SEXUAL MINORITY STRESS, COPING, AND PHYSICAL HEALTH INDICATORS

By

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In memory of Margaret Phillips
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Lesbian, gay, and bisexual individuals (hereafter referred to as sexual minorities) face unique oppressive barriers that impact their health such as legal discrimination, lack of culturally competent health providers, and unsafe living environments. Research has shown that sexual minorities experience higher rates of several physical health problems when compared to their heterosexual counterparts. Meyer’s (2007) Minority Stress Model may be helpful in understanding what factors may contribute to the health status of sexual minorities. The present study extends the Minority Stress Model to examine physical health rather than mental health.

The present study tests four hypotheses. The first two hypotheses suggest that sexual minority stress is predictive of two physical health indicators. The second two hypotheses suggest that problem-focused and social coping will partially mediate the relationship between sexual minority stress and each physical health indicator.

Additionally, the following research question is explored: Are there differences in the study variables in association with a) sex, b) socioeconomic status, and c) the interaction between sex and socioeconomic status? Study participants consisted of 250 adults who identified as a sexual minority.
To test the hypotheses, a bootstrapped path analysis was conducted. The results supported the first two hypotheses. As levels of sexual minority stress increased, engagement in a health-promoting lifestyle significantly decreased and the number of physical health problems significantly increased. The second two hypotheses were not supported. Problem-focused and social coping did not mediate the relationships between sexual minority stress and the physical health indicators; however, as levels of problem-focused and social coping increased, engagement in a health-promoting lifestyle significantly increased.

Analyses of Variance or Multivariate Analyses of Variance were conducted to address the research question. The results suggested significant sex and socioeconomic status differences in levels of sexual minority stress. Male sexual minorities reported higher levels of sexual minority stress than female sexual minorities. Also, sexual minorities with a low-household income reported higher levels of sexual minority stress than sexual minorities with a middle-household income. The implications of the findings from this study for addressing sexual minority stress and health concerns for sexual minorities are discussed.
CHAPTER 1
INTRODUCTION

Nature of Problem

The health of lesbian, gay, and bisexual individuals (hereafter referred to as sexual minorities) is increasingly becoming a major focus of health and health disparities research.\(^1\) One contributor to this research focus is the fact that Healthy People, a U.S. government organization, recently created health promotion initiatives based on previous scientific literature to address the health disparities that sexual minorities face (Healthy People, 2010). The Healthy People organization suggests that sexual minorities face unique oppressive barriers that impact their health such as legal discrimination, lack of culturally competent health providers, and unsafe living environments. Much existing research has attempted to understand such factors in relation to sexual health (e.g., HIV/AIDs) and mental health among sexual minorities; however, it is likely that these factors also impact physical health indicators (i.e., number of physical health problems such as cancer, obesity, or cardiovascular disease and engagement in a health-promoting lifestyle).

Unfortunately, little research has been done to understand physical health, as indicated by the above mentioned physical health indicators, among sexual minorities. The research that is available has shown that sexual minorities experience higher rates of several physical health problems when compared to heterosexual men and women. Conron, Mimiaga, & Landers (2010) found that sexual minorities were more likely to report smoking, drug use, asthma, and activity limitation (i.e., lack of exercise) when compared to heterosexual individuals. Additionally, bisexual men and women reported

\(^1\) While individuals who identify as transgender are also considered sexual minorities, only transgender individuals who also identify as gay, lesbian, or bisexual are included in this study.
experiencing more barriers to health care and higher prevalence of cardiovascular disease than heterosexual individuals.

Ungvarski and Grossman (1999) found that gay and bisexual men have an increased risk of heart disease and certain cancers. Studies by Yancey, Cochran, Corliss, and Mays (2003); Boehmer, Bowen, and Bauer (2007); and Struble, Lindley, Montgomery, Hardin, and Burcin (2011) showed that lesbian and bisexual women were more likely to be overweight or obese than heterosexual women. Other studies by Valanis, Bowen, Bassford, Whitlock, Charney, and Carter (2000), and Roberts, Dibble, Nussey, and Casey (2003) showed that lesbian and bisexual women were at higher risk for reproductive cancers and cardiovascular disease than heterosexual women.

In addition to the health disparities associated with sexual orientation, sexual minorities also may face health disparities related to their race/ethnicity, sex, and socioeconomic status. Racial/ethnic minorities and individuals with low household incomes experience higher levels of stress and health problems, as compared to European Americans and individuals with middle and high incomes, respectively. Racial/ethnic minorities experience health disparities in relation to cancer screenings and management, cardiovascular disease, diabetes, HIV/AIDS, immunizations, hepatitis, syphilis, and tuberculosis (Office of Minority Health & Health Disparities, 2012). Individuals from low-income groups are 50% more likely to be obese than other socioeconomic groups, thus increasing their risk of experiencing obesity-related diseases such as cardiovascular disease and diabetes (National Heart, Lung and Blood Institute, 2009). Additionally, racial/ethnic minorities and individuals with low household incomes have lower access to quality health care and lower insurance coverage (U.S. Department of Health and Human Services, 2011).
There are also sex-related health disparities, but the prevalence of disease within each sex varies by the type of disease. Women face health disparities related to breast cancer, heart attack mortality, and mental illness. Men face health disparities related to diabetes, renal disease, HIV/AIDS, substance abuse and suicide (U.S. Department of Health and Human Services, 2011). It seems likely that the influences on the physical health problems and health-promoting behaviors of sexual minorities who have multiple minority statuses (e.g., being lesbian, African American/Black, and female) are different for these sexual minorities compared to sexual minorities who do not have multiple minority statuses. However, it is not known that this is the case.

**Theoretical Framework**

Models that have been helpful in understanding mental health disparities in sexual minorities may be useful in understanding physical health disparities. One such model is the Minority Stress Model. In the Minority Stress Model, Meyer (2007) targets stress that is specifically associated with being a sexual minority (e.g., lesbian, gay, or bisexual). The entire Minority Stress Model contains several processes and concepts related to sexual identity, various sources of stress that are uniquely associated with being a sexual minority, coping and social support mechanisms, and mental health. The model highlights that there are four specific stress processes that are uniquely associated with being a sexual minority (hereafter referred to as sexual minority stress) including (a) stress related to experiencing prejudiced events, (b) stress related to expecting and anticipating the experience of rejection or discrimination, (c) stress related to disclosing or concealing one’s identity, and (d) stress related to internalizing negative societal attitudes.
An abundance of literature has shown that sexual minority stress results in negative mental health outcomes (Mays & Cochran, 2001; Meyer, 2003; Herek & Garnets, 2007; Frisell, Lichtenstein, Rahman, & Langstrom, 2010; Kuyper & Fokkema, 2011; Lehavot & Simoni, 2011). One potential buffer against sexual minority stress is the ability to cope with the stress. In the Minority Stress Model, coping and social support mediate the relationship between sexual minority stress and mental health outcomes. Studies that have examined the role of coping using the Minority Stress Model show that specific types of coping are better buffers against minority stressors than others (Sandfort, Bakker, Schellevis, & Vanwesenbeeck, 2009; Szymanski & Owens, 2008).

In the present study, problem-focused and social coping were used to mediate the relationship between sexual minority stress and physical health indicators, including number of physical health problems and engaging in a health-promoting lifestyle (see Figure 1-1). Problem-focused coping is one’s ability to utilize strategies to address a problem directly and change the source of stress. An example of problem-focused coping is the ability to break a problem down into smaller parts in order to address it. Problem-focused coping may directly address one’s intrapersonal experiences of sexual minority stress. Social coping is one’s ability to seek support from family or friends, and thus may directly address the social nature of sexual minority stress. The ability to cope with stress may lessen the impact of sexual minority stress on physical health indicators.

**Aims, Hypotheses, and Research Question**

The present study aims to examine whether sexual minority stress, problem-focused coping, and social coping predict physical health problems and engagement in
a health-promoting lifestyle (i.e., physical health indicators). Using a cross-sectional design, the following research hypotheses were investigated:

1. Sexual minority stress will negatively predict level of engagement in a health-promoting lifestyle. That is, as the levels of sexual minority stress increase, the levels of engagement in a health-promoting lifestyle will decrease.

2. Sexual minority stress will positively predict number of physical health problems (e.g., diabetes, cardiovascular disease). That is, as the levels of sexual minority stress increase, the number of physical health problems will increase.

3. Problem-focused and social coping will partially mediate the relationship between sexual minority stress and level of engagement in a health-promoting lifestyle. That is, the influence of sexual minority stress will be weaker on the level of engagement in a health-promoting lifestyle when there are higher levels of problem-focused and social coping.

4. Problem-focused and social coping will partially mediate the relationship between sexual minority stress and number of physical health problems. That is, the influence of sexual minority stress will be weaker on the number of physical health problems when there are higher levels of problem-focused and social coping.

See Figure 1-1 for a graphical depiction of the above hypotheses.

For this study, all participants are considered to have at least one minority status because they are sexual minorities. Therefore, having a multiple minority status in this study is operationalized as also being a racial/ethnic minority, being a gendered minority (e.g., female or transgender), or having a low socioeconomic status in addition to being a sexual minority. Because having multiple minority statuses may influence experiences of sexual minority stress, coping, and physical health indicators, the following research question was addressed: Are there differences in the major study variables in association with a) sex, b) race/ethnicity, c) socioeconomic status, d) the interaction between sex and race/ethnicity, e) the interaction between race/ethnicity and socioeconomic status, and f) the interaction between sex and socioeconomic status?
Figure 1-1. Study path model.
CHAPTER 2
LITERATURE REVIEW

Sexual Minority Stress

Sexual minorities are varied in their backgrounds and experiences; however, they do share a common identity and are often faced with unique stressors related to that identity. Meyer (2007) summarizes the key issues related to such stress in the Minority Stress Model. The entire Minority Stress Model contains several processes and concepts related to sexual identity, various sources of stress, coping and social support mechanisms, and mental health. A subset of this model is being used to understand physical health indicators in the present study. There are three assumptions in the Minority Stress Model: (a) minority stress is unique from general stressors and it has an effect above and beyond general stress, (b) minority stress is stable and long-standing, and (c) minority stress is based in social processes rather than in individual processes.

In a study that examined sources of sexual minority stress among lesbian, gay, and bisexual participants, focus group participants reported experiencing stress related to heteronormative expectations (e.g., assuming every person has a heterosexual orientation), anti-gay attitudes, and disclosing one’s identity (Hequembourg & Brallier, 2009). These focus group findings are consistent with Meyer’s model in which he explains that there are unique processes of sexual minority stress. Meyer describes four specific processes of sexual minority stress: (a) stress related to experiencing prejudiced events, (b) stress related to expecting and anticipating the experience of rejection or discrimination, (c) stress related to disclosing or concealing one’s identity, and (d) stress related to internalizing negative societal attitudes.
Sexual Minority Stress Processes

Experiencing prejudiced events

Prejudiced events are described as instances of discrimination or violence directed towards one's minority status. Anti-gay violence and discrimination has been a stable source of stress for sexual minorities for decades. Meyer (2007) conceptualizes prejudiced events as distal sources of stress for the sexual minority because they occur outside of the individual. The prejudiced events manifest in many different ways including violent assaults, bullying, workplace discrimination, denial of legal rights, etc. One study found that sexual minorities were twice as likely to experience a prejudiced event as heterosexual individuals (Mays & Cochran, 2001).

Expecting and anticipating the experience of rejection or discrimination

The expectation and anticipation of experiencing rejection or discrimination is related to societal stigmatization of sexual minorities. Because sexual minorities are stigmatized in society, they experience different levels of threat in their everyday interactions. Branscombe et al. (1999) explains that there are four types of threat tied to stigmatization: categorization threat, distinctiveness threat, threat against the values of the minority group, and threat of acceptance.

Categorization threat is the threat that an individual from a minority group will be categorized or labeled as a member of a specific group, particularly when group membership is irrelevant to the context of the situation (e.g., being labeled as a sexual minority in the workplace). Distinctiveness threat is the opposite of categorization threat and occurs when an individual from a minority group is denied his/her group membership when it is relevant or significant (e.g., saying someone is not bisexual because bisexuality is just a phase or he/she is confused about his/her sexual identity).
A minority individual’s values may be threatened when society brings into question the individual’s integrity and values (e.g., suggesting sexual minorities are immoral or cannot be religious). The threat of acceptance involves fearing rejection or negative feedback from one’s in-group (e.g., stereotypically feminine lesbians fearing rejection by other lesbians because of their feminine appearance). Each of these sources of threat feeds into the constant expectation and anticipation of rejection that sexual minorities may experience.

Sexual minorities may, often correctly, feel that others do not accept them or that others hold negative attitudes towards them. Anticipation of such negative reactions and threats from others results in sexual minorities becoming vigilant towards others’ reactions. Because vigilance is an internal process, Meyer (2007) conceptualizes this process as a proximal source of stress. This process is especially taxing because it requires the individual to be on guard most, if not all, of the time.

**Disclosure of one’s sexual identity**

Sexual minorities are often an invisible minority, meaning that their minority status is not necessarily apparent upon first meeting. As invisible minorities, sexual minorities often struggle with whether to disclose or conceal their sexual identity. The process of revealing such a stigmatized identity can be stressful. This process is also considered proximal because it is a struggle within the self (Meyer, 2007).

Some sexual minorities may conceal their identity as a way of protecting themselves from harm (i.e., prejudiced events), but concealment may also be related to feelings of shame regarding their identity (D’Augelli & Grossman, 2001). Concealment often requires the sexual minority to monitor their use of language, appearance, mannerisms, interests, or behaviors. Like with vigilance towards prejudiced events,
concealing one’s identity can be taxing, especially cognitively, on the individual. Additionally, concealment may cut off sexual minorities from social support including allies of sexual minorities and the gay community (Meyer, 2007).

The process of disclosure can be stressful because one is often unsure of how others will react and may be fearful of negative reactions. Sexual minorities may have to face the stressful process of disclosure repetitively throughout the lifespan. In the focus group article by Hequembourg and Brallier (2009) on sources of sexual minority stress, one of the participant’s described this process as follows: “The coming-out process is not just one time—you tell everybody, you’re done. It’s every single time you meet different people” (p. 282).

**Internalizing negative societal attitudes**

The most proximal stressor for sexual minorities is internalization of society’s anti-gay attitudes. According to Herek, Gillis, and Cogan (2009), internalization of negative societal attitudes can occur in both heterosexual and sexual minority individuals. In heterosexual individuals, these internalized attitudes shape the individual’s attitudes towards sexual minorities. In sexual minorities, these internalized attitudes shape the individual’s attitudes towards other sexual minorities and towards the self. When these negative societal attitudes shape a sexual minority’s attitude about himself/herself, it is called internalized or self-directed homophobia. Internalized homophobia often results in devaluing the self and having a negative self-perception. Internalized homophobia is often seen in its strongest form in early stages of the coming-out/disclosure process; however, it can manifest in other stages of sexual identity development and therefore may occur throughout the lifespan (Meyer, 2007).
To illustrate the process of internalizing anti-gay attitudes, consider the attitude that displays of affection between same-sex couples is disgusting or inappropriate. If someone who is heterosexual has internalized this attitude, s/he may feel uncomfortable or show disgust when seeing a same-sex couple display affection. If someone who is a sexual minority has internalized this attitude, s/he may show disgust when other same-sex couples display affection, but may also feel insecure about or ashamed of himself/herself when showing affection towards a same-sex partner.

**Sexual Minority Stress, Mental Health, and Physical Health Indicators**

Because the original Minority Stress Model highlights the relationships between sexual minority stress processes and mental health, most of the literature has focused on these relationships. The sexual minority stress processes have been linked to higher levels of psychological distress and psychological disorders (Meyer, 2003). Szymanski and Owens (2008) showed that internalized homophobia was a significant predictor of psychological distress in sexual minority women. Mays and Cochran (2001) found that sexual minorities had higher levels of perceived discrimination than heterosexual individuals and that this perceived discrimination was linked to higher levels of psychological distress and higher prevalence of psychological disorders such as depression, anxiety disorders, and substance dependence. Szymanski (2009) showed that sexual minority men experienced harassment, rejection, and discrimination targeting their sexual orientation and these experiences were significantly related to psychological distress. Frisell et al. (2010) found that high levels of perceived discrimination accounted for higher rates of depression, generalized anxiety disorder, eating disorders, alcohol dependence, and attention deficit hyperactivity disorder in sexual minorities.
Studies have also examined the entire Minority Stress Model in relation to mental health. Kuyper & Fokkema (2011) linked sexual minority stress with mental health problems in a Dutch sample. Leavot and Simoni (2011) found links between sexual minority stress and mental health in sexual minority women. In a review of mental health in sexual minorities, Herek and Garnets (2007) discuss the role of sexual minority stress in anxiety disorders, mood disorders, suicide risk, substance use, and other forms of psychological distress.

Stress has consequences not only for mental health, but for physical health as well (see Tosevski & Milovancevic, 2006 for a review of stress and physical health; McEwen, 2002). Unfortunately, there is no known literature linking sexual minority stress to general physical health. There is, however, evidence that sexual minorities do experience higher rates of physical health problems and lower engagement in health-promoting behaviors. Conron, Mimiaga, & Landers (2010) found that sexual minorities were more likely to report smoking, drug use, asthma, and activity limitation (i.e., lack of exercise) when compared to heterosexual individuals. Several studies have shown that sexual minorities have an increased risk of cardiovascular disease and certain cancers (Conron et al., 2010; Ungvarski & Grossman, 1999; Valanis et al., 2000; Roberts, Dibble, Nussey, & Casey, 2003). Also, sexual minority women are more likely to be overweight and obese than heterosexual women (Yancey et al., 2003; Boehmer, Bowen, & Bauer, 2007; Struble et al., 2011). The present study aims to extend the Minority Stress Model literature by examining the impact of sexual minority stress on physical health indicators (i.e., physical health problems and engagement in a health-promoting lifestyle).
Coping as a Buffer against the Impact of Sexual Minority Stress

Utilizing adaptive forms of coping can buffer against the negative influence of stress on engagement in a health-promoting lifestyle, enhance quality of life, and promote well-being. For example, in a review of literature on coping and diabetes, Fisher, Thorpe, DeVellis, and DeVellis (2007) found that coping plays an integral role in managing diabetes and the overall quality of life in diabetic patients. In the women’s health literature, coping has also been shown to impact health outcomes/behaviors such as proper diabetes management and metabolic control, improved dietary behavior, treatment adherence in breast cancer patients, increased life satisfaction in patients with musculoskeletal disorders, and increased health-related quality of life (Rao, 2009).

In a health intervention study, it was found that participants who created coping plans had significantly more fruit and vegetable intake and marginally higher levels of physical activity than participants in the control group (Luszczynska & Haynes, 2009).

In the Minority Stress Model, coping and social support mediate the relationship between sexual minority stress and mental health outcomes. In the present study, similar constructs (i.e., problem-focused and social coping) were used to mediate the relationship between sexual minority stress and physical health indicators.

Problem-focused Coping as a Mediator between Stress and Health

Problem-focused coping is defined as a form of coping that utilizes strategies to address a problem directly or change the source of stress. Busko and Kulenovic (2003) showed that problem-focused coping is particularly helpful for coping with low-control stressors, which are stressors that are difficult for a person to change (Busko & Kulenovic, 2003). Because sexual minority stress is comprised of many low-control stressors such as discrimination and stigmatization, problem-focused coping may be
particularly useful for managing sexual minority stress. Problem-focused coping may also mediate the relationship between stress and various forms of health. Studies have shown that problem focused coping mediates the relationship between stress and well-being, one aspect of health (Chao, 2011; Karlsen, Dybdahl, & Vitterso, 2006). Problem-focused coping has also been linked to engaging in health-promoting behaviors. In a study with gay men, problem-focused coping was negatively related to the number of types of drugs used as well as the number of sexual partners, thus problem-focused coping may help reduce HIV risk (Barrett, Bolan, Joy, Counts, Doll, & Harrison, 1995). Problem-focused coping also appears to have implications for mental health. Chang et al. (2007) showed that problem-focused coping predicted better psychological adjustment.

Only one known study has examined problem-focused coping in the context of the Minority Stress Model. Problem-focused coping showed no moderating or mediating effect between internalized homophobia, one of the processes of sexual minority stress, and psychological distress among sexual minority women (Szymanski & Owens, 2008). Because this study only examined one component of sexual minority stress (i.e., internalized homophobia), it is worthwhile to examine problem-focused coping in the context of sexual minority stress as a whole. Additionally, it is worthwhile to examine whether problem-focused coping mediates the relationship between sexual minority stress and physical health indicators.

**Social Coping as a Mediator between Stress and Health**

Having social networks and utilizing the support from those networks can serve as a strong buffer against stress and have a positive impact on health. When sexual minorities have strong social support from the gay, lesbian, and bisexual community or
strong social support in general, this support buffers against stress and decreases their risk of negative health outcomes, such as alcohol use problems, depression, or HIV-related complications (Hequembourg and Brallier, 2009). Mansini and Barrett (2008) found that social support, particularly support from friends, predicted higher quality of life, and lower depression, anxiety, and internalized homophobia among older gay, lesbian, and bisexual individuals.

The role of social support in the context of the Minority Stress Model is unclear. In a study with sexual minority women, having social resources mediated the relationship between sexual minority stress and mental health, including substance abuse (Lehavot & Simoni, 2011). In a study using sexual minority men, social support did not mediate the relationship between experiencing heterosexist (prejudiced) events and psychological distress (Szymanski, 2009). It seems, however, that social support may be related to sexual minority stress as a whole. The present study emphasizes the use of social support (i.e., social coping) to cope with the impact of sexual minority stress as a whole. It also extends the literature by examining the role of social coping within the interplay of sexual minority stress and physical health indicators.

**Experiences of Stress, Coping, and Health among Individuals with Multiple Minority Statuses**

Having multiple minority statuses (e.g., being a female sexual minority of color) may alter the experiences of sexual minority stress, one’s ability to cope, and one’s mental and physical health. Such individuals may have a higher risk of exposure to stigmatization and discrimination, which heightens their levels of stress. Stanley (2004) discusses the experiences of biracial sexual minority women and suggests that they experience unique sources of stress such as lacking a sense of belonging to any one group or having certain parts of one’s identity be more visible than others. In a focus
group with sexual minority females, Pendragon (2010) found that the focus group participants often experienced isolation, lack of acceptance, harassment, and violence. Meyer and Frost (2008) found that individuals in multiple disadvantaged groups (i.e., sexual minorities and racial/ethnic minorities) experience higher levels of stress than individuals in only one disadvantaged group.

On the other hand, being able to integrate multiple identities can facilitate coping and boost one’s psychological resilience (Herek & Garnets, 2007). Sexual minority females reported using multiple coping strategies such as redefining self-concepts or values, engaging in activism, or utilizing supportive relationships in order to cope with their unique stress (Pendragon, 2010). Sexual minority individuals with multiple minority identities do not necessarily have greater psychological distress than sexual minorities with no other minority identities (Consolacion, Russell, & Sue, 2004).

Despite the potential of having more coping resources, individuals with multiple minority statuses are still at higher risk for physical health concerns. Having multiple minority statuses increases one’s susceptibility to experiencing health disparities such as lower access to proper health care, higher cardiovascular disease risk, sexual health disease risk, or diabetes risk (Jackson, 2005; Cummings & Jackson, 2008). An especially salient health concern for sexual minority women is the risk of overweight and obesity (Yancey et al., 2003; Boehmer et al., 2007; Struble et al., 2011). Overweight and obesity are also health concerns for sexual minority women of color (Wilson, 2009). Given these concerns, it is important to examine the association of multiple minority statuses with sexual minority stress, coping, and physical health indicators (i.e., number of physical health problems and engagement in a health-promoting lifestyle).
Study Overview

The present study explores whether problem-focused coping and social coping mediate the relationship between sexual minority stress and physical health indicators (i.e., physical health problems and engagement in a health-promoting lifestyle). Additionally, this study explores whether there are differences in the major study variables (i.e., sexual minority stress, problem-focused coping, social coping, engagement in a health-promoting lifestyle, and number of physical health problems) in association with the presence or absence of multiple minority status. Specifically, it determines if there are differences in the major study variables in association with sex, race/ethnicity, socioeconomic status, sex x race/ethnicity, race/ethnicity x socioeconomic status, and sex x socioeconomic status.
CHAPTER 3
METHOD

Participants

Participant inclusion criteria were: (a) age 18 or older, (b) identifies as lesbian, gay, bisexual, or as some other sexual minority, and (c) communicates in written form in English. Participant exclusion criteria were: (a) identifies as heterosexual and (b) age 17 or younger. A total of 393 individuals consented to participate in the study; however, only a total of 258 participants completed the entire online survey, resulting in a 65.6% participation rate. Two participants were removed because they were under the age of 18. Additionally, six participants were removed for having significant missing data (i.e., more than 15% missing). The final sample consisted of 250 participants.

Participants varied in their sexual orientation (see Table 3-1); 240 (96%) participants identified within the range of “somewhat homosexual” - “very homosexual”. Participants ranged in age from 18 to 89 years old, with a mean age of 41 years old ($SD=14.56$). There were 146 (58.4%) females, 86 (34.4%) males, 12 (4.8%) transgender individuals, and 6 (2.4%) participants who identified as “other” (e.g., genderfluid, queer, two-spirited). One hundred eighty-eight (75.2%) participants self-identified as non-Hispanic Caucasian/White/European American, 26 (10.4%) self-identified as multi-racial/multi-ethnic, 17 (6.8%) self-identified as Asian/Asian American, 11 (4.4%) self-identified as Hispanic/Latino(a), 3 (1.2%) self-identified as Black/African American, 1 (0.4%) self-identified as American Indian/Alaska Native, and 4 (1.6%) self-identified as “other” (e.g., Middle Eastern, Texan).

The majority of participants were highly educated. One hundred twenty-five (50%) had completed professional/graduate school, 66 (26.4%) had completed a 4-year college/university, 25 (10%) had completed a 2-year college/university or trade/technical
school, 33 (13.2%) had completed high school or the GED test, and 1 (0.4%) had completed middle school. Annual household income was determined by dividing the shared household income by the number of individuals living in the household. The median household income was $30,000. Ninety-five (38%) participants reported an annual household income below $25,000, 118 (47.2%) participants reported an annual household income between $25,000 and $100,000, 10 (4%) participants reported an annual household income above $100,000, and 27 (10.8%) participants did not report an annual household income.

In terms of participants’ ratings of their overall health, 24 (9.6%) rated their health as excellent, 92 (36.8%) rated their health as very good, 89 (35.6%) rated their health as good, 36 (14.4%) rated their health as fair, and 9 (3.6%) rated their health as poor. Participants endorsed several health conditions (see Figure 3-1). In addition to the health conditions listed, participants listed several other health conditions such as hormonal conditions, joint pain/injury, migraines, internal organ conditions (e.g., cirrhosis of the liver), etc.

Measures

Demographic and Health Information Questionnaire (DHIQ)

The DHIQ was created by the primary researcher and consisted of questions to obtain the following information: race/ethnicity, sex, sexual orientation, age, education level, annual household income, and numbers of individuals in the household. Shivley’s and DeCecco’s (1977) method of assessing sexual orientation was used where participants rate their level of heterosexuality on a 5-point scale ranging from 1 (not at all heterosexual) to 5 (very heterosexual), and their level of homosexuality on a 5-point scale. All measures can be found in the Appendices.
scale ranging from 1 (*not at all homosexual*) to 5 (*very homosexual*). Additionally, participants were asked to rate their overall health and to check off any health conditions they have including overweight/obesity, high cholesterol, high blood pressure, type 2 diabetes, cardiovascular/heart disease, HIV/AIDS, sexually transmitted infection, respiratory problems, gastrointestinal problems, skin conditions, and cancer. Participants had the option of listing any health conditions they have that are not listed. A total count of health conditions was used as a criterion variable (i.e., number of physical problems).

**Measure of Gay-Related Stressors (MOGS)**

The MOGS (Lewis, Derlega, Berndt, Morris, & Rose, 2003) is a 70-item checklist that assesses the number of sexual minority stressors (i.e., stressors that sexual minorities are likely to face) that have occurred in the past year, such as experiences with discrimination, familial conflict, societal stigma, and conflict around one’s own sexual orientation. Each of the processes within the Minority Stress Model is covered in the MOGS. There are ten subscales; however, only an overall score was used in the present study. The instruction on the MOGS is to check any event that you have experienced in the past year that was stressful. Sample items include “hiding my sexual orientation from others,” and “being called names due to my sexual orientation.” Level of sexual minority stress was calculated by summing the number of items endorsed ranging from 0-70. Higher scores indicate a greater degree of sexual minority stress. Doty, Willoughby, Lindahl, and Malik (2010) have reported an overall Cronbach’s alpha of .88 for the MOGS in an adolescent population.
Coping Questionnaire (COPE)

The COPE (Carver, Scheier, & Weintraub, 1989) is a 60-item questionnaire that is used to measure individuals' levels of use of various coping styles. The COPE consists of fifteen subscales, two of which were used in the present study (consisting of eight total items). The subscales used measure an individual's use of planning, which is a form of problem-focused coping, and use of instrumental social support. The instruction on the COPE is to indicate how frequently you use particular coping styles when experiencing stressful events using a 4-point Likert-type scale, ranging from 1 (usually don't do this at all) to 4 (usually do this a lot). Sample items from these subscales are “I ask people who have had similar experiences what they did,” and “I try to come up with a strategy about what to do.” Scores are calculated by summing the ratings of the items in each individual subscale. There is no overall score. Higher scores indicate more frequent utilization of each coping style. In the scale development study (Carver et al., 1989), the Cronbach’s alpha for the planning/problem-focused coping subscale has been reported to be .80, and the Cronbach’s alpha for the use of the instrumental social support subscale has been reported to be .75.

Health-Promoting Lifestyle Profile II (HPLP II)

The HPLP II (Walker & Hill-Polerecky, 1996) is a 52-item self-report inventory that measures level of engagement in an overall health-promoting lifestyle. Six HPLP II subscales assess level of engagement in specific health-promoting behaviors that constitute a health-promoting lifestyle including: health responsibility, exercise, nutrition, spiritual growth, interpersonal relations, and stress management. Only an overall score was used in the present study. The instruction on the HPLP II is to indicate how frequently you engage in specific health-promoting behaviors using a 4-point Likert-type
scale ranging from 1 (never) to 4 (routinely). A sample item on this profile is “How often do you choose a diet low in fat, saturated fat, and cholesterol?” Scores are calculated by taking the mean of all of the items to obtain an overall score. Higher scores indicate a lifestyle with higher self-reported health-promoting behaviors. Walker & Hill-Polerecky (1996) have reported a Cronbach’s alpha of .94 for the overall scale.

Procedure

The present study was approved by the Institutional Review Board (IRB) at the affiliated university. All components of the study were completed online. Participants were primarily recruited through yahoo groups oriented towards sexual minorities. The researcher used an IRB-approved recruitment script to recruit participants. The moderators of 160 yahoo groups were contacted requesting permission to post the recruitment script to the respective yahoo group; however, only 90 moderators responded to the request and posted the script to their group. Additionally, the recruitment script was printed in two media outlets oriented towards sexual minorities. Emails were also sent to known individuals with connections to sexual minority communities (e.g., individuals who have done research with sexual minority communities or individuals who are affiliated with organizations focused on sexual minority issues). The researcher asked such individuals to forward the recruitment script via e-mail to individuals who may fit the inclusion criteria or to listservs oriented towards sexual minorities. (See Appendix E for the recruitment script.)

A link to the study’s informed consent and an Assessment Battery (AB) of the study’s measures was included in the email/recruitment script. The first webpage in the link contained all of the necessary informed consent information. The informed consent included information on the purpose of the study, what participation in the study entails,
the risks and benefits of the study, issues around compensation and confidentiality, the voluntary nature of the study, and the right to withdraw. (See Appendix F for the informed consent form.) Participants gave consent by clicking on an “agree to terms” option on the webpage. Participants who did not agree were not able to access the AB and were sent to a closing webpage thanking them for their time.

After agreeing to terms in the informed consent form, participants were directed to a webpage to complete the AB. The questionnaires in the AB were counter-balanced, with the exception of the DHIQ which was placed at the end of the AB so as not to bias participants’ responses. Completion of the AB took approximately 15-30 minutes. Only the Principle Investigator (PI) had access to the participants’ data. No identifying information, including e-mail addresses, were included with participants’ data. Additionally, the data was password protected.

Although participants did not receive compensation, after 250 participants completed the AB, $250 was donated to the Human Rights Campaign, a civil rights organization that works to achieve equality for lesbian, gay, bisexual, and transgender individuals. Participants also had the opportunity to receive the results of the study and implications for health promotion and counseling interventions. If participants decided to receive the results, they provided their e-mail address on a separate webpage; however, their contact information was kept separate from the rest of their data. Participants’ e-mail addresses will be deleted once they have been notified of the study’s results. Recruitment and data collection lasted approximately 3 months.
Statistical Analyses

Preliminary Analyses

Prior to conducting the main analyses, the demographic characteristics (e.g., age, sex, race/ethnicity, and socioeconomic status) and variables of interest (sexual minority stress, problem-focused coping, social coping, physical health problems, and engagement in a health-promoting lifestyle) were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of the General Linear Model for the continuous variables. The internal reliability of each self-report scale was calculated for the study’s sample using Cronbach’s reliability coefficient alpha. Descriptive statistics were calculated for the demographic variables and variables of interest.

Analysis to Test the Hypothesized Model

Hypotheses 1-4 stated that sexual minority stress will negatively predict level of engagement in health-promoting lifestyle and positively predict number of physical health problems; problem-focused and social coping will partially mediate the relationship between sexual minority stress and a health-promoting lifestyle as well as partially mediate the relationship between sexual minority stress and number of physical health problems. To test these hypotheses, a bootstrapped path analysis was conducted.

The bootstrapping method produces thousands of resampled data sets (random sampling with replacement) from the original measured data set, each with the same sample size as the original sample. The direct and indirect effects are re-estimated in each random resample. The standard deviation of these effects serves as the empirical standard error used to test the significance of the average direct and indirect effects.
The use of this empirical method ensures that the asymptotic assumption of normally distributed effects need not be met. Because such empirical standard error estimates can be opportunistically small (given that they are estimated from the same defined sample), bias-correcting augments to the standard error were used (Arbuckle, 2008). This method can be useful when testing mediation effects because it takes into account the skewed distribution of indirect effects (Shrout & Bolger, 2002; Preacher & Hayes, 2008). The path analysis tested all total effects; the direct effects of sexual minority stress, problem-focused coping and social coping on a health-promoting lifestyle and the number of physical health problems; and the indirect effects of sexual minority stress on a health-promoting lifestyle and the number of physical health problems through both coping styles (i.e., the mediation). The model was fully recursive.

**Analyses to Answer the Research Question**

The research question set forth in the present study stated: Are there differences in the major study variables in association with sex, race/ethnicity, socioeconomic status (SES), sex x race/ethnicity, race/ethnicity x SES, and sex x SES? Due to limited diversity in the sample, the principle investigator was unable to explore the full research question. Thus, the following research question was addressed: Are there differences in the major study variables in association with sex, socioeconomic status (SES), and sex x SES? Between subjects, 2-way Analyses of Variance (ANOVAs) or Multivariate Analyses of Variance (MANOVAs) were conducted to address the research question. The independent variables for the research question analyses were sex and SES. Dependent variables were grouped into MANOVAs based on conceptual relation (e.g., coping strategies, health-related variables) and by utilizing preliminary correlations. If variables were moderately correlated and were conceptually related, they were grouped...
into a MANOVA. Variables not conceptually related or not moderately correlated were placed as dependent variables into separate ANOVAs.

Table 3-1. Participant’s Self-Reported Sexual Orientation

<table>
<thead>
<tr>
<th></th>
<th>Not at all Homosexual</th>
<th>Somewhat Homosexual</th>
<th>Very Homosexual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all Heterosexual</td>
<td>1 (0.4%)</td>
<td>0 (0.0%)</td>
<td>4 (1.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 (4.4%)</td>
<td>104 (41.6%)</td>
</tr>
<tr>
<td>Somewhat Heterosexual</td>
<td>0 (0.0%)</td>
<td>1 (0.4%)</td>
<td>4 (1.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28 (11.2%)</td>
<td>32 (12.8%)</td>
</tr>
<tr>
<td>Very Heterosexual</td>
<td>0 (0.0%)</td>
<td>4 (1.6%)</td>
<td>6 (2.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 (0.8%)</td>
<td>6 (2.4%)</td>
</tr>
</tbody>
</table>

Note. Numbers presented are the N and corresponding percentage for each category. Four participants did not report their sexual orientation.

Figure 3-1. Participants’ health conditions.
CHAPTER 4
RESULTS

First, the results of the preliminary analyses to address the general characteristics of the data are presented. Second, the results of a bootstrapped path analysis to test Hypotheses 1-4 are reported. Finally, the results of the Univariate and Multivariate Analyses of Variance conducted to address the research question are presented.

Preliminary Analyses

Prior to conducting the analyses to address the hypotheses and exploratory research question, the demographic characteristics (e.g., age, sex, race/ethnicity, and socioeconomic status) and variables of interest (sexual minority stress, problem-focused coping/planning, social coping/use of instrumental social support, engagement in a health-promoting lifestyle, and number of physical health problems) were examined for accuracy of data entry and missing values.

The investigated variables were also examined for the fit between their distributions and the assumptions of the General Linear Model (GLM). The assumption of normality was met by verifying that skewness and kurtosis statistics were between 2 and -2, and by producing and inspecting histograms and normal probability plots. Because of their categorical nature, sex, race/ethnicity, and socioeconomic status were not normally distributed. All of the study variables were fairly normal. Linearity and homoscedasticity were verified by producing and inspecting bivariate scatterplots. In addition, inspection of the correlation matrix revealed no bivariate correlations above 0.50 among the variables of interest, indicating that multicollinearity did not exist. After the assumptions of the GLM were met, descriptive statistics of all of the study variables were calculated (see Table 4-1).
The internal reliability of each self-report scale for the study’s sample was calculated using Cronbach’s reliability coefficient alpha. The Cronbach’s alpha for the full scale of the Measure of Gay-Related Stressors was .94 for this sample. The Cronbach’s alphas for the subscales of the Coping Questionnaire for this sample were .85 for the Planning subscale and .86 for the Use of Instrumental Social Support subscale. The Cronbach’s alpha for the full scale of the Health-Promoting Lifestyle Profile II was .93 for this sample.

**Results of Bootstrapped Path Analysis to Test Hypotheses 1-4**

A path model with bootstrapped estimates of standard error was conducted to test hypotheses 1-4, which are as follows:

1. Sexual minority stress will negatively predict level of engagement in a health-promoting lifestyle.

2. Sexual minority stress will positively predict number of physical health problems (e.g., diabetes, cardiovascular disease).

3. Problem-focused and social coping will partially mediate the relationship between sexual minority stress and level of engagement in a health-promoting lifestyle.

4. Problem-focused and social coping will partially mediate the relationship between sexual minority stress and the number of physical health problems.

Significance tests were conducted using bootstrapped estimates of standard errors for direct, indirect, and total effects. To test Hypotheses 1-4 in the present research, 1000 bootstrapped subsamples were selected. Two statistical packages, AMOS 20.0 and SPSS 19.0, were used to conduct the bootstrapped mediation. All calculations involved were based on standardized values. Table 4-2 shows the resulting standardized direct regression paths, indirect mediation paths, and total regression paths. The overall model accounted for 26% of the variance in level of engagement in a
health-promoting lifestyle and 5% of the variance in number of physical health problems.

**Direct Effects**

The significant direct effects highlight the significant relationships in the model while controlling for the other relationships in the model. Hypotheses 1 and 2 were supported. Results indicated that sexual minority stress had a significant negative direct effect on engagement in a health-promoting lifestyle and a significant positive direct effect on number of physical health problems. Results also indicated that problem-focused and social coping had a significant positive direct effect on engagement in a health-promoting lifestyle. All other direct effects were not significant. See Table 4-2 for the selected statistics on all direct effects.

**Indirect Effects**

Hypotheses 3 and 4 were not supported. The test of the indirect effects (i.e., the meditational effects) revealed no significant indirect effects. Specifically, problem-focused and social coping did not significantly mediate the relationship between sexual minority stress and engagement in a health-promoting lifestyle, nor did either coping style significantly mediate the relationship between sexual minority stress and number of physical health problems (see Table 4-2).

**Total Effects**

The significant total effects highlight the significant relationships in the overall model, without controlling for other relationships within the model. Results indicated that sexual minority stress had a significant negative total effect on engagement in a health-promoting lifestyle and a significant positive total effect on number of physical health problems. Results also indicated that problem-focused and social coping had a
significant positive total effect on engagement in a health-promoting lifestyle. All other
total effects were not significant. See Table 4-2 for the selected statistics on all total
effects.

Results of ANOVAs and MANOVAs to Explore the Research Question

The research question set forth in the present study stated: Are there differences
in the major study variables in association with sex, race/ethnicity, socioeconomic status
(SES), sex x race/ethnicity, race/ethnicity x SES, and sex x SES? Due to limited
diversity in the sample, the principle investigator was unable to explore the full research
question. Specifically, the sample was fairly homogenous in regards to race/ethnicity,
with 75.2% of the sample identifying as Caucasian/non-Hispanic White/European
American, so no race/ethnicity analyses were conducted. Additionally, only 4% of the
sample fit into the high-income group (reporting an annual household income above
$100,000) so only individuals with low- and middle-incomes were compared. Finally,
only female and male participants were compared due to small Ns for participants who
identified as transgender (4.8%) or as “other” (2.4%).

Between subjects, 2-way Analyses of Variance (ANOVAs) or Multivariate Analyses
of Variance (MANOVAs) were conducted to address the research question. The
independent variables for the research question analyses were sex and SES.
Dependent variables were grouped into MANOVAs based on conceptual relation (e.g.,
coping strategies or health-related variables) and by utilizing preliminary correlations. If
variables were moderately correlated and were conceptually related, they were grouped
into a MANOVA. Only problem-focused and social coping were grouped as dependent
variables in a MANOVA ($R = .29, p < .01$). Sexual minority stress, engagement in a
health-promoting lifestyle, and number of physical health problems were entered as a dependent variable in separate ANOVAs.

**Demographic Differences in Sexual Minority Stress**

Results of the ANOVA using sexual minority stress as the dependent variable revealed a significant main effect of sex on sexual minority stress, $F(1, 195) = 13.49, p < .001$. Men ($M = 21.88, SD = 13.47$) reported significantly higher levels of sexual minority stress than women ($M = 17.13, SD = 10.81$). There was also a significant main effect of SES on sexual minority stress, $F(1, 195) = 8.38, p < .01$. Individuals with a low-household income ($M = 22.65, SD = 11.68$) reported significantly higher levels of sexual minority stress than individuals with a middle-household income ($M = 17.25, SD = 12.82$). The interaction between sex and SES was not significant, $F(1, 195) = 1.49, p = .22$. See Table 4-3 for group means and standard deviations.

**Demographic Differences in Coping**

Results of the MANOVA using problem-focused and social coping as dependent variables revealed no significant main sex ($F(2, 194) = 2.91, p = .06$) or SES ($F(2, 194) = 0.92, p = .40$) effects. There were also no significant interaction effects, $F(2, 194) = 0.87, p = .42$. See Table 4-3 for group means and standard deviations.

**Demographic Differences in Engagement in a Health-Promoting Lifestyle**

Results of the ANOVA using engagement in a health-promoting lifestyle as the dependent variable revealed no significant main sex ($F(1, 195) = 3.78, p = .05$) or SES ($F(1, 195) = 3.02, p = .08$) effects. There were also no significant interaction effects, $F(1, 195) = 1.90, p = .17$. See Table 4-3 for group means and standard deviations.
Demographic Differences in Number of Physical Health Problems

Results of the ANOVA using number of physical health problems as the dependent variable revealed no significant main sex ($F(1, 195) = 0.59, p = .44$) or SES ($F(1, 195) = 0.96, p = .33$) effects. There were also no significant interaction effects, $F(1,195) = 0.60, p = .44$. See Table 4-3 for group means and standard deviations.

Table 4-1. Selected descriptive statistics for all investigated variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sexual Minority Stress</th>
<th>Planning</th>
<th>Use of Social Support</th>
<th>Health-Promoting Lifestyle</th>
<th>Number of Health Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M$</td>
<td>19.26</td>
<td>13.48</td>
<td>11.52</td>
<td>2.58</td>
<td>1.79</td>
</tr>
<tr>
<td>Comparative $M$</td>
<td>a</td>
<td>12.58$^b$</td>
<td>11.50$^b$</td>
<td>2.65$^c$</td>
<td></td>
</tr>
<tr>
<td>$SD$</td>
<td>12.58</td>
<td>2.62</td>
<td>2.98</td>
<td>0.41</td>
<td>1.75</td>
</tr>
<tr>
<td>Comparative $SD$</td>
<td>a</td>
<td>2.66$^b$</td>
<td>2.88$^b$</td>
<td>0.41$^c$</td>
<td></td>
</tr>
<tr>
<td>Obtained Range</td>
<td>0-61</td>
<td>5-16</td>
<td>4-16</td>
<td>1.65-3.65</td>
<td>0-10</td>
</tr>
<tr>
<td>Possible Range</td>
<td>0-70</td>
<td>4-16</td>
<td>4-16</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td>Obtained $\alpha$</td>
<td>.94</td>
<td>.85</td>
<td>.86</td>
<td>.93</td>
<td></td>
</tr>
<tr>
<td>Scale $\alpha$</td>
<td>.88</td>
<td>.80</td>
<td>.75</td>
<td>.94</td>
<td></td>
</tr>
</tbody>
</table>

$^a$Unable to access a comparative $M$ and $SD$ for the total 70-item MOGS score.

$^b$The COPE comparative sample $M$s and $SD$s are adapted from Carver, Scheier, & Weintraub (1989).

$^c$The HLP II comparative sample $M$s and $SD$s are adapted from McElligott, Capitulo, Morris, & Click (2010).
Table 4-2. Direct, indirect and total effects in the path model

<table>
<thead>
<tr>
<th>Predicators</th>
<th>Sexual Minority Stress</th>
<th>Social Coping</th>
<th>Problem-focused Coping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health-Promoting Lifestyle</td>
<td>Total</td>
<td>-0.265$^*$</td>
<td>0.298$^*$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.053)</td>
<td>(.057)</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>-0.225$^*$</td>
<td>0.298$^*$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.049)</td>
<td>(.057)</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>-0.040</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Physical Health Conditions</strong></td>
<td>Total</td>
<td>0.187$^*$</td>
<td>-0.060</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.077)</td>
<td>(.063)</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0.197$^{**}$</td>
<td>-0.060</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.077)</td>
<td>(.063)</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>-0.011</td>
<td></td>
</tr>
</tbody>
</table>

$^*$ $p < .05$, $^{**}$ $p < .01$.

Note. Values represent standardized effect estimates for total, direct, and indirect effects of each predictor. The values in parentheses represent standard errors, which were empirically estimated with 1,000 bootstrapped samples.
Table 4-3. Sex and SES Statistics for Investigated Variables

<table>
<thead>
<tr>
<th></th>
<th>Female M (SD) (n = 130)</th>
<th>Male M (SD) (n = 69)</th>
<th>Low-Income M (SD) (n = 85)</th>
<th>Mid-Income M (SD) (n = 114)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual Minority Stress*</td>
<td>17.13 (10.81)</td>
<td>21.88 (13.47)</td>
<td>22.65 (11.68)</td>
<td>17.25 (12.82)</td>
</tr>
<tr>
<td>Problem-focused Coping</td>
<td>13.66 (2.54)</td>
<td>13.19 (2.69)</td>
<td>13.11 (2.85)</td>
<td>13.69 (2.47)</td>
</tr>
<tr>
<td>Social Coping</td>
<td>11.81 (2.95)</td>
<td>11.14 (2.98)</td>
<td>11.34 (2.82)</td>
<td>11.53 (3.02)</td>
</tr>
<tr>
<td>Health-Promoting Lifestyle</td>
<td>2.62 (0.42)</td>
<td>2.52 (0.39)</td>
<td>2.49 (2.07)</td>
<td>2.64 (0.41)</td>
</tr>
<tr>
<td>Number of Health Problems</td>
<td>1.64 (1.57)</td>
<td>1.88 (1.81)</td>
<td>2.07 (2.04)</td>
<td>1.69 (1.51)</td>
</tr>
</tbody>
</table>

* Indicates significant demographic differences.

Note. The values in parentheses represent standard deviations.
CHAPTER 5
DISCUSSION

Summary of Results

Relationships among Sexual Minority Stress, Coping Styles, and Physical Health Indicators

Hypotheses 1-4 addressed the relationships among sexual minority stress, coping styles (i.e., problem-focused and social coping), and physical health indicators (i.e., engagement in a health-promoting lifestyle and number of physical health problems). Hypotheses 1 and 2, which pertain to the relationship between sexual minority stress and the physical health indicators, were supported. Both the total and direct effects within the path model suggest that sexual minority stress had a significant negative effect on engagement in a health-promoting lifestyle. In other words, as levels of sexual minority stress increased, engagement in a health-promoting lifestyle decreased. Additionally, both the total and direct effects within the bootstrapped path model suggest that sexual minority stress had a significant positive effect on number of physical health problems. In other words, as levels of sexual minority stress increased, the number of physical health problems also increased.

Hypotheses 3 and 4, which pertain to the mediational effect of the coping styles between sexual minority stress and the physical health indicators, were not supported. There were no significant indirect (i.e., mediational) effects within the path model. However, both problem-focused and social coping had significant total and direct effects on engagement in a health-promoting lifestyle. As levels of problem-focused and social coping increased, engagement in a health-promoting lifestyle also increased.
Multiple Minority Statuses and Investigated Variables

The research question was developed to explore whether having multiple minority statuses influenced levels of sexual minority stress, coping styles, and physical health indicators. Specifically, the research question addressed differences in the investigated variables in association with sex, socioeconomic status (SES), and the interaction of sex and SES. Largely, the results suggest that having multiple minority statuses was not necessarily related to differences in the investigated variables; however, there were demographic differences in association with sexual minority stress. Male sexual minorities reported higher levels of sexual minority stress than female sexual minorities. Also, sexual minorities with a low-household income reported higher levels of sexual minority stress than sexual minorities with a middle-household income. There were no significant demographic differences in coping or physical health indicators.

Implications of Results

Sample Health Characteristics

This study adds to the literature on the state of physical health among sexual minorities. It is important to highlight that while 46.4% of participants rated their health as very good or excellent, the average participant endorsed having approximately 2 physical health problems. This is consistent with the existing literature that suggests sexual minorities experience high rates of several physical health conditions, particularly when compared to heterosexual individuals (Conron, Mimiaga, & Landers, 2010). Of particular note is the high rate of overweight and obesity in this sample (44.4% of the sample), both of which are linked to a number of long-term physical health conditions (National Heart, Lung and Blood Institute, 2009). This statistic parallels the research showing high rates of overweight and obesity among lesbian and bisexual women.

**Minority Stress Model**

Meyer’s (2007) Minority Stress Model addresses several processes and concepts related to sexual identity, various sources of stress, coping and social support mechanisms, and mental health. The findings in this study serve two purposes informed by the Minority Stress Model literature. First, this study provides partial support for the existing literature on the Minority Stress Model. Second, this study extends the Minority Stress Model by examining the impact of sexual minority stress on physical health indicators, rather than mental health indicators.

**Sexual minority stress and health**

Broadly, the results from this study and the existing literature suggest a negative link between sexual minority stress and health. Specifically, sexual minority stress has been linked with negative mental health outcomes such as psychological distress or psychological disorders (Frisell et al., 2010; Mays & Cochran, 2001; Meyer, 2003; Szymanski & Owens, 2008; Szymanski, 2009). The results from this study parallel the findings with sexual minority stress and mental health; specifically, sexual minority stress was shown to have a negative association with physical health indicators (i.e., decreased engagement in a health-promoting lifestyle and increased number of physical health problems).
Coping and the Minority Stress Model

In the original Minority Stress Model, coping and social support mediate the relationship between sexual minority stress and mental health outcomes. This study was designed to examine a similar relationship between sexual minority stress and physical health indicators by utilizing problem-focused and social coping as mediators; however, the mediating relationship was not supported. Clearly, these findings were unexpected.

While the results did show a link between both coping styles and engagement in a health-promoting lifestyle, these coping styles did not seem to buffer against the sexual minority stress. The coping literature has already demonstrated a link between coping and engagement in specific health-promoting behaviors, such as treatment adherence or dietary behaviors. The link between both problem-focused and social coping styles and engagement in a health-promoting lifestyle in the present study confirms the relationship found by other researchers between coping and health-promoting behaviors (Luszczynska & Haynes, 2009; Rao, 2009).

Problem-focused coping may be an adequate coping style when dealing with general stress, but it may not be adequate in mediating the effect of sexual minority stress. For example, studies have shown that problem-focused coping mediates the relationship between stress and well-being, one aspect of health (Chao, 2011; Karlsen, Dybdahl, & Vitterso, 2006). However, the results of this study are consistent with the findings in Szymanski and Owens’ (2008) study showing that problem-focused coping had no moderating or mediating effect on the relationship between internalized homophobia, one component of sexual minority stress, and psychological distress. It appears that problem-focused coping may not be the best coping style for addressing
various forms of sexual minority stress. One possible explanation is that problem-focused coping is an intrapersonal style of coping, whereas sexual minority stress is largely a social and interpersonal process.

Meyer (2007) suggests that actual or perceived social support mediates the relationship between sexual minority stress and mental health outcomes in the Minority Stress Model. There is existing evidence that social support buffers against general and sexual minority stress and results in positive psychological outcomes (Hequembourg & Brallier, 2009; Lehavot & Simoni, 2011; Mansini & Barrett, 2008). The present study examined perceived social support from a coping perspective, given the relationship between various coping styles and physical health indicators; however, it may be actual social support, instead of the ability to cope using social support, that is effective when dealing with sexual minority stress.

Experiences of Sexual Minority Stress within Sexual Minority Sub-groups

This present study explored demographic differences (i.e., sex and SES) in sexual minority stress, coping styles, and physical health indicators among sexual minorities, utilizing a multiple minority status framework. While some of the literature suggests differences in each of these variables (i.e., stress, coping, and physical health indicators) by level of minority status (e.g., having multiple minority statuses versus having a single minority status), the present study only found minority status differences in the experiences of sexual minority stress. It is not clear why there were no significant demographic differences in the investigated coping styles and physical health indicators. These results are contrary to existing research that suggests having multiple minority statuses facilitates coping and psychological resilience (Herek & Garnets, 2007). One possible explanation is that having multiple minority statuses allows an
individual to use a variety of coping styles, rather than elevating the use of just one coping style. Pendragon (2010) showed that sexual minority females would use multiple coping strategies as a way to manage discrimination related to their multiple identities.

Given the health disparities research showing that low-income groups are at a higher risk for health problems than higher income groups, it would seem that there would at least be SES differences in number of physical health problems (National Heart, Lung and Blood Institute, 2009; Office of Minority Health & Health Disparities, 2012). However, the prevalence of health conditions is only one factor when considering the contributors to health disparities; this study does not account for the other factors, such as access to and quality of healthcare.

It is clearer why there were no sex differences in the physical health indicators. Because physical health varies by sex based on the type of condition and the specific health promoting behavior, taking a broader view of physical health may mask any existing sex differences. For example, women are more prone to certain kinds of cancers and may be more focused on dietary behaviors whereas men are more prone to diabetes or hypertension and may be more focused on exercise (U.S. Department of Health and Human Services, 2011)

Although there were no demographic differences in coping styles and physical health indicators in association with sex or income, there were significant differences in sexual minority stress in association with these demographic variables. The multiple minority status framework may be helpful in explaining the intersection of sexual identity and SES on experiences of sexual minority stress. Sexual minorities with a low-household income reported higher levels of sexual minority stress than sexual minorities with a middle-household income. Literature has shown that minorities experience higher
levels of stress than majority groups, particularly low SES groups (see review in Hatch & Dohrenwend, 2007). Meyer and Frost (2008) found that individuals in multiple disadvantaged groups experience higher levels of stress than individuals in only one disadvantaged group.

Conversely, the multiple minority status framework does not apply to the intersection of sex and sexual identity for this study. If the multiple minority status framework held true, female sexual minorities in this study would have reported higher levels of sexual minority stress than male sexual minorities; however, the opposite was true. The intersection of sex and sexual identity is a complex one in regards to experiences of stress and discrimination. In some cases male sexual minorities may experience more discrimination than female sexual minorities. For example, one study found evidence of workplace discrimination, especially with wages, against gay men, but not against lesbian women (Elmslie & Tebaldi, 2007).

A very likely explanation for the sex differences in sexual minority stress found in this study is that sexual minority men experience different types of stressors from sexual minority women. Hequembourg and Brallier (2009) suggest that sexual minority women may experience more sexualized discrimination, while sexual minority men experience more physically threatening discrimination. Sexual minority women may be eroticized and sexual minority men may be recipients of verbal and physical threats, particularly by heterosexual men. The Measure of Gay-Related Stressors does capture physical and verbal violence, but it does not capture sexualized discrimination. Accounting for sexualized discrimination may narrow the gap between sexes on sexual minority stress.
Limitations and Future Directions

Recruitment and Sample Issues

It is important to note that the majority of the sample consisted of women (58.4%) and non-Hispanic White participants (75.2%), thus limiting the generalizability to other populations. Despite efforts to recruit participants from diverse racial/ethnic backgrounds by specifically targeting several online groups for people of color, there was little representation from racial/ethnic minority groups. There was also limited representation from transgender individuals (4.8%).

Distrust is likely a major factor contributing to the lack of representation from these groups. For example, many racial/ethnic minorities may not have participated because of fears associated with exploitation or concerns about data being used only to benefit the careers of the researchers rather than to benefit the community (Yancey, Ortega, & Kumanyika, 2006). Yancey, Ortega, and Kumanyika suggest bridging the gap between research-related goals and goals of the community by improving communication. Due to the online nature of the present study, it was difficult to express intent and goals when recruiting participants. When the researcher had direct communication with the leaders of the online group and intentions were clarified, participation seemed to be stronger from those groups.

The direct communication highlights another important point; that is, when leaders within the group endorsed the study, participation was stronger. It seems important to have an in-group ally to enhance trust from participants. As a white, female researcher, it was more difficult to gain the trust from non-female and non-white individuals. Many online groups did not allow membership unless one met the demographic criteria.
Occasionally, group leaders of such groups would allow the researcher to post information about the study after having direct communication with the researcher.

The process of expressing intent was also relevant with transgender participants. The study was not designed to address the needs of transgender individuals, knowing that transgender individuals’ stressors and health issues may be different from the stressors and health issues associated with gay, lesbian, and bisexual individuals; however, this was not clearly expressed in the recruitment materials. Some transgender individuals reported feeling offended that “transgender” was not included in the study materials. More research needs to be done to capture the experiences with stress, coping, and physical health among transgender populations, and particularly research that is sensitive to the needs of this population

Future online research similar to the present study should clearly express the intentions of the research in recruitment materials and highlight the relevancy of the research to the minority community. It may also be helpful to offer a brief report of research findings and implications to the participants once the study is complete so the participants are aware of how their data is presented. For the present study, a report will be given to participants who provided consent to receive the report.

**Measurement Issues**

An important limitation of the present study is that the measures all involved self-report responses. The self-report responses may be somewhat biased and may more accurately capture perceived, rather than actual, levels of sexual minority stress, coping, engagement in a health-promoting lifestyle, and physical health problems. Future studies similar to the present study should ideally include gathering objective health indicator data such as health behavior logs.
There were some limitations related to the coping measure used (i.e., COPE). Although the COPE is a reliable and validated measure, the Planning and Use of Instrumental Social Support subscales are comprised of only four items, which may not fully capture problem-focused and social coping. Participants in the present study tended to endorse high levels of these coping styles, which may limit the variance and impact the findings from the coping data. For example, the mean score was 13.48 for the Planning subscale and 11.52 for the Use of Instrumental Social Support subscale out of a possible range of 4-16. Finally, it is possible that the selected coping styles may not have been relevant for this specific population. Future research should attempt to identify what successfully buffers against sexual minority stress by exploring various coping styles as buffers of this stress.

The primary limitation to the assessment of sexual minority stress in the present study pertains to level of distress associated with the sexual minority stressors. Participants were told to endorse an item on the Measure of Gay-Related Stressors (MOGS) if they had experienced the event and the event was stressful. Thus, the experience of a stressful event may have impacted participants without causing distress; yet, the present study does not capture those experiences. Future research should differentiate between experiences of sexual minority stressors and feelings of distress related to such stressors.

While the overall assessment of sexual minority stress provided a helpful general picture of the relationship between sexual minority stress and physical health indicators, more detailed information is needed about the processes underlying sexual minority stress. As indicated in Chapter 2, sexual minority stress, as defined in the Minority Stress Model, consists of several stress processes: (a) stress related to experiencing
prejudiced events, (b) stress related to expecting and anticipating the experience of rejection or discrimination, (c) stress related to disclosing or concealing one’s identity, and (d) stress related to internalizing negative societal attitudes. Future research should examine these stress processes more closely and identify if certain ones may be more predictive of physical health indicators. Finally, as the Minority Stress Model states, sexual minority stress has an effect above and beyond general stress. Future research should confirm this assumption of the model.

Conclusions

The purpose of this study was to a) examine whether sexual minority stress, problem-focused coping and social coping, predict physical health problems and engagement in a health-promoting lifestyle (i.e., physical health indicators) and b) explore the impact of multiple identities on sexual minority stress, coping, and physical health indicators. Sexual minority stress was predictive of physical health indicators and coping was predictive of engagement in a health-promoting lifestyle. There were higher levels of sexual minority stress among male sexual minorities and sexual minorities with a low-household income, than their respective counterparts. The present study provides a greater understanding of the psychological factors influencing physical health indicators (i.e., number of physical health problems and engagement in a health-promoting lifestyle) among sexual minorities. Furthermore, support is provided for further research using the Minority Stress Model to study such psychological factors.

The results of the present study have implications for health care provision. Specifically, the results suggest the need for health care providers to be trained in how to assess sexual minority stress among their patients and in ways they as providers may help to reduce/eliminate this type of stress during provider-patient interactions.
Additionally, the study has implications for counseling psychologists who focus on health-related issues. Such psychologists should strive to discuss the role of sexual minority stress in the lives of sexual minority clients, and explore ways in which to reduce/eliminate this stress.

Overall, support is provided for training psychologists as well as health care providers about the influences of sexual minority stress on the occurrence of health problems and levels of engagement in health-promoting lifestyles among sexual minorities. Clearly, the results of the present study provide an impetus for delivering more culturally sensitive/competent physical and mental health care for sexual minorities. Such health care could ultimately help eliminate the health disparities that sexual minorities face.
APPENDIX A
MEASURES

Demographic and Health Information Questionnaire

Directions: Please answer all questions that apply to you. Your answers will be kept confidential.

Do you consider yourself to be any of the following races or ethnicities? (Click all that apply)

(Note: Even if you consider yourself to be Hispanic/Latino and/or African American or Black, you may also consider yourself to be one or more of the following races)

- American Indian or Alaska Native
- Asian or Asian American
- Black or African American
- Caucasian/White/European American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- Other: _____________________________________________

(Please write in your race if it is not listed)

What is the highest level of education that you have completed?

- elementary school
- junior high/middle school
- high school or GED
- trade/technical school
- 2-year college
- 4-year college/university
- professional/graduate school

What is your age? _________

What is your sex?

- Female
- Male
- Transsexual
- Other: _____________________________________________

(Please write in your sex if it is not listed)
Consider your physical and affectional preference. To what degree are you heterosexual (physically attracted to and affectionate with the opposite sex)?

<table>
<thead>
<tr>
<th>Not at all heterosexual</th>
<th>Somewhat heterosexual</th>
<th>Very heterosexual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Consider your physical and affectional preference. To what degree are you homosexual (physically attracted to and affectionate with the same sex)?

<table>
<thead>
<tr>
<th>Not at all homosexual</th>
<th>Somewhat homosexual</th>
<th>Very homosexual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

What is your current relationship status?

- I do not have a partner
- I am living with my partner(s)
- I am not living with my partner(s)

How many people currently live in your household (including yourself)?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

What is your yearly household income (the total combined income that is made yearly by all working members of your household)?

$_____________________

In general, how would you describe your health?

- Excellent
- Very good
- Good
- Fair
- Poor
Do you currently have any of the following health conditions? *Please bubble-in all that apply to you.*

- [ ] Overweight/obesity
- [ ] High cholesterol
- [ ] High blood pressure (hypertension)
- [ ] Type 2 diabetes
- [ ] Cardiovascular/Heart disease
- [ ] HIV/AIDS
- [ ] Sexually Transmitted Infection (STI)
- [ ] Respiratory problems (e.g., asthma, COPD)
- [ ] Gastrointestinal problems (e.g., IBD, ulcer)
- [ ] Skin conditions (e.g., eczema, psoriasis)
- [ ] Cancer *please write in what type of cancer:*

______________________________

- [ ] Other *please list any additional health conditions:*

______________________________

- [ ] I do not have any of these health conditions
Measure of Gay-Related Stressors

**Directions:** Below are some issues you may or may not have dealt with because of your sexual orientation. *If you experienced the event in the past year AND it was stressful, please select YES. If you have not experienced the event in the past year, please select NO.*

*Only select yes for an item if it occurred for you in the past year.*

- 1. Introducing a new partner to my family
- 2. Having straight friends know about my sexual orientation
- 3. Dating someone openly gay
- 4. Having people at work find out about my sexual orientation
- 5. Being affectionate in public with my partner
- 6. Mental health discrimination based on my sexual orientation
- 7. Housing discrimination because of my sexual orientation
- 8. Lack of security at work because of my sexual orientation
- 9. Hiding my sexual orientation from others
- 10. Possible rejection when I tell someone about my sexual orientation
- 11. Being in public with groups of gays/lesbians/bisexuals (in a bar, in church, at a rally)
- 12. The expectation from friends and family members who do not know about my sexual orientation for me to date or marry someone of the opposite sex
- 13. Keeping my sexual orientation secret from some friends and family members
- 14. Possible loss of my children in a custody case due to my sexual orientation
- 15. Legal discrimination due to my sexual orientation
- 16. Lack of support from family members due to my sexual orientation
- 17. Working in a homophobic environment
- 18. Fact that my family ignores my sexual orientation
- 19. Having my lover and family members in the same place at the same time
- 20. Telling straight friends about my sexual orientation
— 21. Rumors about me at work due to my sexual orientation
— 22. Talking with some of my relatives about my sexual orientation
— 23. Loss of job due to sexual orientation
— 24. Discrimination in social services due to my sexual orientation
— 25. Inability to get some jobs due to my sexual orientation
— 26. A feeling that I must always prove myself at work because of my sexual orientation
— 27. Loss of close friends to AIDS
— 28. Fear that I will be attacked because of my sexual orientation
— 29. Limits I have placed on sexual activity due to AIDS
— 30. Lack of constitutional guarantee of rights due to sexual orientation
— 31. My family's over-zealous interest in my sexual orientation
— 32. The need to exercise caution when dating due to AIDS
— 33. Fear that I may have exposed others to HIV
— 34. The feeling that my family tolerates rather than accepts my sexual orientation
— 35. Rejection by my children due to my sexual orientation
— 36. My lover's family's inability to accept our relationship
— 37. Rejection by my brothers and sisters
— 38. Harassment at work due to my sexual orientation
— 39. Potential job loss due to sexual orientation
— 40. Fear that I might get HIV or AIDS
— 41. Loss of friends due to my sexual orientation
— 42. The extra care I must take to assure that my partner gets benefits (insurance, etc.) that a legal spouse would get automatically
— 43. Rejection by family members due to my sexual orientation
— 44. Distance between me and my family due to my sexual orientation
— 45. "Being exposed" as a gay/lesbian/bisexual
— 46. My family's lack of understanding about my sexual orientation
47. Physical assault due to my sexual orientation
48. Threat of violence due to my sexual orientation
49. The constant need to be careful to avoid having anti-gay/lesbian violence directed at me
50. Mixed feelings about my sexual orientation because of society's attitudes toward gays/lesbians
51. Possibility that there will be violence when I am out with a group of gays/lesbians/bisexuals
52. Fact that I have HIV or AIDS
53. Fear that my friends may be at risk for HIV
54. Inability to get close to people because of my sexual orientation
55. Constantly having to think about "safe sex"
56. Harassment due to sexual orientation
57. Being called names due to my sexual orientation
58. Lack of acceptance of gays/lesbians in society
59. Being left out of things due to my sexual orientation
60. Some people's ignorance about gays/lesbians
61. Difficulty meeting people because of concern over HIV
62. Shame and guilt because of my sexual orientation
63. Conflict between my self-image and the image people have of gays/lesbians
64. Difficulty finding someone to love
65. The image of gays/lesbians created by some visible, vocal gays/lesbians
66. Difficulty accepting my sexual orientation
67. Unwillingness of my family to accept my partner
68. Talking to others about AIDS
69. Rejection by my church or religion due to sexual orientation
70. Feeling that I am left out of certain rites of passage (proms, weddings, etc.) because of my sexual orientation
Coping Questionnaire (COPE)

**Directions:** We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress. Then respond to each of the following items by selecting how frequently you use that response. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no “right” or “wrong” answers, so choose the most accurate answer for YOU – not what you think “most people” would say or do. Indicate what YOU usually do when YOU experience a stressful event. Indicate the frequency with which you engage in each behavior by clicking on the circle beneath the answer you choose.

<table>
<thead>
<tr>
<th></th>
<th>I usually don’t do this at all</th>
<th>I usually do this a little bit</th>
<th>I usually do this a medium amount</th>
<th>I usually do this a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I try to come up with a strategy about what to do.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2.</td>
<td>I ask people who have had similar experiences what they did.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3.</td>
<td>I make a plan of action.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4.</td>
<td>I try to get advice from someone about what to do.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5.</td>
<td>I think hard about what steps to take.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6.</td>
<td>I talk to someone to find out more about the situation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7.</td>
<td>I think about how I might best handle the problem.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>8.</td>
<td>I talk to someone who could do something concrete about the problem.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>
**Health-Promoting Lifestyle Profile II**

**Directions:** This questionnaire contains statements about your *present way of life or personal habits*. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by clicking on the circle beneath the answer you choose.

<table>
<thead>
<tr>
<th>1. Discuss my problems and concerns with people close to me.</th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Routinely</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Choose a diet low in fat, saturated fat, and cholesterol.</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Report any unusual signs or symptoms to a physician or other health professional.</td>
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<td></td>
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<tr>
<td>4. Follow a planned exercise program.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Get enough sleep.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Feel I am growing and changing in positive ways.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Praise other people easily for their achievements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Limit use of sugars and food containing sugar (sweets).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Read or watch TV programs about improving health.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).</td>
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<td></td>
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</tr>
<tr>
<td>11. Take some time for relaxation each day.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Believe that my life has purpose.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. Maintain meaningful and fulfilling relationships with others.

14. Eat 6-11 servings of bread, cereal, rice and pasta each day.

15. Question health professionals in order to understand their instructions.

16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).

17. Accept those things in my life which I cannot change.

18. Look forward to the future.

19. Spend time with close friends.

20. Eat 2-4 servings of fruit each day.

21. Get a second opinion when I question my health care provider's advice.

22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).

23. Concentrate on pleasant thoughts at bedtime.

24. Feel content and at peace with myself.

25. Find it easy to show concern, love and warmth to others.

26. Eat 3-5 servings of vegetables each day.

27. Discuss my health concerns with health professionals.

28. Do stretching exercises at least 3 times per week.

29. Use specific methods to control my stress.
<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>Work toward long-term goals in my life.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Touch and am touched by people I care about.</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Eat 2-3 servings of milk, yogurt or cheese each day.</td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Inspect my body at least monthly for physical changes/danger signs.</td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Find each day interesting and challenging.</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Find ways to meet my needs for intimacy.</td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Ask for information from health professionals about how to take good care of myself.</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Check my pulse rate when exercising.</td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>Practice relaxation or meditation for 15-20 minutes daily.</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>Am aware of what is important to me in life.</td>
<td></td>
</tr>
<tr>
<td>41.</td>
<td>Get support from a network of caring people.</td>
<td></td>
</tr>
<tr>
<td>42.</td>
<td>Read labels to identify nutrients, fats, and sodium content in packaged food.</td>
<td></td>
</tr>
<tr>
<td>43.</td>
<td>Attend educational programs on personal health care.</td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>Reach my target heart rate when exercising.</td>
<td></td>
</tr>
</tbody>
</table>
47. Pace myself to prevent tiredness.  
   Feel connected with some force greater than myself.  
48. Settle conflicts with others through discussion and compromise.  
49. Eat breakfast.  
   Seek guidance or counseling when necessary.  
50. Expose myself to new experiences and challenges.
Hello!

My name is Delphia Flenar, and I am a doctoral student in the Psychology Department at the University of Florida. I am currently conducting a study under the guidance of Dr. Carolyn M. Tucker. The study has been approved by the Institutional Review Board at the University of Florida (UFIRB # 2012-U-539). The purpose of this study is to examine how stress related to one’s sexual identity affects physical health problems and engagement in a health-promoting lifestyle. Additionally, this study examines what coping styles may adequately address stress in sexual minority adults. It is our hope that this study can inform psychologists and healthcare providers about the influences of stress and coping in the lives of sexual minorities in order to establish more culturally sensitive physical and mental healthcare initiatives for sexual minorities. Your participation is essential to achieving this goal, so we hope that you will take part in our study.

In order to participate, you must identify as lesbian, gay, bisexual, or as some other sexual minority; be able to read English; and be 18 years of age or older. If you would like to participate in our study, please click on the link below and you will be directed to the online survey: https://ufpsychology.qualtrics.com/SE/?SID=SV_e5xqi0XCPyQ5TiA Please note that Facebook, Yahoo groups, or other online servers may record and use your online activity for other purposes.

Thank you very much in advance for your time! Please feel free to pass on this link to other people who might be eligible. If 250 individuals participate, $250 will be donated to the Human Rights Campaign, a civil rights organization that works to achieve equality for lesbian, gay, bisexual, and transgender individuals. If you have any question about this study, please feel free to contact me at dflenar@ufl.edu.

Sincerely,

Delphia Flenar, M.S.
Carolyn M. Tucker, Ph.D.
Counseling Psychology, University of Florida
Informed Consent to Participate in Research and Authorization for Collection, Use, and Disclosure of Information

PLEASE READ THE INFORMATION BELOW AND CLICK ‘YES’ BELOW IF YOU AGREE TO THE TERMS

You are being asked to take part in a research study. This webpage provides you with information about the study and seeks your permission for the collection, use, and disclosure of your information necessary for the study. Your participation is entirely voluntary. Before you decide whether or not to take part, read the information below and ask questions about anything you do not understand. You can email your questions to dflenar@ufl.edu. If you choose not to participate in this study, you will not be penalized or lose any benefits that you would otherwise be entitled to.

1. Title of Research Study:
   Sexual Minority Stress, Coping, and Physical Health Indicators

2. Source of Funding or Other Material Support:
   Dereck Chiu Counseling Psychology STAR Scholarship

3. Purpose of the research study:
   The purpose of this study is to examine how stress related to one’s sexual identity affects physical health problems and engagement in a health-promoting lifestyle. Additionally, this study examines what coping styles may adequately address stress in sexual minority adults.

4. What you will be asked to take part in the study:
   You will be asked to complete a set of questionnaires online. Specifically, the questionnaires will ask you about what types of stress you experience, how often you use certain coping styles, how often you engage in specific health-promoting behaviors, and basic demographic and health information. Completing the questionnaires will take approximately 15-30 minutes.

5. Possible risks and benefits:
   We do not expect any risk to you for participating in this study. Some questions may cause mild personal discomfort due to their sensitive nature; however, if a question is too discomforting, feel free to skip that question. There are no known risks to completing the questionnaires. We do not expect any benefits associated with participation in this research project; however, there may be long-term benefits in regards to enhancing counseling and health interventions for sexual minority clients. You may receive the study’s results and how those results may impact counseling and health interventions at the conclusion of the study.
6. **Compensation:**
There is no compensation for participating in this study; however, if at least 250 individuals participate in the study, $250 will be donated to the Human Rights Campaign, a civil rights organization that works to achieve equality for lesbian, gay, bisexual, and transgender individuals.

7. **Confidentiality:**
Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken: only PI and the research team members will have access to the data and the data will be stored on the primary investigator’s computer with password protected computer files. We will ask you to write down your email address if you are interested in receiving the results at the conclusion of the study; however, this information will be kept separate from the rest of your data. Records identifying participants will be kept confidential and will not be made publicly available. After data collection has been completed and participants have been notified of the results, your email address will be removed.

8. **Voluntary participation:**
Your participation in this study is completely voluntary. There is no penalty for not participating. In addition you may stop completing the questionnaires if it makes you feel uncomfortable. You may skip any question that you do not wish to answer or that makes you feel uncomfortable, without receiving any penalty. For the information to be useful to us, please complete as many items as you can.

9. **Right to withdraw from the study:**
You have the right to withdraw from the study at any time without consequence.

Whom to contact if you have questions about the study:
Delphia Flenar, M.S.
Doctoral Candidate

This research is being done under the supervision of Dr. Carolyn M. Tucker.
Whom to contact about your rights as a research participant in the study:
University of Florida Institutional Review Board Office
Box 112250 University of Florida
Gainesville, FL 32611
(352) 392-0433

Agreement:
I have read the procedure described above. I voluntarily agree to participate in the study and give my consent by clicking ‘accept’ below.

ACCEPT
(Consent by agreeing to terms and continue to participation link)

REJECT
(Refuse consent and stop participation; will not continue to participation link)


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BIOGRAPHICAL SKETCH

Delphia Flenar was born in Denver, Colorado in 1986. At the age of 4, Delphia moved to the small Midwestern town of Dunkirk, Indiana and spent her childhood and adolescence with her large family in Indiana during the school year and Colorado during the summer. Delphia attended Butler University in Indianapolis, Indiana and graduated cum Laude in 2008 with a Bachelor of Arts in Psychology and a minor in Gender Studies.

Immediately after obtaining her bachelor’s degree, Delphia moved to Gainesville, Florida to pursue degrees in Counseling Psychology. She received her Master of Science degree in 2010 and her Doctor of Philosophy degree in 2013 from the University of Florida. Delphia plans to pursue a career as a staff psychologist within a university counseling center. Her research interests include empowerment of marginalized groups, addressing health disparities, and multicultural issues in health.