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SEXUAL MINORITY WOMEN AND LIFETIME RISK OF ALCOHOL USE DISORDER

PROFESSIONAL DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE SCHOOL OF PROFESSIONAL PSYCHOLOGY
WRIGHT STATE UNIVERSITY

BY

JENNIFER SMITH, M.A., PSY.M.

IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF
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Abstract

Sexual minority women demonstrate higher rates of Alcohol Use Disorder, or AUD, compared to their heterosexual counterparts. Factors that potentially impact how likely a sexual minority woman is to develop an AUD during her lifetime has received limited attention in existing research. These include sexual minority stress, stress and cognitive appraisal, and hardiness theories. While many factors are suggested, and some supported, no consistent risk or protective factors have emerged. This study sought to change that by testing whether proposed risk and protective factors for stress, both in general and unique to sexual minority individuals, impacted the likelihood of the development of an AUD. Sexual minority stress was explored as a potential risk factor while hardiness was proposed as a potential protective factor. Stress appraisal was explored as both a potential risk and protective factor. Quantitative data was collected from a previously conducted study that utilized self-report surveys. Participants were recruited by distributing the online survey via email to LBGT+ organizations and listservs across North America. Data was collected from lesbian and bisexual identified women (n = 344) from a larger study on substance use in sexual minority individuals. Correlational and regressional analyses were conducted. Of the proposed risk and protective factors (hardiness, bisexual minority stress, stress appraisal, and sexual minority stress), none were found to significantly impact lifetime AUD risk (as measured by the AUDIT). Strengths, limitations, clinical implications, and research recommendations are presented in the discussion section.

Keywords: sexual minority women, lesbian, bisexual, alcohol use disorder

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I extend a heartfelt thank you to each and every one of you. I am better for having all of you in my life.

Dedication

To saving the world. Or trying to at least.

Chapter I

Statement of Problem

Alcohol use has garnered considerable attention from government agencies and medical and mental health fields due to the associated risks and economic burden. Alcohol consumption is commonplace in the United States with 136.7 million Americans over the age of 12 reporting being current alcohol users according to a 2016 study conducted by Substance Abuse and Mental Health Services Administration, or SAMHSA (2017). The Center for Disease Control and Prevention (CDC) (2018) has associated a number of health issues with excessive alcohol use. Short-term risks include risky sexual behavior, negative impact on prenatal development, alcohol poisoning, increased rates of violence including sexual assault and intimate partner violence, and accidental injuries. Long-term risks include cancer, learning and memory problems, social problems, high blood pressure, disease of heart and liver, and mental health problems.

National Institute on Alcohol Abuse and Alcoholism (NIAA) estimates that 88,000 people die each year due to alcohol-related causes (NIAA, 2017). The misuse of alcohol cost the United States a total of $249 billion in 2010. Patterns of heavy use and consequences related to alcohol use are indicative of an Alcohol Use Disorder, or AUD (American Psychiatric Association, 2013). An AUD is characterized by impairment or distress directly related to alcohol use. One of the many risks associated with high rate of alcohol consumption is the development of an AUD (CDC, 2018). SAMHSA (2017) found that 5.6%, or 15.1 million, of alcohol users in the U.S. met criteria within the past

year for an AUD. With over 15 million people being effected by AUDs per year it has garnered a consider amount of attention

Multiple variables have been proposed and researched as risk factors for Alcohol Use Disorders. This dissertation will focus on factors that may contribute to the elevated risk of AUD among sexual minority women. Sexual minority refers to those who identify as either lesbian, gay, or bisexual or engage in sexual contact with members of the same or both sexes (Center for Disease Control and Prevention, 2017). Sexual minority women demonstrate higher alcohol use than their heterosexual counterparts (SAMHSA, 2016). A 2015 study conducted by SAMHSA found that sexual minority women reported significantly higher rates of alcohol use, binge drinking, and heavy drinking in the past month than heterosexual women.

With higher rates of AUD being present among sexual minority women in comparison to their heterosexual counterparts, psychologists are concerned with identifying protective/resilience and risk factors that may play a role in the development of AUD in members of this population. Existing research on AUD in sexual minority women is characterized by many inconsistent findings and proposed, but not yet explored, factors. Sexual minority stress has been proposed as a unique stressor experienced by sexual minority individuals and requires additional coping, which may include alcohol use as a means of coping. Both research and theory on potential risk and protective factors contributing to the rates of AUD will be presented and critiqued. Resilience and hardiness as constructs will be presented and implications they may have for the current topics will be discussed. Additional research is needed in order to gain an

expanded understanding of AUD among sexual minority women to improve treatment and preventative care.

Aim and Purpose

Disparities in Alcohol Use Disorder between sexual minority women and their heterosexual counterparts have been noted. This dissertation aims to expand upon the research on sexual minority women and alcohol use, specifically in relation to AUD, by investigating possible risk factors contributing to the disparity as well as potential protective factors.

The first way this will be accomplished is to explore the potential relationship between the cognitive appraisal of sexual minority stress, appraisal as a challenge or a threat, and the impact of that on lifetime risk of AUD. Internal conflict related to sexual orientation will be tested as a unique risk factor. The relationship between sexual minority stress and lifetime AUD risk for lesbians and bisexuals will be tested and compared. Finally, hardiness will be explored as a potential moderator between the relationship between sexual minority stress and lifetime AUD risk.

Chapter II

Literature Review

This section will begin by introducing the criteria for an AUD and a number of terms relevant to the research to serve as a foundation for the review of the literature on sexual minority women and AUD. A general introduction a psychological stress followed by stressors unique to minorities will be discussed as a lead in to coping. Coping will be introduced broadly before it will be tied to alcohol use. Literature on resilience and how it relates to stress, coping, and alcohol use will be covered. Research on sexual minority women and general alcohol use as well as AUDs will be presented in depth with discussions of the limitations and implications. This section will conclude with the hypotheses of this dissertation.

A number of terms are important to understand before the existing literature is reviewed. The American Psychological Association (2012) provides definitions for numerous terms related to problematic alcohol use. Binge drinking, which is synonymous with heavy drinking, for women is defined as four or more drinks on a single occasion (SAMHSA, 2016). Although the term is widely used in the literature, a review of the literature failed to provide a definition of alcohol misuse. The only definition of alcohol misuse found was provided by United Kingdom's National Health Service (NHS) (2015). NHS defined it as consuming an excessive amount of alcohol. Excessive was used to refer to an amount exceeding the lower-risk limits of developing an AUD. Alcohol abuse is described as drinking that results in multiple significant negative consequences and is

included as a diagnosis in the *4th edition of the Diagnostic and Statistical Manual of Mental Disorders*, or DSM-IV (American Psychiatric Association, 2000). These consequences can be in multiple domains including occupational, academic, relational, and/or legal. Another term for these negative effects resulting for alcohol use are alcohol-related consequences. Alcohol dependence refers to the loss of reliable control over alcohol use. This may include increased tolerance, withdrawal symptoms, inability to discontinue alcohol use. Alcoholism is another term for alcohol dependence. Alcohol Dependence is the DSM-IV equivalent to the DSM-5's Alcohol Use Disorder.

The *Diagnostic and Statistical Manual of Mental Disorders, 5th edition*, or DSM-5, (American Psychiatric Association, 2013, p. 490-491) defines Alcohol Use Disorder as the following:

A. A problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:
    1. Alcohol is often taken in larger amounts or over a longer period than was intended.
    2. There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.
    3. A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects.
    4. Craving, or a strong desire or urge to use alcohol.
    5. Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home.

6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol.
7. Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
8. Recurrent alcohol use in situations in which it is physically hazardous.
9. Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.
10. Tolerance, as defined by either of the following:
    a. A need for markedly increased amounts of alcohol to achieve intoxication or desired effect.
    b. A markedly diminished effect with continued use of the same amount of alcohol.
11. Withdrawal, as manifested by either of the following:
    a. The characteristic withdrawal syndrome for alcohol (withdrawal refers to experiencing anxiety, insomnia, hallucination, or other symptoms to a distressing or impairing degree following cessation of alcohol use).
    b. Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms.

A number of common measures are frequently implemented to measure constructs related to the topics of interest. The Alcohol Use Disorders Identification Test, or AUDIT, was developed by the World Health Organization (Babor, Higgins-Biddle,

Saunders, & Monteiro, 2001) as a screening tool for harmful or hazardous patterns of alcohol consumption, which may indicate the presence or risk of developing an AUD. It consists of 10-items related to alcohol consumption, alcohol-related consequences, and drinking behaviors. Both self-report and clinician versions of the AUDIT exist. Scores of eight and above on the AUDIT are indicative of harmful alcohol use and a high risk of an AUD.

While developed based on DSM-IV (APA, 2000) criteria for AUD, the AUDIT has been tested as a screener for AUD under the updated DSM-5 (APA, 2013) criteria. The AUDIT-C's, a brief version of the AUDIT that consists of the third three questions on the AUDIT, screening performance for the DSM-IV and DSM-5 AUD criteria was compared by Dawson, Smith, Saha, Rubinsky, and Grant (2012). Data analyzed originated from a longitudinal study on alcohol use collected from a representative sample of adults across the United States, the National Epidemiological Survey on Alcohol and Related Conditions. AUDIT-C scores were compared for participants who met criteria for AUD under both DSM-IV and DSM-5. The cutoff scores deemed optimal to indicate the presence of any AUD, moderate AUD, and severe AUD were the same for both the DSM-IV and DSM-5 criteria. A study on the effectiveness of the 10-item AUDIT for DSM-5 AUD criteria was tested by Hagman (2016). The AUDIT was administered to a sample of 251 undergraduate students at a southeastern university who reported at least one binge drinking episode in the past 90-days. In addition, quantity and frequency of consumptions was measured utilizing a modified index and the presence of cravings were assessed with questions from the Composite International Diagnostic Interview - Substance Abuse Module (Clements, 1998; Robins, Wing, Wittchen, Helzer,

Babor, Burke, & Towle, 1988). Determinations on AUD was based on the DSM-5 Substance Use Task Force guidelines (APA, 2015). The researchers concluded that the AUDIT was able to detect the presence of DSM-5 AUD equally as well as DSM-IV AUD.

One of the only large-scale, representative population surveys on substance use with data on sexual minority women was the 1996 National Household Survey on Drug Abuse (NHSDA) collected by SAMHSA. Cochran, Keenan, Schober, and Mays (2000) analyzed data from this survey relevant to AUD among sexual minority women. The NHSDA is a national study conducted yearly utilizing mail questionnaires. Data was collected from those aged 12 and older. Of the 12,387 responders, 9,714 reported only "opposite" gender (e.g. men) partners in the past year while 194 reported same gender partners. The researchers compared those who reporting having at least one same gender sexual partner in the past year with those who reported only "opposite" gender sexual partners in the timeframe. Women who reported same gender sexual partners also reported more frequent alcohol consumption and greater amounts of alcohol consumed than those who reported only "opposite" gender partners. In addition, those in the first category indicated that on average they began drinking alcohol at an earlier age. Respondents who indicated same gender partners in the past year were more likely to demonstrate each of the six symptoms associated with Alcohol Dependence as well as more likely to meet each of the criteria for Alcohol Dependence. This supports the idea that sexual minority women are at increased risk for developing an AUD compared to heterosexual women. Of the women who met criteria for this AUD, approximately 4%

reported same gender sexual relations. This group composed approximately 5% of the women who sought treatment for problems related to alcohol use.

Differences between alcohol misuse among lesbian, bisexual, and heterosexual women when controlling for other factors were investigated by Drabble, Midanik, and Trocki (2005). Data relevant to sexual minorities collected in the 2000 National Alcohol Survey was analyzed. The National Alcohol Survey collected representative data by conducting interviews via telephone. Participants were selected from all 50 states, with consideration for population differences, utilizing random digit dialing. Sexual orientation was based on self-identification and reported behavior. The 7,248 who provided information on sexual orientation identified as the following - 95.5% heterosexual (with no same sex partners), 2% heterosexual (with same sex partners), 1.1% bisexual, and 1.2% homosexual. Five measures to assess alcohol use were utilized. Sexual minority women scored higher on self-reported number of times intoxicated in past year, social consequences related to alcohol, alcohol dependence, and help-seeking for alcohol problems when compared with heterosexual women. These differences persisted even when controlling for demographic factors. Among those who reported current alcohol use, lesbians were at seven times the risk and bisexuals at 6.5 times the risk to meet criteria for the DSM-IV diagnosis of Alcohol Dependence as compared to heterosexual women. Increased rates of fights, arguments, lost work time, non-DUI related legal troubles, problems in romantic relationship because of drinking, and doctor recommendation of decreased alcohol use, all related to alcohol were higher in sexual minority women than heterosexual women. This study indicates that when controlling for

other factors, the difference in alcohol misuse and AUD between heterosexual women and both lesbians and bisexual women persists.

Numerous studies have reached the conclusion that sexual minority individuals are at increased risk of developing mental health disorders, including AUDs, over heterosexual individuals. King, Semlyen, Tai, Killaspy, Osborn, Popelyuk, and Nazareth (2008) conducted a meta-analysis of existing research on sexual minority individuals and a variety of mental health disorders and how they differed from heterosexuals. Quantitative studies on the mental health of sexual minorities conducted between 1966 and 2005 were collected. In order to be deemed eligible for the meta-analysis studied needed to a published study that included valid definitions of sexual orientation and mental health outcomes and a heterosexual comparison group. While random sampling was preferred, studies relying on snowball sampling were permitted as long as they met the other criteria. Non-experimental studies were reviewed using the Cochrane Handbook's (Higgins, Thompson, Deeks, & Altman, 2003) general guidance to determine quality. Twenty-eight of the originally identified 13,706 met inclusion criteria, while seven met at least three of the four quality criteria. The meta-analysis included data on 11,971 sexual minority individuals and 214,344 heterosexual individuals. Definition of sexual orientation varied between included studies. This included self-identification, sexual attraction, sexual behavior, Kinsey scale score, and considered timeframe varied between current and lifetime. The Kinsey Scale is a 7-point scale that rates individuals based on both sexual behavior and attraction, which ranges from exclusively heterosexual (rating of 0) to exclusively homosexual (rating of 6) (Kinsey, Pomeroy, Martin, & Gebhard, 1953/1998). In relation to AUD, five studies met inclusion criteria. Alcohol

dependence, the equivalent to AUD in the DSM-5, in the previous twelve months was highest in sexual minority women (as compared to heterosexuals and sexual minority men), with an average Risk ratio of 4.0, 95% CI [2.85, 5.61]. The findings of the included studies varied with between 5% and 12% risk of AUD in lesbian and bisexual women being attributed to sexual orientation. Two studies met criteria to be analyzed for alcohol misuse risk in lesbian and bisexual women. One study found no difference while the other found that lesbian and bisexual women are at 352% greater risk than heterosexual women. Overall, lesbian and bisexual women were at the highest risks for alcohol dependence and misuse over both sexual minority men and heterosexual women.

This research is clear on the existence of disparities in alcohol dependence, alcohol misuse, and risk of AUD between sexual minority women and their heterosexual counterparts. However, it is less clear on the possible contributing factors behind these disparities. Understanding of the factors contributing to the greater risk of AUDs in sexual minority women is vital for treatment and prevention efforts. Potential factors contributing to the higher rates of alcohol misuse among sexual minority women will be discussed below, beginning with stress.

Psychological Stress

In order to understand the impact of stressors on mental health it is necessary to first develop an understanding of stress in general and the psychological process associated with it. This will be followed by ways to cope with stress, including alcohol-related coping. Theory and research on stress unique to sexual minorities will then be presented to offer suggested additional stressors experienced by sexual minority women

and will serve as a lead in to the hypothesis of this dissertation, which will be presented at the conclusion of the literature review.

Psychological stress, as defined by Lazarus and Folkman (1984), refers to the relationship between individual and their environment. Stress is determined based on the perception of exceeding available resources rather than by aspects of the stressor. Given that all stress discussed will be psychological in nature, it will be referred to simple as stress moving forward. As part of this relationship, the individual appraises the demands of their environment and the resources available to them, a process referred to as cognitive appraisal. This process can result in stress being appraised a number of different ways including harm/loss, threat, and challenge. When stress is appraised as a harm/loss, an individual has determined that some physical and/or psychological damage has already occurred, such as the death of a loved one, loss of self-esteem, or receiving an injury. Threat appraisal are characterized by the view that a physical and/or psychological loss or harm has not yet taken place but is expected to occur. Threat is often accompanied by feelings such as fear and anger. Challenge involves the appraisal of stress as a chance to gain or grow from the experience. It is often accompanied by feelings like excitement and exhilaration. Threat and challenge appraisal are not mutually exclusive and a stressor may be perceived as both.

The way that a stimulus is appraised, whether it be as harm or loss, threat, or challenge impacts the stress process (Lazarus & Folkman, 1984). The higher the evaluated threat level, the higher the evaluated demands of the situation and the required coping resources. High levels of threat may also negatively impact cognitive functioning and information processing. If an individual evaluates their environment to be

threatening, demanding, or requiring more resources then they have available to them, then psychological stress is the result. Following cognitive appraisal of the environment as demanding or threatening, individuals utilize coping to contend with the resulting stress. The process of stress, including cognitive appraisal, impacts coping, which in turn impacts outcomes, such as the development of an AUD. Specific stressors and experiences that may be appraised as stressful by sexual minority women will be presented and discussed in a later section.

Coping

According to Lazarus and Folkman (1984), coping refers to cognitive and/or behavior efforts, which are constantly changing, to manage demands that are evaluated to be challenging or exceeding the resources they possess. These demands may be external to their being, internal, or both. They consider coping to be a process with three distinguishing features. The first feature is the specific thoughts and/or action evoked by the stressful stimuli, in other words the initial cognitive and/or behavioral response to a stressor. The second feature is applying context in order to develop an understanding of what specifically is inciting the individual's cognitive and/or behavioral reaction (coping responses). The third feature refers to coping being a dynamic process that changes over time. Attempts to cope are not automatically successful in reducing stress. In addition, coping involves the management of stress rather than the resolution of stress. It is in direct response to events that are perceived as stressful. There are different strategies individuals may adapt to try to cope.

Forms of coping can either be emotion-focused or problem-focused. Emotion-focused forms of coping are cognitive efforts aimed at altering emotional distress

(Lazarus & Folkman, 1984). These efforts may aim to reduce emotional distress through tactics such as avoidance or minimizing. Or they may aim to increase emotional distress, through cognitive processing such as self-blame, to increase distress before reducing it in order to bring about a sense of relief. Reappraisal, or changing the cognitive construction, of an event is another emotion-focused form of coping that attempts to reduce emotional distress associated with a stressor. Problem-focused are coping strategies that involve problem solving and identifying and implementing alternative strategies. Kahn, Wolfe, Quinn, Snoek, and Rosenthal (as cited in Lazarus & Folkman, 1984) indicated that these efforts may be aimed externally or internally. External involves attempts to change the environment, such as responsibilities or barriers. For example, protesting in an attempt to change an organization's policy that is discriminatory in nature. Internal involves attempts to change motivation or cognitive changes through strategies such as developing new standards for behaviors or learning new skills. Setting goals and rewards for meeting each goal oneself illustrates an internal attempt to motivate oneself.

Alcohol use was suggested to be a means of coping by Moos, Brennan, Fondacaro, and Moos (1990). They proposed that alcohol use is an emotion-focused coping strategy. Specifically, alcohol is used to avoid emotional distress. The researchers tested this on a sample of problem and nonproblem drinkers. Surveys were distributed to patients between the ages of 55 and 65 who had been a patient in the previous three years at either of two medical facilities. Participants were categorized into either current problem drinkers or nonproblem drinkers based on their score on a 17-item Drinking Problems index constructed by the researchers of the study, which was used to assess alcohol-related problems, an AUD criterion, in the past year. The current problem

drinkers group contained 501 participants while the nonproblem drinkers group contained 609 participants. The Coping Responses Inventory (Moos, 1988) was administered to participants to assess their coping. Overall, the researchers found that problem drinkers were more likely to use avoidance coping strategies than nonproblem drinkers. This supports their categorization of alcohol use as an emotion-focused, specifically avoidance, coping strategy that is related to the development of AUD.

Coping resources, according to Lazarus and Folkman (1984), are strategies that an individual draws on in order to help them cope. Six coping resource categories were identified. First, health and energy refers to the idea that one may find it easier to cope when they are physically well and have the energy to cope. Second, positive beliefs refer to a positive regard of oneself that serves as a basis for hope that one's situation with improve. Third, problem solving is the ability to analyze situations to identify problems, search for information, generate and weigh alternatives, consider possible outcomes, and select and implement a plan to reduce stress. Next, social skills encompass the ability to effectively and appropriately interact with others. This can allow for the aid of other in problem solving, cooperative efforts, support from others, and the improved command of social interactions. Fourth, social support is support from others, which may be emotional, informational, or physical in nature. Last, instrumental support or material resources are monetary resources that can be utilized to purchase goods and services, which may aid in finding more effective coping options.

Another factor proposed to play a role in the process of coping with stress is resilience. Carver (1998) refers to resilience as a return to baseline, or functioning before the introduction of the adversity. Adverse events cover a wide range from illnesses to

traumas. The more the adverse events negatively impacts functioning, the more resilience a person requires to return to their prior functioning. He differentiates this from what he terms thriving, which involves a stressful event leading to growth or gains, decreased reaction to future stressors, improved recovery from stressors, and a higher level of functioning. Luthar, Cicchetti, and Becker (2000) defined resilience as "a dynamic process encompassing positive adaptation within the context of significant adversity" (p. 543). It is separate from coping in that rather than a cognitive or behavioral reaction taken to reduce stress it is an adaptation. An individual adapts to their situation in a positive way which reduces stress. While coping is a direct reaction to a stressor, resilience is the ability to adapt to adversity that reduces stress, reduces the need for coping, and allows the individual to return to their prior level of functioning.

Resilience has implicated in substance use disorders (SUD), including AUD, prevention by Meschke and Patterson (2003). They reviewed the literature on substance use among youth including risk and protective factors. (No data was collected on sexual orientation of the sample.) Protective factors refer to mechanisms that serve as a buffer for the influence of risk factors on outcomes, reducing or eliminating the negative impact of the stressor on the outcome (e.g. AUD). Bronfenbrenner's (1979) ecological model of development served as a basis for the three levels outlined by Meschke and Patterson (2003). Individual and family levels in particular were found to be the source of protective factors against substance abuse among adolescents. Individual factors included the presence of religious beliefs and practices, well-developed social skills, and academic competence. Family included positive relationships with parents, parent abstinence from substances, and effective communication in the family. To a lesser extent, peer and

community levels were also indicated to facilitate the development of protective factors. Acceptance by peers was identified as a potential peer protective factor while a sense of belonging to the community was indicated as a potential community protective factor. Protective factors, a pathway by which resilience occurs, reduce stress experienced as a response to a stressor and in turn reduce the need for coping, which may take the form of substance-related coping. Given that this review was on research conducted on youth and with no consideration to sexual orientation, the generalizability to adult sexual minority women is questionable.

Hardiness

Understanding stress and coping are vital to understanding the experiences of individuals. In addition to general knowledge of the stress and coping processes, some would argue that it is necessary to understand the role that identity variables play in this process. For example, sexual orientation may play a vital role in experiences of stress and coping. One such theorist is Meyer (1995/2003), who developed a model of stress specific for sexual minority individuals. Coping, resilience, and psychological outcomes, which includes AUD, are addressed as part of Meyer's model. While his model has overlap with that of Lazarus and Folkman (1984), his model seeks to provide understanding of experiences of stress unique to first gay men, and then other sexual minority individuals.

Another concept relative to stress that is important to consider is hardiness. Hardiness is considered a personality trait (Kobasa, 1979). Hardy individuals are considered to be those that hold three general personality characteristics. The first is that they possess the belief that that are able to control or influence events in their lives. The

second is that they have the ability to feel committed and involved in the events occurring in their lives. The last is the view of change as challenging, exciting, and an opportunity for growth. There is overlap between the concept of hardiness and Lazarus and Folkman's appraisal of stress as a challenge. The difference lies in the saliency. Hardiness is considered to be a personality trait and thus hardy individuals routinely evaluate stressful events as a challenge. Routinely perceiving events as a challenge, as opposed to as a threat, may reduce the stress and/or demands associated with the event. In this context, less stress would then require less coping. This means that perceiving stress as a challenge, including the unique stresses related to minority statuses, could theoretically lead to less demands on coping and therefore lower chances of mental health problems, including but not limited to AUD. Conversely, perceiving stress as a threat may have the opposite effect and lead to increased demands for coping and increased chances of a mental health problem. Based on foundational work on hardiness, individuals, including those who identify as sexual minority individuals, high in hardiness should have lower rates of mental health problems (such as AUD).

There has been little research on hardiness in sexual minority women. Figueroa and Zoccola (2015) conducted a study on hardiness and mental health in sexual minority individuals. Recruiting occurred through an online labor market website with a total of 277 sexual minority individuals completing the survey. Hardiness was measured using the Dispositional Resilience Scale (Bartone, 1991), a 15-item scale used to assess the three facets of hardiness – commitment, control, and challenge. Mental Health was assessed using the 18-item Brief Symptoms Inventory-18 (Derogatis, 2000), which measures depression, anxiety, somatization, and overall mental health. Higher scores on

hardiness were found to be directly associated with better reported mental health. The researchers argue for the need for more research on hardiness among sexual minority individuals. The basis for their argument is that a number of studies have shown that hardiness is associated with better health outcomes in the general population and little research has been done with sexual minority individuals. While a PsycINFO database search (date of search 29 March 2018; search terms ('alcoholism' OR 'alcohol use disorder' OR 'alcohol dependence') AND ('sexual minority' OR 'lgbt' OR 'lesbian' OR 'bisexual') AND ('hardiness')) yielded no studies examining the role of hardiness on AUD in LGBTQ+ individuals, Figueroa and Zoccola's (2015) study supported a positive relationship between higher levels of hardiness and better mental health outcomes.

Minority Stress Model

Being both a sexual minority and a woman is accompanied by unique experiences. This section serves as an introduction and overview to the most well-known model of minority stressors in order to provide a theoretical basis for understanding the unique stressors sexual minority women may experience. Herek, Gillis, and Cogan (2009) provide definitions of core concepts, which provide a foundation for understanding these experiences. Sexual stigma, or sexual prejudice, is a term that refers to the societal association of homosexuality with negative, interior, and/or powerlessness. Sexual stigma on a structural level is the result of heterosexism and utilizes institutional practices to place sexual minorities at a disadvantage. Internalized homophobia is also referred to as self-stigma and is characterized by prejudice directed at oneself based on minority sexual identity that is tied to society's negative views of homosexuality. These concepts are incorporated in a model developed by Meyer (1995/2003) that proposes a

theoretical conceptualization of the unique experiences of stress experienced by marginalized individuals (see Figure 1).

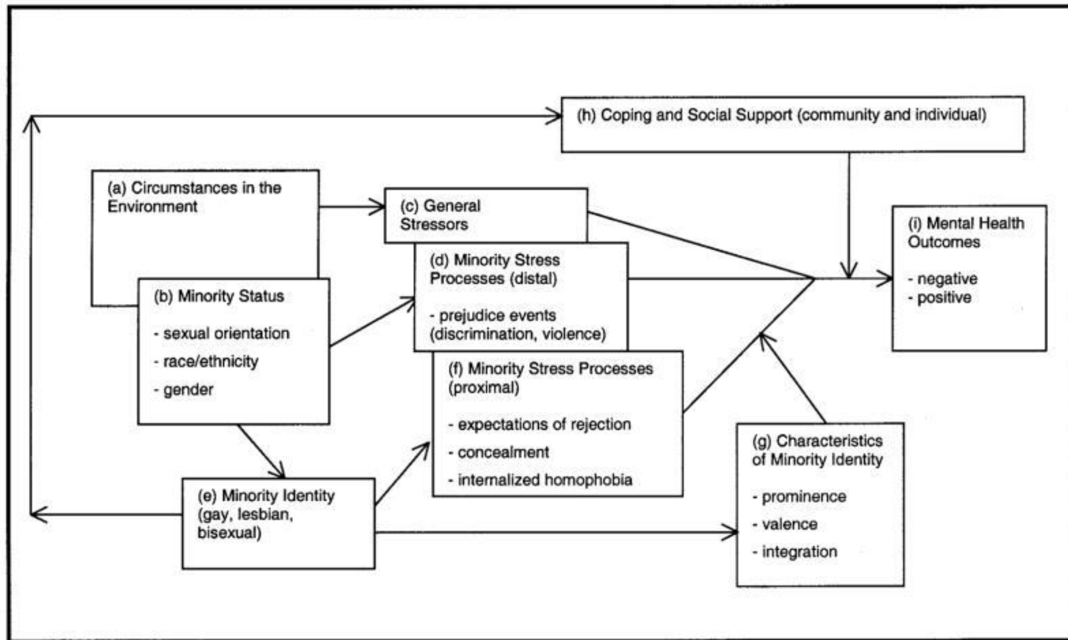

Figure 1. Meyer's minority stress model (2003).

Meyer's (1995) work is based on the assumption that the stigmatization for a heterosexist society results in sexual minorities experiencing chronic stress. He termed this minority stress, which is stress resulting from holding one or more minority, or marginalized, identity/ies. Meyer's work is relevant because it provides a basis for understanding the specific stressors experienced by sexual minority women in addition to general life stressors. His early research on gay men and their experiences of minority stress and the impact on their mental health later formed the basis for his minority stress theory (Meyer, 2003). His initial study focused on minority stress, a term he used to refer to psychological distress directly related to one's minority status, in gay men. He hypothesized that higher levels of minority stress can negatively impact mental health and result in increased rates of adverse mental health outcomes.

Meyer (1995) identified three processes of minority stress that he hypothesized to be important for sexual minorities. The first process was internalized homophobia. Internalized homophobia may take many forms but one is example is a lesbian internalizing the belief that their attraction is innately predatory. The second process, perceived stigma, was described as an expectation that others may not accept them, reject them, or harm them. Discrimination and violence, the third process, are experiences of rejection, discrimination, and/or violence based on one's gay identity. Each of these serve as unique stressful experiences related to sexual minority status.

The initial study conducted by Meyer (1995), consisted of information gathered from 741, predominately white, gay men. Participants were initially recruited from New York. Internalized homophobia, stigma, and prejudice were measured along with the following five facets of psychological distress – demoralization, guilt, sex problems, suicide, and AIDS-related trauma. Demoralization measured dread, anxiety, sadness, helplessness, hopelessness, somatic symptoms, confusion, low self-esteem, and perceived health problems. Guilt measured feelings of guilt, both rational and irrational. Sex problems measured reduced or inhibited sex drive, or difficulties becoming excited or orgasming. Suicide tapped into past suicidal ideation and/or behavior. AIDS-related trauma measured distress as a result of the AIDS epidemic. All were measured utilizing scales from the Psychiatric Epidemiology Research Instrument (Dohrenwend, Levav, Shrout, Schwartz, Navek, Link, Skodol, & Stueve, 1992). Results indicated that when all three measures of minority stress were considered in tandem, they were able to significantly predict all five measures of psychological distress. When considered on its own and controlling for confounds, internalized homophobia was associated with all

measured types of psychological distress. On the other hand, stigma and prejudice events remained associated with four of the five types of distress, with sex problems being the exception. These findings suggest that higher sexual minority stress is related to higher levels of psychological distress, which may lead to mental health disorders.

Meyer's (1995) initial study supports his claim that certain stressors that are uniquely related to minority stress experienced by sexual minorities negatively impact the psychological well-being of these individuals. Higher levels on experiences of minority stressors related to higher levels of psychological distress in a number of domains. Not all stressors were found to impact psychological distress in the same manner, with only internalized homophobia impacting sexual functioning. The population that these finding can be applied to are limited, but this study provided empirical support that informed the development of his minority stress model (see Figure 1).

A limitation of Meyer's (1995) early formation and research on minority stress is that it was developed solely with gay men in mind. The sample was predominately comprised of white, gay men who resided in New York. The fact that it was based on the specific experiences of gay men leads to the possibility that other processes of minority stress that may apply to other members of the LGBT+ community may have been overlooked and this theory may fail to incorporate them. Another limitation is that Meyer based his original three processes of minority stress on theory, which he then tested in his 1995 study. Since it was based on theory and limited research, there may have been other processes that were not incorporated into the model.

Meyer (2003) utilized his initial study as a foundation for his minority stress model (Figure 1). Meyer's proposed his minority stress model as a framework to explain

the factors and process that contribute to higher prevalence rates of mental health problems in sexual minority individuals. There are eight components of the model, which will be discussed in the following order – circumstances of environment, minority status, general stressors, minority stressors (distal and proximal), minority identity, characteristics of minority identity, coping and social support, and mental health outcomes. According to the model, stress related to sexual minority status is situated in the circumstances of an individual's environment. This includes cognitive appraisal of the environment and the perceived demands and threats of the environmental circumstance, environmental circumstances and the general stressors related to it are considered universal (Lazarus & Folkman, 1984). However, specific experiences within the larger environmental circumstances are related to minority status.

Minority status is inclusion in a marginalized group and can refer to variables such as sexual orientation, gender, race, and/or socioeconomic status (Meyer, 2003). Three categories of stress are outlined in the minority stress model. General stressors are those associated with common life circumstances unrelated to minority status. Minority stress is stress specifically related to minority status and can take two forms, distal and proximal. Minority stress distal processes are experiences of stress related to minority status that is experienced due to the action of others. This includes incidents or prejudice such as discrimination or acts or threats of violence. Minority stress proximal processes are tied to minority identity, or the specific identity an individual holds. These proximal processes are internal and can involve cognitions related to internalized homophobia or biphobia (alternately referred to as internalized sexual prejudice), expectations of rejection, or concerns around revealing or concealing minority identity. General stressors

as well as proximal and distal minority stress processes place stress on the individual. An example to illustrate this would be a lesbian experiencing financial difficulties (general stressor), internal beliefs relating to being unworthy of happiness due to sexual orientation (proximal stressor), and being passed up for a promotion at work due a supervisor's homophobia (distal stressor).

In general, theory on stress and coping holds that stress can result in positive and/or negative mental health outcomes and can be influenced by perceptions of the stress (e.g. perceive it as a challenge or threat (Kobasa, 1979/Lazarus & Folkman, 1984). One such negative health outcome is an AUD. The minority stress model (Meyer, 2003) identifies a number of factors that influence the relationship between minority stress and outcome. In theory, minority stress in conjunction with general stress places sexual minority women under higher rates of stress which increases the amount of coping needed to manage the stress, which increases the risk for alcohol-related coping and subsequent development of an AUD. Characteristics of minority identity effects minority stress proximal processes and has three subcategories.

The first subcategory, prominence, refers to how central the identity is to one's sense of self (Meyer, 2003). Next, valence is the degree to which one intrinsically holds a positive view of their minority identity. Finally, integration refers to the level of integration between their minority identity and other identities, for example the level of integration between sexual minority identity and gender within sexual minority women. Coping is one factor identified that influences the impact of general stressors, minority stress proximal processes, and minority stress distal processes on mental health outcome. The other factors that influences all three is social support, this refers to the perceived

support from other individuals or a community that are available to the individual. More effective coping (e.g. broader array of coping skills, which includes problem-focused and emotion-focused coping), higher levels of social support, positive identity prominence and valence, and higher levels of identity integration is suggested to result in more positive and less negative mental health outcomes. This model provides a conceptualization of the sources and pathways of stress experienced by sexual minority women as well as the role of coping and factors of resilience. Although not explicitly mentioned in Meyer's model, the three components of hardiness (Kobasa, 1979) may also serve as additional factors that impact the relationship between minority stress and outcomes such as AUD. Expanded understanding of stressors, coping factors, and resilience or protective factors may aid in predicting sexual minority women most at risk for the development of AUDs.

The minority stress model (Meyer, 2003) has many commonalities with Lazarus and Folkman's (1984) model of stress. Both consider stress to result from the relationship between an individual and their environment. Both models are concerned with the cognitions related to the environment and the role they play in subsequent stress experienced. While Lazarus and Folkman discuss environmental circumstances and resulting stress in general, Meyer's model expands this to differentiate experiences unique to individuals based on their minority statuses and identities. Meyer implicates specific internal processes and associated cognitions unique to sexual minority individuals in the stress process. Both models addressed coping with stress following the onset of stress. Both models overlap in terms of coping strategies, with Lazarus and Folkman's emotion-focused and problem-focused coping fitting within Meyer's

conceptualization of coping. The minority stress model's coping and social support and characteristics of minority identity components function similarly to the coping resources outlined by Lazarus and Folkman. Individual differences in the coping process are acknowledged in both models as are social support. Identity valence, under the Minority Stress Model, fit within the positive belief category of Lazarus and Folkman. However, Meyer's inclusion of identity prominence and integration go beyond that proposed by Lazarus and Folkman. Personal constraints, outlined by Lazarus and Folkman, would encapsulate Meyer's minority stress proximal processes, while their perception of threat encapsulate his minority stress distal processes. While general stress and coping research applies to individuals regardless of sexual orientation, based on Meyer's work, these along are insufficient to understand the stressors experienced by minority individuals. Minority status is accompanied by unique stressors that can impact mental health outcomes, such as the development of an AUD.

The minority stress model (Meyer, 2003) takes into account many factors when conceptualizing the stress and coping process of sexual minority individuals. However, there are limitations to his model. The model fails to describe interactions between multiple minority statuses. While both are included and considered to contribute to stress, the specific interactions between sexual orientation and other marginalized identities are not included. In other words, the unique experiences associated with the intersection of particular identities are not accounted for by the model. Specifically, the model does not expand understanding on the stress experienced specifically when considering women who are sexual minorities. This means that while there are commonalities in experiences among sexual minority individuals there are likely differences as well based on other

identities they hold, such as gender identity. When considering that lack of consideration for the interaction specifically between sexual orientation and gender as well as that this model evolved out of his work with gay men (Meyer, 1995), there is the possibility that aspects related to stressors or coping for sexual minority women are not present in the model. A review of the research on sexual minority women and alcohol-related outcomes will be covered next to explore the aspects of stress, minority stress, coping, and resilience most apply to sexual minority women.

Sexual Minority Women and AUD Risk

One of the earliest empirical studies on sexual orientation and alcohol-related outcomes explored the role of stress (McKirnan & Peterson, 1989). In this study, self-report surveys were distributed through LGBT organizations and settings in Chicago with 3,400 being returned. Survey data on stressors, level of disclosure of sexual orientation, symptoms of alcohol dependence, and loss of control over alcohol use was collected from individuals who were categorized as exclusively attracted to the same gender, “more homosexual than heterosexual”, or bisexual. The study was not clear on whether sexual orientation was based on self-identification, reported attraction, or reported behavior. Women composed twenty-two percent of the sample. The survey utilized scales developed by Clark and Midanik (1982), five of which related to common AUD symptoms. Rates of abstinence from alcohol, or refraining from alcohol consumption, were found to be comparable between sexual minority men and women. The researchers note that this differs from prior research conducted by Clark and Midanik (1982), which states that, in general, women are more likely to engage in abstinence than men. The rate

of abstinence was significantly lower in sexual minority individuals than in the general population.

The gender differences related to AUD observed in the general population were not present when only considering sexual minority individuals (McKirnan & Peterson, 1989). Sexual minority individuals reported similar rates of heavy use to the general population; however, their risk for alcohol-problems, defined as meeting at least two criteria for an AUD, was higher. Alcohol problems in sexual minority women demonstrated significantly slower decline over time as compared to the general population. The results of this study suggest that unlike with the population as a whole, gender and age do not appear to be protective factors for sexual minority women. This early study indicates that sexual minority women differ from heterosexual women in alcohol-related outcomes indicating that similarities between the two groups in reference to AUD risk factors, protective factors, and treatment factors should not be assumed.

Alcohol consumption among lesbians was also studied by Bradforth, Ryan, and Rothblum (1994). Of the 1,925 lesbian identified women, 83% reported consuming alcohol. Participant data was collected as part of the 1984-1985 National Lesbian Health Care Survey. Surveys were distributed nationally with a 42% response rate and participants from all 50 states. The sample was majority white, college-educated, women between the ages of 25 and 44. The study was unclear on the basis for determination of sexual orientation. Of those that reported consuming alcohol, 6% indicated daily consumption and 25% weekly consumption. Participants' personal concern regarding their alcohol consumption was endorsed by 14% of respondents. Rates of daily alcohol consumption increased with the age of the respondent. The researched compared the

prevalence rate of SUDs, including AUD, in their sample with the prevalence rate of SUDs in a sample of heterosexual women collected as part of a study conducted by McKirnan and Peterson (1989). SUDs, including but not limited to AUD, were higher in the sample of lesbian women than the comparison sample of heterosexual women. This is one of the few national studies providing prevalence rates for alcohol consumption and concern related to alcohol use among lesbians. While the analyzed data was collected in 1984-1985 and may not reflect the same experiences of lesbian women in the current decade, it does establish a history of alcohol use and alcohol concerns among lesbians.

Coping resources were explored as a factor contributing to alcohol abuse in lesbians by Heffernan (1998). Surveys were distributed nationally through LGB organizations and networks. Of the 263 respondents, the majority identified as white, the average age was 37 years, close to three-fourths were in a relationship, and over half had a graduate school level of education. All participants self-identified as lesbian. Measures on the following were completed by participants as part of the survey – stress, coping style, substance use, bar orientation, social support, and impulsivity. Two types of stress were measured, general perceived stress was measured on The Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), a 14-item measure. Stress specific to LGB individuals was measured using an unpublished Discrimination Scale, which consisted of 24-items asking whether the individual or their partner had experienced any of the described events due to their sexual orientation, such as verbal harassment or denied visitation of children, in the past month. The Coping Resources Inventory, CRI, (Moos, 1995) was adapted to tap into the dispositional coping, or typical way of coping, of participants. The eight subscales of the CRI correspond with different types of coping

response – cognitive approach, behavioral approach, cognitive avoidance, behavioral avoidance. The cognitive approach response parallels Lazarus and Folkman's (1984) emotion-focused coping while the behavioral approach is comparable to problem-focused coping. Cognitive avoidance would be considered emotionally avoidant coping and behavioral avoidance would be problem avoidant coping. Alcohol use was assessed using criteria items from the DSM-IV for Alcohol Abuse and Alcohol Dependence as well as self-reported frequency and quantity. McKirnan and Peterson's (1989) measure of bar orientation was utilized to determine participants' level of reliance on bars as a primary social setting. Moos, Fenn, Billings, and Moos' (1988) Life Stressors and Social Resources Inventory assessed levels of social support and available resources. Impulsivity was measured using the Impulsivity subscale from the Impulsivity-Venturesomeness-Empathy Scale (Eysenck & Eysenck, 1978). As a whole, the sample reported relatively few incidents of discrimination in the previous month. The level of general perceived stress (M = 25.67) was slightly elevated in comparison to women regardless of sexual orientation (M = 20.20). Due to the majority of participants reporting being open about their sexual orientation, data was limited on the potential impact of identity concealment. The notion that lesbians lack social support in comparison to heterosexual women was not supported, with lesbians reporting higher perceived support and empathy both in their romantic relationship and relationships with friends than women as an overall group. No participant in the study identified themselves as a heavy drinker, defined as over 60 drinks a month. However, approximately 14% met criteria for a substance abuse disorder and approximately 6% for substance dependence, with percentages reflecting both AUD and SUD rates. Level of perceived stress was only

found to correlate with frequency of intoxication in the past month, no other measures of substance use. Those with avoidant coping styles, which includes (but is not limited to) substance use coping, reported higher rates of drinks consumed and number of times intoxicated. The more important a bar was as a social setting served as the strongest predictors for AUD. Those who were single, are we also more likely younger in age, were more likely to view the bar as more important. Stress and social support were not found to predict substance use. More impulsive participants were at slightly increased risk for alcohol use. Overall, this study did not support deficits in coping resources among lesbians, as compared to heterosexual women, nor stress or social support being predictive of AUD. The findings related to stress and social support conflict with the findings of later research. Bar orientation, or how important of a social setting a bar was considered to be to the participant, was related to alcohol use. This implies that lesbians are more likely to consume alcohol while at a bar than while at home. The major limitation of this study is related to the sample. The sample was collected through social organizations and networks, meaning that lesbians with access to more social supports may have disproportionally been recruited for the study. The lack of heavy drinking among participants also restricts the study's findings on factors related to AUD because heavy drinking, a risk factor for AUD, was endorsed by few, the ability to investigate factors contributing to heavy drinking is limited.

Trocki and Drabble (2008) studied differences between sexual minority and heterosexual individuals among bar and household samples. Surveys were mailed to residences and passed out at bars in a Western state. Of the surveys returned completed, 1,043 were from residences and 569 from bars. Collected data included information on

heavy episodic alcohol use, whether participants met at least three alcohol dependency symptoms in their lifetime, and whether they experienced at least two consequences related to alcohol use. Alcohol dependency and alcohol-related consequences were measured using one dichotomous question each asking participants to answer whether or not they met criteria for at least three of the dependency criteria and experienced at least two consequences directly related to alcohol use during their lifetime. Sexual identity was determined by self-identification. An 18-item bar motivation scale was developed based on focus group data that asked participants to score how important different identified motivations for visiting a bar were to them.

Lesbians in the household sample and bisexual women in both samples visited bars more frequently than heterosexual women (Trocki & Drabble, 2008). Bisexual women were significantly more likely to binge drink in both bar and household samples. Lesbians in the household sample were more likely to engage in heavy drinking compared to heterosexuals in the household sample, this same difference was not observed between lesbians and heterosexual women in the bar sample. Symptoms of alcohol dependency were significantly higher in the bar population and similar rates were reported across sexual orientations. Lesbians were at twice the risk of experiencing alcohol-related consequences than heterosexual women. Lesbians rated sensation seeking and entertainment as motivations for visiting bars lower than heterosexual women and mood change (an indicator of use of substances to cope) similar to heterosexual women. Bisexual women rated entertainment as a motive higher than lesbians and similar to heterosexual women and mood change higher than both. Overall, the findings indicate that lesbians are at the highest risk for alcohol-related consequences and bisexual women

have the highest rates of heavy alcohol use. Bisexuals are most likely to visit bars, with higher levels of sensation seeking contributing to this. Lesbians demonstrated higher rates of bar attendance, but lower ratings on the three measured motivations for visiting bars. This suggests that the study failed to adequately tap into lesbians' motivations for visiting bars. While sexual minority women were not found to be at increased risk for AUDs, lesbians were found to be at twice the risk for alcohol-related consequences, a component of AUD.

Data from the 2004-2005 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) was analyzed by McCabe, Hughes, Bostwick, West, and Boyd (2009) to draw conclusions on substance use behaviors and dependence among sexual minorities. Face-to-face interviews were conducted with participants from the 2001-2002 NESARC study. The 2004-2005 interview utilized the Alcohol Use Disorder and Associated Disabilities Interview Schedule DSM-IV (Grant, Dawson, & Hasin, 2001) structured interview to collect data on alcohol use and criteria for AUD. Of the 34,653 participants, all of whom were at least 20 years of age, approximately 2% self-identified as either lesbian, gay, or bisexual. Approximately 4% indicated at least one past same-sex sexual partner and approximately 6% indicated experiencing same-sex sexual attraction. Sexual identity, sexual attraction, and sexual behavior were assessed by having participants chose the description that best fit them for each other the three categories. Criteria for an AUD in the past year was met by 13.3% of lesbians and 15.6% of bisexual women in the study. Lesbian and bisexual identified women had significantly higher risk, 3.6 and 2.9 times the risk respectively, of having met criteria for alcohol dependence in the past year than those who identified as heterosexual or unsure of identity. Elevated risk

of alcohol dependence was noted in women who indicated any level of attraction to women when compared to women who reported being only attracted to men. However, when comparing alcohol risk in women who reported some degree of same-gender attraction, only those who indicated that they were mostly sexually attracted to females demonstrated elevated risk of alcohol dependence. In regard to sexual behavior, only women who reported behavior that included both male and female sexual partners demonstrated increased rates of alcohol dependence. These findings imply that not only identity, but attraction and behavior, are important to consider when discussing sexual minority women and AUD. A limitation of the study is that participants were required to select from pre-existing categories rather than being able to describe their identity, attraction, and behavior in their own words.

Lehavot and Simoni (2011) conducted a study on the impact of sexual minority stress on sexual minority women's mental health and substance abuse. Data from a total of 1,381 women who identified as either lesbian or bisexual was collected via an online survey. Surveys were distributed to LGB organizations, listservs, and websites across all 50 states in addition to online groups aimed at bisexual women and people of color. Participants were asked to forward the survey to other eligible individuals. Questions were aimed at assessing sexual minority stressors, gender expression, social-psychological resources, and outcomes, including alcohol abuse. The Brief Michigan Alcohol Screening Test (Pokorny, Miller, & Kaplan, 1972), a measure of lifetime problematic alcohol use consisting of 10 yes-or-no items. Meyer's (1995) Internalized Homophobia Scale and a concealment measure developed by Meyer, Rossano, Ellis, and Bradford (2002) were used to measure two of the sources of sexual minority stress.

Victimization was measured on the 14-item Heterosexist Harassment, Rejection, and Discrimination Scale (Szymanski, 2006) which assesses the frequency of these experiences and a prejudice events measure (D'Augelli, 2005) on lifetime frequency of prejudice events experienced. Social-psychological resources, which included social support (measured on the Multidimensional Scale of Perceived Social Support; Zimet, Dahlem, Zimet, & Farley, 1988) and spirituality (measured on the Existential Well-being subscale of the Spiritual Well-Being Scale; Ellison, 1983), was proposed as a moderator. Or in other words, social support and spirituality were hypothesized to act as a buffer reducing the impact of sexual minority stress on health outcomes. Higher rates of sexual minority stress, including victimization, concealment, and internalized homophobia, were all found to be associated with lower rates of social-psychological resources. Lower rates of both types of social-psychological resources, social support and spirituality, resulted in increased risk of negative mental health outcomes, including alcohol abuse. Lower social-psychological resources were found to have a direct effect on alcohol abuse, meaning that as social support and spirituality decreased, alcohol abuse increased. The findings of this study suggest that stressors unique to sexual minority identity may negatively influence risk of alcohol abuse in sexual minority women. Specifically victimization, concealment, and internalized homophobia from Meyer's minority stress model (2003). The role of social support and spirituality as a risk reducer for negative outcomes, in this case alcohol abuse, was supported. However, the cross-sectional design of the study restricts the ability to make causal inferences.

Qualitative interviews with twelve sexual minority women were held to explore factors contributing to problematic alcohol use in this population (Condit, Kitaji, Drabble,

& Trocki, 2011). Participants were recruited to through ads posted online and physically in areas aimed at sexual minorities. Participants identified as a wide range of orientations but all indicated significant same-sex relationships. They ranged in age from 25-63, half identified as white, reported at least one year of college education, and resided in a Western state. Six of the women reported previously receiving support for alcohol related problems, five from Alcoholics Anonymous and one from a mental health provider. Five of these participants indicated that they abstained from alcohol consumption. The seven participants that reported that they still consumed alcohol reported rates varying from up to four times a week to one time a year. The interview consisted of open-ended questions with eight primary questions and probes related to perception of alcohol use, management of mood, support system, sexual identity, trauma, relationships, and substance use.

Stressors that contributed to alcohol consumptions and coping factors that reduced both overall stress and alcohol misuse emerged as themes (Condit, Kitaji, Drabble, & Trocki, 2011). Stressors fell into two domains; family and trauma/violence/discrimination (non-specific to sexual orientation). Family referred to negative reactions to sexual orientation, alcohol problem in the family, and criticism or abuse received from parents. Trauma/violence/discrimination covered experienced events that fell into one or more of those categories. Coping factors included family and community. Family encompassed supportive family members. Community included LGBT-friendly support networks, social support, activism, and learning to accept themselves. In relation to alcohol consumptions, all participants spoke of consuming alcohol in a social setting and of drinking to cope with their stress. This exploratory qualitative study proposes a number

of stress and coping factors that are implicated in being important in understanding problematic alcohol consumption in sexual minority women. Specifically, participants indicated stress as a factor contributing to their drinking and identified negative family reactions to sexual orientation and experiences of trauma, violence, and/or discrimination as sources of stress. Supportive families and connection to LGBT-friendly support network were identified as common support systems that helped participants cope with their stress. However, the implications are limited due to the sample size and non-random selection, potentially leading to a sample that does not accurately reflect sexual minority women as a whole. Since this was not a representative or random sample, it is possible that certain experiences of sexual minority women may have been non-represented, underrepresented, or overrepresented and the small sample size limits the ability to draw conclusions about sexual minority women as a whole.

Green and Feinstein (2012) conducted a review of literature on substance use among LGB individuals. Twelve empirical studies, published between 2000 and 2009, were reviewed to identify recent patterns in substance use. Specific inclusion criteria for study selection was not provided. Focus was placed on factors unique to LGB individuals rather than factors universal to individuals regardless of sexual orientation. In relation to protective factors, older age and female gender as factors demonstrate less protection against substance use in the LGB population than the heterosexual population. LB women appear to experience more alcohol-related problems whereas GB men appear to experience more drug-related problems. Bisexual individuals are proposed to be at higher risk for substance abuse, including but not limited to alcohol use, over both LG and heterosexual individuals. Overall, the authors' review of the research indicated support

for the minority stress model with a relationship between the outlined sexual minority stressors and substance use. Gender and age were not supported as protective factors among LGB individuals as has been found with heterosexual individuals. Noted limitations by the reviewers included differing ways in which substance use is operationalized and measured between studies and focus on sexual behavior over sexual orientation. Combining sexual orientations and not discussing potential difference between bisexual men and women serve as additional limitations.

Nawyn, Richman, Rospenda, and Hughes (2000) researched harassment in the work place and its impact on sexual minority women's alcohol use. Data was collected from faculty, graduate student workers, maintenance/service workers, and clerical workers via a mail survey at an urban university. A total of 2,492 completed questionnaires were returned by 1,336 female and 1,156 male employees. The majority of the female responders identified as heterosexual (1,254) with the remaining 40 identifying as either lesbian or bisexual. Sexual orientation was determined by self-identification. Workplace sexual harassment in the past 12 months was measured with a modified version of the Sexual Experiences Questionnaire (Fitzgerald, Shullman, Bailey, Richards, Swecker, Gold, Ormerod, & Weirzman, 1988), a 20-item measure of three types of harassment – gender harassment, unwanted sexual attention, and sexual coercion. General work harassment, nonspecific to sexual orientation, including - verbal aggression, disrespectful/demeaning behaviors, isolation/exclusion, threats/bribery, and physical aggression were measured on the Generalized Workplace Abuse Questionnaire (Richman, Rospenda, Nawyn, Flaherty, Fendrich, Drum, & Johnson, 1999), an instrument developed based on content analysis from transcripts of university employee

groups. Alcohol-related problems with in the last 12 months were measured using the Michigan Alcoholism Screening Test (Selzer, 1971), a common AUD screener that is similar to the AUDIT. Other alcohol behaviors such as frequency, quantity, and greatest drinking quantity were measured using modified items from Cahalen, Cisin, and Crossley (1969) while episodes of heavy drinking and incidents of intoxication were measured using items from Wilsnack, Klassen, Schur, and Wilsnack (1991). Alcohol use as an escape motive, a type of emotion-focused coping comparable to substance coping, was measured by five Liker-type items developed by the Alcohol Research Group (Temple, 1986). Both sexual and non-sexual harassment measures were administered. Sexual minority women represented 1.6 percent of the sample (n = 40) while heterosexual women represented 50.3 percent (n = 1254).

Within the study by Nawyn, Richman, Rospenda, and Hughes (2000), sexual minority women reported significantly more experiences with workplace sexual harassment on average than heterosexual women. They were twice as likely to drink to intoxication or drink heavily and reported consuming more drinks. However, sexual minority women did not endorse more experiences with general workplace harassment, how often they drank, or alcohol use as a means of escape. Heterosexual women and sexual minority women were found to abstain from alcohol at similar rates. Sexual minority women who experienced sexual harassment had higher AUD screener scores when compared to both sexual minority women who indicated for experiences with sexual harassment and heterosexual women who endorsed past experiences with sexual harassment. Feels of isolation and/or exclusion among sexual minority women served as the strongest predictor for higher alcohol abuse/dependence screening scores. These

results imply that sexual minority women may be more prone to engaging in alcohol misuse as a means of coping with workplace sexual harassment than heterosexual women. Sexual minority stress experienced in the workplace may have contributed to workplace harassment. Conflation between sexual workplace harassment and sexual minority stressors in the workplace cannot be disentangled due to a measure of minority stress not being administered as part of the study was the major limitation of the study.

The impact of intimate relationship status on alcohol use among bisexual women was explored by Molina, Marquez, Logan, Lesson, Balsam, and Kaysen (2015). The 470 self-identified bisexual participants were recruited through online advertisement. All participants were women, aged 18-25, and the majority were Caucasian. The majority, 282 reported a male partner while 56 reported a female partner. A single partner was indicated by 338 women and multiple males and female partners by 132. Measures of intimate relationships, bisexual minority stress, outness, internalized bi-negativity (e.g. a bisexual individual being told that they need to "pick a side"), depressive symptoms, binge-drinking, and alcohol-related consequences were administered. The Bisexual Minority Stress Scale, developed by Balsam, Beadnell, Simoni, and Cope (2008) measured experiences with bi-negativity on 10-items. Each item was rated on a five-point scale with 0 = Never and 5 = Almost Every Day. Items inquired about experiences with bi-negatvity, for example "People assuming you will sleep with anyone." The reported reliability for the given sample was 0.76. The Outness Inventory (Mohr & Fassinger, 2000) was administered to measure how open to others the participants were about their sexual orientation. Internalized bi-negativity was measured using three times from the Lesbian, Gay, and Bisexual Identity Scale (Mohr & Fassinger, 2000). Binge drinking,

defined as 4 or more drinking on a single occasion for women, was assessed on the self-report Daily Drinking Questionnaire (Collins, Parks, & Marlatt, 1985). Alcohol-related consequences was measured using the Young Adult Alcohol Consequences Questionnaire (Read, Kahler, Strong, & Colder, 2006) a 48-item measure inquiring about common consequences associated with alcohol use, such as "I have neglected my obligations to family, work, or school because of my drinking.". The gender(s) of intimate partners were hypothesized to be important to minority stress experiences. Participants were solicited through online advertisement. In order to meet inclusion criteria individuals needed to self-identify as bisexual and be involved in at least one intimate relationship. In relation to finding related to the topic at hand, experiences of bisexual minority stress were positively related to binge-drinking and alcohol-related consequences, the latter of which is one of the criteria for AUD.

Higher levels of internalized bi-negativity were associated with higher levels of consequences related to alcohol but not binge-drinking (Molina, Marquez, Logan, Lesson, Balsam, & Kaysen, 2015). Bisexual women with a single male partner were at greater risk for alcohol-related consequences than bisexual women with a single female partner. Alcohol-related consequences were found to be more prevalent among bisexual women with multiple partners than those with a single partner. Experiences with bisexual minority stress contributed to the relationship between binge-drinking and alcohol-related consequences for those with a single partner. A limiting factor of the study is the absence of information on bisexual women not involved in an intimate relationship and how this may impact social support, bisexual minority stress, and alcohol use. The assumption that bisexual minority stress and internalized biphobia increase risk of alcohol consumption in

a problematic way that results in consequences is supported by this study. The sex and number of intimate partners is implicated as a risk factor, with bisexual women involved with men or with multiple partners demonstrating higher rates of experiencing alcohol related consequences. In sum, this study implies partner number and gender impacts bisexual women's experiences with bisexual minority stress, which in turn impacts their likelihood of experiencing alcohol-related consequences.

The relationship between sexual minority stress and risk for AUD was research by Weber (2008). The sample was comprised of 824 sexual minority individuals recruited using online advertisement dispersed to LGBT community and resource centers. Over half of the sample identified as women (51%) with 36% of the overall sample identifying as lesbian, 16% as bisexual, and 6% exploring either lesbian or bisexual identity. Sexual orientation was identified based on self-identification. The majority identified as European American (82%) and participants ranged in age from 18 to 81. Measures included the Schedule of Heterosexist Events (Selvidge, 2000; as cited in Weber, 2008), 17-item measure of frequency of heterosexist events experienced by lesbian or bisexual women (e.g. "How many times have people made inappropriate or unwanted sexual advances to you because you are lesbian or bisexual?"), Internalized Homophobia Scale (Martin & Dean, 1987; as cited in Weber, 2008), a 9-item measure of internalized homophobia utilizing 4-point Likert-type scales, and the AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), a 10-item screener for hazardous or harmful patterns of alcohol consumption. Scores of 8 or above on the AUDIT are indicative of excessive drinking, which may indicate either presence of or increased risk for developing an AUD. The AUDIT has a test-retest reliability of .86. Experiences with heterosexist events and

feelings of internalized homophobia were identified as stressors within the minority stress model. Higher levels of internalized homophobia were related to higher AUDIT scores ($r = .39$, $p < .01$). The same relationship was not found between heterosexist events and AUDIT scores. Specific sexual orientation identity (i.e. lesbian, bisexual, or exploring identity) was not related to the presence of substance use disorders even when considering experiences with heterosexist events and/or internalized homophobia. Lesbians reported more experiences with heterosexist events and internalized homophobia than bisexual women. Results indicated that specific types of minority stress, internalized homophobia, increase risk of AUDs while others, heterosexist events, do not. A limitation of the study was that measures specific to bisexual minority stress were not utilized, which may have impacted the findings relating to bisexual individuals.

Wilson, Gilmore, Rhew, Hodge, and Kaysen (2016) conducted a longitudinal research study on the impact of minority stress on the alcohol habits of young adult sexual minority women. Recruitment occurred through Craigslist and Facebook advertisements. A screening tool was administered to insure that participants met the following inclusion criteria – U.S. resident, between 18 and 25 years of age, self-identified as either lesbian or bisexual, and possessed a valid email address. All 1057 participants were women with 40.5% identifying as lesbian and 59.5% identifying as bisexual. The majority were Caucasian (76%) and the mean age of the sample was 20.9 years old. Measures of alcohol consumption, alcohol consequences, and minority stress were administered in survey format. Balsam, Beadbell, and Molina's (2013) Daily Heterosexist Experiences Questionnaire assessed general minority stress by having participants rate 35 experiences of heterosexism on a 6-point Likert-type scale based on

how frequently they experience them. Alcohol consumption was measured with the 4-item Daily Drinking Questionnaire (Collins, Parks, & Marlatt, 1985), which assess drinking habits. The Young Adult Alcohol Consequences Questionnaire (Read, Kahler, Strong, & Colder, 2006) was administered to determine how many alcohol-related consequences a participant had experienced in the prior 30 days. Data was collected at baseline and three consecutive 12-month follow ups.

Higher levels of minority stress were not found to be associated with higher levels of alcohol consumption (Wilson, Gilmore, Rhew, Hodge, & Kaysen, 2016). Those reporting higher levels of minority stress were at increased risk of reporting alcohol related consequences, one of the criteria for AUD, at the next follow up. For every standard deviation increase in minority stress, alcohol related consequences increased by 7% at the next follow up. When taking into consideration the number of drinking consumed by participants, the relationship between minority stress and both the presence and amount of alcohol consequences remained. Lesbian and bisexual women were not separated out and finding reflect both groups combined. While these findings do not support the theory that minority stress increases drinking, it does support the notion that minority stress increases the risk for alcohol use that results in consequences. The study could have benefited from the inclusion of subscales for specific types of minority stress and specific types of alcohol-related consequences in order to provide additional implications for the impact of sexual minority stress on alcohol-related consequences.

In sum, there is consensus in the research the AUD is a mental health disorder experienced by a disproportional percentage of sexual minority women. Research generally supports that the incident rate of AUD is higher among sexual minority women

than heterosexual women. A number of potential risk and protective factors were researched in the studies. Age and gender, which are supported as protective factors in the general population, were consistently unsupported as protective factors for AUD among sexual minority women. Attractions and behaviors were noted as important to separate due to findings that both have a unique impact on AUD risk.

Findings specific to bisexual women indicated that they were more likely to drink in bars, more likely to engage in binge drinking, as bisexual specific minority stress increased so did alcohol-related consequences, and both gender(s) and number of partners influenced AUD risk. In relation to lesbians, lesbians were more likely to report higher rates of internalized homophobia and heterosexist experiences, less likely to engage in binge drinking, and more likely to experience alcohol-related consequences. Sexual minority women who rely more heavily on emotion-focused coping, specifically escaping or avoiding emotion, were found to be at higher risk for AUD. The impact of sexual minority stress on AUD risk varied between studies. While one study found no relationship, another found that internalized homophobia but not heterosexist events was related to higher rates of AUD, with a third finding support of a relationship between minority stress and higher rates of alcohol related consequences and AUD criteria. One study concluded that the relationship between sexual minority stress and AUD was moderated by social support and spirituality. A number of constructs proposed to impact coping were not present in existing research on AUD among sexual minority women, these include resilience, or hardiness, and cognitive appraisal of stress as either a challenge or threat. The contradictions as well as the gaps in the research have led to the development of the following hypotheses.

Hypotheses

1: Perceiving sexual minority stress as a challenge in the context of higher levels of sexual minority stress will be a protective factor for lifetime risk of AUD for both lesbian and bisexual women.

H1: SAM Challenge (Peacock & Wong, 1990) scores will moderate the relationship between AUDIT (Babor at al., 2001) total scores and MOGS (Lewis at al., 2001) total scores. (As SAM Challenge scores increase, the relationship between AUDIT total and MOGS total will decrease).

2: Perceiving minority stress as a threat will be a risk factor for lifetime risk of AUD for both lesbian and bisexual women.

H2: SAM Threat (Peacock & Wong, 1990) scores will be positively and significantly correlated with AUDIT (Babor et al., 2001) total scores for both lesbian and bisexual identified women.

3: Higher internal sexual orientation conflict will be associated with higher risk of lifetime AUD for both lesbian and bisexual women.

H3: MOGS-SoC (Lewis et al., 2001) scores will be positively correlated with AUDIT (Babor et al., 2001) total scores for both lesbian and bisexual identified women.

4: Bisexual minority stress will be a unique predictor of lifetime AUD risk among bisexual women above and beyond general sexual minority stress.

H4: BMSS (Balsam et al., 2008) scores and MOGS (Lewis et al., 2001) total scores will significantly predict AUDIT (Babor et al., 2001) score above and beyond the predictive power of MOGS on AUDIT.

5: Hardiness will moderate the relationship between sexual minority stress and lifetime AUD risk for both lesbian and bisexual women.

H5: Higher scores on hardiness as measured by DRS (Bartone, 2007) total scores will moderate the relationship between MOGS (Lewis et al., 2001) total scores and AUDIT (Babor et al., 2001) total scores. (As scores on hardiness increase, the relationship between MOGS and AUDIT total scores will decrease).

Chapter III

Method

Participants

Participant data was obtained from a larger national study on English-speaking lesbian, gay, bisexual, and/or transgender self-identified adults collected in 2009. Of the 730 participants, 346 identified as women and comprise the sample for the current analysis.

Of the 344 participants, 332 identified as cisgender and 12 identified as transgender. Participants ranged in age from 18 to 72 years, with an average age of 34.98 (*SD* = 13.77). Demographic data is reported in Table 1. The sample identified predominately as Caucasian/White (83.7%). A bachelor's degree or higher was reported by 63.3%. The majority of participants resided in either suburban (42.2%) or urban (41%) areas. A bisexual identity was reported by 103 (29.9%) participants while a lesbian identity was reported by 241 (70.1%).

Table 1

Demographic Information for Study Sample

	n	Percent
Gender		
Cisgender Women	332	96.5
Transgender Women	12	3.5
Sexual Orientation		
Lesbian	241	70.1
Bisexual	103	29.9

Age		
18-25	110	32.0
26-34	88	25.6
35-44	47	13.7
45-65	93	27.0
65 and above	6	1.7
Race/Ethnicity		
Caucasian/White	288	83.7
African American/Black	16	4.7
Latino/a/x	10	2.9
Asian/Pacific Islander	6	1.7
Native American	2	.6
Biracial/Multiracial	9	2.6
Other	10	2.9
Missing	3	.9
Education		
High school	18	5.2
Some college	93	27.0
Associate's/Technical degree	15	4.4
Bachelor's degree	75	21.8
Master's degree	81	23.5
Doctorate degree	62	18.0
Geographic Area		
Rural	53	15.4
Suburban	145	42.2
Urban	141	41.0
Missing	5	1.5

Materials

Demographics. In addition to the standard demographic questions, questions regarding sexual identity, substance use history and identity development were included, although the latter two were not used in the present analysis (see Appendix A).

AUD risk. An alcohol use disorder screener, the Alcohol Use Disorders Identification Test-10 (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; see Appendix B), was used to measure lifetime risk for AUD. The screener has 10 items each of which are measured on a 4-point self-report Likert-type scale. Scores of 8 or above on the AUDIT are indicative of excessive drinking, which may indicate either presence of or increased risk for developing an AUD. The AUDIT has a test-retest reliability of .86. Participants were asked to respond to the items once when considering the last 12 months and again when considering the 12 months when their drinking was the heaviest. For the present study, participants responded to items on the AUDIT twice, once for the past 12 months and once for the heaviest 12 months of drinking. The scores for the heaviest 12 months were used in the present analysis.

Hardiness. Hardiness was assessed using Dispositional Resilience Scale, or DRS15-R (Bartone, 2007; see Appendix C). The DRS15-R is comprised of 15-item scale measured on a 4-point Likert-type scale. It assesses the three facets of hardiness (commitment, control, and challenge) and an overall hardiness score. An internal consistency of .86 was reported by Figueroa and Zoccola (2015).

Sexual minority stress. The severity of experiences of stress related to sexual minority status was assessed using the Measure of Gay Related Stressors, MOGS (Lewis, Derlega, Berndt, Morris, & Ross, 2001; see Appendix D). The MOGS consists of 56-

items that are measured on a self-report, four-point, Likert-type scale. A “Not Applicable” option is included for each item, which is not counted in calculating scores. The total score is obtained from calculating the mean for all items. Scale scores are derived from the mean of the total items that comprise that scale. Ten scales, or sources of sexual minority stress, are measured on the MOGS. These include Family, Family Reactions to My Lover, Violence, Misunderstanding (described as misunderstanding of sexual orientation by others), Work Discrimination, General Discrimination, Visibility of Sexual Orientation from Friends and Family, Visibility of Sexual Orientation from General Public, HIV/AIDS, and Internal Sexual Orientation Conflict. The alpha for the scales ranged from .72 to .92. The two visibility of sexual orientation subscales and the internal sexual orientation conflict subscale map on to Meyer’s (2003) proximal stressors. They tap into internal processes of stress. The remaining subscales measure distal stress, or stress originating outside of oneself. The overall sexual minority stress score was derived from the summing of all items. The Internal Sexual Orientation Conflict scale is scored based on the average of scores on items 50, 62, 63, and 66.

Stress Appraisal. Appraisal of stress related to sexual orientation as either a threat or a challenge was measured using an adapted version of Peacock and Wong’s (1990; see Appendix E) Stress Appraisal Measure – Revised. Of the 19 items, the 11 that measured threat and challenge were administered. Internal consistency was tested with three samples and found to be between .66 and .79 for Challenge and between .65 and .75 for threat. Each item was scored on a 5-point Likert-type scale. Items were adapted to ask participants to answer the questions while considering stress associated with their sexual

orientation. The Challenge scale score is derived from the responses to items 1-6 while the Threat scale score corresponds to items 7-11.

Bisexual stress. The frequency of experiences of bisexual stress was measured by the Bisexual Minority Stress Scale (Balsam, Beadnell, Simoni, & Cope, 2008; see Appendix F). It measures experiences of binegativity on 10 items. Each item was rated on a five-point scale with 0 = *Never* and 5 = *Almost Every Day*. Items inquired about experiences with binegativity, for example “People assuming you will sleep with anyone.” The total score is derived from summing the scores for the items. Prior research has established an alpha, or internal consistency reliability, or .76 (Molina, Marquez, Logan, Leeson, Balsam, & Kaysen, 2015).

Procedure

The original data from this archival data set was collected via an online survey. The study received approval from an institutional review board at The University of Virginia (IRB SBS #2009-0117-00). Participants in the larger study, which data for the present study originated, were solicited through a combination of convenience and snowball sampling. The larger study was examining risk and protective factors for substance use disorders in the LGBTQ+ population. LGBTQ+ organizations in the U.S. and Canada were provided with a short description of the study and asked to provide the description and survey link to members who may be eligible via e-mail. Information about IRB approval and the Informed Consent form were also provided to the LGBT organizations. The survey was hosted on and data collected through Surveymonkey (www.surveymonkey.com), a secure survey website. Following the completion of the survey, participants were asked to provide the survey link to others they knew that met

the eligibility criteria. Participants were not asked to provide their names or other identifying information. The measure of bisexual stress was only administered to those who identified as bisexual.

Design

The present correlational study utilizes exclusively self-report data collected through items and measures gathered in a survey format.

Analysis

Hypotheses 2 and 3 were analyzed using Pearson correlation to measure the linear relationship between variables. For hypothesis 1, the interaction term between SAM Challenge and MOGS was computed. The interaction, SAM Challenge, and MOGS were entered stepwise into a linear regression to analyze the relation between these variables and Lifetime AUDIT. Hypothesis 5 utilized the same analysis process except with DRS replacing SAM Challenge. Hypothesis 4 followed a similar process except BMSS, MOGS, and the interaction between them were analyzed in relation to Lifetime AUDIT. Normality was tested using Kolmogorov-Smirnov.

Chapter IV

Results

Stress Appraisal Measure – Challenge

A total of 277 of the participants completed the SAM Challenge items (*M* = 21.24, *SD* = 5.34). Scores ranged from 6 to 30. Scores were not normally distributed (p = 0.00, Skewness = -0.38).

Stress Appraisal Measure – Threat

A total of 279 of the participants completed the SAM Threat items (*M* = 10.84, *SD* = 4.08). Scores ranged from 5 to 25. Scores were not normally distributed (p = 0.00, Skewness = 0.59).

Measure of Gay Related Stressors – Total

Of the 346 participants, 256 completed all items of the MOGS to generate a MOGS Total Score (*M* = 130.33, *SD* = 30.51). The range of scores was from 71 to 249. Scores were not normally distributed (p = 0.00, Skewness = 0.55).

Measure of Gay Related Stressors – Sexual Orientation Conflict Scale

Of the 346 participants, 299 completed all items of this scale on the MOGS (*M* = 9.71, *SD* = 4.64). Scores ranged from 4 to 20. Scores were not normally distributed (p = 0.00, Skewness = 0.59).

Alcohol Use Disorders Identification Test-10 – Total

All 344 participants completed the AUDIT (*M* = 5.02, *SD* = 6.56). Scores ranged from 0 to 29. Scores on the AUDIT were not normally distributed (p = 0.00, Skewness = 1.45).

Bisexual Minority Stress Scale

Of the 103 participants who reported a bisexual identity, 97 completed the BMSS (*M* = 37.19, *SD* = 9.98). Scores ranged from 17 to 60. Scores were normally distributed (p = 0.20, Skewness = 0.07).

Dispositional Resilience Scale – Total

All participants completed the DRS15-R and scores ranged from 0 to 42 (*M* = 23.64, *SD* = 11.61). Scores were not normally distributed (p = 0.00, Skewness = -1.12).

Table 2

Correlation Table

	1	2	3	4	5	6	7
1. SAM Challenge	-	-0.55**	-0.19**	-0.27**	-0.04	-0.05	0.41**
2. SAM Threat	-0.55**	-	0.43**	0.42**	0.05	0.19	0.25**
3. MOGS Total	-0.19**	0.43**	-	0.45**	0.01	0.42**	-0.03
4. MOGS-SoC	-0.27**	0.42**	0.45**	-	0.03	0.11	-0.60
5. AUDIT	-0.04	0.05	0.01	0.03	-	0.17	0.25**
6. BMSS	-0.05	0.19	0.42**	0.11	0.17	-	0.09
7. DRS	0.41**	0.25**	-0.03	-0.60	0.25**	0.09	-

Note ** Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 1

Hypothesis 1 states that the relationship between Lifetime AUDIT scores and MOGS Total scores will be moderated by SAM Challenge scores. This hypothesis was

not supported by the data. MOGS Total did not statistically predict Lifetime AUDIT ($R^2 = 0.001$, $F(1, 235) = 0.20$, $p = 0.66$, $\beta = 0.03$). SAM Challenge was added in the second step of the regression analysis ($R^2 = 0.002$, $F(1, 234) = 0.12$, $p = 0.89$, $\beta = 0.14$). In the last step the interaction term between SAM Challenge and MOGS Total was entered, and it did not explain a significant increase in variance in Lifetime AUDIT Total ($R^2 = 0.002$, $F(1, 233) = 0.09$, $p = 0.84$, $\beta = 0.60$).

Hypothesis 2

Hypothesis 2 states that there will be a significant, positive correlation between SAM Threat and Lifetime AUDIT scores. This hypothesis was not supported by the data. No significant correlation was found between SAM Threat and Lifetime AUDIT scores ($r = 0.05$, $p = 0.37$).

Hypothesis 3

A significant positive correlation between MOGS Sexual Orientation Conflict scores and Lifetime AUDIT scores was predicted in Hypothesis 3. MOGS Sexual Orientation Conflict scores were not found to correlate significantly with Lifetime AUDIT scores ($r = 0.03$, $p = 0.55$). Hypothesis 3 was unsupported by the data.

Hypothesis 4

Bisexual minority stress was predicted in hypothesis 4 to be a unique predictor of Lifetime AUDIT score. MOGS Total did not explain a significant portion of the variance in Lifetime AUDIT scores ($R^2 = 0.007$, $F(1, 73) = 0.515$, $p = 0.48$, $\beta = 0.08$). BMSS did not explain a significant portion of the variance in Lifetime AUDIT scores above and beyond MOGS Total scores alone ($R^2 = 0.07$, $F(2, 71) = 1.83$, $p = 0.15$, $\beta = 1.40$).

Hypothesis 5

Hardiness was proposed to significantly moderate the relationship between Lifetime AUDIT and MOGS Total scores in hypothesis 5. This hypothesis was unsupported by the data. MOGS Total did not statistically predict Lifetime AUDIT (R^2 = 0.000, $F(1, 254) = 0.012$, $p = 0.91$, $\beta = 0.01$). Hardiness was added in the second step of the regression analysis (R^2 = 0.007, $F(1, 253) = 0.856$, $p = 0.42$, $\beta = 0.10$). In the last step the interaction term between Hardiness and MOGS Total was entered, and it did not explain a significant increase in variance in Lifetime AUDIT Total (R^2 = 0.007, $F(1, 252) = 0.62$, $p = 0.62$, $\beta = -0.09$).

Summary

This chapter presented results related to the hypotheses. There were five hypotheses around potential risk and protective factors for sexual minority women in regard to developing an Alcohol Use Disorder. None of the hypotheses in the current study were supported, meaning that there was no empirical evidence supporting the proposed relationships between stress appraisal, hardiness, bisexual minority stress, or sexual orientation conflict and AUD risk in this sample of lesbian and bisexual women. Potential explanations for these findings will be presented in the discussion section.

Chapter V

Discussion

The purpose of the current study was to examine potential risk and protective factors related to the development of Alcohol Use Disorder among lesbian and bisexual women. The questions for the present study evolved out of the finding that sexual minority women are at increased risk for developing an AUD compared to their heterosexual counterparts. Meyer's (2003) theory and research suggests that higher levels of stress due to sexual minority status adversely effects the mental health of sexual minorities. Adverse mental health includes the development of an AUD. Stress appraisal theory holds that the stress associated with a stressor is influenced by how the stimulus is appraised (Lazarus & Folkman, 1984). Events appraised as challenges are proposed to induce lower levels of stress than those appraised as threats. Hardiness theory proposes that a person's personality traits can result in hardiness, which acts as a protective factor against stress (Kobasa, 1979). While various studies linked sexual minority stress and increased AUD risk, few looked at specific risk factors or any protective factors. The presented study looked to expand on the existing research in order to identify specific factors impacting the development of AUD among lesbian- and bisexual-identified women.

General Critiques

A number of limiting factors apply across all hypotheses. First, the majority of collected data is not normally distributed, which likely impacted analysis and results. Due

to the measures for stress appraisal challenge (SAM - Challenge) and threat (SAM – Threat), sexual minority stress (MOGS), sexual orientation conflict (MOGS – SoC), alcohol use (AUDIT), and hardiness (DRS) being non-normally distributed and skewed, linear regression was compromised as a means of identifying moderation effects (Cohen, 2013). Another is that all measures were self-report. Participants' perceptions of their experiences may have been inaccurate and/or varied between participants. Given that stress and appraisal are subjective, reported alcohol use and/or alcohol-related consequences may be more impacted by these. Additionally, they may have engaged in impression management while competing measures. Participants may have exaggerated their reports out of a desire for their distress to be taken seriously. Conversely, participants may have under-reported due to wanting to avoid impressions of sexual orientation being related to negative experiences (e.g. stress, alcohol use).

Related to this, participants may have experienced retrograde memory bias that influenced their recollection of past experiences, and by extension their self-rated scores (Shiffman, Stone, & Hufford, 2008). While multiple measures asked participants to reflect on past events (BMSS, MOGS, AUDIT), the AUDIT may be most impacted due to participants being asked to consider the 12 months when they drank the heaviest, regardless of how long ago that occurred.

Another critique is that potential participants self-selected whether or not to participate in the study. It is possible that those who feel conflicted, ashamed, or otherwise wish to avoid thinking about their current or past alcohol use and/or sexual minority stress may have been more likely to decline to participate. An additional layer is that the different aspects of sexual minority status (identity, attraction, behavior) may

have played a role in influencing findings. It is possible that the risk and protective factors may differ depending on the specific sexual minority group in question. Additionally, there may be some fundamental differences in stress and/or coping between women who experience same-gender attraction and identify as either lesbian or bisexual and those who identify with a different identity or reject identity labels.

The limited diversity of the sample is another limited factor since it means that the sample failed to reflect the diversity present in the overall population of sexual minority women. The high education level present in the sample may have introduced related confounds that were not controlled for. In relation to the education level of the sample, a previous study found support of lower education as a risk factor for high rates of alcohol use. Slater, Godette, Huang, Ruan, and Kerridge (2017) conducted a study on excessive alcohol use, defined as exceeding a limit of 7 alcoholic drinks over the course a week for women, and sexual orientation discrimination among sexual minority adults. Education level was found to impact the relationship between discriminating experienced and excessive alcohol use, with those possessing a higher level of education being at lower risk. The implications of this finding for the results of the present study is that education level may have mediated the relationship between the studied risk and protective factors and lifetime AUD risk. As a result, this may have reduced the variability in AUDIT scores, especially for those with elevated risk/high scores. The majority of the sample also identified as white, although, it should be noted that this was a common critique across the existing research presented in the literature review.

Finally, measures of stress may not have adequately captured modern experiences of sexual minority stress, microaggressions in particular. A measure that fails to measure

the full breadth sexual minority stress can potentially result in artificially suppressed scores that fail to adequately capture the stress an individual is experiencing related to their sexual minority status. Nadal (2013) postulates that as overt forms of prejudice and discrimination become less acceptable in society, the outlet for these beliefs become more covert. He identifies this less blatant form as microaggressions, described brief and ordinary comments, attitudes, or behaviors directed those holding a minority identity (or identities) that are insulting and/or negative in nature. Based on this, it is conceivable that experiences of more overt internal or external discrimination may be low while experiences of these more covert forms are high and may have gone unaccounted for in the present study.

Findings and Critiques

Hypotheses 1 postulated that appraising stressful events as a challenge would temper the impact of sexual minority stress on AUD risk. Challenge appraisal was not found to impact the relationship between levels of sexual minority stress and AUD. Likewise, hypothesis 2 stating that appraising events as a threat would increase AUD risk, was not supported. For both hypotheses, a relationship may have not been found due to the higher average scores in the sample of stress appraised as a challenge ($M = 21.24$, $SD = 5.34$) than as a threat ($M = 10.84$, $SD = 4.08$), which would make it more difficult to compare the relationship between those who appraise stress as a challenge and those who do not. Higher levels of viewing stress as a challenge rather than a threat may have been due to confounding factors that acted as protective factors such as high education level, potentially impacting both hypotheses 1 and 2 findings. It is possible that high education level was related to other potential protective factors, such as socio-economic status and

insurance/access to therapy, that were not assessed for in the current study but may have impacted the results. Additionally, the measure of stress minority stress was developed in 2001 and may not capture modern experiences of stress experienced by sexual minorities, such as microaggressions. Examples of microaggressions that were not included on the measure of sexually minority stress are remarks about how a woman does not look gay or how her lesbian or bisexual identity is a phase. Similarly, hypothesis 4, which utilized the BMSS, is likely impacted by the inability of the measure to capture the full range of experiences of bisexual minority stress.

The third hypothesis stated that higher levels of stress related to internalized conflict over sexual orientation would increase AUD risk. This link was unsupported by the data. One possible explanation for not finding the expected results is that lesbian and bisexual women may rely on methods of coping other than reliance on substance use for specific types of stress. Additionally, given the unrepresentative sample in terms of education level, it can be assumed that the sample had access to the financial means, coping skills, and intellectual capabilities to successfully navigate advanced college degrees. This suggests that the sample may have had resources to allow for other, healthier, coping strategies than alcohol use, such as seeking out social support. In addition, sexual minority women who identify as lesbian or bisexual may be more likely to be further along in identity development and thus report lower internal conflict related to sexual orientation. This is due to disclosure of orientation typically beginning in the identity tolerance stage according to Cass' (1979) sexual orientation identity development model.

Hypothesis 4 proposed that bisexual specific minority stress would serve as an additional risk factor for AUD over sexual minority stress alone. Previous research has conflicted on whether lesbian or bisexual women are more likely to develop an AUD. It is possible that while bisexual minority stress serves as an additional stressor, any unique stress that may exist is coped with in a different manner and does not increase AUD risk. Additional factors unexplored in the present study may account for when this stress increases AUD risk and when it does not. As previously noted when discussing sources of sexual minority stress, measures, in this case the BMSS, often do not capture the full breadth of experiences. For example, the measure asked about experiences of gay and lesbian individuals looking down upon them for their bisexual identity but not experiences of heterosexual individuals looking down upon them based on their identity.

The final hypothesis, hardiness as a protective factor for AUD risk, was unsupported. Hardiness work, as well as the chosen hardiness measure, has predominately been conducted with presumably majority heterosexual samples. Additionally, hardiness is considered to be a personality trait that is based in innate aspects of an individual rather than a trait that changes in response to an individual's experiences or environment (Kobasa, 1979). Due to it being static, it is possible that it impacts both experiences of minority stress and alcohol-related coping, meaning those with higher hardiness are more likely to evaluate sexual minority stress to be less stressful and those with low hardiness the opposite. Based on this possibility, hardiness may then not impact the relationship between scores on sexual minority stress and alcohol use. Furthermore, hardiness does not account for developed resilience or personality traits other than the three implicated (challenge, control, commitment).

Limitations and Strengths

A major limitation lies in the theories that contributed to the formation of the hypotheses. Meyer's (2003) sexual minority stress model was derived from research on gay men. Additionally, the model is focused predominately on the role of sexual orientation, and while other identity variables are implicated to play a role, little attention is paid to the intersection of identities. It is possible that the intersection of sexual minority status and being a woman creates a unique set of experiences that is not adequately captured by the sexual minority stress model. Stress appraisal theory is based on the work by Lazarus and Folkman (1984). It is possible that this conceptualization of stress fails to tap into particular aspect(s) of stress that are influential in the stress process of lesbian and bisexual women. For example, while a discrete event of discrimination, such as being fired for being a lesbian, may be subject to stress appraisal, ongoing and systematic oppression, such as the absence in many places of legislation that protects individuals from being fired on the basis of their sexual orientation, may contribute to stress but not be subject to the same process of stress appraisal as a specific incident. Due to this, measures of stress appraisal may not adequately capture these experiences.

While some aspects of the sample were weaknesses of the study, others were strengths. The sample included a large group of lesbian and bisexual women of varying ages across the adult lifespan and from a variety of geographical areas and communities (rural, suburban, and urban). The measures selected were additional strengths as all measures were empirically validated, demonstrating both reliability and validity (Carmines, & Zeller, 1979). The outcome measure selected (AUDIT; Babor et al., 2001) is a clinical measure based on AUD diagnostic criteria. Bisexual participants were

administered a specific measure of bisexual minority stress opposed to assuming that a general sexual minority stress measures captures it. Another strength was that rather than focusing primarily on risk factors, as has been the pattern in existing research, the current study included protective factors as well.

Clinical Implications

The current study fails to implicate any particular risk or protective factors for the development of AUD in lesbian and bisexual women. Therefore, the implications are limited to the ability to identify or confirm factors that predict risk or serve as protective factors for AUDs. This means that efforts to reduce AUD risk in this population utilizing interventions tailored around one or more of the factors in this study are unlikely to be effective. Although, given the high education sample of the study, this statement may only apply in relation to well-educated lesbian and bisexual women.

In general, there is a dearth of empirical research on treatment or prevention of AUD among sexual minority women to draw on in providing recommendations for clinical practice. While not substance use treatment specific, the APA (2012) guidelines for working with lesbian, gay, and bisexual (LGB) clients offers general recommendations for providing mental health treatment to these clients. These guidelines include sexual minority stress theory, research, and implications. The guidelines focus on aiding psychologist in addressing the unique needs and experiences of this population. Given the absence of AUD-specific treatment recommendations, clinical implications for providing AUD treatment should draw from the APA guidelines.

Of the 21 guidelines provided by APA (2012), seven are directly applicable to AUD prevention and/or treatment. Guideline 1 states that psychologist should make

efforts to understand the impact of stigma on the mental health of LGB people. This would include the impact of sexual minority stress and bisexual stress. This guideline is relevant due to existing research that sexual minority stress impact AUD risk. The second guideline indicates that psychologist should not pathologize LGB peoples' sexual orientation and/or equate an LGB identity with mental illness. The importance of these lies in not assuming that there is a causational relationship between lesbian or bisexual identity and AUD development just because of the evidence for elevated risk. Such assumptions may serve as an additional source of sexual minority stress. Another guideline encourages psychologists to reflect on their own attitudes and beliefs towards LGB people and how that may impact treatment and/or assessment. Next, psychologist should endeavor to understand the unique experiences of bisexual people. The implications for this are while lesbian and bisexual clients may have overlapping experiences, they also have differing ones, and sexual minority stress and bisexual stress may differentially impact AUD risk/development/treatment.

The remaining three relevant APA (2012) guidelines discuss the relationships in the lives of LGB people. In sum, these describe placing equal value on LGB relationships, understanding that support systems have different compositions (i.e. family of choice opposed to biological family), and are accompanied by unique experiences. In AUD treatment this allows a clinician to better understand their client's support system, which may have implications for healthy coping efforts, and unique stressors. Given that these are general guidelines that can be applied to AUD treatment, future research in needed on AUD treatment specific to lesbian and bisexual women.

Future Research

A mixed-methods, longitudinal study starting with collecting qualitative data on sexual minority women's experiences with stress, coping, and alcohol use in order to identify themes is suggested for future research. Efforts should be made to recruit a diverse sample of sexual minority women. This includes women of varying races and ethnicities as well as those who represent a range of sexual minority women. In addition to women who identity as lesbian or bisexual, those who identity with another label, such as queer or pansexual, as well as those who do not label their identity, whether this is due to a rejection of labels or being in early stages of sexual orientation identity development. Attention should be paid to the differing aspects of sexual minority status (identity, attraction, behavior) and potential differences that may emerge related to these.

Themes collected from qualitative data should then be used to inform the development and/or selection of the most appropriate measures for quantitative research on risk and protective factors. In order to address limitations with self-report measures, objective measures, such as the Structured Clinical Interview for DSM-5 (SCID-5; First, Williams, Karg, & Spitzer, 2016), to be incorporated. A longitudinal study examining the development of AUDs over time would allow for the reduction of memory bias. Risk and protective factors that emerge from this should then be used to tailor screening measures and processes for AUD risk for sexual minority women.

Theoretically, further research on sexual minority women and AUD can lead to identifying risk and protective factors that can aid in reducing the disparity of AUD between sexual minority women and their heterosexual counterparts. Identifying risk factors can aid in identify those at high risk and implementing early interventions as well

as developing interventions aimed at reducing the risk factors (when possible). An expanded understanding of protective factors, particularly those that can be fostered, can support preventative efforts. Treatment of sexual minority women diagnosed with an AUD can ideally be bolstered by drawing on research on risk and protective factors. In sum, further research and a better understanding of sexual minority women's experiences with AUD can allow mental health professional to better serve members of this population. Expanded understanding of sexual minority women's unique experiences, stressors, and coping can contribute to a reduction in the mental health disparities faced by sexual minority women.

Appendix A

DEMOGRAPHIC INFORMATION

Please consider your responses carefully and respond honestly. Please participate only once in this study. We recommend that you complete this survey in a quiet, non-public environment to minimize distractions and any privacy concerns you may have.

Sex: ___Male ___ Female ___Other (Please describe): ____________

Gender: ____ Woman ____ Man ______ Transgender Man ________ Transgender women

Other (Please describe): ______________

Sexual identity: ___ Lesbian ___Gay man ___ Bisexual
___ Queer ____ Questioning
___Other (Please specify): _____________________

Age: ______

Age when you first felt different from your heterosexual peers: _____ or N/A

Age at first self-identification as LGB/same-gender loving: _____ or N/A

Age of first disclosure of your LGB identity to another person:_____ or N/A

Highest level of completed education:
___ Less than high school ___ High school ___ Some college
___ Associate/Technical degree ___ Bachelor's degree ___ Master's degree
___ Doctorate/Professional degree

Race/ethnicity:
___White/Caucasian ___ Black/African-American ___Latino/a
___Asian/Pacific Islander ___Native American ___Biracial/multiracial
___Other: (Please specify) _____________________________

The area I live in is best described as:
____ Urban _____ Suburban _____ Rural

What state do you currently live in? : ____________________

In the last **30** days, how many cigarettes have you smoked? ______

At what age did you first drink alcohol: _____ or N/A

To what extent are you involved in events/activities within the LGBT community (social, political, religious/spiritual, professional organizations)?

0	1	2	3	4	5
Not at all	A little bit	Moderately	Quite a bit	Highly	Extremely

To what extent are you involved in social events or activities with LGBT individuals who you **already know**?

0	1	2	3	4	5
Not at all	A little bit	Moderately	Quite a bit	Highly	Extremely

To what extent are you involved in activities with LGBT individuals you **do not know**?

0	1	2	3	4	5
Not at all	A little bit	Moderately	Quite a bit	Highly	Extremely

How much of your social/recreational time do you spend in settings where drinking **or** drug use is a major activity (e.g., bars, clubs, at friend's homes)?

6	5	4	3	2	1
All	More than half	Half	Less than half	A little	None

How many of your LGBT friends drink 5 or more drinks/day (men), or 4 or more drinks/day (women)?

6	5	4	3	2	1
All	More than half	Half	Less than half	A few	None

Compared to others in the LGBT community, your alcohol use is

1	2	3	4	5
Much less	A little less	About the same	A little more	Much more

Compared to others in the LGBT community, your drug use is

1	2	3	4	5
Much less	A little less	About the same	A little more	Much more

Are you interested in participating in future research in this area (including follow-up research on this issue)? If so, please provide your e-mail address below. This information

will not be shared, sold, or provided to others outside of the research team and will only be used for research purposes)

Appendix B

The AUDIT: Self-Report Version
(Babor, Higgins-Biddle, Saunders, & Monteiro, 2001)

We ask that you complete this questionnaire that asks about your use of alcoholic beverages (wine, beer, vodka, sherry, mixed drinks) during the 12 months your drinking was the heaviest. Please answer as accurately and honestly as possible. Your individual responses will be kept confidential.

One drink means 12 oz. of beer, 5 oz. of wine, or 1 shot of hard liquor

1.) How often do you have a drink containing alcohol?

0	1	2	3	4
Never	Monthly or less	2-4 times/month	2-3 times/week	4+ times/week

2.) How many drinks containing alcohol do you have on a typical day when you are drinking?

0	1	2	3	4
1-2 drinks	3-4 drinks	5-6 drinks	7-9 drinks	10 or more

3.) How often do you have six or more drinks on one occasion?

0	1	2	3	4
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

4.) How often during the last year have you found that you were not able to stop drinking once you had started?

0	1	2	3	4
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

5.) How often during the last year have you failed to do what was normally expected of you because of drinking?

0	1	2	3	4
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

6.) How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

0	1	2	3	4
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

7.) How often during the last year have you had a feeling of guilt or remorse after drinking?

0	1	2	3	4
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

8.) How often during the last year have you been unable to remember what happened the night before because of your drinking?

0	1	2	3	4
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

9.) Have you or someone else been injured because of your drinking?

0	2	4
No	Yes, but not in the last year	Yes, during the last year

10.) Has a relative, friend, doctor, or other health care worker been concerns about your drinking or suggest you cut down?

0	2	4
No	Yes, but not in the last year	Yes, during the last year

Appendix C

DRS15-R
(Bartone, 2007)

Below are statements about life that people often feel differently about. Please show how much you think each one is true. Give your own honest opinions. There are no right or wrong answers.

0	1	2	3
Not at all true	A little true	Quite true	Completely true

1) Most of my life gets spent doing things that are meaningful.
0 1 2 3

2) Planning ahead can help avoid future problems.
0 1 2 3

3) I don't like to make changes in my regular activities.
0 1 2 3

4) I feel that my life is somewhat empty of meaning.
0 1 2 3

5) Changes in routine are interesting to me.
0 1 2 3

6) By working hard you can nearly always achieve your goals
0 1 2 3

7) I really look forward to my work activities.
0 1 2 3

8) If I'm working on a difficult task, I know when to ask for help.
0 1 2 3

9) I don't think there's much I can do to influence my own future.
0 1 2 3

10.) Trying your best at work is really worth it in the end.
0 1 2 3

11.) It bothers me when my daily routine gets interrupted.
0 1 2 3

12.) Most days, life is really interesting and exciting for men.

0 1 2 3

13.) I enjoy the challenge when I have to do more than one thing at a time.
0 1 2 3

14.) I like having a daily schedule that doesn't change very much.
0 1 2 3

15.) When I make plans I'm certain I can make them work.
0 1 2 3

Appendix D

Measure of Gay Related Stressors
(Lewis, et al. 2002)

Below are some issues you may or may not have dealt with because of your sexual orientation. *Please indicate how stressful you perceive the issue/event to be if it happened to you.* **If the issue/event has not happened to you, select N/A.**

N/A	1	2	3	4
Has not occurred	Not at all stressful	A little bit stressful	Moderately stressful	Extremely stressful

1. Introducing a new partner to my family.
   N/A 1 2 3 4

2. Having straight friends know about my sexual orientation.
   N/A 1 2 3 4

3. Dating someone openly gay or bisexual.
   N/A 1 2 3 4

4. Having people at work find out I'm lesbian, gay, or bisexual.
   N/A 1 2 3 4

5. Mental health discrimination due to my sexual orientation.
   N/A 1 2 3 4

6. Housing discrimination due to my sexual orientation.
   N/A 1 2 3 4

7. Lack of security at work because I am gay, lesbian, or bisexual.
   N/A 1 2 3 4

8. Hiding my sexual orientation from others.
   N/A 1 2 3 4

9. Possible rejection when I tell about my sexual orientation.
   N/A 1 2 3 4

10. Being in public with groups of LGBT people (i.e. in a bar, church, rally).
    N/A 1 2 3 4

11. Expectation from friends and family who do not know that I am LGB for me to date and marry someone of the opposite sex .
    N/A 1 2 3 4

12. Keeping my orientation secret from family and friends.
N/A 1 2 3 4

13. Lack of support from family members due to my orientation.
N/A 1 2 3 4

14. Working in a homophobic environment.
N/A 1 2 3 4

15. Fact that my family ignores my sexual orientation.
N/A 1 2 3 4

16. Having my lover and family in the same place at the same time.
N/A 1 2 3 4

17. Telling straight friends about my sexual orientation.
N/A 1 2 3 4

18. Rumors about me at work due to my sexual orientation.
N/A 1 2 3 4

19. Talking with some of my relatives about my sexual orientation.
N/A 1 2 3 4

20. Loss of job due to sexual orientation.
N/A 1 2 3 4

21. Discrimination in social services due to my orientation.
N/A 1 2 3 4

22. Inability to get some jobs due to my sexual orientation.
N/A 1 2 3 4

23. A feeling that I must always prove myself at work because of my sexual orientation.
N/A 1 2 3 4

24. Fear that I will be attacked due to my sexual orientation.
N/A 1 2 3 4

25. Limits I have placed on sexual activity due to AIDS.
N/A 1 2 3 4

26. Lack of constitutional guarantee of rights due to sexual orientation.
N/A 1 2 3 4

27. My family's overzealous interest in my sexual orientation.
N/A 1 2 3 4

28. Need to exercise caution dating due to AIDS.
N/A 1 2 3 4

29. Feeling that my family tolerates rather than accepts my sexual orientation.
N/A 1 2 3 4

30. Rejection by my brothers and sisters.
N/A 1 2 3 4

31. Harassment at work due to my sexual orientation.
N/A 1 2 3 4

32. Potential job loss due to sexual orientation.
N/A 1 2 3 4

33. Fear that I might get HIV or AIDS.
N/A 1 2 3 4

34. Loss of friends due to my sexual orientation.
N/A 1 2 3 4

35. Rejection by family members due to my sexual orientation.
N/A 1 2 3 4

36. Distance between me and family due to orientation.
N/A 1 2 3 4

37. "Being exposed" as a LGB person.
N/A 1 2 3 4

38. My family's lack of understanding of my orientation.
N/A 1 2 3 4

39. Physical assault due to my sexual orientation.
N/A 1 2 3 4

40. Threats of violence due to my sexual orientation.
N/A 1 2 3 4

41. Constant need to be careful to avoid having anti-LGB violence directed at me.
N/A 1 2 3 4

42. Mixed feelings about my sexual orientation.

N/A 1 2 3 4

43. Possibility there will be violence when I am out with a group of LGB people.
N/A 1 2 3 4

44. Fear that my friends might be at risk for HIV.
N/A 1 2 3 4

45. Constantly having to think about 'safe sex'.
N/A 1 2 3 4

46. Harassment due to my sexual orientation.
N/A 1 2 3 4

47. Being called names due to my sexual orientation.
N/A 1 2 3 4

48. Lack of acceptance of LGB people in society.
N/A 1 2 3 4

49. Some people's ignorance about LGB people.
N/A 1 2 3 4

50. Difficulty meeting people due to concern over HIV.
N/A 1 2 3 4

51. Shame and guilt because I am LGB.
N/A 1 2 3 4

52. Conflict between my self-image and the image people have about LGB people.
N/A 1 2 3 4

53. Difficulty finding someone to love.
N/A 1 2 3 4

54. Image of LGB people created by some visible, vocal LGB people.
N/A 1 2 3 4

55. Difficulty accepting my sexual orientation.
N/A 1 2 3 4

56. Unwillingness of my family to accept my same-gender partner.
N/A 1 2 3 4

Appendix E

Stress Appraisal Measure – Revised
(Adapted from Peacock & Wong, 1990)

Respond to each of these questions with respect to how you think and feel about stress associated with your sexual orientation.

0	1	2	3	4
Not At All	A little Bit	Somewhat	Quite a Bit	A Great Amount

1. I have the ability to overcome stress related to my sexual orientation.
   0 1 2 3 4

2. I can positively attack stressors related to my sexual orientation.
   0 1 2 3 4

3. I have what it takes to beat stress related to my sexual orientation.
   0 1 2 3 4

4. I am eager to tackle problems related to my sexual orientation.
   0 1 2 3 4

5. I feel I can become stronger after experiencing stressful situation related to my sexual orientation.
   0 1 2 3 4

6. I am excited about the potential outcome of stressors related to my sexual orientation
   0 1 2 3 4

7. I feel totally helpless dealing with stress related to my sexual orientation.
   0 1 2 3 4

8. I feel anxious dealing with stress related to my sexual orientation.
   0 1 2 3 4

9. Stressful events related to my sexual orientation impact me greatly.
   0 1 2 3 4

10. Stress related to my sexual orientation is beyond my control.
    0 1 2 3 4

11. The outcome of stressful events related to my sexual orientation is negative.
    0 1 2 3 4

Appendix F

Bisexual Minority Stress Scale
(Balsam, Beadnell, Simoni, & Cope, 2008)

The following is a list of experiences that bisexual people sometimes have. Please read each one carefully, and then respond to the following question:

How much has each problem distressed or bothered you?

1. Did not happen/Not applicable to me
2. It happened and it bothered me NOT AT ALL
3. It happened, and it bothered me A LITTLE
4. It happened, and it bothered me MODERATELY
5. It happened, and bothered me, QUITE A BIT
6. It happened, and bothered me EXTREMELY

1.) Hearing lesbian or gay people make negative remarks about bisexuality.
0 1 2 3 4 5

2.) Hiding your bisexuality from others.
0 1 2 3 4 5

3.) Being asked "When are you going to come out all the way?"
0 1 2 3 4 5

4.) Being mistaken as straight.
0 1 2 3 4 5

5.) People making assumptions about your sexuality based on the gender of your partner or partners.
0 1 2 3 4 5

6.) People assuming that you can't be with just one partner.
0 1 2 3 4 5

7.) Not having a bisexual community.
0 1 2 3 4 5

8.) People assuming that you will sleep with anyone.
0 1 2 3 4 5

9.) Being looked down upon by lesbians and gay men.
0 1 2 3 4 5

10.) Having trouble meeting other bisexual people.

0 1 2 3 4 5

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