to leave questions blank, might reduce both the number of participants who skimmed and clicked through the survey and the number of participants who did not fully complete measure items. To avoid this limitation, future research could use other recruitment methods such as in-person sampling in public areas, universities, or near LGBTQ+ organizations. Using another online service, like Amazon's Mturk or Prolific, may have produced a higher rate of data retention, as well as collecting data over more than a 24-hour period before closing the survey. Based on previous experience with this same snowball email recruitment method with university and community LGBTQ+ organizations through Qualtrics (Ballester et al., 2021), data collection was expected to take two weeks. It is possible that providing the opportunity for compensation drastically increased both participation rates and fraudulent responses. Even though about 1000 university and non-university affiliated groups were contacted by email to distribute the survey to their members, it is possible that such a short

data collection window affected both the types of organizations and people who completed the survey. Due to the anonymous nature of the survey, it is unclear which organizations participants came from; a more focused, possibly participant-identifying recruiting method might be better for understanding regional, organizational, and other demographic differences. Additionally, collecting data during one week or some other specified amount of time might allow for a more organizationally diverse sample.

Interpretations of findings should be made considering several methodological limitations of cross-sectional studies. Wang and Cheng (2020) discussed pros and cons of cross-sectional studies. Although they argue that a cross-sectional design may be useful for establishing initial evidence for a theory, it comes with difficulty interpreting associations and causality due to an inability to understand how variables of interest change over time. Future longitudinal studies could determine if minority stress changed over time and how that might affect both relationship satisfaction and psychological distress, along with other important changes in relationships, such as breakup, divorce, and grief. Future research should have longitudinal data collection, such as using 3, 6, and 12-month survey follow-ups with participants to be able to make better causal inferences and reduce bias in mediation due to collecting cross-sectional data (Maxwell & Cole, 2007). I also would conduct supplementary interviews if they experienced a major life change, like a breakup, divorce, separation, or discrimination of some kind to understand the role that their partner did or did not play during stressful times or how minority stressors may have contributed to a breakup, for example.

Relatedly, interpretations should be made considering methodological limitations of self-report studies. Important limitations include honesty, participant ability for introspection, and

social desirability (Althubaiti, 2016). Valuable demographic variables that were not included in the analyses included income and comparisons between participants who were in university or non-university settings at the time of data collection. Income was not a significant predictor in an exploratory regression analysis but nevertheless may be a valuable tool for understanding the "how" of other demographic variables like age, race/ethnicity, relationship type, and relationship duration. It is unclear why 70 participants did not enter their income. The open-ended question, "What is your income?" might have been too vague; modifying it to include specifiers like, "What is your *yearly* income?" might have yielded more results. This is also evidenced by some participants who entered numbers under $10,000, suggesting that they either earned significantly below a living wage or entered a different unit of measurement. However, another possible explanation is that collecting income using a self-report measure might have led to participants misreporting or not reporting their income at all.

Conclusion

In conclusion, this study had several important lessons about study design factors, such as recruitment and measurement, for future research. The main finding from this study was that internalized stigma was the only minority stress variable that linked to psychological distress. Internalized stigma may be a critical target for psychological distress reduction by psychologists and past research suggests it may be reduced or mitigated by interventions at the individual, group, and macro-levels. These possibilities should be investigated in future clinical research.

References

Aiken, L. S., West, S. G., & Pitts, S. C. (2003). Multiple linear regression. *Handbook of psychology*, 481-507.

Al-Ajlouni, Y. A., Park, S. H., Safren, S. A., Kreski, N. T., Elbel, B., Trinidad, A., … & Duncan, D. T. (2020). High financial hardship and mental health burden among gay, bisexual and other men who have sex with men. *Journal of gay & lesbian mental health*, *24*(3), 308-321.

Almeida, J., Johnson, R. M., Corliss, H. L., Molnar, B. E., & Azrael, D. (2009). Emotional distress among LGBT youth: The influence of perceived discrimination based on sexual orientation. *Journal of Youth and Adolescence, 38*(7), 1001-1014.

Althubaiti, A. (2016). Information bias in health research: definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare*, *9*, 211.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D. *American journal of preventive medicine*, *10*(2), 77-84.

Atewologun, D. (2018). Intersectionality theory and practice. In *Oxford Research Encyclopedia of Business and Management*.

Baams, L., Bos, H. M., & Jonas, K. J. (2014). How a romantic relationship can protect same-sex attracted youth and young adults from the impact of expected rejection. *Journal of Adolescence*, *37*(8), 1293-1302.

Ballester, E., Cornish, M. A., & Hanks, M. A. (2021). Predicting Relationship Satisfaction in LGBQ+ People Using Internalized Stigma, Outness, and Concealment. *Journal of GLBT Family Studies*, 1-16.

Balsam, K. F., Beadnell, B., & Molina, Y. (2013). The Daily Heterosexist Experiences Questionnaire: Measuring minority stress among lesbian, gay, bisexual, and transgender adults. *Measurement and Evaluation in Counseling and Development, 46*, 3-25.

Balsam, K. F., Beauchaine, T. P., Rothblum, E. D., & Solomon, S. E. (2008). Three-year follow-up of same-sex couples who had civil unions in Vermont, same-sex couples not in civil unions, and heterosexual married couples. *Developmental Psychology*, *44*(1), 102.

Balsam, K. F., & Szymanski, D. M. (2005). Relationship quality and domestic violence in women's same-sex relationships: The role of minority stress. *Psychology of Women Quarterly*, *29*(3), 258-269.

Barlow, D. H., Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Allen, L. B., & May, J. T. E. (2010). *Unified protocol for transdiagnostic treatment of emotional disorders: Therapist guide*. Oxford University Press.

Berger, B. E., Ferrans, C. E., & Lashley, F. R. (2001). Measuring stigma in people with HIV: Psychometric assessment of the HIV stigma scale¶. *Research in nursing & health*, *24*(6), 518-529.

Berghe, W. V., Dewaele, A., Cox, N., & Vincke, J. (2010). Minority-specific determinants of mental well-being among lesbian, gay, and bisexual youth. *Journal of Applied Social Psychology*, *40*(1), 153-166.

Bodenmann, G. (1995). A systemic-transactional conceptualization of stress and coping in couples. *Swiss Journal of Psychology/Schweizerische Zeitschrift für Psychologie/Revue Suisse de Psychologie*.

Bosson, J. K., Weaver, J. R., & Prewitt-Freilino, J. L. (2012). Concealing to belong, revealing to be known: Classification expectations and self-threats among persons with concealable stigmas. *Self and Identity*, *11*(1), 114-135.

Braiker, H. B., & Kelley, H. H. (1979). Conflict in the development of close relationships. *Social exchange in developing relationships*, *135*, 168.

Brondolo, E., Brady ver Halen, N., Pencille, M., Beatty, D., & Contrada, R. J. (2009). Coping with racism: A selective review of the literature and a theoretical and methodological critique. *Journal of behavioral medicine*, *32*, 64-88.

Brooks, V. R. (1981). *Minority stress and lesbian women*. Free Press.

Brown, A. (2017). 5 Key Findings About Americans. *Pew Research Center*.

Burton, C. L., Wang, K., & Pachankis, J. E. (2019). Psychotherapy for the spectrum of sexual minority stress: Application and technique of the ESTEEM treatment model. *Cognitive and Behavioral Practice*, *26*(2), 285-299.

Butler J (1990). Gender Trouble: Feminism and the Subversion of Identity. New York: Routledge.

Cao, H., Zhou, N., Fine, M., Liang, Y., Li, J., & Mills-Koonce, W. R. (2017). Sexual minority stress and same-sex relationship well-being: A meta-analysis of research prior to the U.S. Nationwide legalization of same-sex marriage. *Journal of Marriage and Family*, *79*(5), 1258-1277.

Carlton, S. (2021). *Internalized Stigmatization and Rejection Sensitivity as Mediators of the Link Between Self-Monitoring and Transgender Identity Concealment*. University of North Florida.

Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual review of psychology*, *61*, 679-704.

Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. Routledge.

Cohen, S. (2004). Social relationships and health. *American psychologist*, *59*(8), 676.

Cohen, S. E., & Syme, S. I. (1985). *Social support and health*. Academic Press.

Costa, P. A., Almeida, R., Anselmo, C., Ferreira, A., Pereira, H., & Leal, I. (2014). University students' attitudes toward same-sex parenting and gay and lesbian rights in Portugal. *Journal of Homosexuality, 61*(12), 1667-1686.

Covington Jr, M. C. (2021). *Perceived Parental Rejection, Romantic Attachment Orientations, Levels of "Outness", and the Relationship Quality of Gay Men in Relationships* (Doctoral dissertation, The George Washington University).

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, *16*(3), 297-334.

Dalgard, O. S., Bj, S., & Tambs, K. (1995). Social support, negative life events and mental health. *The British Journal of Psychiatry*, *166*(1), 29-34.

Davis, K. B. (1929). Factors in the sex life of twenty-two hundred women. New York: Harpers.

Derogatis, L. R., & Spencer, P. M. (1982). Administration and procedures: BSI manual I. *Baltimore: Clinical Psychometric Research*.Dodge, B., Sandfort, T. G., & Firestein, B. (2007). A review of mental health research on bisexual individuals when compared to

homosexual and heterosexual individuals. *Becoming visible: Counseling bisexuals across the lifespan*, 28-51.

Doty, N. D., Willoughby, B. L., Lindahl, K. M., & Malik, N. M. (2010). Sexuality related social support among lesbian, gay, and bisexual youth. *Journal of Youth and Adolescence*, *39*(10), 1134-1147.

Doyle, D. M., & Molix, L. (2015). Social stigma and sexual minorities' romantic relationship functioning: A meta-analytic review. *Personality and Social Psychology Bulletin*, *41*(10), 1363-1381.

Doyle, D. M., & Molix, L. (2021). Reconciling associations between minority stress and sexual minority romantic relationship functioning. *Frontiers in Psychology*, *12*.

Fagan, P. F., & Rector, R. (2000). The effects of divorce on America. *World and I*, *15*(10), 56-61.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, *41*(4), 1149-1160.

Feinstein, B. A., Goldfried, M. R., & Davila, J. (2012). The relationship between experiences of discrimination and mental health among lesbians and gay men: An examination of internalized homonegativity and rejection sensitivity as potential mechanisms. *Journal of consulting and clinical psychology*, *80*(5), 917.

Feinstein, B. A., Latack, J. A., Bhatia, V., Davila, J., & Eaton, N. R. (2016). Romantic relationship involvement as a minority stress buffer in gay/lesbian versus bisexual individuals. *Journal of Gay & Lesbian Mental Health*, *20*(3), 237-257.

Fincham, F. D. (2001). Attributions and close relationships: From balkanization to integration. In G. J. Fletcher & M. Clark (Eds.), *Blackwell handbook of social psychology*. (pp. 3–31). Oxford, England: Blackwell.

Fincham, F. D., & Beach, S. R. (1999). Conflict in marriage: Implications for working with couples. *Annual review of psychology*, *50*(1), 47-77.

Fincham, F. D., & Beach, S. R. (2006). Relationship satisfaction. *The Cambridge Handbook of Personal Relationships*, *2*.

Fincham, F. D., Rogge, R., & Beach, S. R. H. (2018). Relationship satisfaction. Dalam AL Vangelisti & D. Perlman (Eds.), The Cambridge handbook of personal relationships (hlm. 422–436).

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of health and social behavior*, 219-239.

Frost, D. M., Parsons, J. T., & Nanín, J. E. (2007). Stigma, concealment and symptoms of depression as explanations for sexually transmitted infections among gay men. *Journal of health psychology*, *12*(4), 636-640.

Funk, J. L., & Rogge, R. D. (2007). Testing the ruler with item response theory: increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of family psychology*, *21*(4), 572.

Garson, G. D. (2017). Mediation & moderation: Partial correlation and regression approaches. *G. David Garson and Statistical Associates Publishing ISBN*, 978-1.

Georgetown Law Library (n.d.) *A Timeline of the Legalization of Same-Sex Marriage in the U.S.* Retrieved April 18, 2021, from https://guides.ll.georgetown.edu/c.php?g=592919&p=4182201

Gladding, S. T. (2014). *Family therapy: History, theory, and practice*. Pearson Higher Ed.

Goffman, E. (2009). *Stigma: Notes on the management of spoiled identity*. Simon and Schuster.

Goldberg, A. E., & Smith, J. Z. (2011). Stigma, social context, and mental health: lesbian and gay couples across the transition to adoptive parenthood. *Journal of counseling psychology*, *58*(1), 139.

Gottman, J. M., & Notarius, C. I. (2000). Decade review: Observing marital interaction. Journal of Marriage and the Family, 62 , 927–947.

Graham, J. W., Cumsille, P. E., & Shevock, A. E. (2013). Methods for handling missing data.

Green, D. E., Walkey, F. H., McCormick, I. A., & Taylor, A. J. (1988). Development and evaluation of a 21-item version of the Hopkins Symptom Checklist with New Zealand and United States respondents. *Australian Journal of Psychology*, *40*(1), 61-70.

Hamilton, G. V. (1948). A research on marriage. Lear.

Harrell, S. P. (2000). A multidimensional conceptualization of racism-related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry*, *70*(1), 42-57.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British journal of clinical psychology*, *44*(2), 227-239.

Herek, G. (2004). Beyond 'Homophobia': Thinking about Sexual Stigma and Prejudice in the Twenty-first Century. *Sexuality Research and Social Policy, 1*, 6-24.

Herek, G. (2007). Confronting Sexual Stigma and Prejudice: Theory and Practice. *Journal of Social Issues, 63*, 905-25.

Herek, G. M., Cogan, J. C., Gillis, J. R., & Glunt, E. K. (1998). Correlates of internalized homophobia in a community sample of lesbians and gay men. *Journal of the Gay and Lesbian Medical Association, 2*, 17-25.

Herek, G. M., & Glunt, E. K. (1995). Identity and community among gay and bisexual men in the AIDS era. *AIDS, identity, and community: The HIV epidemic and lesbians and gay men*, *2*, 55.

Ho, L. Y. (2019). Gender roles, sexual assertiveness, and sexual coercion in LGBTQ individuals [unpublished master's thesis]. University of Mississippi.

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of psychosomatic research*, *11*(2), 213-218.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: a meta-analytic review. *PloS medicine*, *7*(7), e1000316.

Huppert, F. A., Marks, N., Clark, A., Siegrist, J., Stutzer, A., Vittersø, J., & Wahrendorf, M. (2009). Measuring well-being across Europe: Description of the ESS well-being module and preliminary findings. *Social Indicators Research*, *91*(3), 301-315.

Israel, T., Choi, A. Y., Goodman, J. A., Matsuno, E., Lin, Y. J., Kary, K. G., & Merrill, C. R. (2019). Reducing internalized binegativity: Development and efficacy of an online intervention. *Psychology of Sexual Orientation and Gender Diversity*, *6*(2), 149.

Jacobson, N. S. (1985). The role of observation measures in marital therapy outcome research. Behavioral Assessment, 7, 287–308.

Kalla, J. L., & Broockman, D. E. (2022). "outside lobbying" over the airwaves: A randomized field experiment on televised issue ads. *American Political Science Review*, *116*(3), 1126-1132.

Kaniuka, A., Pugh, K. C., Jordan, M., Brooks, B., Dodd, J., Mann, A. K., ... & Hirsch, J. K. (2019). Stigma and suicide risk among the LGBTQ population: Are anxiety and depression to blame and can connectedness to the LGBTQ community help? *Journal of Gay & Lesbian Mental Health, 23(2), 205-220*.

Kelly, A., Fincham, F. D., & Beach, S. R. H. (2003). Emerging perspectives on couple communication. In J. O. Greene & B. R. Burleson (Eds.), Handbook of communication and social interaction skills (pp. 723–752). Erlbaum.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., . . . Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. Psychological Medicine, 32, 959–976.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of general internal medicine*, *16*(9), 606-613.

Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: the PHQ–4. *Psychosomatics*, *50*(6), 613-621.

Kurdek, L. A. (1998). Relationship outcomes and their predictors: Longitudinal evidence from heterosexual married, gay cohabiting, and lesbian cohabiting couples. *Journal of Marriage and the Family*, 553-568.

Lambert, M. J., Burlingame, G. M., Umphress, V., Hansen, N. B., Vermeersch, D. A., Clouse, G. C., & Yanchar, S. C. (1996). The reliability and validity of the Outcome Questionnaire. *Clinical Psychology & Psychotherapy: An International Journal of Theory and Practice*, *3*(4), 249-258.

Lampis, J., De Simone, S., & Belous, C. K. (2021). Relationship satisfaction, social support, and psychological well-being in a sample of Italian lesbian and gay individuals. *Journal of GLBT Family Studies*, *17*(1), 49-62.

Lazarus, R. S. (1966). *Psychological Stress and the Coping Process*. New York: McGraw-Hill

Lazarus, R. S. (1991). *Emotion and Adaptation*. Oxford University Press.

Lazarus, R. S. (1999). *Stress and Emotion*: A New Synthesis. New York: Springer

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

Lea, T., de Wit, J., & Reynolds, R. (2014). Minority stress in lesbian, gay, and bisexual young adults in Australia: Associations with psychological distress, suicidality, and substance use. *Archives of sexual behavior*, *43*, 1571-1578.

Lehavot, K., & Simoni, J. M. (2011). The impact of minority stress on mental health and substance use among sexual minority women. *Journal of consulting and clinical psychology*, *79*(2), 159.

Lelutiu-Weinberger, C., Pachankis, J. E., Golub, S. A., Ja'Nina, J. W., Bamonte, A. J., & Parsons, J. T. (2013). Age cohort differences in the effects of gay-related stigma, anxiety and identification with the gay community on sexual risk and substance use. *AIDS and Behavior*, *17*(1), 340-349.

Lewis, R. J., Derlega, V. J., Clarke, E. G., Kuang, J. C., Jacobs, A. M., & McElligott, M. D. (2005). An expressive writing intervention to cope with lesbian-related stress: The moderating effects of openness about sexual orientation. *Psychology of Women Quarterly*, *29*(2), 149-157.

Lin, Y. J., & Israel, T. (2012). A computer-based intervention to reduce internalized heterosexism in men. Journal of Counseling Psychology, 59(3), 458–464. doi:10.1037/a0028282

Lin, Y. J., Israel, T., & Ryan, W. S. (2019). Releasing internalized stigma for empowerment: Development of theory-driven interventions for sexual and gender minorities. *Journal of LGBT Issues in Counseling*, *13*(4), 276-292.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour research and therapy*, *33*(3), 335-343.

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention science*, *1*(4), 173-181.

Martin, J. L., & Dean, L. L. (1988). The impact of AIDS on gay men: A research instrument, 1988. Unpublished technical report. New York: Columbia University.

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological methods*, *12*(1), 23.

Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*, *91*(11), 1869-1876.

McLean, K. (2007). Hiding in the closet? Bisexuals, coming out and the disclosure imperative. *Journal of Sociology*, *43*(2), 151-166.

Meidlinger, P. C., & Hope, D. A. (2014). Differentiating disclosure and concealment in measurement of outness for sexual minorities: The Nebraska Outness Scale. *Psychology of Sexual Orientation and Gender Diversity*, *1*(4), 489.

Metz, M. E., Rosser, B. S., & Strapko, N. (1994). Differences in conflict-resolution styles among heterosexual, gay, and lesbian couples. *Journal of Sex Research*, *31*(4), 293-308.

Meuwly, N., & Randall, A. K. (2019). Relationships, gender, and sexual orientation. *New directions in the psychology of close relationships*, 100.

Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, 38-56.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological bulletin*, *129*(5), 674.

Meyer, I. H., & Dean, L. (1998). Internalized homophobia, intimacy, and sexual behavior among gay and bisexual men. *Psychological Perspectives on Lesbian and Gay Issues*, *4*, 160-186.

Meyer, I. H., Frost, D. M., Narvaez, R., & Dietrich, J. H. (2006). Project Stride methodology and technical notes. *Unpublished manuscript*.

Meyer, I. H. (2010). Identity, stress, and resilience in lesbians, gay men, and bisexuals of color. *The counseling psychologist*, *38*(3), 442-454.

Millar, B. M., Wang, K., & Pachankis, J. E. (2016). The moderating role of internalized homonegativity on the efficacy of LGB-affirmative psychotherapy: Results from a randomized controlled trial with young adult gay and bisexual men. *Journal of Consulting and Clinical Psychology*, *84*(7), 565.

Minten, M. J., (2017). The impact of relationship wellness checkups on LGBTQ couples. [unpublished doctoral dissertation]. Oregon State University.

Minten, M., & Dykeman, C. (2020). The impact of relationship wellness checkups with gay male couples. *Journal of Counseling Sexology & Sexual Wellness: Research, Practice, and Education*, *2*(1), 4.

Mohr, J., & Fassinger, R. E. (2000). Measuring dimensions of lesbian and gay male experience. *Measurement and Evaluation in Counseling and Development*, *33*(2), 66-66.

Mohr, J. J., & Fassinger, R. E. (2006). Sexual orientation identity and romantic relationship quality in same-sex couples. *Personality and Social Psychology Bulletin*, *32*(8), 1085-1099.

Mohr, J. J., & Kendra, M. S. (2011). Revision and extension of a multidimensional measure of sexual minority identity: the Lesbian, Gay, and Bisexual Identity Scale. *Journal of counseling psychology*, *58*(2), 234.

Montoya, A. K. (2016). *Extending the Johnson-Neyman procedure to categorical independent variables: Mathematical derivations and computational tools* (Doctoral dissertation, The Ohio State University).

Moradi, B., Wiseman, M. C., DeBlaere, C., Goodman, M. B., Sarkees, A., Brewster, M. E., & Huang, Y. P. (2010). LGB of color and white individuals' perceptions of heterosexist stigma, internalized homophobia, and outness: Comparisons of levels and links. *The Counseling Psychologist*, *38*(3), 397-424.

Morandini, J. S., Pinkus, R. T., & Dar-Nimrod, I. (2018). Does partner gender influence relationship quality among non-monosexual women? *Sexual and Relationship Therapy*, *33*(1-2), 146-165.

Morris, J. F., Waldo, C. R., & Rothblum, E. D. (2001). A model of predictors and outcomes of outness among lesbian and bisexual women. *American Journal of Orthopsychiatry*, *71*(1), 61-71.

Nakamura, N., Dispenza, F., Abreu, R. L., Ollen, E. W., Pantalone, D. W., Canillas, G., Gormley, B., & Vencill, J. A. (2022). The APA Guidelines for Psychological Practice With Sexual Minority Persons: An executive summary of the 2021 revision. *American Psychologist.* Advance online publication. https://doi.org/10.1037/amp0000939

Neilands, T. B., LeBlanc, A. J., Frost, D. M., Bowen, K., Sullivan, P. S., Hoff, C. C., & Chang, J. (2020). Measuring a new stress domain: Validation of the couple-level minority stress scale. *Archives of Sexual Behavior*, *49*(1), 249-265.

Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. *Clinical Psychology Review*, *30*(8), 1019-1029.

Newport, F. (2018, May 22). *In U.S., estimate of LGBT population rises to 4.5%.* https://news.gallup.com/poll/234863/estimate-lgbt-population-rises.aspx.

Nguyen, J., & Pepping, C. A. (2022). Prospective effects of internalized stigma on same-sex relationship satisfaction: The mediating role of depressive symptoms and couple conflict. *Journal of Consulting and Clinical Psychology*, *90*(2), 184.

Obergefell v. Hodges, 14-556 (2015). https://www.supremecourt.gov/opinions/14pdf/14-556_3204.pdf

Ogolsky, B. G., Monk, J. K., Rice, T. M., & Oswald, R. F. (2019). As the states turned: Implications of the changing legal context of same-sex marriage on well-being. *Journal of Social and Personal Relationships*, *36*(10), 3219-3238.

Pachankis, J. E. (2014). Uncovering clinical principles and techniques to address minority stress, mental health, and related health risks among gay and bisexual men. *Clinical Psychology: Science and Practice*, *21*(4), 313.

Pachankis, J. E., & Bränström, R. (2018). Hidden from happiness: Structural stigma, sexual orientation concealment, and life satisfaction across 28 countries. *Journal of Consulting and Clinical Psychology*, *86*(5), 403.

Pachankis, J. E., Goldfried, M. R., & Ramrattan, M. E. (2008). Extension of the rejection sensitivity construct to the interpersonal functioning of gay men. *Journal of consulting and clinical psychology*, *76*(2), 306.

Pachankis, J. E., Hatzenbuehler, M. L., Rendina, H. J., Safren, S. A., & Parsons, J. T. (2015). LGB-affirmative cognitive-behavioral therapy for young adult gay and bisexual men: A randomized controlled trial of a transdiagnostic minority stress approach. *Journal of consulting and clinical psychology*, *83*(5), 875.

Pearlin, L. I. (1999). The stress process revisited. In *Handbook of the sociology of mental health* (pp. 395-415). Springer, Boston, MA.

Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social behavior*, 337-356.

Peplau, L. A., & Fingerhut, A. W. (2007). The close relationships of lesbians and gay men. Annual Review of Psychology, 58, 405–424.

Perry v. Schwarzenegger, 704 F. Supp. 2d 921 (N.D. Cal. 2010).

Pinel, E. C. (1999). Stigma consciousness: the psychological legacy of social stereotypes. *Journal of personality and social psychology*, *76*(1), 114.

Potoczniak, M. J., Murot, J. E., Crosbie-Burnett, M., & Potoczniak, D. J. (2003). Legal and psychological perspectives on same-sex domestic violence: A multisystemic approach. *Journal of Family Psychology*, *17*(2), 252.

Power, J., Schofield, M. J., Farchione, D., Perlesz, A., McNair, R., Brown, R., Pitts, M., & Bickerdike, A. (2015). Psychological wellbeing among same-sex attracted and heterosexual parents: Role of connectedness to family and friendship networks. *Australian and New Zealand journal of family therapy*, *36*(3), 380-394.

Proulx, C. M., Helms, H. M., & Buehler, C. (2007). Marital quality and personal well-being: A meta-analysis. *Journal of Marriage and family*, *69*(3), 576-593.

Qualtrics. (2022). *Fraud Detection*. https://www.qualtrics.com/support/survey-platform/survey-module/survey-checker/fraud-detection/

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied psychological measurement*, *1*(3), 385-401.

Ragins, B. R. (2008). Disclosure Disconnects: Antecedents and Consequences of Disclosing Invisible Stigmas across Life Domains. *Academy of Management Review, 33*(1), 194–215. 10.5465/AMR.2008.27752724

Raj, A., Johns, N. E., Barker, K. M., & Silverman, J. G. (2020). Time from COVID-19 shutdown, gender-based violence exposure, and mental health outcomes among a state representative sample of California residents. *EclinicalMedicine*, *26*, 100520.

Randall, A. K., & Bodenmann, G. (2017). Stress and its associations with relationship satisfaction. *Current opinion in psychology*, *13*, 96-106.

Reynolds, C. R., & Kamphaus, R. W. (2004). Behaviour assessment system for children. Circle Pines, MN: American Guidance Service.

Rich, A. J., Salway, T., Scheim, A., & Poteat, T. (2020). Sexual minority stress theory: Remembering and honoring the work of Virginia Brooks. *LGBT health*, *7*(3), 124-127.

Riggle, E. D. B., Rostosky, S. S., Black, W. W., & Rosenkrantz, D. E. (2017). Outness, concealment, and authenticity: Associations with LGB individuals' psychological distress and well-being. *Psychology of Sexual Orientation and Gender Diversity*, *4*(1), 54.

Riggle, E. D. B., Whitman, J. S., Olson, A., Rostosky, S. S., & Strong, S. (2008). The Positive Aspects of Being a Lesbian or Gay Man. *Professional Psychology: Research & Practice, 39*(2), 210–217. 10.1037/0735-7028.39.2.210

Rostosky, S. S., & Riggle, E. D. (2011). Marriage equality for same-sex couples: Counseling psychologists as social change agents. *The Counseling Psychologist*, *39*(7), 956-972.

Rostosky, S. S., & Riggle, E. D. (2017). Same-sex couple relationship strengths: A review and synthesis of the empirical literature (2000–2016). *Psychology of Sexual Orientation and Gender Diversity, 4*(1), 1.

Selye, H. (1956). What is stress. *Metabolism*, *5*(5), 525-530.

Selye, H. (1975). Stress and distress. *Comprehensive therapy*, *1*(8), 9-13.

Selye, H., Goldberger, L., & Breznitz, S. (1982). Handbook of stress: Theoretical and clinical aspects.

Smith, N. G., Hart, T. A., Kidwai, A., Vernon, J. R., Blais, M., & Adam, B. (2017). Results of a pilot study to ameliorate psychological and behavioral outcomes of minority stress among young gay and bisexual men. *Behavior therapy*, *48*(5), 664-677.

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). Consulting Psychologists Press; Palo Alto, CA: 1983. *Manual for the state-trait anxiety inventory.*

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*, *166*(10), 1092-1097.

Stewart, A. L., Hays, R. D., & Ware Jr, J. E. (1988). The MOS short-form general health survey: reliability and validity in a patient population. *Medical care*, 724-735.

Strunk, K. (2017, April 13). *Path Analysis* [PowerPoint slides]. Canvas at Auburn University. https://auburn.instructure.com/login/ldap

Strunk, K. K., & Mwavita, M. (2021). *Design and Analysis in Educational Research Using Jamovi: ANOVA Designs*. Routledge.

Talley, A. E., & Bettencourt, B. A. (2011). The moderator roles of coping style and identity disclosure in the relationship between perceived sexual stigma and psychological distress. *Journal of Applied Social Psychology*, *41*(12), 2883-2903.

Tan, K. K., Treharne, G. J., Ellis, S. J., Schmidt, J. M., & Veale, J. F. (2019). Gender minority stress: A critical review. *Journal of homosexuality*.

Terman, L. M., Buttenweiser, P., Ferguson, L. W., Johnson, W. B., & Wilson, D. P. (1938). Psychological factors in marital happiness. McGraw-Hill.

Testa, R. J., Habarth, J., Peta, J., Balsam, K., & Bockting, W. (2015). Development of the gender minority stress and resilience measure. *Psychology of Sexual Orientation and Gender Diversity*, *2*(1), 65.

Thies, K. E., Starks, T. J., Denmark, F. L., & Rosenthal, L. (2016). Internalized homonegativity and relationship quality in same-sex romantic couples: A test of mental health mechanisms and gender as a moderator. *Psychology of Sexual Orientation and Gender Diversity*, *3*(3), 325.

Thode, H. C. (2002). *Testing for normality*. CRC press.

Till, B., Tran, U. S., & Niederkrotenthaler, T. (2016). Relationship satisfaction and risk factors for suicide. *Crisis*.

Timmins, L., Rimes, K. A., & Rahman, Q. (2020). Minority stressors, rumination, and psychological distress in lesbian, gay, and bisexual individuals. *Archives of sexual behavior*, *49*(2), 661-680.

Todosijevic, J., Rothblum, E. D., & Solomon, S. E. (2005). Relationship satisfaction, affectivity, and gay-specific stressors in same-sex couples joined in civil unions. *Psychology of Women Quarterly*, *29*(2), 158-166.

Totenhagen, C. J., Randall, A. K., & Lloyd, K. (2018). Stress and Relationship Functioning in Same-Sex Couples: The Vulnerabilities of Internalized Homophobia and Outness. *Family Relations*, *67*(3), 399-413.

Vaux, A., Riedel, S., & Stewart, D. (1987). Modes of social support: The social support behaviors (SS-B) scale. *American Journal of Community Psychology*, *15*(2), 209-232.

Velez, B. L., Watson, L. B., Cox Jr, R., & Flores, M. J. (2017). Minority stress and racial or ethnic minority status: A test of the greater risk perspective. *Psychology of sexual orientation and gender diversity*, *4*(3), 257.

Vencill, J. A., Carlson, S., Iantaffi, A., & Miner, M. (2018). Mental health, relationships, and sex: Exploring patterns among bisexual individuals in mixed orientation relationships. *Sexual and Relationship Therapy*, *33*(1-2), 14-33.

Veroff, J., Douvan, E., Kulka, R. A., & Douvan, E. (1981). *The Inner American: A Self Portrait from 1957 to 1976*. Basic Books.

Verrelli, S., White, F. A., Harvey, L. J., & Pulciani, M. R. (2019). Minority stress, social support, and the mental health of lesbian, gay, and bisexual Australians during the Australian Marriage Law Postal Survey. *Australian Psychologist*, *54*(4), 336-346.

Wang, K., & Pachankis, J. E. (2016). Gay-related rejection sensitivity as a risk factor for condomless sex. *AIDS and Behavior*, *20*, 763-767.

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. *CHEST*, *158*(1), S65-S71.

Weiss, R. L., & Heyman, R. E. (1997). A clinical research overview of couple interactions. In W. K. Halford & H. J. Markman (Eds.), The clinical handbook of marriage and couples interventions (pp. 13–42). Wiley

Whitton, S. W., & Kuryluk, A. D. (2014). Associations between relationship quality and depressive symptoms in same-sex couples. *Journal of Family Psychology*, *28*(4), 571.

Whitton, S. W., Dyar, C., Newcomb, M. E., & Mustanski, B. (2018). Romantic involvement: A protective factor for psychological health in racially-diverse young sexual minorities. *Journal of abnormal psychology*, *127*(3), 265.

Wright, E. R., & Perry, B. L. (2006). Sexual identity distress, social support, and the health of gay, lesbian, and bisexual youth. *Journal of homosexuality*, *51*(1), 81-110.

Appendices

Demographic Survey

1. Are you 18 years or older? (Y/N)

Skip To: End of Survey If Q1 = No

2. What is your age?

Skip To: End of Survey If Condition: What is your age? Is Less Than 18. Skip To: End of Survey.

3. Are you currently in a romantic relationship with someone who has the same gender identity that you have? (Y/N)

Skip To: End of Survey If Q10 = No

4. What sex were you assigned at birth, on your original birth certificate? (male, female, intersex)
5. How do you describe yourself? Select all that apply. (man, woman, transgender, gender queer, gender non-conforming, different identity [text])
6. What is your relationship status? (in a committed relationship, cohabitating, married, other [text])
7. Do you think of yourself as: (asexual, bisexual, gay, lesbian, pansexual, queer, straight, questioning, different identity [text])

GRRSS

GRS Please read the following descriptions of situations and answer the two questions that follow each one. Imagine each situation as vividly as you can, as if you were actually there.

How concerned or anxious would you be (item text) because of your sexual orientation? How likely is it (item text) because of your sexual orientation?

1 *very unconcerned/very unlikely* to 6 *very concerned/very likely*

1. You bring a partner to a family reunion. Two of your old-fashioned aunts don't come talk to you even though they see you.

2. A 3-year old child of a distant relative is crawling on your lap. Their mom comes to take them away.

3. You've been dating someone for a few years now, and you receive a wedding invitation to a straight friend's wedding. The invite was addressed only to you, not you and a guest.

4. You go to a job interview and the interviewer asks if you are married. You say that you and your partner have been together for 5 years. You later find out that you don't get the job.

5. You are going to have surgery, and the doctor tells you that they would like to give you an HIV test.

6. You go to donate blood and the person who is supposed to draw your blood turns to their co-worker and says, "Why don't you take this one?"

7. You bring a person you are dating to a fancy restaurant of straight patrons, and you are seated away from everyone else in a back corner of the restaurant.

8. Only you and a group of macho men are on a subway train late at night. They look in your direction and laugh.

9. You and your partner are on a road trip and decide to check into a hotel in a rural town. The sign out front says there are vacancies. The two of you go inside, and the person at the front desk says that there are no rooms left.

10. You go to a party and you and your partner are the only ${Q20/ChoiceGroup/SelectedChoicesTextEntry} people there. No one seems interested in talking to you.

11. You are in a locker room in a straight gym. One person nearby moves to another area to change clothes.

12. Your colleagues are celebrating a co-worker's birthday at a restaurant. You are not invited.

From Pachankis (2008).

IHP-R

I have tried to stop being attracted to men in general.

If someone offered me the chance to be completely heterosexual, I would accept the chance.

I wish I weren't gay.

I feel that being gay is a personal shortcoming for me.

I would like to get professional help in order to change my sexual orientation from gay to straight.

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly Agree (5)
	○	○	○	○	○

From Herek and colleagues (1998).

Outness Inventory

OUTNESS INVENTORY

Use the following rating scale to indicate how open you are about your sexual orientation to the people listed below. Try to respond to all of the items, but leave items blank if they do not apply to you. If an item refers to a group of people (e.g., work peers), then indicate how out you generally are to that group.

1 = person definitely does NOT know about your sexual orientation status
2 = person might know about your sexual orientation status, but it is NEVER talked about
3 = person probably knows about your sexual orientation status, but it is NEVER talked about
4 = person probably knows about your sexual orientation status, but it is RARELY talked about
5 = person definitely knows about your sexual orientation status, but it is RARELY talked about
6 = person definitely knows about your sexual orientation status, and it is SOMETIMES talked about
7 = person definitely knows about your sexual orientation status, and it is OPENLY talked about

0 = not applicable to your situation; there is no such person or group of people in your life

1. mother	1	2	3	4	5	6	7	0
2. father	1	2	3	4	5	6	7	0
3. siblings (sisters, brothers)	1	2	3	4	5	6	7	0
4. extended family/relatives	1	2	3	4	5	6	7	0
5. my new straight friends	1	2	3	4	5	6	7	0
6. my work peers	1	2	3	4	5	6	7	0
7. my work supervisor(s)	1	2	3	4	5	6	7	0
8. members of my religious community (e.g., church, temple)	1	2	3	4	5	6	7	0
9. leaders of my religious community (e.g., church, temple)	1	2	3	4	5	6	7	0
10. strangers, new acquaintances	1	2	3	4	5	6	7	0
11. my old heterosexual friends	1	2	3	4	5	6	7	0

From Mohr and Fassinger (2000).

CSI-4

1. Please indicate the degree of happiness, all things considered, of your relationship.

Extremely Unhappy	Fairly Unhappy	A Little Unhappy	Happy	Very Happy	Extremely Happy	Perfect
0	1	2	3	4	5	6

	Not at all True	A little True	Somewhat True	Mostly True	Almost Completely True	Completely True
12. I have a warm and comfortable relationship with my partner	0	1	2	3	4	5

	Not at all	A little	Somewhat	Mostly	Almost Completely	Completely
19. How rewarding is your relationship with your partner?	0	1	2	3	4	5
22. In general, how satisfied are you with your relationship?	0	1	2	3	4	5

From Funk and Rogge (2007).

PHQ-4

APPENDIX 1. The Four-Item Patient Health Questionnaire (PHQ–4) for Anxiety and Depression

Over the *last 2 weeks,* how often have you been bothered by the following problems?	**Not at All**	**Several Days**	**More Than Half the Days**	**Nearly Every Day**
Feeling nervous, anxious, or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Feeling down, depressed, or hopeless	0	1	2	3
Little interest or pleasure in doing things	0	1	2	3

From Kroenke and colleagues (2009).