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A sexual minority is someone who identifies as lesbian, gay or bisexual (LGB). According to the Minority Stress Model (Meyer, 2003), sexual minorities encounter significant levels of stress due to their minority group status, thus they are more likely to experience perceived stress. Our cross-sectional, correlational study aimed to explore the relationships between forgiveness, mindfulness and anger and how they are related to perceived stress in a convenience sample of ethnically diverse LGB adults. We hypothesized that: 1) anger is positively associated with perceived stress; 2) forgiveness is negatively associated with perceived stress; 3) mindfulness is negatively associated with perceived stress; and 4) anger, forgiveness and mindfulness account for a significant proportion of the variance in perceived stress. 5) The relationship between anger and perceived stress is moderated by forgiveness. 6) The relationship between anger and perceived stress is moderated by mindfulness. Among LGB adults, the extant literature does not address these four variables in conjunction and the relationships between anger, forgiveness, mindfulness and stress has yet to be explored. Various statistical analyses were conducted, including a hierarchical linear regression to test our model. We found that our overall model accounted for 36% of the total variance in perceived stress ($F(5, 142) = 17.31, p < .01$) with anger ($\beta = .31, t = 3.55, p = .001$) and forgiveness ($\beta = -.21, t = -2.56, p < .05$) as the significant predictors. Contrary to prediction, forgiveness and mindfulness did not moderate the relationship between anger and perceived stress in our LGB sample. Limitations, strengths, future research and implications are discussed.
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By

Matthew Robert Schumacher
Acknowledgements

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CHAPTER 1
INTRODUCTION

The discrimination and prejudice that lesbians, gay men and bisexuals experience, place them at an increased risk for mental distress and disorders (Meyer, 2003). The stress caused by this discrimination and prejudice can increase the amount of anger these individuals face, establishing the importance to understand coping mechanisms that may benefit this population. In order to cope with difficulties and stressors that they experience, forgiveness and mindfulness are strategies that the sexual majority population uses. However, no current research addresses the relationship between stress, anger, forgiveness and mindfulness in a sexual minority population.

What is the relationship between anger, forgiveness and mindfulness with perceived stress among sexual minority populations compared to heterosexuals? The purpose of this study is to establish the relationships between anger, forgiveness, mindfulness and stress within a lesbian, gay male and bisexual sample. Our principal research question assesses psychosocial factors that are related to perceived stress in sexual minorities with the long-term intention of creating interventions that aim to alleviate some of the unique stressors that lesbians, gay men and bisexuals face.

History

The term homosexual is rooted in a history of oppression and discrimination, which often leads lesbians, gay men, and bisexuals to have negative and discriminatory experiences due to their sexual minority status. The discrimination associated with this term was rooted in its creation. Richard Krafft-Ebbing (1894) defined homosexuality as a
pervasive feeling toward the same sex and as a “strange manifestation of the sexual life” (p. 222). Krafft-Ebbing went on to note that homosexuality is a “functional sign of degeneration,” is often hereditary and elaborated on several “signs of this psychopathic” lifestyle (Krafft-Ebing, 1894, p. 225). The primary diagnostic tool used by mental health professionals, the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (DSM), listed homosexuality as a diagnosis prior to 1974, which further perpetuated discrimination and anti-gay attitudes. The pathologizing nature of the term homosexual is perceived as negative and offensive to some lesbians and gay men, as it may suggest abnormalities or some form of clinical disturbance, which in turn perpetuates homophobia and heterosexism (GLAAD, 2013; Committee on Lesbian & Gay Concerns, CLGC, 1991). With this historical framework in mind, Gay and Lesbian Alliance Against Defamation (2013) recommends the term gay as an inclusive term to describe anyone who has same-sex sexual and affectionate relationships. This can apply to both men and women, therefore, to further specify, the term lesbian is used to describe gay women and gay men is predominately used to describe men who are attracted to other men. Bisexual refers to people who are physically, romantically and/or emotionally attracted to both women and men (GLAAD, 2013).

Lesbians, gay men and bisexuals (LGB) are subject to overt and covert forms of oppression, harassment, discrimination and prejudice. Researchers estimate that as many as 80% of sexual minorities experience some type of harassment throughout their lifetime, with some reports indicating that more than 94% of adult lesbians, gay men and bisexuals report verbal harassment in relation to their sexual minority status (Herek, Cogan, & Gillis, 2002; Katz-Wise & Hyde, 2012). Similar numbers are also seen in
physical aggressions towards sexual minorities. The Federal Bureau of Investigation (FBI; 2011) reports more than 15,000 hate crimes against adult lesbians, gay men and bisexuals in the United States since 1998; the second largest category of hate crime perpetractions after race. Interestingly, in 2010 to 2011 the prevalence of hate crimes in the U.S. decreased except in sexual minorities, where the prevalence rate increased (FBI, 2011). In 2001, Amnesty International (2001) released a report that lesbians, gay men, bisexuals and transgender people frequently experience widespread human rights abuse, torture and ill treatment, ranging from murder to assault. This mistreatment spans numerous social settings, including the work place. People that identify as gay or bisexual are twice as likely as their heterosexual counterparts to be subjected to a life event related to prejudice, such as being unfairly terminated from a job (Mays & Cochran, 2001). In comparison to adults, LGB youth are at an even greater risk of victimization due to antigay prejudice, with the psychological consequences potentially more severe (Meyer, 2013). A vivid and disturbing trend prevalent in current society is revealed by these statistics; a trend that suggests the environment for lesbians, gay men and bisexuals is hostile and unwelcoming.

Sexual minorities who grow up in a largely heteronormative culture, may feel pressure and fear due to the possibility of being perceived as a deviant, and facing rejection, stigmatization and discrimination (Bonet, Wells, & Parsons, 2007). Lesbians, gay men and bisexuals face high amounts of discrimination and stigma in relation to their sexual minority status, which may be related to greater levels of reported minority stress (Lick, Durso, & Johnson, 2013). These environmental stressors typically begin when a sexual minority is presumed to be heterosexual, i.e. heterosexism; a belief that everyone
is assumed to be straight (Herdt, 1989). There have been large societal changes within the last several years that may impact the social climate for lesbians, gay men and bisexuals. With the Supreme Court ruling that same-sex marriage is legal in each of the 50 United States, it is possible that these changes may reduce the amount of perceived stress that sexual minorities experience.

**Sexual Minorities**

Sexual minorities are people whose sexual orientation is not the predominant heterosexual orientation. The term sexual minority refers to individuals that identify as a lesbian, gay man or bisexual (LGB). The Minority Stress Model proposes that sexual minorities are subject to increased levels of stress due to their minority group membership and as a result may experience higher amounts of psychological distress (Meyer, 2003). Sexual minorities face discrimination, prejudice and internalized homophobia (Meyer, 2003). Internalized homophobia refers to negative attitudes and perceptions about sexuality based on heterosexual social norms that are internalized. Internalized homophobia likely arises as a result of living in a heterosexist environment that promotes anti-gay beliefs (Meyer & Dean, 1998).

Meyer (2003) suggests that in order to cope with living in a heterosexist environment, LGB persons maintain a sense of vigilance by being aware of the possibility that others will be hostile or discriminatory to them. This constant vigilance is stressful and can result in significant negative symptomatology. In response to external stressors, individuals may seek ways to alleviate these demands by implementing coping mechanisms. Individuals that experience societal discrimination may benefit from
developing positive or adaptive coping mechanisms (Borders, Earlywine, & Jajodia, 2010; Lawler-Row, Karremans, Scoot, Matityahou & Edwards, 2008). Lazarus & Folkman (1984) define coping as the thoughts and behaviors used to manage external and internal demands of stressors. Coping mechanisms that focus on anger reduction as well as forgiveness and mindfulness based practices may benefit sexual minorities who face significant interpersonal transgressions and discrimination.

General Stress

The term stress is defined as external events or situations that are demanding to individuals and exceed their capacity to handle such strains (Dohrenwend, 2000). Stress can also be accompanied by physical, mental or emotional pressure, strain, or tension (Meyer, 2003). Stress within our social environments as well as negative personal events, are sources of strain and tension that may lead to mental and physical ailments (Meyer, 2003). Traumatic events, life stressors, chronic stress and role strains, as well as daily hassles may be various components of stress and thereby require an individual to adapt (Dohrenwend, 1998).

Minority Stress Theory

Individuals that belong to a minority group are at a greater likelihood of experiencing distress due to discrimination, stigma and prejudice as a result of their minority status (Meyer, 2003). According to the Minority Stress Model, minority status in conjunction with experiences of rejection can create an environment that is hostile and stressful and is related to an increased risk of health issues (see figure 1). Meyer (2003)
proposes four different minority stress processes: 1) internalized homophobia, 2) expectations of rejection or discrimination, 3) experiences of prejudice and 4) hiding/concealing sexual orientation. Sexual minority status itself is not associated with poor health outcomes, however the increased risk of exposure to discrimination and stigma due to a minority identity is what is related to psychological problems (Meyer, 2003). The implications of such stressors may greatly impact LGB overall health, but more specifically their mental health.

Figure 1. Minority Stress Theory (Meyer, 2003).

Significant research suggests lesbians, gay men and bisexuals face serious mental health barriers and are more vulnerable and at significant risk for stress due to antigay stigma and harassment (Hatzenbuehler, 2009). The stress that sexual minorities face is unique in that it is chronic and socially based, which places a significant amount of stress on those that experience it (Vanden Berghe, Dewaele, Cox & Vinicke, 2010). The ramifications of such stress and antigay stigma may pose greater risk for difficulties with emotional regulation, interpersonal relationships and negative cognitions and self-beliefs (Hatzenbuehler, 2009). In certain cases, victims of antigay hate crimes may develop post-traumatic stress disorder (PTSD; Herek, Gillis & Cogan, 1999). Consequently, gay men and lesbians are roughly twice as likely as heterosexuals to be diagnosed with a mental health disorder (Meyer, 2003).
In addition to mental illness, physical illness may also be a response to the chronic stress and victimization that lesbians, gay men and bisexuals face (Frost, Lehavot, & Meyer, 2011). Diarrhea, sleep disturbances and nightmares, use of substances, uncontrollable crying, agitation and restlessness, headaches and deterioration in personal relationships may all be a result of harassment and abuse (Garnets, Herek, & Levy, 1990). These factors can play an important role in how lesbians, gay men and bisexuals are impacted by discrimination and prejudice. In some cases, anger presents as a common and sometimes adaptive response.
CHAPTER 2
LITERATURE REVIEW

Anger

Anger is an interpersonally based emotion due to the social context in which it occurs (Averill, 1983). According to the American Psychological Association (2013), the term anger is described as an emotion characterized by animosity toward someone or something that intentionally tried to harm the individual. Anger is also an emotional state that can vary in intensity, from a mild annoyance to an extreme bout of frustration (Spielberger & Reheiser, 2009). Research suggests that some anger may be beneficial, such as expression of negative feelings or problem solving capabilities, however excess or chronic anger can lead to greater amounts of physical and emotional problems (APA, 2013). According to the Minority Stress Model, stigma and discrimination may be related to higher amounts of anger or negative feelings. Anger is sometimes a precipitant of verbal or physical aggression and when confronted with a threat, individuals may react with anger or anxiety (Deschenes, Dugas, Francalanza & Koerner (2012). If sexual minorities are subjected to higher amounts of harassment than their heterosexual counterparts, they may experience greater amounts of anger (Edmondson & Conger, 1996). Research conducted by Herek, Cogan & Gillis (1999), indicate that lesbians and gay men that experience harassment or prejudice based on their sexual orientation experience a significantly greater amount of anger as well as traumatic stress, anxiety and depression than heterosexuals.

Due to its ubiquitous nature, careful assessment of the experience, expression and control of anger is essential for psychological health and treatment planning.
(Deffenbacher, 1992; Spielberger & Reheiser, 2009). For sexual minorities, interventions to promote forgiveness may help those who want to overcome anger and interpersonal transgressions from past experiences and allow them to move on with their lives (Goldman & Wade, 2012). Current research addresses the impact of anger and aggression perpetrated against sexual minorities, however, there is minimal literature that addresses the anger that lesbians, gay men and bisexuals experience in response to this aggression. Therefore, it is essential to explore coping mechanisms and preventative processes to reduce anger in LGB populations.

Coping: Forgiveness and Mindfulness

Lazarus & Folkman (1984) define coping as the thoughts and behaviors used to manage external and internal demands of stressors. Within this definition is the recognition that coping is process-oriented, indicating that these thoughts and behaviors can and do change over time. Mindfulness and forgiveness are thus seen as positive coping skills, as they both work to modify the external and internal demands of stressors in hopes to alleviate such difficulties. Lazarus & Folkman (1984) posit that coping serves two primary functions: to manage or alter the environmental problem causing the stress and regulating emotional response to the problem. Research indicates that adaptive coping is common and beneficial to members of minority groups (Clark, Anderson, Clark & Williams, 1999). Similar to sexual majority populations, lesbians, gay men and bisexuals that implement a range of personal adaptive coping mechanisms, resilience and hardiness are able to better withstand stressful experiences (Antovsky, 1987). Forgiveness and mindfulness may be beneficial methods to help reduce stressful
experiences and negative feelings left over from harmful interpersonal transgressions, which is why they are of particular interest in regards to both stress and anger.

Forgiveness is a coping strategy that may be useful for lesbians, gay men, and bisexuals (Greene & Britton, 2012). Forgiveness is often misconstrued as a way in which individuals excuse or overlook interpersonal transgressions. Therefore, we will understand forgiveness as the intentional and voluntary process by which an individual works to create compassion for those that have wronged them (Worthington, 2001). In sexual majority populations, research supports the association between individual acts of forgiveness and the reduction of angry feelings (Barber, Maltby, & Macaskill, 2005). Additionally, the ability to forgive others might be a skill that serves as a protective function in both physical and mental illness (Goldman & Wade, 2012). For the purpose of this paper we describe two primary processes that underlie forgiveness: 1) letting go of negative judgments and thoughts; and 2) fostering compassion and empathy toward the perpetrator (Lawler-Row, Karremans, Scoot, Matityahou & Edwards, 2008). Forgiveness of others may alleviate negative feelings and allow individuals to create a space in which they can heal and let go of specific offenses (Worthington, 2001). As physical and emotional transgressions towards LGB’s increase, forgiveness as a coping strategy may reduce feelings of anger and manifestations of stress (Kaufman & Raphael, 1996). Lesbians, gay men and bisexuals may become angry at how they are negatively treated, but they may benefit from self-healing, by implementing forgiveness of others and situations (Cass, 1984). Forgiveness of self may also be an adaptive way to cope and is where individuals abandon self-resentment while fostering compassion, generosity and love toward oneself (Enright, 1996). However, there is limited current research on the
implementation of forgiveness as a way to reduce negative feelings within lesbians, gay men and bisexuals.

Mindfulness is another coping strategy that may help individuals reduce anger or negative events (Brown & Ryan, 2003). Mindfulness is the act of bringing complete focus and attention to the current moment, while not dwelling on past transgressions or future opportunities (Borders, Earlywine, & Jajodia, 2010). Mindfulness may be particularly beneficial to individuals and communities that experience significant amounts of harassment or violence. Greater mindfulness is correlated with lower hostility, verbal aggression and anger (Brown & Ryan, 2003). When individuals use mindfulness in their daily lives, positive and negative events and experiences are less likely to be internalized (Heppner, Kernis, Lakey, Campbell, Goldman, Davis, & Cascio, 2008). Within the psychological literature, mindfulness has a strong positive relationship with overall improvement of moods and dispositions among the heterosexual community (Borders, Earlywine, & Jajodia, 2010). Lesbians, gay men and bisexuals particularly may benefit from the use of mindfulness, as they are often subject to homophobia, harassment and verbal and physical abuse. After doing a thorough literature search through Psychinfo on June 25, 2015 and using key terms such as, mindfulness and gay, lesbian, bisexual, lgbt, lgb and sexual minorities, no peer-reviewed scholarly journals were found. Therefore, mindfulness interventions within LGB individuals must be explored.

Stress and Forgiveness

As stated, lesbians, gay men and bisexuals experience significantly greater amounts of stress than their heterosexual counterparts (Meyer, 2003). To ensure
uniformity when discussing this topic, we will clarify the terminology that will be used throughout our paper. Stressors are believed to be external or internal events that are particularly draining and surpass the ability to endure, which may result in mental or somatic illness (Dohrenwend, 2000). Additionally, these stressors may be related to specific events and conditions that place a strong emphasis on change or require adaptation. This may be of particular importance when copious amounts of interpersonal difficulties and transgressions are experienced.

To introduce stress, we provide a theoretical framework to better understand and manipulate its process. Lazarus and Folkman’s model (1984) posits that stress occurs via transactions between a person and his or her external environment. As an extension to Lazarus and Folkman, it is possible that external factors as well as internal factors, such as internalized homophobia, may be reactions to acute or chronic stressors. Stress results when an individual perceives an event as threatening or challenging and has insufficient resources to deal or cope with the threat. Within this, Lazarus and Folkman propose two appraisal processes: primary and secondary cognitive appraisal. Primary appraisal occurs when an individual encounters a stimulus and appraises it as threatening or non-threatening. Secondary appraisal occurs when the primary appraisal is perceived as threatening and then the individual considers the resources available to effectively manage the threat. After secondary appraisal, the person goes through reappraisal. The individual now has a different appraisal of the stressor based on new information from the environment (Lazarus & Folkman, 1984). If an individual experiences a deficit in resources, an imbalance between the demands created by the threat and resources available to cope with those demands, stress will occur. However, if an individual
possesses and implements resources to manage the threat, stress does not occur as a result of the initial stressor. See Figure 2.0 for Lazarus and Folkman’s Transactional Model of Stress and Coping.

Figure 2.0.

*Transactional Model of Stress and Coping (Lazarus & Folkman, 1984).*

Poor psychological adjustment can result from stressors related to primary and secondary appraisals. To combat this, forgiveness may be a useful intervention (Ferguson, Matthews, & Cox, 1999). Forgiveness can be a potentially beneficial process.
for individuals, as they might be more likely to move past feelings of pain and focus more on the present moment; a tenet of the forgiveness process.

With this understanding in mind, we can then address how stress and forgiveness may interact with one another. According to the Minority Stress Model (Meyer, 2003), lesbians, gay men or and bisexuals may be at increased risk for stress. Meyer (2003) postulates that LGB people learn to anticipate and eventually expect negative interactions from heterosexuals, which may in turn cause LGB people to be hypervigilant. Such a reaction may contribute to significant levels of distress due to their sexual minority status. Additionally, gay men, lesbians and bisexual identities tend to differ from other identities (e.g., ethnic, racial, age), due to the hidden nature of sexual orientation. Therefore, sexual minorities may experience minority stress because of closeted sexual orientation and efforts to conceal this identity (Lindquist & Hirabayashi, 1979). When combining minority stress with Lazarus and Folkman’s (1984) model of stress and coping, the two primary negative appraisals; threat and loss, are relevant due to the significant amount of anxiety and suffering that LGB people experience. Chronic and acute prejudicial events, anticipation of events, discrimination and/or rejection, homophobia and hiding of the stigmatized identity are also minority stress processes (Meyer, 2003). These factors may have deleterious effects, which can contribute to significant levels of stress and anxiety among sexual minorities. To combat the serious negative interpersonal interactions and experiences, forgiveness may be a helpful, cost-effective and efficient coping strategy.

Forgiveness may help a number of dispositions and ailments, as it promotes a sense of letting go of lingering negative emotions and may alter the experience of negative interactions (Goldman & Wade, 2012; Burrow & Hill, 2012). The better an
individual uses forgiveness, the more he or she can reduce stress during individual recall of interpersonal transgressions (Lawler, Younger, Piferi, Billington, Jobe, Edmondson, & Jones, 2003). This is an area that requires more attention since limited research examines the relationship between stress and forgiveness with lesbians, gay men and bisexuals.

Anger and Forgiveness

The literature on the relationship between anger and forgiveness in LGB communities is limited, however, there is a significant amount of evidence for the relationship between forgiveness and anger among heterosexuals. This lack of research may be due to the fact that sexual majorities may experience and face different types of transgressions and repeated discrimination than sexual minorities. Within the sexual majority population, empirical studies support the association between the implementation of forgiveness and the reduction of anger (Barber, Maltby & Macaskill, 2005). Continuing to hold onto negative thoughts and memories may act as a barrier to forgiveness, thereby having potentially detrimental effects on mental health (Barber, Maltby & Macaskill, 2005; Mauger, Perry, Freeman, Grove, McBride & McKinney, 1992). Macaskill (2005) indicates that higher levels of unforgiveness and anger are related to poorer mental health as well as higher life-dissatisfaction. LGB folks are at an increased risk of victimization. Over 33% of lesbians and gay men were victims of interpersonal violence in the United States; with up to 94% reporting some type of victimization related to their sexual orientation (Fassinger, 1991; National Gay and Lesbian Task Force, 1990). Gay men are at a significantly higher risk than lesbians, bisexuals or transgender individuals, constituting 75% of known incidents (U.S.
Department of Justice, 2002). Due to a significant amount of harassment and prejudice within a predominately homophobic culture, these communities may experience a greater amount of anger than the general population (Fassinger, 1991; Diamond, Diamond, Levy, Closs, Ladipo & Siqueland 2012). In research done by Diamond et al., (2012), the authors report that societal homophobic messages can create feelings of shame, guilt, loss and anger. Victimization and exposure to hostility, makes it imperative to identify effective coping strategies for LGB individuals to adaptively manage the repetitive and pervasive discrimination they face.

Forgiveness is one coping strategy to manage interpersonal transgressions and is linked to less physiological reaction (i.e. lower blood pressure), greater emotional well-being and greater empathy for others (Goldman & Wade, 2012). Forgiveness is seen as the ability to replace suppressed anger with positive or proactive feelings such as compassion or empathy. Forgiveness may reduce negative emotional and cognitive experiences that arise after a hurtful interpersonal interaction and also may develop positive outlooks and feelings (Wade & Worthington, 2003). A significant amount of research in the general population emphasizes the importance of forgiveness and its relationship to physical and mental health, but little is known about this relationship within the LGB communities.

Forgiveness is also an alternative adaptive coping strategy in many conflict situations, from grudge holding to revenge seeking (Macaskill, 2012). Neuroticism, depression and anxiety are all related to the inability to forgive (Macaskill, Maltby & Day, 2012). These factors detract from overall well-being and life satisfaction. The ability to forgive others is associated with overall life-satisfaction; greater amounts of
forgiveness are associated with higher life satisfaction and lower levels of mental health difficulties (Diener, Lucas & Oishi, 2005). While forgiveness may reduce anger, it is also associated with positive changes, some of which may play an important role in subsequent health (Lawler-Row et. al., 2008). After doing a thorough literature search through Psychinfo on June 25, 2015 and using key terms such as, forgiveness, anger and gay, lesbian, bisexual, lgbt, lgb and sexual minorities, limited peer-reviewed scholarly manuscripts were found.

Anger and Mindfulness

Pertaining to anger and mindfulness, mindfulness techniques may effectively promote relaxation and foster resilience through the integration and emphasis on positive emotional states within sexual majority populations, but there is limited research on mindfulness in lesbians, gay men and bisexuals (Wright, Day, & Howells, 2009). In a study done by Robins, Keng, Ekblad & Brantley (2012), heterosexuals who report higher amounts of mindfulness and self-compassion exhibit decreased amounts of absent-mindedness, emotional regulation difficulties, fear of emotions as well as a decrease in anger aggression and anger expression. These results are consistent throughout research on mindfulness and anger and the expression of anger (Brown & Ryan, 2003). People who report greater amount of mindfulness also exhibit lower levels of anger and hostility (Borders, Earlywine, & Jajodia, 2010). This study also reported a significant decrease in physical and verbal aggression with mindfulness practices. Clinical implications of mindfulness techniques may exist for individuals that experience emotional difficulties. Mindfulness can improve attention regulation by allowing people who practice
mindfulness to redirect attention away from worries and place focus on their current feelings and sensations (Baer, 2003). Mindfulness interventions to treat borderline personality disorder, substance abuse, depression, anxiety and eating disorders are also promising (Baer, 2003). These clinical applications suggest the importance of the use of mindfulness for overall health and well-being, especially for those who face regular interpersonal transgressions. In regard to lesbians, gay men and bisexuals, decreased stress and improved overall life satisfaction are associated with mindfulness (Brown & Ryan, 2003).

The relationship between anger, forgiveness and mindfulness with perceived stress among sexual minority populations compared to heterosexuals is expected to be different. The purpose of this study is to understand the relationships between anger, forgiveness, mindfulness and stress within a lesbian, gay male and bisexual sample. Our overarching research question examines both positive and negative psychosocial factors that are related to stress in sexual minorities in order to begin to develop tailored interventions that target unique stressors that members of LGB communities experience. By identifying dimensions that may be receptive to therapeutic treatment, we hope to be able to reduce stress and improve overall quality of life in these communities. To that end, we hypothesize the following: 1) Anger is positively associated with perceived stress; 2) Forgiveness is negatively associated with perceived stress; 3) Mindfulness is negatively associated with perceived stress; 4) Anger, forgiveness and mindfulness account for a significant proportion of the variance in perceived stress; 5) The relationship between anger and perceived stress is moderated by forgiveness; 6) The relationship between anger and perceived stress is moderated by mindfulness.
CHAPTER 3

METHOD

Procedure

The appropriate institutional review board approved our study. Written informed consent was obtained from all participants prior to participation. Individuals 18 or older that self identified as LGBT were recruited between 2008-2009 as part of a larger project that examined health issues and associated psychosocial and behavioral factors in the LGBT communities. For the purpose of this research study, we will only assess the relationships of LGB’s and not “T’s.” People that identify as transgender may also identify as gender minorities as well as sexual minorities, and for the purpose of this study, we want to understand the relationships of our variables of interest in sexual minorities. Gender minorities face similar challenges as sexual minorities, however, we wanted to focus on the difficulties that sexual minorities experience. Recruitment was solicited through local community-based organizations and the gay pride parade in the Dallas/Fort Worth metroplex area in Texas. Participants received a $25 incentive to complete our survey. Our study uses a cross-sectional correlational design and examines self-report data from questionnaires.

Participants

Our diverse sample consisted of 148 participants. Of these participants, 50 (33.8%) identified as gay men, 50 (33.8) identified as lesbian and 48 (32.4%) identified as bisexual. One hundred and forty eight individuals, of which 71 (48%) were males and 77 (52%) were females, participated in the study. The sample was diverse with 62.2%
European American (N=92) while 12.8% (N=19) were Latina/o, 12.2% (N=18) were African American, 2.7% (N=4) were Asian American, and 10.1% (N=15) identified as Other Ethnic Identity. The sample mean age was 32.3 years old (SD = 12.8, Range = 18-73). The participants had an average of 15 years of education (SD = 5, Range = 1-33). Finally, the median income for the sample was $25,000 (SD = 48,852, Range = $0-390,000).

**Measures**

Participants completed items on demographic characteristics, as well as items on health and wellness, medical issues, barriers to health and health disparities within the LGB communities. Data on psychosocial and behavioral factors such as stress and coping, anger, mindfulness and forgiveness practices were also collected.

Stress levels were measure with the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1984). The PSS will be our dependent variable and is a 14-item measure that assesses the degree to which situations are appraised as stressful. The likert-type scale ranges from 0 (Never) to 4 (Very Often) with high scores indicating high amounts of stress. Examples of items on this measure include “In the last month, how often have you been upset because of something that happened unexpectedly?” and “In the last month, how often have you found that you could not cope with all the things that you had to do?” The PSS demonstrates concurrent and predictive validity (Cohen, Kamarck & Mermelstein, 1984). Cohen, Kamarck and Mermelstein (1984) report an internal consistency reliability coefficient (Cronbach’s alpha) of 0.88 for the PSS. The calculated internal reliability coefficient (Cronbach’s alpha) for this measure is .88 for our sample.
The inward expression of anger will be measured by using the State Trait Anger Expression Inventory-2 (STAXI-2). Due to the amount of oppression, harassment, discrimination and prejudice as well as the presence of heterosexist beliefs in society, LGB individuals may be more likely to internalize and suppress feelings of anger and frustration (Meyer, 2003). Therefore, we will measure anger using the Inward Expression of Anger subscale of the STAXI-2 (Speilberger, 1999), an 8-item subscale that measures how often angry feelings are experienced but are turned inward and suppressed. The likert-type scale ranges from 1 (Almost Never) to 4 (Almost Always), with high scores indicating high inward expression of anger. Examples of items on this measure include “I keep things in” and “I boil inside but I don’t show it.” Speilberger (1999) reports an internal consistency reliability coefficient (Cronbach’s alpha) of .86 for the subscales of the STAXI-2. The calculated internal reliability coefficient (Cronbach’s alpha) for this measure is .86 for our sample. The STAXI-2 demonstrates discriminant and convergent validity (Speilberger, 1999).

Forgiveness was measured by the Heartland Forgiveness Scale (HFS; Thompson et al., 2005). This scale is a 24-item likert-type scale that measures dispositional forgiveness; the ability to distinguish the personal traits from acts of forgiving (Roberts, 1995). The likert-type scale ranges from 1 (Almost Always False of Me) to 7 (Almost Always True of Me) with high scores indicating high levels of forgiveness. The HFS demonstrates good convergent validity (Thompson et al., 2005). Thompson et al. (2005) report an internal consistency reliability coefficient (Cronbach’s alpha) of .93 for the HFS. The calculated internal reliability coefficient (Cronbach’s alpha) for this measure is .84 in our sample.
Mindfulness was reported by participants through the Kentucky Inventory of Mindfulness Skills, Describing subscale (KIMS; Baer, Smith, & Allen, 2004). The Describing subscale is an 8-item likert-type scale and was chosen due to its supplemental relationship to forgiveness. Mindfulness and forgiveness both focus on the victim’s own healing, but approach this process in contrasting ways (Rosenzweig, 2013). Individuals that score high on this subscale are able to nonjudgmentally label feelings that arise and then move onto the present moment. This is related to forgiveness because individuals who experience negative feelings are encouraged to become aware of their feelings by labeling them and then work to let go of them by forgiving either themselves or others. This scale is a 39-item likert-type scale that measures accepting thoughts and emotions without judgment. The likert-type scale ranges from 1 (Never) to 5 (Very Often) with high scores indicating higher amounts describing mindfulness. An example item on this measure is, “I’m good at finding the words to describe my feelings.” The KIMS demonstrates good concurrent and predictive validity with an internal consistency reliability coefficient (Cronbach’s alpha) of .87 (Baer, Smith, & Allen, 2004). The calculated internal reliability coefficient (Cronbach’s alpha) for this measure is .93 for our sample.
Figure 3. Our Moderation Model based on Baron & Kenny’s Moderator Model (1986) for hypothesis five.

Figure 4. Our Moderation Model based on Baron & Kenny’s Moderator Model (1986) for hypothesis six.
Data Analyses

After cleaning the data, we checked for outliers and missing data. To determine the necessary sample size to achieve sufficient power, we conducted an a priori power analysis using G*Power, a computerized statistical package. Results of the power analysis indicate that 92 participants are required to achieve sufficient power, .80, with a medium effect size ($R^2 = .15$) for a design using five independent variables. This estimated effect size is based on effect sizes reported in recent psychosocial research conducted within the LGB communities (Cox, Dewaele, Von Houtte & Vincke, 2011; Kuyper & Fokkema, 2011). According to Cohen (1988; 1992), $R^2$ is a measure of effect size when conducting a linear multiple regression, so that .01 is considered a small effect size, .09 a medium effect size, and .25 a large effect size.

After determining that our sample had enough participants to achieve sufficient power, histograms and quantile-quantile (QQ) plots were used to check each of our variables for normality. We conducted descriptive and univariate analyses (means, standard deviations, ranges, percentages and frequency statistics to examine the demographic variables (e.g., age, income, education and ethnicity) and our variables of interest (anger, forgiveness, mindfulness and perceived stress). We tested the internal consistency of each measure by calculating a Cronbach’s alpha for each. We used one way analyses of variance (ANOVAS) to examine the relationships between our variables of interest and assess differences across gender, sexual orientation and ethnicity. We chose the Bonferroni correction for our planned comparisons due to its conservative nature and our desire to reduce the likelihood of obtaining a type-I error.
Finally, we tested our model via a hierarchical linear regression. Since education and ethnicity were not correlated with perceived stress, they were omitted from our regressions. Within the first block, potential covariates (i.e., age and income) were entered simultaneously into the hierarchical regression to control for such factors. Within our second block, our variables of interest were entered in order to test the overall model.

Next, to determine whether forgiveness and mindfulness moderate the relationship between anger and perceived stress, we conducted two tests of moderation per Baron and Kenny’s protocol (1986) in which we centered the predictor variables (anger, forgiveness and mindfulness). For the first moderation model, we entered age and income into our first block. Our variables of interest (anger and forgiveness) were then entered into the second block of our model. The previously centered predictor variables were then used to create an interaction term (forgiveness X anger), which was entered into the third block of the model to test for moderation. To ensure that unique variance in perceived stress was explained by our model, we included analyses of collinearity (tolerance and VIF) as well as semi-partial correlations.

We conducted the same series of steps for the second moderation model to determine whether mindfulness moderates the relationship between anger and perceived stress. In contrast to the first moderation model, we used mindfulness instead of forgiveness to create our interaction term in the second model.
CHAPTER 4

Results

We cleaned and examined our data to ensure that it met the assumptions of the proposed analyses. The tests of normality and QQ plots computed for our variables indicated that they are all normally distributed. There was no missing data nor were there any outliers for our variables of interest. There was an outlier in terms of income before taxes and we corrected for this by using the median instead of the mean.

Univariate Statistics

A univariate analysis was conducted to examine anger, forgiveness, mindfulness and perceived stress. STAXI-2 scores were calculated and ranged from 8 to 30, with a mean of 17.1 ($SD = 5.1$). Visual examination of the data, along with skewness (0.53, SE = 0.20) and kurtosis (-0.15, SE = 0.40) indicated the data was normally distributed. HFS scores were calculated and ranged from 58 to 156, with a mean of 112.9 ($SD = 17.8$). Visual examination of the data, along with skewness (0.04, SE = 0.20) and kurtosis (-.13, SE = 0.40) indicated the data was normally distributed. KIMS scores were calculated and ranged from 8 to 40, with a mean of 29.0 ($SD = 7.1$). Visual examination of the data, along with skewness (-.35, SE = 0.20) and kurtosis (-.50, SE = 0.40) indicated the data was normally distributed. PSS scores were calculated and ranged from 6 to 44, with a mean of 24.3 ($SD = 8.1$). Visual examination of the data, along with skewness (-.35, SE = 0.20) and kurtosis (-.50, SE = 0.40) indicated the data was normally distributed. We noticed a ceiling effect on PSS as well as a floor effect for HFS and may encounter attenuation due to range restriction (Howell, 2002). See Table 1.0.
Table 1.0

*Univariate Statistics*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
<th>Possible Range</th>
<th>Actual Range</th>
<th>Calculated α</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Trait Anger Expression Inventory (STAXI-2)</td>
<td>17.1</td>
<td>5.1</td>
<td>8-32</td>
<td>8-30</td>
<td>.86</td>
</tr>
<tr>
<td>Heartland Forgiveness Scale (HFS)</td>
<td>112.9</td>
<td>17.8</td>
<td>24-168</td>
<td>58-156</td>
<td>.84</td>
</tr>
<tr>
<td>Kentucky Inventory of Mindfulness Skills (KIMS)</td>
<td>29.0</td>
<td>7.1</td>
<td>8-40</td>
<td>8-40</td>
<td>.93</td>
</tr>
<tr>
<td>Perceived Stress Scale (PSS)</td>
<td>24.3</td>
<td>8.1</td>
<td>0-56</td>
<td>6-44</td>
<td>.88</td>
</tr>
</tbody>
</table>

*Bivariate Statistics*

In comparison to the reference group, which was individuals that identify as European American, identifying as African American was negatively associated with STAXI-2 ($r = -.20, p < .05$) and identifying as Latino/a was negatively associated with STAXI-2 as well ($r = -.21, p < .01$). In comparison to individuals that identified as European American, identifying as African American was negatively associated with HFS ($r = -.23, p < .01$) and identifying as African American was positively associated with PSS ($r = .26, p < .01$). See table 2.0.
Table 2.0

*Correlation Matrix*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Income Before Taxes</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Education</td>
<td>.09</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. HFS</td>
<td>.21**</td>
<td>.02</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. KIMS</td>
<td>.12</td>
<td></td>
<td>.10</td>
<td>.36**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. STAXI</td>
<td>-.33**</td>
<td>-.12</td>
<td>-.20*</td>
<td>-.57*</td>
<td>-.43**</td>
<td></td>
</tr>
<tr>
<td>11. PSS</td>
<td>-.33**</td>
<td>.22**</td>
<td>-.13</td>
<td>-.46**</td>
<td>-.36**</td>
<td>.54**</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01

Multivariate Statistics

We conducted several ANOVAs with Bonferroni corrected planned contrasts to compare differences between groups (see Table 4.0). Scores on the STAXI-2 (F(2,145) = 1.19, p = .11) and HFS (F(2,145) = .48, p = .62) did not vary across sexual orientation. However, the three groups scored significantly different from each other on the PSS (F(2,145) = 4.53, p < .05), with bisexuals reporting higher levels of perceived stress compared to gay men (p < .01). See table 3.0.

Table 3.0.

*Means and Standard Deviations for LGBs*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Gay M (SD)</th>
<th>Lesbian M (SD)</th>
<th>Bisexual M (SD)</th>
<th>Significance p</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAXI-2</td>
<td>16.7 (5.0)</td>
<td>16.7 (4.6)</td>
<td>18.1 (5.5)</td>
<td>.31</td>
</tr>
<tr>
<td>HFS</td>
<td>113.7 (18.9)</td>
<td>114 (17.1)</td>
<td>110.8 (17.6)</td>
<td>.62</td>
</tr>
<tr>
<td>KIMS</td>
<td>30.4 (6.3)</td>
<td>29.2 (7.6)</td>
<td>27.4 (7.3)</td>
<td>.11</td>
</tr>
<tr>
<td>PSS</td>
<td>22 (7.8)₁</td>
<td>24.1 (8.7)</td>
<td>26.8 (7.2)₁</td>
<td>.01**</td>
</tr>
</tbody>
</table>

**p < .01; ₁ = significant relationship between variables
A one-way ANOVA (see Table 5.0 below) suggests significant differences in perceived stress levels among our sample based on ethnicity \([F(4, 147) = 3.20, p < .05]\). Planned comparisons using the Bonferroni test (see Table 5.0) suggest that African Americans \((M = 27.75, SD = 7.08, p < .05)\) report significantly more perceived stress than European Americans \((M = 23.26, SD = 8.22, p < .05)\) and Latino/a’s \((M = 22.42, SD = 7.23, p < .05)\). Additionally, a one-way ANOVA suggests that there are significant differences regarding forgiveness among participants based on ethnicity \([F(4,147) = 3.25, p < .05]\). Planned comparisons using the Bonferroni test suggest that African Americans report lower levels of forgiveness \((M = 101.89, SD = 12.78, p < .05)\) compared to European Americans \((M = 115.57, SD = 18.04, p < .05)\).

Table 4.0

*One-Way ANOVAs by Ethnicity*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group 1</th>
<th></th>
<th>Group 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Stress</td>
<td>African Americans</td>
<td>27.75</td>
<td>7.08</td>
<td>European Americans</td>
<td>23.26</td>
<td>8.22</td>
</tr>
<tr>
<td>Stress Scale</td>
<td>African Americans</td>
<td>27.75</td>
<td>7.08</td>
<td>Latino/a</td>
<td>22.42</td>
<td>7.23</td>
</tr>
<tr>
<td>Heartland Forgiveness</td>
<td>African Americans</td>
<td>101.89</td>
<td>12.78</td>
<td>European Americans</td>
<td>115.57</td>
<td>18.04</td>
</tr>
</tbody>
</table>

* *p < .05, **p < .01*
We conducted three hierarchical linear regression analyses to test our hypotheses and our model. In the first model the dependent variable was perceived stress. We simultaneously entered the covariates of perceived stress (i.e age and income) identified by the bivariate correlation analysis into the first block of the regression. In the second block, we entered our three independent variables, anger, forgiveness and mindfulness. Our overall model was significant and explained 36% (adj. $R^2 = .36$) of the variance in stress ($F(5, 142) = 17.31, p < .01$) with anger ($\beta = .31, p = .001$) and forgiveness ($\beta = -.21, p < .05$) as the significant predictors. Age ($\beta = .13, p = .08$) and income before taxes ($\beta = -.13, p = .07$) were not significant, however, they were trending.

Our next hierarchical regression analysis tested whether forgiveness moderated the relationship between anger and perceived stress. As with the first model, for our first block we simultaneously entered the covariates of perceived stress (i.e age and income) identified by the bivariate correlation analysis into the first block of the regression. This block was significant [$F(2, 145) = 10.39, p < .001$] and explained 11% of the total variance (adj. $R^2 = .11$) in perceived stress. Age ($\beta = -.29, p < .001$) was significantly associated with perceived stress, but income before taxes ($\beta = -.14, t = -1.67, p = .36$) was not. In the second block, we entered anger and forgiveness (the predictor variables). The second block was significant [$F(4, 143) = 20.74, p < .001$] and explained 34.9% of the total variance (adj. $R^2 = .35$) in perceived stress. Furthermore, our model explained an additional 24% of the variance in perceived stress controlling for covariates (change in $R^2 = .24$). Forgiveness ($\beta = -.22, p < .01$) and anger ($\beta = .38, p < .001$) were significantly associated with perceived stress. For our third block, we entered our centered interaction term (anger X forgiveness). Our third block was significant, [$F(5, 142) = 16.89, p < .001$]
and explained 35.1% of the total variance (adj. $R^2 = .35$) in perceived stress. Furthermore, our model explained an additional .01% of the variance in perceived stress controlling for covariates (change in $R^2 = .006$). However, our interaction term was not significant ($p = .26$). Tolerance was greater than .01 and VIF was less than 10 for all variables; therefore collinearity measures were within the acceptable range (Hair, 2010) for demographic, predictor and moderator variables.

Our next hierarchical regression analysis tested whether mindfulness moderated the relationship between anger and perceived stress. As with the first model, for our first block we simultaneously entered the covariates of perceived stress (i.e. age and income) identified by the bivariate correlation analysis into the first block of the regression. This block was significant [$F(2, 145) = 10.39, p < .001$] and explained 11% of the total variance (adj. $R^2 = .11$) in perceived stress. Age ($\beta = -.29, t = -3.57, p < .001$) was significantly associated with perceived stress, but income before taxes ($\beta = -.14, t = -1.67, p > .05$) was not. In the second block, we entered anger and mindfulness (the predictor variables). The second block was significant [$F(4, 143) = 19.25, p < .001$] and explained 32% of the total variance (adj. $R^2 = .32$) in perceived stress. Furthermore, our model explained an additional 23% of the variance in perceived stress controlling for covariates (change in $R^2 = .23$). Mindfulness ($\beta = -.42, p < .001$) and anger ($\beta = -.16, p < .05$) were significantly associated with perceived stress. For our third block, we entered the centered interaction term (anger X mindfulness). Our third block was significant [$F(5, 142) = 15.30, p < .001$] and explained 33% of the total variance (adj. $R^2 = .33$) in perceived stress. Furthermore, our model did not explain any additional variance in perceived stress controlling for covariates (change in $R^2 = .00$). Mindfulness ($\beta = -$
.42, $p < .001$) and anger ($\beta = -.16, p < .05$) were significantly associated with perceived stress. However, our interaction term was not significant ($p = .90$). Tolerance was greater than .01 and VIF was less than 10 for all variables; therefore collinearity measures were within the acceptable range (Hair, 2010) for demographic, predictor and moderator variables.
CHAPTER 5
Discussion

The present study explored the relationship between anger, forgiveness, mindfulness and perceived stress. First, we found significant correlations between age and our other variables. Specifically, our results indicate that age was negatively associated with perceived stress, suggesting that as our sample’s age increased, their perceived stress decreased. This is supported by current research, which suggests that as individuals age, the amount of perceived stress that they experience decreases (Scott, Sliwinski & Blanchard-Fields, 2013). It is possible that as lesbians, gay men and bisexuals age, they are able to find adaptive coping mechanisms, are less focused on or remember fewer negative memories or are better at controlling their emotions. Age was positively associated with income in our overall model, suggesting that salaries increased as individual’s aged or that as people age, their net worth increases (i.e., increased pay, return on investments, etc.). Forgiveness was positively associated with age. Research indicates that as individual’s age, they are more willing to forgive than their younger counterparts (Ghaemmaghami, Allemand & Martin, 2011). One possibility for this might be that as individuals age, they are more focused on appreciating life’s positive experiences, rather than ruminating on past transgressions as a way to improve their overall quality of life. Lastly, we discovered that the inward expression of anger was negatively associated with age. Previous research suggests that young adults report significantly higher amounts of anger than their older counterparts (Kunzmann & Thomas, 2014). In a study completed by Kunzmann, Richter & Schmuckle (2013), the authors’ results indicate that the frequency of anger increases from late adolescence into
young adulthood, but then shows a steady decline until old age. One hypothesis for this finding could be that when individuals are younger, they may have difficulty with regulating emotions, whereas, it is largely socially unacceptable for adults to consistently exhibit outburst of anger.

Income before taxes and perceived stress were positively associated, which implies that the more money that our sample made, the greater amounts of perceived stress they experienced. Bovier, Chamot and Perneger (2004), supported this correlation, as they found that as income increased, perceived stress increased as well. Earning a higher income may afford a person greater financial responsibilities, more hours worked and greater amounts of work-related responsibilities and duties, which may increase stress levels. While income before taxes and perceived stress were positively associated with one another, ethnicity also had several significant correlations in our model.

European Americans reported greater amounts of forgiveness than African Americans. Due to the fact that many African Americans experience racial discrimination on a daily basis, it is possible that forgiveness for African Americans may be more difficult to enact than other racial and ethnic identities, especially for double minorities (sexual and racial/ethnic minorities; Henson, Derlega & Pearson, 2013). Burrow and Hill (2012) suggest that although heterosexual African Americans may benefit more from implementing forgiveness compared to other racial and ethnic identifies, they may be less likely to do so. European Americans reported higher levels of anger compared to the Latino/a’s in our sample. This is consistent within the current literature, in which Deffenbacher and Swain (1999) report that European Americans report greater amounts of anger than their Latino/a counterparts. One hypothesis for this finding is possibly that
Latino/a individuals receive more social support from their family units and are able to express their anger in a more adaptive way than European Americans.

Finally, in regards to perceived stress, European Americans reported significantly less perceived stress than African Americans. This may reflect the societal difficulties, such as prejudice, discrimination and overt and covert forms of racism that impact sexual minorities of color. Therefore, it is noteworthy to review the various minority statuses that may be present for any one individual. In addition to being a sexual minority, a participant may also be a gender minority and/or a racial/ethnic minority.

In line with our prediction, mindfulness was negatively significantly associated with perceived stress, which again mirrors current heterosexual populations. A meta-analysis conducted by Grossman, Niemann, Schmidt and Walach (2004) indicated that mindfulness might enhance general features of adaptive coping with distress in everyday life, as well as under more strenuous and acute stressors. In another meta-analysis completed by Chiesa and Serretti (2009), the authors reported seven studies that suggest that participants who emphasized mindfulness experienced significantly less stress compared to those that did not receive any treatment. Similar to our prediction, anger and forgiveness accounted for a significant proportion (36%) of the total variance in perceived stress levels among our LGB sample, however mindfulness was not found to be significant. This may be due to mindfulness being highly correlated with forgiveness as they both measure similar aspects within positive psychology and may tap into analogous overarching constructs.

In line with our first hypothesis, anger was positively associated with perceived stress. This is consistent with previous findings that lesbians, gay men and bisexuals who
experience anger are also subject to higher amounts of traumatic stress, anxiety and depression than heterosexuals (Herek, Cogan & Gillis, 1999). Our next significant finding was that bisexuals reported significantly higher levels of perceived stress compared to gay men. This may be due to the fact that bisexuals do not have the group affiliation and social support from organizations as gay men and lesbians do. It is possible that this lack of social support can create higher amounts of perceived stress or impede the creation of adaptive coping mechanisms. Forgiveness and perceived stress were negatively significantly related, as expected, which mirrors the extant research among heterosexual populations. The ability to forgive others might be a skill that serves as a protective function in mental illness (Goldman & Wade, 2012). Recently, researchers theorized that forgiveness may help alleviate the impact of stressors. Forgiveness as a coping strategy may reduce feelings of anger and the manifestation of stress (Kaufman & Raphael, 1996). These findings are unique in that this is possibly the first study to report findings of forgiveness being negatively correlated with perceived stress within an LGB sample.

Another finding was that bisexual men and women reported significantly higher levels of perceived stress than gay men. This is supported by previous research that indicates that bisexuals are more likely than lesbians and gay men to have mental health problems (Jorm, Korten, Rodgers, Jacomb & Christensen, 2002) due to binegativity. Binegativity is a unique stressor in which bisexuals experience stigma from both the heterosexual and other sexual minority communities (Ochs, 1996). Research suggests that bisexuals experience differences in their identity development, community affiliation, experiences of discrimination and marginalization, and the way they are viewed by others
compared to lesbians and gay men (Paul, Smith, Mohr & Ross, 2014). Additionally, bisexuality may not be considered a valid sexuality by both the heterosexual and sexual minority community, but rather a transitional phase between the dichotomous heterosexual and homosexual orientations (Dworkin, 2001).

Contrary to our hypothesis, forgiveness did not moderate the relationship between anger and perceived stress in our sample. This result was surprising; given the extensive research that suggests the benefits of forgiveness for reducing perceived stress that heterosexual individuals experience (Goldman & Wade, 2012). Furthermore, levels of forgiveness varied between our sexual minority groups, where lesbians reported the highest levels of forgiveness ($M = 114.04$), gay men reporting the next highest ($M = 113.70$) and bisexuals reporting the lowest ($M = 110.81$). However, the differences between these groups were not statistically significant ($p = .622$). Several other studies have used the Heartland Forgiveness Scale, both of which reported lower scores than were seen in the current study. Thompson, et. al., (2005) conducted a study on students located at a Midwestern university and reported a mean forgiveness score of 91 ($M = 91.68$). In the second study that was conducted on forgiveness and PTSD among veterans, the authors reported a mean forgiveness score of 79 ($M = 78.65$) (Karairmak & Guloglu, 2014). One potential explanation for our findings is that individuals that are more forgiving are less likely to view situations and scenarios as threatening or stressful (Burrow & Hill, 2012). Burrow and Hill (2012) also report that although forgiveness may be adaptive for overall well-being, the magnitude of its benefit is dependent on the context of the situation. Therefore it is possible that LGB’s may experience certain situations or transgressions differently than others. In relation to the geographical location
in which this sample was collected, it is possible that being in the southern parts of the United States, our sample is more likely to forgive than other areas. The culture of the south and being in the “Bible Belt” of America, may encourage individuals to employ varying forms of forgiveness after being confronted with interpersonal transgressions. Additionally, while forgiveness did not moderate the relationship between anger and forgiveness in our sample, it may be important to understand the level and types of interpersonal transgressions that sexual minorities experience. A study completed by Orcutt, Pickett and Brooke Pope (2008), assessed the relationship between interpersonal trauma and stress. The authors found that higher levels of perceived severity of the event was strongly related to increased levels of Posttraumatic Stress Disorder and lower levels of forgiveness. Therefore, it is possible that our sample, specifically bisexual men and women, experienced higher interpersonal transgressions, which may have limited their ability to forgive. Related to this, homophobia and stigma may also inhibit one’s ability to implement forgiveness techniques. Internalized homophobia is the direction of negative attitudes toward the self, which in time, may lead to negative self-view and poor self-regard (Meyer & Dean, 1998). It includes negative attitudes toward homosexuality in a general sense, discomfort with disclosure of one’s sexual identity with others and potential discomfort with same-sex sexual activity (Newcomb & Mustanski, 2010). Given that our sample is from the southern region of the United States and apart of the “Bible Belt,” there may be greater amounts of negative attitudes towards homosexuality compared to other less conservative or religious regions. It is possible that these factors impacted our sample’s ability to forgive not only others, but themselves as well. Another possible reason that forgiveness did not moderate the relationship between anger and
perceived stress is related to the collection of our sample. With our participants being recruited through community organizations, it is possible that they might be at a different stage of forgiving others than individuals that have not yet sought services. Our sample could be at a stage where they have been able to forgive those that have discriminated against or wronged them, whereas, other lesbians, gay men and bisexuals that have not sought services might have a different experience.

Another result that did not support our initial hypothesis is that mindfulness did not moderate the relationship between anger and perceived stress. This was surprising given the significant amount of research that exists supporting the relationship between mindfulness and the reduction of perceived stress and anxiety for heterosexuals (Marchand, 2012; Branstrom, Kvillemo, Brandberg, & Moshowitz, 2010). One potential explanation for mindfulness not moderating the relationship between anger and perceived stress is that mindfulness is often a practice that is taught or learned. A large number of studies completed on mindfulness have participants run through interventions that focus on teaching and implementing mindfulness over a period of several weeks (Branstrom, Kvillemo, Brandberg, & Moshowitz, 2010). Therefore, this result might not have been significant due to the lack of formal intervention that focused on reducing anger and perceived stress through mindfulness exercises such as meditation. However, it may be possible that our sample had a basic understanding of mindfulness, which is why they reported moderate levels of mindfulness as a baseline. Our overall sample reported a mean score of 29.0 on the KIMS describing subscale, but there were differences among each sexual orientation. Gay men reported the highest amounts of mindfulness ($M = 30.44$), with lesbians reporting the next highest amount ($M = 29.20$) and bisexuals
reporting the lowest amount of mindfulness \(M = 27.43\). The differences between these groups were not statistically significant \(p = .112\). One hypothesis for this finding is that the gay men in our sample might be more mindful due to their age. The mean age for gay men was 36 years old \(M = 35.96\) and the mean age of lesbians in our study was 31 \(M = 31.49\). It is possible that the individuals are more mindful as they age, which might be why gay men reported the highest mindfulness scores. Although there is no current research reporting levels of mindfulness using the KIMS within an LGB sample, there are international studies as well as studies with mental disorder diagnoses that report KIMS scores. Our overall mean score for mindfulness is identical to current research that used a Swedish sample \(M = 29.0\); Hansen, Lundh, Homman & Wangby-Lundh, 2009).

However, it is higher than borderline personality disorder patients \(M = 23.9\), children that have been diagnosed with ADHD \(M = 26.1\), as well as students from universities in the Washington D.C. area \(M = 28.41\); Perroud, Nicastro, Jermann & Huguelet, 2012; Tanner, Travis, Gaylord-King, Haaga, Grosswald & Schneider, 2009; Smalley, Loo, Hale, Shrestha & McGough, 2009). One interpretation of this data could be that sexual minorities have higher amounts of mindfulness than reported in previous research. This could be due to the fact that lesbians, gay men and bisexuals need to be more aware of their feelings and emotional states to cope with the high amounts of discrimination that they experience. However, further research may be beneficial in this area, specifically related to mindfulness moderating the relationship between stress and anger.
Limitations and Strengths

Participants were recruited via convenience sampling from local LGB service organizations and may not truly reflect the general LGB population in regard to anger, forgiveness, mindfulness and perceived stress. Therefore, our results may not be generalizable to the greater population. Also, our sample was not balanced between male and female bisexuals, therefore our sample might be misrepresented and our results may not be generalizable to the greater population.

Our results may be limited by several factors. First, our design was cross-sectional and correlational, thus causality cannot be inferred. Our sample was also predominately recruited from one specific geographical location, thus our findings may not be generalizable to broader geographic regions and may not reflect anger, forgiveness, mindfulness and perceived stress across the nation. However, this study was conducted in the southern region of the United States and it is possible LGB individuals may experience greater amounts of discrimination and prejudice due to the area’s conservative nature. More specifically, this study was conducted in a historically “red” state in terms of political affiliation, being in the “Bible Belt” of America and many of its inhabitants identifying with a Fundamentalist viewpoint, all of which may condemn homosexuality. Though various limitations have been identified, the current study replicated the positive relationship between anger and perceived stress, the negative relationship between forgiveness and perceived stress and the negative relationship between mindfulness and perceived stress found within the sexual majority within a sexual minority sample. Our findings also may suggest that forgiveness and mindfulness may not be effective methods for reducing perceived stress that has resulted from the inward expression of anger.
Clinical Implications

The discrimination and prejudice that lesbians, gay men and bisexuals experience, place them at an increased risk for mental distress and disorders. Clinicians with LGB clients may want to teach positive coping skills to help them cope with LGB-related stigma and stress. More specifically, mental health professionals might want to consider treatment methods that teach forgiveness skills and that it may be beneficial for clinicians to ask about this topic with their clients. As highlighted in this study, forgiveness may be an important tool in helping sexual minorities reduce the amount of anger and perceived stress that they experience. Also, stigma and discrimination may also be an important subject to broach with clients, as lesbians, gay men and bisexuals tend to experience higher amounts of interpersonal transgressions than their heterosexual counterparts. Due to significant amounts of interpersonal transgressions, it may be important to address feelings of anger that LGB clients experience due to the aforementioned stigma and discrimination. Particular attention should be paid to bisexual clients, as they face additional stressors and appear to be more at risk for psychological difficulties such as stress and anger.

Future Research

Additional research should be conducted to assess if other forms of adaptive coping could moderate the relationship between anger and perceived stress in LGB samples. Researchers might want to consider social support, parental influence, coping style, and appraisal of events as possible avenues for future research. A longitudinal study may be valuable to assess the experience of sexual minority stress over time, as the relationship between anger and perceived stress may be dependent upon particular factors.
(e.g., age, sexual identity development stage, interpersonal transgressions, ability to cope with discrimination). In regards to the sample itself, future research may benefit from having an ethnically balanced sample to accurately assess differences and similarities that might be present between ethnic groups. In a similar vein, researchers may find it advantageous to have a balanced bisexual sample in order to see how bisexual men and women may differ offer contrasting or comparative results. It may also be beneficial if researchers assessed perceived stress, anger, forgiveness and mindfulness in multiple geographic locations in order to assess for differences among samples in different areas. More research is warranted regarding bisexual mental health, as bisexuals appear to be more prone to higher amounts of psychological problems (compared to gays and lesbians). In regards to the confounding variables in relation to the moderating variables that were not significant, future research may want to assess the impact that interpersonal transgressions have on sexual minorities. Additionally, future studies may want to introduce a mindfulness based stress reduction program for lesbians, gay men and bisexuals that have experienced discrimination, stigma or interpersonal transgressions.
REFERENCES


