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**The Relationship of Peer Norms, Connectedness with GLB
Community, Minority Stress, and Condom Use Self-Efficacy with
Safer Sex Behaviors in Men Who Have Sex with Men**

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THE RELATIONSHIP OF PEER NORMS, CONNECTEDNESS WITH GLB
COMMUNITY, MINORITY STRESS, AND CONDOM USE SELF-EFFICACY WITH
SAFER SEX BEHAVIORS IN A SAMPLE OF MEN WHO HAVE SEX WITH MEN

by

Rebecca Adele Aycock

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Abstract

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Even though there have been multiple initiatives orchestrated to educate MSM (Men Who Have Sex with Men) about engaging in safer sex practices, many still engage in unsafe sexual practices (Hospers, Molenaar, & Kok, 1994; Seal et al., 2000). There is a substantial amount of research supporting the role perceived peer norms and self-efficacy play in facilitating an individual's sexual behaviors (Hamilton & Mahalik, 2009; Kelly et al., 1995; Miner, Peterson, Welles, Jacoby, & Roser, 2010; Peterson & Bakeman, 2006; Peterson, Rothenberg, Kraft, Beeker, & Trotter, 2009). Furthermore, Hamilton and Mahalik (2009) found that minority stress significantly interacted with perceived social norms in predicting risky health behaviors. However, researchers have not explored the relationship connectedness with the GLB community along with perceived norms of different peer groups, minority stress, and condom use self efficacy with the practice of protective sexual health behaviors. This study used a cross-sectional design to examine the potential relationship between peer norms, connectedness with GLB community, minority stress, condom self efficacy, and safer sex behaviors. Data were collected via an online survey with 96 participants. Sixty-four reported having receptive or insertive sexual intercourse with a main and/or casual male partner. Results indicated that perceived gay and straight peer norms, connectedness with the GLB community, and condom use self-efficacy were significant independent predictors of protective sexual behaviors. In addition, connectedness with the GLB community accounted for a greater amount of the variance in perceived gay peer norms endorsing protective sexual

behaviors compared to perceived straight peer norms. However, minority stress did not moderate the relationship between perceived peer norms and the dependent variables. Also, community connectedness did not moderate the relationship between minority stress and the dependent variables. Implications for health initiatives with MSM are discussed.

Key Terms: Men Who Have Sex With Men, Gay, Sexual Health Behaviors, Peer Norms, Community Connectedness, Minority Stress, Condom Use Self-Efficacy

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Chapter 1

Introduction

The prevention of HIV infection and Sexually Transmitted Infections (STI) continues to be a critical issue in the realm of health psychology, especially among men who have sex with men (MSM; Centers of Disease Control [CDC], 2010a, 2005). MSM is a term used to describe men who have sex with men whether or not they identify as gay and/or bisexual. The number of new reports of HIV/AIDS among MSM increased 11% in 2005 compared to 2001 (CDC, 2010b). In addition, MSM account for about 53% of all new HIV/AIDS cases and 71% of cases in male adults and adolescents (CDC, 2010a). Furthermore, the number of syphilis cases increased from 4% to 10% from 1999 to 2004, and the number of gonorrhea cases increased from 4% to 20% among MSM (CDC, 2005). Correct and consistent use of the male condom is highly effective in reducing HIV/STI transmission (e.g., the transmission of the disease or infection from one individual to another) (CDC, 2010a). Even though there have been multiple initiatives developed to educate MSM about engaging in protective sexual behaviors, many still engage in unsafe sexual practices (Aguinaldo & Myers, 2008; Crossley, 2004; Seal et al., 2000; Hospers, Molenaar, & Kok, 1994). The inconsistent practice of protective sexual behaviors not only adversely impacts the health of those men, but also their sexual partners' health. This study will examine multiple social-cognitive factors that may influence protective sexual behaviors of MSM.

Protective Sexual Behaviors of MSM

According to the CDC (2010a), protective sexual behaviors should include awareness about whether or not one is at risk for contracting a disease or infection, how

diseases and infections are spread, and what protections one can use. There are a variety of ways that an individual can protect oneself from disease or infection: abstain from sex, only have sex with a mutually monogamous partner whose STI/HIV/AIDS status is known, and use a condom every time one engages in vaginal, anal, and oral sex. The use of a condom has been found to be effective in preventing the transmission of STIs/HIV/AIDS between partners (Holmes, Levine, & Weaver, 2004; Weller & Davis, 2003). In addition, individuals need to know their own HIV/AIDS/STI status. Therefore, it is important that a person get tested on a consistent basis (e.g., every six months, annually, etc.). Finally, it is important that people talk about HIV/AIDS and STIs (Latkin, Forman, Knowlton, & Sherman, 2003). Having open conversations with family, friends, and acquaintances can help to alleviate the stigma related to seeking testing, prevention, treatment, and support for HIV/STIs (CDC, 2010a). Openly discussing HIV/AIDS with significant others provides individuals with knowledge about norms regarding protective sexual behaviors in their own social networks (Latkin et al., 2003; Latkin et al., 2009).

The guidelines for protective sexual health outlined by the CDC (2010a) indicate that social-cognitive factors are important in influencing individuals' actual protective sexual behaviors. Several researchers have conducted studies that support social-cognitive factors as significant predictors of protective sexual behaviors and unsafe sexual practices among MSM. Some factors that have been found to influence whether or not an individual engages in protective sexual behaviors include perceptions as to what other people do (perceived normative behaviors) (Aguinaldo & Meyers, 2008; Berg, 2008), negative emotional states (Adams & Neville, 2009; Hospers et al., 1994), a connection with certain Gay/Lesbian/Bisexual (GLB) cultural values (Crossley, 2004),

and the belief that one possesses the adequate skills to use a condom appropriately (Berg, 2008; Hospers et al., 1994).

Though much research has been conducted examining the social-cognitive factors related to promoting protective sexual behaviors with MSM, research has been limited in exploring the relative influence of different peer groups (e.g., gay and straight peer norms) and/or the level of connection an individual might have with the GLB community on individuals' protective sexual behaviors. Furthermore, there is scarce research examining the relative influence of minority stress (Meyer, 1995) in predicting protective sexual behaviors (Hamilton & Mahalik, 2009). Minority stress is the chronic stress that GLB individuals experience as a result of stigmatization, which in turn can cause individuals to experience negative emotional states (Meyer, 1995). Negative emotional states have been found to be related to increased sexual risk taking (Adams & Neville, 2009; Hospers et al., 1994).

Perceived Peer Norms-Behavior link

In order to adequately conceptualize factors that influence health-related behavior, like protective sexual behavior, most models rely on a social-cognitive approach (Bandura, 1986, 1994, 1998) that explains differences in individual health risk and health promotion behaviors. A well-known social-cognitive model of health behavior is the Theory of Planned Behavior (TPB; Ajzen, 1991, 2006; Ajzen & Madden, 1986). This model describes the role subjective peer norms play in facilitating an individual's behaviors. Peer norms refer to perceived social pressure to perform or not perform a certain behavior. According to TPB, subjective peer norms interact with one's attitude about a given behavior and one's perceived control over this behavior (i.e., self-efficacy),

which influence one's intention to engage in a behavior and then whether one engages in the actual behavior. Multiple studies have examined these models, specifically the role of peer norms, with regard to sexual behavior and have found that perceived normative behavior is significantly related to an individual's sexual behaviors, and that peer norms that support protective sexual behaviors predict less frequent risky sexual behaviors (Bakeman, Peterson, & The Community Intervention Trial for Youth Study Team, 2007; Hamilton & Mahalik, 2009; Kelly et al., 1995; Miner, Peterson, Welles, Jacoby, & Roser, 2010; Peterson & Bakeman, 2006; Peterson, Rothenberg, Kraft, Beeker, & Trotter, 2009).

Many of the studies that have examined the influence of peer norms on protective sexual behaviors have used an aggregate of perceived norms referencing multiple peer groups (Hamilton & Mahalik, 2009). For example, all items addressing the norms of parents, friends, and acquaintances were summed together to create a collective peer norms score (Hamilton & Mahalik, 2009). This is problematic because it is unknown which peer group individuals are referencing when determining to engage or not engage in a certain behavior or which reference group has the most influence. Theory of Planned Behavior hypothesizes that the strength of influence related to norms is dependent on the strength of importance that an individual prescribes to certain peer groups (Ajzen, 1991, 2006; Ajzen & Madden, 1986). For example, if an individual values or deems his close friends to be more important than acquaintances then the perceived peer norms of his friends are going to have greater influence on his behaviors compared to the perceived norms of his acquaintances. Because of the problems related to using an aggregate measure of peer norms in detecting particular influences, many of these studies have

suggested that future research should examine different peer groups more distinctly (e.g., Hamilton & Mahalik, 2009).

When specifically examining the social context of MSM, exploring the unique influence of perceived peer norms related to sexual behaviors of one's close straight male friends and close gay male friends could provide interesting insight into the social influences of sexual behaviors in this population. For example, these distinct reference groups may influence individuals' protective sexual behaviors differently because individuals' peer groups may consist of different ratios of straight and gay males. Depending on if either group holds a majority, the group with the larger ratio may exert more influence than the other (Cialdini, 2008). Furthermore, researchers have found that when an individual feels more similar to another person, that person has greater influence on the individual's behaviors (Cialdini, 2008). Therefore, MSM may be more influenced by their gay male friends than their straight friends due to their shared sexual minority status.

Connectedness with the GLB Community

Examining other unique social factors that may impact the health and well-being of sexual minorities is also important to consider. One factor that researchers have identified as influential in the health and well-being of GLB individuals is the connectedness that one has with the GLB community (Frost & Meyer, 2009; Riggle, Whitman, Olson, Rostosky, & Strong, 2008). Community connectedness is a cognitive/affective sense of belonging to a collective group and having mutually influential relationships with members of the collective (Frost & Meyer, 2010).

Connectedness with the GLB community is a unique variable of interest when studying the social influences of protective sexual behaviors among MSM because GLB individuals have varying degrees of connectedness to the community. It is theorized that the perceived norms of the people with whom one has a significant relationship and considers important are going to be the norms that influence behaviors (Ajzen, 1991; Cialdini, 2008). Therefore, it is critical to identify salient group norms that may impact individuals' behaviors (Berkowitz, 2003; Borsari & Carey, 2003; Perkins, 2003). Based on a review of the literature, there are conflicting findings related to the role of connectedness with the GLB community and engagement in risky sexual behaviors. Herek and Glunt (1995) found that a greater sense of community connectedness with other GLB people was related to beliefs and attitudes endorsing reduced risky sexual behaviors. Additionally, Ramirez-Valles (2002) posited a theory that individuals who are involved in the community would be more aware of the risks related to unsafe sexual practices and would therefore be more inclined to engage in healthy sexual behaviors. However, other researchers have found that greater involvement in the GLB community is related to greater incidence of unprotected anal intercourse (Flores, Mansergh, Marks, Guzman, & Colfax, 2009; Meyer & Dean, 1995). Therefore, this study will explore the relationship between connectedness with the GLB community and condom use self-efficacy and protective sexual behaviors.

Furthermore, it is unknown whether and how a greater connection to the GLB community relates to peer norms about protective sexual behaviors. As was noted previously, if an individual feels they share similar traits with others, those others will have greater influence on an individuals' behaviors (Cialdini, 2008). Therefore, if an

individual feels connected with a GLB community, that connection may increase an individual's feelings of shared interests and values, which in turn may strengthen the influence of gay male peer norms regarding protective sexual practices. This study will explore possible relationships between connectedness with the GLB community and the perceived peer norms of different reference groups.

Minority Stress

The minority stress model (Meyer, 1995, 2003) is a theory that attempts to explain the chronic stress that GLB individuals experience as a result of stigmatization. This model consists of three elements: internalized homophobia, expectation of stigma, and experience of prejudice (i.e., physical and verbal aggression). *Internalized homophobia* is the extent to which sexual minority individuals internalize anti-GLB sentiments from the majority, heterosexual culture. *Social stigma* includes experiences and cognitions that cause a sexual minority individual to believe that he or she will experience discrimination and rejection due to his or her sexual orientation. Finally, *experience of prejudice* is defined as experiences of verbal and/or physical aggression due to one's sexual orientation. Minority stressors have been found to predict increased negative health behaviors like alcohol consumption, depressive symptoms, and other forms of psychological distress, physical illness, and demoralization in GLB individuals (Austin & Irwin, 2010; Herek, Cogan, Gillis, & Glunt, 1997; Meyer, 1995, Meyer & Dean, 1995). Furthermore, each of these variables, when examined separately, has been shown to be significantly related to increased risky sexual behavior (Garofolo, Wolf, Kessel, Palfrey, & DuRant, 1998; Meyer & Dean, 1995; Ross et al., 2001; Ross, Rosser, Neumaier, & Positive Connections Team, 2008).

Hamilton and Mahalik (2009) extended this line of research by examining the role of a composite minority stress model by combining internalized homophobia, social stigma, and experiencing violence related to being a sexual minority, in predicting health risk behaviors, including risky sexual behaviors. The researchers found that though minority stress did not directly influence health risk behaviors, minority stress significantly interacted with perceived social norms in predicting risky health behaviors where increased minority stress interacted with higher endorsement of peer risk behaviors resulting in greater risk taking by the individual. This study will reexamine the possible direct influence of minority stress on protective health behaviors, as well as examining the possible direct relationship with condom use self-efficacy. Furthermore, this study will also examine whether minority stress moderates the relationship between peer norms and condom use self-efficacy and protective sexual behaviors, with higher minority stress strengthening the relationship between peer norms endorsing risky sex and lower condom use self-efficacy and lower protective sexual behaviors. By exploring the possible relationship of minority stress with condom use self-efficacy, this study will be filling a gap in the literature; no study to date has explored this potential relationship.

In addition, this study will examine the possible relationship between connectedness with the GLB community and minority stress. Connectedness with the GLB community may decrease the negative impact of minority stress. A connection with the greater GLB community can provide a person with social support in coping with stressors and prejudices that one encounters (Frost & Meyer, 2009; Smith & Ingram, 2004). Research has shown that higher levels of minority stress and its discrete elements of internalized homophobia and social stigma are related to less connection with the GLB

community (Herek et al., 1997). Furthermore, this study will examine whether GLB connectedness moderates the relationships between minority stress and condom use self-efficacy and protective sexual behaviors.

Self-Efficacy

Self-efficacy has long been examined in social-cognitive research as a variable that has a significant positive relationship with actual behavior. Specifically, Ajzen (2006) examined elements of perceived behavioral control within Theory of Planned Behavior. In this study, self-efficacy was identified as an element of perceived behavioral control that had considerable influence on behavior (Ajzen, 2006). Furthermore, studies have found a significant direct relationship between various forms of self-efficacy and a variety of behavioral outcomes related to protective health measures, like the use of sunscreen, engaging in cancer screenings, and protective sexual behaviors (Beadnell et al., 2007; Jackson & Aiken, 2000; Rotheram-Borus, Reid, Rosario, & Kasen, 1995). Additional studies have supported a direct relationship between various forms of self-efficacy related to health behaviors and social factors, such as desire for acceptance by others and fear of rejection (Bandura, 1986, 1994).

Condom use self-efficacy

When examining forms of self-efficacy related to sexual health, condom use self-efficacy is appropriate because the use of condoms is considered an effective strategy in supporting sexual health and preventing the transmission of STIs/HIV/AIDS (CDC, 2010a). Condom use self-efficacy is one's belief that one can competently purchase condoms, use them appropriately, and negotiate the use of condoms with one's partner (Brafford & Beck, 1991). Researchers have found that condom use self-efficacy is

positively and directly related to protective sexual behaviors (Rotheram-Borus et al., 1995). Researchers also found that condom use self-efficacy influenced the relationship between social environmental variables, like perceived norms, and protective sexual behaviors (Beadnell et al., 2007; Miner, Peterson, Welles, Jacoby & Rosser, 2010).

Purpose of the Study

The current study will investigate the relationships between perceived peer norms related to different reference groups (i.e., straight male friends and gay male friends), connectedness with a GLB community, minority stress, condom use self-efficacy and protective sexual behaviors in order to improve our understanding about engagement in protective sexual behaviors among MSM. Until now, researchers have not explored the collective influence of perceived norms of different peer groups, connectedness with the GLB community, minority stress and condom use self-efficacy on protective sexual behaviors among MSM. Furthermore, researchers have not examined the possible moderating influence of minority stress on perceived peer norms with condom use self-efficacy or protective sexual health behaviors, or the moderating influence of GLB community connectedness on minority stress with condom use self-efficacy or protective sexual health behaviors.

Research Questions and Hypothesis

1) Do perceived peer norms, minority stress, connectedness with GLB community and condom use self-efficacy, collectively and independently predict protective sexual behaviors? It is hypothesized that the predictor variables of perceived peer norms about protective sexual behaviors, minority stress, connectedness with the GLB community and condom use self-efficacy will collectively predict a significant amount of the variance in

the dependent variable of protective sexual behaviors. In addition, each predictor variable will uniquely predict a significant amount of the variance in the dependent variable of protective sexual behavior.

2) Does GLB community connectedness predict peer norms about protective sexual behaviors (i.e., straight male friends and gay male friends), and if so, which ones and in which direction? It is hypothesized that connectedness with the GLB community will be significantly related to perceived norms about protective sexual behaviors and to gay male peer norms rather than heterosexual peer norms, however, because of conflicting research findings, direction is not hypothesized.

3) Will minority stress serve as a moderator between perceived peer norms and condom use self-efficacy, as well as between perceived peer norms and protective sexual behaviors? It is hypothesized that minority stress will act as a moderator between perceived peer norms of protective sexual behaviors and condom use self-efficacy, as well as between peer norms and protective sexual behaviors (Figure 1).

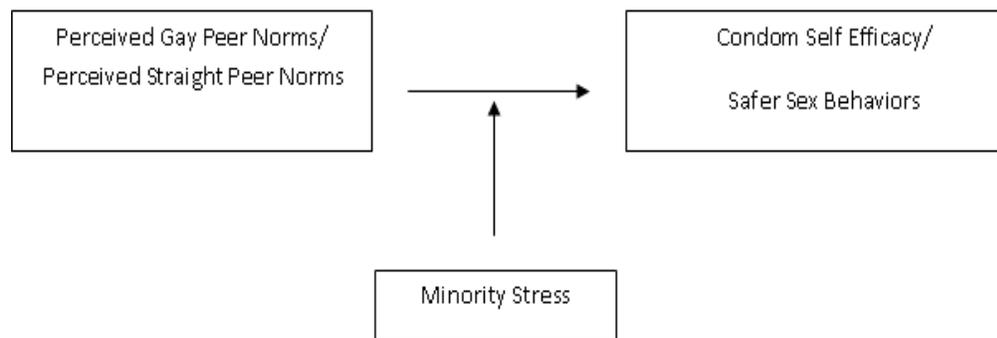


Figure 1. Hypothesized Minority Stress Moderation Model

4) Will connectedness with the GLB community serve as a moderator between perceived minority stress and condom use self-efficacy, as well as between minority stress and protective sexual behaviors? It is hypothesized that GLB community connectedness will act as a moderator between minority stress and condom use self-efficacy, as well as between minority stress and protective sexual behaviors (Figure 2).

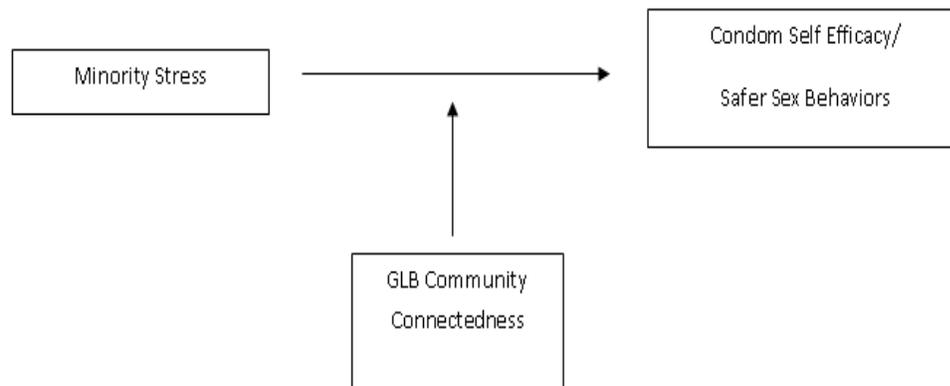


Figure 2. Hypothesized Community Connectedness Moderation Model

Definition of Terms

Men who have Sex with Men (MSM). Men who report sexual contact with other men (homosexual contact) and men who report sexual contact with both men and women (bisexual contact), whether or not they identify as “gay” (CDC, 2006)

Protective Sexual Behaviors (safe sex behaviors and safer sex). Protective sexual behaviors are behaviors that individuals engage in during sexual activities that minimize the odds of contracting STIs/HIV/AIDS. These behaviors attempt to minimize the exchange of bodily fluids (semen, vaginal secretions, and blood), usually by using latex barriers such as condoms for intercourse and oral sex, and/or limiting sexual

practices to less risky ones (e.g., being in a mutual monogamous relationship where each partners STI/HIV/AIDS serostatus is known) (CDC, 2010).

Perceived Peer Norms. Perceived peer norms are the perceived social pressures to perform or not perform a certain behavior based on one's perception of peers' beliefs, values, and behaviors regarding certain behaviors (Ajzen, 1991, 2006; Ajzen & Madden, 1986).

Perceived Gay Male Peer Norms. The perceived social pressure to perform or not perform a certain behavior based on one's perception of gay male peers' beliefs, values, and behaviors regarding certain behaviors.

Perceived Straight Male Peer Norms. The perceived social pressure to perform or not perform a certain behavior based on one's perception of straight male peers' beliefs, values, and behaviors regarding certain behaviors.

Minority Stress. The minority stress model (Meyer, 1995, 2003) is a theory that attempts to explain the chronic stress that GLB individuals experience as a result of stigmatization. This model consists of three elements: internalized homophobia, expectation of stigma, and experience of prejudice (i.e., physical and verbal aggression).

Connectedness with the GLB Community. Community connectedness is a cognitive/affective sense of belonging to a collective and having mutually influential relationships with members of the collective (Frost & Meyer, 2010).

Condom Use Self-Efficacy. Condom use self-efficacy is one's belief that one can competently purchase condoms, use them appropriately, and negotiate the use of condoms with one's partner (Brafford & Beck, 1991).

Chapter 2

Literature Review

The following review of the literature will provide a brief overview of relevant findings regarding the practice of risky sexual health behaviors in men who have sex with men (MSM). Following this overview, to aid in an increased understanding of the development of protective sexual behaviors, social-cognitive theories will be discussed, specifically how the variables of peer norms, minority stress, connectedness with the GLB community, and self-efficacy are related to health behaviors, and particularly protective sexual behaviors.

Risky Sexual Behaviors among MSM

The Centers for Disease Control (CDC) consistently collects data regarding the rates of STI's and HIV/AIDS in the United States. The main research initiative monitoring the prevalence of STI's and HIV/AIDS among men who have sex with men (MSM) is the MSM Prevalence Monitoring Project (CDC, 2005). This project collected data from nine cities across the United States. Data were retrieved from private and public STD clinics, and community-based, gay men's health clinics. According to the data collected, the number of seropositive syphilis cases increased from 4% to 10% from 1999 to 2004 among MSM. Similarly, according to the Gonococcal Isolate Surveillance Project (CDC, 2005), the number of seropositive gonorrhea cases increased from 4% to 20% among MSM. With regard to HIV/AIDS, the CDC (2010a) reported that MSM account for over 50% of all new cases of HIV/AIDS each year in the U.S. The CDC estimates that MSM account for approximately 4% of the U.S. male population yet the rate of new HIV diagnosis among MSM is 44 times greater than that for other males.

In order to explore why the infection rate is greater among MSM, the CDC conducted a cross-sectional survey through the National HIV Behavioral Surveillance System (CDC, 2009). This study included 2,186 MSM participants who were 18-24 years old and have had oral and/or anal sex within the last year. This study found that 46% of MSM admitted to having unprotected anal intercourse in the last year and 17% have had unprotected anal intercourse with more than one partner.

Multiple qualitative studies have provided foundational literature regarding unsafe sexual practices among MSM. Some of the themes identified as contributing to unsafe sexual practices include perceptions of what other people do (Aguinaldo & Meyers, 2008), negative emotional states (Adams & Neville, 2009; Hospers et al., 1994), the belief that being in a monogamous relationship, whether homosexual or heterosexual, decreases STI transmission and therefore condom use decreases when individuals identify as being in a monogamous relationship (Adams & Neville, 2009), and a connection with certain GLB cultural values (i.e., barebacking) (Crossley, 2004). Barebacking is the intentional engagement in unprotected anal intercourse. Furthermore, the belief that one possesses adequate skills to use a condom appropriately is negatively related to risky sexual behaviors (Hospers et al., 1994).

Berg (2008) conducted a correlational study to examine variables he hypothesized to be related to barebacking behavior. He collected responses from 240 participants who were recruited on the internet through websites that focused on gay and bisexual content. Participants were asked to complete a questionnaire that explored variables that were thought to be related to barebacking behaviors. Some of the variables that were found to be related to risky sexual practices included lower endorsement of safer sex norms, and

lower self-efficacy regarding behaviors to prevent STI transmission. Meyer and Dean (1995) also conducted a study that examined the patterns of sexual behaviors and sexual risk taking among gay men in New York City. They surveyed 174 participants in person and found that being in a relationship and knowing one's partner's serostatus were positively related to receptive anal intercourse, along with alcohol and/or drug use, earlier sexual experiences, and greater integration into the gay community. In addition, those who participated in *unprotected* receptive anal intercourse endorsed more mental health problems, more drug use, higher levels of internalized homophobia and AIDS-related traumatic stress. The results from these studies along with the qualitative studies indicate that future research needs to examine psychological and social antecedents that influence MSM to engage in protective sexual practices.

Theory of Planned Behavior

The Theory of Planned Behavior (TPB; Ajzen, 1991, 2006; Ajzen & Madden, 1986) has been identified as a viable model to aid in the understanding of individual differences with regard to the practice of various health behaviors. The TPB postulates that subjective norms, perceived behavioral control and attitudes toward the behavior predict the individual's intentions to engage in a particular behavior, which then predicts actual behavioral practices (Ajzen, 1991, 2006). Attitudes toward a behavior refer to whether a person thinks positively or negatively about a particular behavior. Subjective norms consist of perceived pressure from peers to execute or refrain from executing a behavior. Finally, perceived behavioral control includes self-efficacy and locus of control (Ajzen, 2006). Ajzen (1991, 2006). Other researchers have found support for the TPB,

specifically that these three variables (subjective norms, perceived behavioral control, and attitudes toward the behavior) predict an individual's intentions and behaviors.

Researchers have examined the applicability of the TPB and its various elements, specifically perceived norms and self-efficacy, to examine behaviors related to the use of alcohol, tobacco, and other drugs (Collins & Carey, 2007; Dams-O'Connor, Martin, Martens, 2007; Lee, Geisner, Lewis, Neighbors, & Larimer, 2007; Real & Rimal, 2007), cancer screenings (Sieverding, Mattered, Ciccarello, 2010), the use of sun protection (Jackson & Aiken, 2000), and risky sexual behaviors (Hadera, Boer, & Kuiper, 2007). When studies have examined the role of perceived social norms and self-efficacy in the prediction of risky sexual behaviors they have found that both have a direct relationship with individual behaviors (Bakeman et al., 2007; Hamilton & Mahalik, 2009; Kelly et al., 1995; Miner et al., 2010; Peterson & Bakeman, 2006; Peterson et al., 2009).

Perceived Peer Norms

Perceived peer norms have been shown to significantly predict individual health behaviors in a variety of studies. One example is Lee and colleagues' (2007) study that found that in a sample of 1,400 first year college students, perceived norms of one's close friends were positively related to drinking behaviors. Sieverding et al. (2010) studied the role of social norms in predicting cancer screening intentions. One study compared three groups of men who differed in previous cancer screening behaviors ($N = 2,426$) and examined the role of perceived norms. They then followed up by examining whether participants acted on the intentions to engage in cancer screening that they reported in the first study ($N = 1,032$). The results of both studies indicated that social norms regarding whether or not an individual believed others wanted them to engage in cancer screening

explained a significant amount of the variance for both intentions and behaviors about cancer screening.

Studies that specifically examined the influence of peer norms with sexual health behaviors include Millstein and Moscicki (1995), Boyer et al. (2000), and Fishbein, Hennessy, Yzer, and Douglas (2003). Millstein and Moscicki (1995) recruited 571 ethnically diverse females from family planning clinics. Multiple regression analysis indicated that greater peer risk-taking behavior directly predicted (positive) individual risky sexual behaviors, as well as moderated the prediction of other psychosocial variables (i.e., low levels of perceived behavioral control, perceptions of higher risks associated with sexual behaviors, and higher substance use). Boyer and colleagues (2000) also found that greater perceptions of peers engaging in risky sexual behaviors and perceptions that peers will not support safer sex efforts predicted greater sexual risk behavior. This study utilized an ethnically diverse sample of male and female adolescents. Finally, Fishbein et al. (2003) used post-test data collected for Project RESPECT, a study comparing three HIV/STI prevention programs for males and females. They also found that perceived norms significantly predicted whether or not people engaged in protective sexual health behaviors.

With regards to the role of peer norms in predicting the protective sexual behaviors of MSM, multiple studies support a direct influence between peer norms and individual behaviors. Kelly and colleagues (1995) surveyed 5,939 gay men and found that the perceived norm that safer sex is not expected in one's peer group increased the likelihood that one would engage in risky sexual practices. In addition, The Community Intervention Trial for Youth Study (Bakeman et al., 2004; Hart, Peterson, & The

Community Intervention Trial for Youth Study team, 2004) found that positive condom use peer norms predicted less frequent risky sexual behaviors in a sample of African American MSM.

Finally, Hamilton and Mahalik (2009) found that perceived peer norms directly predicted individual health behaviors among MSM. Their study consisted of 315 participants who were surveyed online. To measure perceived peer norms, participants were asked to rate perceived normative behaviors for four peer groups (male friends, male relatives, male coworkers, and gay men) on a 6-point Likert scale. Sexual risk behavior was assessed using four questions that ask participants to confirm or deny acts of unprotected receptive anal intercourse. They extend the TPB by exploring contextual variables that may moderate the relationship between peer norms and sexual risk behavior among MSM, and found that minority stress was indeed a moderator of this relationship. Specifically, greater risk taking behaviors occurred when participants reported higher minority stress and higher perceptions of risky behaviors as normative.

Minority Stress

Meyer (1995, 2003) developed and tested a theoretical model consisting of three stressors that impact the psychological distress of gay men: internalized homophobia, stigma, and experiences of prejudice. Internalized homophobia is defined as internalizing majority, heterosexual negative attitudes about homosexuality towards one's self. Stigma refers to one's expectations of prejudice from others due to one's sexual orientation. Prejudice is defined as having experiencing "any event of antigay violence and/or discrimination" (Meyer, 1995, p. 43). Meyer (1995) tested whether or not these three variables predicted individual level of psychological distress. In his study, he interviewed

741 gay men. During the interview he asked them survey questions using validated measures of internalized homophobia, stigma, and prejudice. His finding supported the hypothesis that each of the three predictor variables significantly predicted increased levels of psychological distress.

Additional studies have examined how the individual stressors embedded in the minority stress model impact individual sexual health behaviors. Meyer and Dean (1995) found that higher levels of internalized homophobia were related to unprotected, receptive anal intercourse with multiple partners. The sample for this study consisted of 149 self-identified gay and bisexual male youth who resided in New York City. These findings were supported by a study conducted by Ratti, Bakeman, and Peterson (2000). The sample of this study consisted of 98 Canadian gay and bisexual men who had had sex with a partner other than a main partner in the previous six months. Participants were asked to complete a questionnaire regarding the correlates of high-risk sexual behaviors. The results of this study indicated that greater internalized homophobia was related to high-risk anal and oral sex. Furthermore, Garafolo et al. (1998) found that acts of discrimination lead to higher rates of risky sexual behaviors in LGB adolescents. In addition, Preston and colleges (2007) found that stigma positively predicted individual's engagement in risky sexual behaviors in a sample of 414 MSM who lived in rural areas.

Hamilton and Mahalik (2009) extended this line of research by examining the role of the composite minority stress model in predicting gay men's health behaviors, including sexual health behaviors. To assess individuals' levels of minority stress, Hamilton and Mahalik (2009) created a composite score by summing the scores of 3 measures, one for each element of the model, including internalized homophobia, social

stigma, and experiences of prejudice. Though their results did not indicate that minority stress had a direct relationship with predicting engagement in health risk behaviors, they did find that minority stress moderated the relationship between perceived peer norms and individual behavior so that greater minority stress interacted with perceived peer norms of risky health behaviors and predicted greater involvement in risky health behaviors.

Connectedness with the GLB Community

Connectedness with the GLB community is a construct that is theorized to act as a protective factor for the negative effects of minority stress like emotional distress (Frost & Meyer, 2009; Riggle et al., 2008) and risky health behaviors (Herek & Glunt, 1995; Ramirez-Valles, 2002). Connectedness with the GLB community has been discussed as an element that can help sexual minorities cope with a variety of psychosocial stressors by providing social support, and allowing one to make positive comparisons to people who are similar to themselves (Frost & Meyer, 2010; Riggle et al., 2008). Furthermore, Ramirez-Valles (2002) theorized how connection and involvement in the GLB community, specifically HIV/AIDS advocacy, could decrease individual involvement in risky sexual behaviors.

Multiple studies have found connectedness with the GLB community to have a significant relationship with internalized homophobia, an element of minority stress, and emotional well being (Herek et al., 1997; Frost & Meyer, 2009). Frost and Meyer (2009), in a sample of 396 gay, lesbian, and bisexual individuals, found that internalized homophobia was negatively related to community connectedness. Furthermore, Herek et al. (1997) examined correlates of internalized homophobia in a sample of male ($N = 73$)

and female ($N = 74$) GLB participants. Participants were recruited at a LGB street fair, and were paid \$5 and provided a drink. Participants completed a questionnaire containing measures to assess for internalized homophobia, psychological well-being, outness, perceptions of community, and developmental milestones related to sexual orientation. Results indicated that higher levels of internalized homophobia correlated to feeling less connected with the GLB community.

However, the relationship between GLB connectedness/involvement and health behaviors has had conflicting findings. Herek and Glunt (1995) conducted a study in which 106 participants answered questionnaires that examined community connectedness, GLB identity and protective AIDS related behaviors. Their preliminary findings indicated that a strong sense of connectedness with the GLB community was not directly related to a reduction in risky sexual behavior. However, it was indirectly related to a decrease in sexual risk taking through relationships with other variables like positive feelings about their sexuality. However, Flores et al. (2009) found that in a sample of 483 MSM from San Francisco, greater community involvement was related to more receptive unprotected anal intercourse. Likewise, Meyer and Dean (1995) found in a sample of 174 self identified gay male youths that greater integration into the gay community was related to increased rates of receptive anal intercourse, which they termed as an element of risky sexual behavior. However, receptive anal intercourse included both protected and unprotected sexual encounters.

It is important to note that community connectedness is not equivalent to community participation (Frost & Meyer, 2010), though community involvement and/or participation is often used as a variable to operationalize community connectedness.

Authors have noted that many people do not have access to GLB community venues or activities, which limits their ability to participate in the GLB community, for example, racial and ethnic minorities (Frost & Meyer, 2010) , and those living in rural areas (Preston et al., 2004; Williams, Bowen, & Horvath, 2006). Though certain groups do not have the opportunity to participate in the GLB community, many have found other ways to feel connected to the community, specifically through internet websites and chat rooms (Williams et al., 2006).

Self-efficacy

Self- efficacy is an element of the Theory of Planned Behavior, along with perceived peer norms, that is theorized to predict actual health behaviors. For example, Fishbein et al. (2003) found that self-efficacy explained a unique amount of the variance in individual's actual behaviors. Collins and Carey (2007) examined the applicability of TPB to health behaviors and used structural equation modeling to test how the latent variables of attitudes, self-efficacy, and peer norms predicted heavy episodic drinking in a college student sample. Their results indicated that self-efficacy significantly predicted base line intention along with drinking attitudes. They did not find a significant relationship between peer norms and actual drinking behavior.

Several studies specifically examined the influences of self-efficacy with other predictor variables on individual protective sexual health behaviors. Beadnell, et al. (2007) tested a hypothesized model using structural equation modeling in which self-efficacy, along with other elements of TPB, mediated the influence of interpersonal and intrapersonal variables on individual behavior. They tested this model by having 1,177 adolescents complete questionnaires. The researchers found two final models that fit the

data, one for interpersonal variables and another for intrapersonal variables. In both models self-efficacy had a mediating effect for many of the variables, including hard work (prosocial commitment), moral beliefs, school attachment, and number of friends having sex.

Furthermore, the role of self-efficacy has been examined with respect to its influence on health behaviors, including protective sexual health behaviors, specifically among MSM. One such study that examined this relationship was conducted by Rotheram-Borus et al. (1995). Researchers recruited 136 gay/bisexual youth, ages 14-19, who sought services at a New York City community agency that provided supportive services to GLB youth. The researchers were examining determinants of consistent safer sex practices, which they defined as abstaining from anal and/or oral sex or using a condom on every occasion of anal and/or oral sex. Results of this study indicated that condom use self-efficacy was significantly different between participants who were 100% consistent in using condoms during anal sex and those that were not, or abstained and/or used condoms 100% of the time during anal and oral sex. Those who used condoms 100% consistently during anal intercourse had higher condom use self-efficacy. In addition, Miner et al. (2010) conducted a study to examine the relationship of self-efficacy to social norms and sexual health behaviors among MSM. The researchers obtained a sample of 675 HIV-positive MSM from various urban centers across the United States. Using logistical regression analysis, the results confirmed a mediating relationship of self-efficacy between social norms and sexual health behaviors. This study will continue this line of research by examining the interaction effects of condom use

self-efficacy with peer norms, connectedness with the GLB community, and minority stress on actual protective health behaviors.

Similar to the relationship between peer norms and self-efficacy, Ross et al. (2008) found that there is a relationship between self-efficacy and internalized homophobia, an element of minority stress. They recruited 675 HIV-positive MSM from six community-based organizations known to work with patients with HIV. The results indicated that internalized homophobia was negatively related to condom use self-efficacy through level of sexual comfort. Furthermore, the results indicate that condom use self-efficacy was negatively related to unprotected anal intercourse.

It is apparent from a review of the literature that social cognitive factors including perceived peer norms, minority stress, and self-efficacy, influence individuals' sexual health practices among MSM. However, there is scant research exploring the relative influence of different peer groups (e.g., gay and straight peer norms) and how these norms may interact with minority stress and condom use self-efficacy in predicting sexual health practices. In addition, there are mixed findings related to role of connectedness with the GLB community in predicting sexual health behaviors. Further, minority stress has not been explored as a moderator of peer norms and condom use self-efficacy. Also, connectedness with the GLB community has not been explored as a moderator between minority stress and condom use self-efficacy or protective sexual behaviors. This study aims to shed light on some of the gaps in the literature on peer norms, GLB connectedness, minority stress, and condom use self-efficacy as well as condom behaviors.

Chapter 3

Methods

This study used a cross-sectional design to examine the potential relationship between peer norms, connectedness with Gay/Lesbian/Bisexual (GLB) community, minority stress, condom use self-efficacy, and protective sexual behaviors in men who have sex with men (MSM).

Participants

Participants were 96 men who have sex with men, of whom 64 reported having receptive or insertive sexual intercourse with a main and/or casual male partner in the past month. The mean age of participants was 36.61 years old ($SD = 14.43$). The majority of the sample identified as White/Caucasian ($n = 84, 87.5%$); however, the participants also were Black/African American ($n=2; 2.1%$), Latino/Hispanic ($n=5; 5.2%$), Asian/Asian American ($n=2; 2.1%$), biracial/multiracial ($n=1; 1%$), Pacific Islander ($n=1; 1%$), and other ($n=1; 1%$). There was close to an even distribution of participants who indicated that they were currently in an intimate relationship with one main partner ($n = 47; 49%$) or were not in a relationship ($n = 49; 51%$). The most common relationship length of participants who were currently in a relationship was within the range of 3 to 5 years ($SD = 1.92$). Participants on average reported achieving a high level of education: high school diploma ($n = 3; 3.1%$); some college ($n = 25; 26.0%$); associates degree ($n = 8; 8.3%$); vocational/technical School ($n = 1; 1.0%$); college degree ($n = 28; 29.2%$), master's degree ($n = 23; 24.0%$), and doctorate/professional degree ($n = 8; 8.3%$). Participants' median income range was \$25,000 to \$35,000 ($SD = 2.86$); however the majority of participants reported an average income of less than \$15,000 ($n = 26; 27.1%$).

Procedure

After receiving approval from the Internal Review Board, participants were recruited nationwide via online social utilities and websites that serve sexual minorities and through snowball sampling. These various approaches were used to reduce selection bias and increase generalizability. While the emails sent to GLB focused listserves and websites reached participants who are involved with the GLB community to some extent, snowball sampling can potentially reach participants who are not connected to the community. Recruiting via the Internet has been shown to increase opportunities for reaching sexual minority participants who may otherwise be hidden because of the stigma associated with their sexual orientation (Meyer & Wilson, 2009). Recruitment of participants was conducted through email announcements about the study distributed to listserves and websites that serve men who have sex with men such as www.facebook.com, www.yahogroups.com, and other sites. The announcement informed potential participants that a study was being conducted “seeking, gay, bisexual, and men who have sex with men 18 years or older to participate in a study examining the social influences of sex behaviors.” The announcement provided a link to the Principal Investigator’s website, where the survey could be accessed. Participants who were interested entered their email addresses into a lottery for a chance to win 1 of 4 \$50.00 gift certificates. Participants were notified that these email addresses would not be linked with the data collected.

Participants were asked to click on a link to a webpage that described the study and provided informed consent. This page described the qualifications to participate. They were also told that minimal risk was expected to result from participation. They

were given this researcher's name and email address in the case that they have questions about the survey, as well as the email address of the faculty advisor. They were told that the survey will take approximately 15 to 20 minutes to complete. When participants clicked "I Agree" on the informed consent page, they were redirected to a secure online questionnaire hosted by www.surveymzmo.com. The web pages allowed them to monitor their progress with a status bar during the survey. At the end of the study, participants were asked to send the survey on to others if they wished.

The survey began by asking demographic information followed by questions regarding perceived peer norms, The Internalized Homophobia Scale, Stigma Scale and the experience of violence item, the Community Connectedness measure, the Condom Self-Efficacy Scale, and finally questions assessing individual risky and safer sex behaviors.

Measures

Demographic and Control Variables. The demographic questionnaire addressed items related to age, gender, race/ethnicity, socioeconomic status, relationship status, health history, and health status. No identifying information beyond basic demographic information was asked.

Predictor Variables.

Perceptions of normative sexual health behavior. Perceptions of normative sexual health behaviors was assessed using 28 items modified from prior studies (12 and 16 items related to both straight and gay peer norms respectively) (Beadnell et al., 2007; Peterson & Bakeman, 2006; Selven, Ross, Kapadia, Mathai, & Hira, 2001). Items addressed both perceived norms regarding protective sexual behaviors and perceived

norms regarding risky sexual behaviors (e.g., “Before having casual sex, most of my gay male friends think you should have safe sex discussions (STD status and history, the use of condoms, etc.),” “Most of my gay male friends *don’t* think you should have safe sex discussions (STD status and history, the use of condoms, etc.) with your main male partner,” “Most of my straight male friends think you should use a condom when having sexual intercourse (vaginal and anal) with your main female partner,” and “Most of my straight male friends *don’t* think you should use a condom when having sexual intercourse (vaginal and anal) with your main female partner.”). Items addressing perceived norms regarding risky sexual behaviors were reverse coded. Participants rated the perceived norms of sexual health behaviors for the two reference groups: (a) straight male friends and (b) gay male friends. Similar to previous research, each statement was rated on a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*); if participants did not consider themselves to have straight or gay male friendship networks they reported N/A and this was coded as 0. Scores were summed and divided by the number of items ranked in order to yield a mean score for both perceived gay male peer norms and perceived straight male peer norms so that higher scores indicated perceptions of more positive sexual health norms. Scale scores fell within a valid range (0 to 4). Internal consistency for this study, Cronbach’s alpha = .95 (perceived straight peer norms) and Cronbach’s alpha = .95 (perceived gay peer norms).

Minority stress. Minority stress was assessed using three measures examining the domains of internalized homophobia, social stigma, and experiences of violence (Hamilton & Mahalik, 2009; Meyer, 1995). Once scale scores were calculated they were re-calculated using z-scores. Then the mean of the 3 scales was used to create a minority

stress scale with higher scores indicating higher levels of minority stress. Scale scores fell within a valid range (-.96 to 1.57); however, internal consistency was low (Cronbach alpha = .38). Further, analysis of the scale revealed that the deletion of the experience of violence item would produce the greatest improvement to the reliability (Cronbach's alpha = .49). Due to the low reliability of the combined minority stress scale, I elected to use individual scales as separate indicators of minority stress to predict the criterion variables in the models.

Internalized homophobia. The Internalized Homophobia Scale (*IHP*; Martin & Dean, 1987) is a 9-item scale using a 4-point Likert scale ranging from 1 (*never*) to 4 (*often*). Participants were asked the degree to which they concur with statements regarding being uncomfortable with one's homosexuality (e.g., "In the past year, how often have you thought that being gay was a personal shortcoming?"). Ratings were summed with lower score indicative of lower levels of internalized homophobia. Internalized homophobia scale scores fell within a valid range (9 to 34), Cronbach's alpha = .90.

Social Stigma. The Stigma Scale (Martin & Dean, 1987) is an 11-item survey that assesses expectations of prejudice and discrimination due to one's sexuality (e.g., "Once they know a person is gay, most people will take his opinion less seriously"). Participants ranked their responses on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Scores were summed to create a composite score, with higher scores indicating greater expectation of prejudice and discrimination. Social stigma scale scores also fell within a valid range (12 to 58), Cronbach's alpha=.88.

Experience of antigay violence. Antigay physical attack was measured with a single item that has been used in previous research addressing antigay experiences (Hamilton & Mahalik, 2009). The question asked was, “Have you ever been physically attacked because of your sexual orientation?” This item was a dichotomous variable with either an affirmative (“yes”) or negative (“no”) response. The experience of violence item was dummy coded with values of 0 and 1, with 1 indicating that the participant had experienced violence.

Connectedness to the GLB community. Community connectedness was assessed with an 8-item scale, which was developed by Frost and Meyer (2009). It is an adaptation from a 7-item community cohesion scale used in the Urban Men’s Health Study (UMHS; Mills et al., 2001), and an additional item from Herek and Glunt’s (1995) Community Consciousness Scale. This scale is intended to measure both participation in and cognitive/affective affiliation with the GLB community (e.g., “You feel you’re a part of the LGBT community,” and “Participating in the LGBT community is a positive thing for you”). The scale was modified to make the assessment applicable to participants nationwide. Participants will be given a definition of community to aid them in answering the questions. The definition will state, “GLB community does not mean any particular neighborhood or social group, but in general, groups of gay men, bisexual men and women, and lesbians. This community can include online groups.” Participants rated items on a scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). For those participants who do not feel connected to the GLB community or do not associate with members of the GLB community, participants could respond by choosing the response scored as 0, “Not Connected.” Scores were summed so that higher scores indicate more

connectedness with the GLB community. In addition, Frost and Meyer (2009) found that this assessment was significantly and negatively correlated with internalized homophobia and outness and significantly and positively correlated with the number of GLB-related community or recreational groups participants were members of or active in. Scale scores fell within a range (0 to 32), Cronbach's alpha = .93.

Condom Self-Efficacy Scale. Condom use self-efficacy was assessed using the Condom Self-efficacy Scale (CSES; Hanna, 1999), which is a 14-item instrument designed to measure an individual's perceptions of his ability to appropriately use a condom. Each item was rated on a 5-point Likert-type scale ranging from 1 (*very unsure*) to 5 (*very sure*). Scores were summed for a total scale score with lower scores indicating lower condom use self-efficacy. Scale scores fell within a range of 14 to 70, Cronbach's alpha = .91.

Dependent Variable.

Protective sexual behavior. There is no standard assessment of safer sex behavior (Jaccard, McDonald, Wan, Dittus, & Quinlan, 2002), therefore, items measuring protected/unprotected sex were adapted from previous studies. Sexual health behaviors were assessed with four questions. Participants were asked to consider the sexual behaviors they engaged in within the previous month. Questions include: "In the past month, have you used a condom when having insertive anal sex with your main male partner? In the past month, have you used a condom when having receptive anal sex with your main male partner? In the past month, have you used a condom when having insertive anal sex with a casual male partner? and In the past month, have you used a condom when having receptive anal sex with a casual male partner?" Participants rated

their frequencies on a Likert-type scale from 1(*never*) to 4 (*always*), or indicated that they did not have a main partner, casual partner, or male partner (Beadnell et al., 2007; Peterson et al., 2009). Scores were summed and divided by the number of items ranked in order to yield a mean score of protective sexual behaviors with higher scores indicating greater engagement in protective sexual health behaviors (Herek et al., 1997; Rosser, Bockting, Ross, Miner, & Coleman, 2008). Scale scores fell within a range of 1 to 4, Cronbach's alpha = .91.

Analysis

The data was analyzed using linear regression methods.

1) In order to address the first research question regarding the relationship of the four predictor variables and the dependent variable, multiple regression analysis was used; a follow up analysis was used to examine the unique relationships and variance accounted for by each of the predictor variables to the dependent variable, protective sexual behaviors.

2) To explore the relationship between connectedness with the GLB community and perceived peer norms, a simple linear regression was used to determine if GLB connectedness accounts for a significant amount of the variance in different peer norms (gay and straight) and in which direction.

3) For research question 3, which explored moderation, four hierarchical regression analyses were utilized to explore the influence that minority stress may have on the relationship between perceived straight peer norms and condom use self-efficacy, perceived gay peer norms and condom use self-efficacy, perceived straight peer norms and protective sexual behaviors, and perceived gay peer norms and protective sexual

behaviors. The moderation analysis was tested by first examining whether the interactions between the two perceived peer norms and the three minority stress variables accounted for a significant amount of the variance in the dependent variables. If this interaction was significant then the sample would have be divided into high and low minority stress groups (overall sample minority stress variables of $\pm 1 SD$) according to Aiken and West's (1991) recommendations. The interaction between high and low minority stress and perceived gay peer norms on condom use self-efficacy and then condom use behavior would be analyzed for significance.

4) For research question 4, which explored moderation, two hierarchical regression analyses were utilized to explore the influence that GLB community connectedness may have on the relationship between minority stress and condom use self-efficacy, and minority stress and protective sexual behaviors. The moderation analysis was tested by first examining whether the interactions between community connectedness and each of the three minority stress variables accounted for a significant amount of the variance in the dependent variables. If this interaction was significant then the sample would be divided into high and low GLB community connectedness groups (overall sample GLB community connectedness composite score of $\pm 1 SD$) according to Aiken and West's (1991) recommendations. The interaction between high and low GLB community connectedness and minority stress on condom use self-efficacy and then condom use behavior will be analyzed for significance.

Each model was checked to ensure that the underlying assumptions of normality, independence and linearity are met. In addition, the data was examined for influential data points and multicollinearity.

Chapter 4

Results

Ordinary least squares multiple regression was used to determine whether perceived gay and straight peer norms, minority stress factors, connectedness with GLB community and condom use self-efficacy, collectively and independently predicted protective sexual behaviors. Also, the moderating effect of minority stress factors on the relationship between perceived peer norms and condom use self-efficacy and between peer norm and protective sexual behaviors was explored. Finally, I explored whether connectedness with the GLB community moderated the relationship between minority stress and condom use self-efficacy and between minority stress and protective sexual behaviors. Means, standard deviations, and correlations among all the variables are presented in Tables 1 and 2.

Predictors of Protective Sexual Behaviors

Linear regression analysis was used to determine whether perceived gay and straight peer norms, minority stress indicators (i.e., stigma consciousness, internalized homonegativity, and experience of violence), connectedness with GLB community and condom use self-efficacy, collectively and independently predicted protective sexual behaviors. Preliminary exploratory analyses indicated that there were no multicollinearity problems with the data (largest variance inflation factor was 2.08) and that the assumptions of independence, normality, and heteroschedasticity were met. Simultaneous regression testing main effects of all independent variables was significant [$R^2 = .39$, $F(7, 56) = 5.01$, $p < .001$] (see Table 3). Examining beta coefficients for the independent variables revealed that perceived gay peer norms ($\beta = .29$, $p = .047$), perceived straight

Table 1

Means, Standard Deviations, and Correlations for Study Variables (N=96)

Variables	1	2	3	4	5	6	7	8
1 GayPeer Norms	--							
2 Straight Peer Norms	.45**	--						
3 GLB Community Connectedness	.48**	.26*	--					
4 Internalized Homophobia	-.23*	.02	-.50**	--				
5 Social Stigma	-.22*	.08	-.28**	.32**	--			
6 Physical Discrimination	.11	-.01	.06	-.12	.23**	--		
7 Condom Self-Efficacy	.36**	.08	.45**	-.53**	-.32**	.06	--	
8 Protective Sexual Behav.	.35**	.31*	-.17	.14	.07	.08	.15	--
Means	2.4	1.5	24.9	14.3	31.8	0.2	58.7	2.5
Standard Deviations	1.1	1.2	6.6	6.1	9.7	0.4	9.8	1.3

Notes. **p<.01. *p<.05.

Table 2

Means, Standard Deviations, and Correlations for Study Variables: Participants Endorsing

	1	2	3	4	5	6	7	8
1 Gay Peer Norms	--							
2 Straight Peer Norms	.57**	--						
3 GLB Community Connectedness	.42**	.35*	--					
4 Internalized Homophobia	-.16	-.07	-.47**	--				
5 Social Stigma	-.11	.02	-.23	.28*	--			
6 Physical Discrimination	.15	-.01	.03	-.07	.28*	--		
7 Condom Self-Efficacy	.32**	.12	.53**	-.66**	-.27*	.04	--	
8 Protective Sexual Behav.	.35**	.31*	-.17	.14	.07	.08	.15	--
Means	2.4	1.5	24.9	14.1	31.4	0.2	58.4	2.5
Standard Deviations	1.1	1.2	6.2	6.2	10.4	0.4	10.9	1.3

Notes. **p<.01. *p<.05.

peer norms ($\beta = .28, p = .040$), connectedness with the GLB community ($\beta = -.50, p = .001$), and condom use self-efficacy ($\beta = .48, p = .002$) were significant independent predictors of the variance in protective sexual behaviors. That is, greater endorsement of perceived gay and straight peer norms that support protective sexual behaviors was related to greater endorsement of actual protective sexual behaviors. Greater connectedness with a GLB community was inversely related to protective sexual behaviors, however, greater condom self-efficacy was positively related to protective sexual behaviors.

Table 3

Summary of Regression Analysis Predicting Protective Sexual Behaviors (N=64)

Variable	B	SE B	β
Gay Norms	.35	.17	.29*
Straight Norms	.30	.14	.28*
Connectedness	-.10	.03	-.50**
IH	.06	.03	.29
Stigma	.00	.02	.01
Violence	.15	.35	.05
CSES	.06	.02	.48**

Notes. $R^2 = .39^{**}$

** $p < .01$. * $p < .05$.

Connectedness with GLB Community

Linear regression analysis was used to determine whether connectedness with the GLB community predicted perceived gay and straight peer norms. Preliminary exploratory analyses indicated that there were no multicollinearity problems in the data (largest variance inflation factor was 1.00) and that the assumptions of independence,

normality, and heteroschedasticity were met. Regression analysis indicated that connectedness with the GLB community significantly predicted perceived gay peer norms [$R^2 = .23$, $F(1, 94) = 27.87$, $p < .001$], as well as perceived straight peer norms [$R^2 = .07$, $F(1, 94) = 6.89$, $p = .01$] (see Table 4). That is, connectedness with the GLB community accounted for more of the variance in perceived gay peer norms than straight peer norms.

Table 4

Summary of Regression Analysis of Community Connectedness in Predicting Peer Norms of Different Reference Groups (N=96)

Dependent Variable	B	SE B	β	R^2
Gay Norms	.08	.01	.48**	.23**
Straight Norms	.05	.02	.26*	.07*

Notes. ** $p < .01$. * $p < .05$.

Minority Stress as a Moderator

To test the moderation effects of the individual minority stress variables (i.e., internalized homophobia, social stigma, and experience of antigay violence) on the relationship between perceived peer norms and condom use self-efficacy, as well as between perceived peer norms and protective sexual behaviors, hierarchical regression analyses were conducted following Frazier, Tix and Barron's (2004) suggestions for testing moderating effects. The independent variables were centered. Then, four regression equations were estimated that included all independent variables. The set of

interaction terms was then added to the four equations and the increase in the amount of variance explained calculated. Preliminary exploratory analyses indicated that there were no multicollinearity problems in the data (largest variance inflation factor was 1.25) and that the assumptions of independence, normality, and heteroschedasticity were met.

The first regression analysis examined the moderation effects of minority stress factors on the relationship between perceived gay peer norms (e.g., stigma consciousness x gay peer norms, internalized homonegativity x gay peer norms, and experience of violence x gay peer norms) and condom use self-efficacy. Simultaneous regression testing main effects of all independent variables was significant [$R^2 = .36$, $F(4, 91) = 12.53$, $p < .001$]. The increase in variance explained by the addition of the interaction terms was not statistically significant (R^2 change = .03; $F_{change} = 1.64$, $df = 3, 88$; $p = .19$), indicating that minority stress elements did not moderate the relationship between perceived gay peer norms and condom self-efficacy.

Second, a regression analysis examined the moderation effects of minority stress factors on the relationship between perceived straight peer norms and condom use self-efficacy. Simultaneous regression testing main effects of all independent variables was significant [$R^2 = .32$, $F(4, 91) = 10.61$, $p < .001$]. The increase in variance explained by the addition of the interaction terms was not statistically significant (R^2 -change = .03; $F_{change} = 1.51$, $df = 3, 88$; $p = .22$), indicating that minority stress factors did not moderate the relationship between perceived straight peer norms and condom self-efficacy (see Table 5).

A third regression analysis examined the moderation effects of minority stress factors on the relationship between perceived gay peer norms and protective sexual

behaviors. Simultaneous regression testing main effects of all independent variables was significant [$R^2 = .17$, $F(4, 59) = 2.94$, $p = .03$]. The increase in variance explained by the addition of the interaction terms was not statistically significant (R^2 change = .08; $F_{change} = 1.84$, $df = 3, 56$; $p = .15$), indicating that minority stress elements did not moderate the relationship between perceived gay peer norms and protective sexual behaviors.

The final regression analysis examined the moderation effects of minority stress factors on the relationship between perceived straight peer norms and protective sexual behaviors. Simultaneous regression testing main effects of all independent variables was not significant [$R^2 = .13$, $F(4, 59) = 2.21$, $p = .08$]. The increase in variance explained by the addition of the interaction terms was not statistically significant (R^2 change = .09; $F_{change} = 2.22$, $df = 3, 56$; $p = .10$), indicating that minority stress elements did not moderate the relationship between perceived straight peer norms and protective sexual behaviors (see Table 6).

Table 5
Summary of Hierarchical Regression Analysis Predicting Condom Self-Efficacy
(N=96)

Variable	B	SE B	β	R^2	ΔR^2
Moderation Model 1					
Step 1				.36	.36**
Gay Norms	2.14	.83	.23*		
IH	-.70	.15	-.44**		
Stigma	-.13	.10	-.13		
Violence	.36	2.19	.02		
Step 2				.39	.03
Gay Norms X IH	.19	.13	.18		
Gay Norms X Stigma	.06	.10	.06		
Gay Norms X Violence	.07	2.83	.00		
Moderation Model 2					
Step 1				.32	.32**
Straight Norms	.86	.72	.10		
IH	-.75	.15	-.47**		
Stigma	-.19	0.10	-.19		
Violence	1.22	2.23	.05		
Step 2				.35	.03
Straight Norms X IH	.25	.12	.20*		
Straight Norms X Stigma	-.04	.09	-.05		
Straight Norms X Violence	.17	2.05	.01		
Moderation Model 3					
Step 1				.35	.35**
Connectedness	.34	.15	.23*		
IH	-.59	.16	-.37**		
Stigma	-.15	.10	-.15		
Violence	.92	2.19	.04		
Step 2				.35	.01
Connectedness X IH	-.02	.02	-.10		
Connectedness X Stigma	.02	.02	.12		
Connectedness X Violence	-.21	.34	-.07		

Notes. ** $p < .01$. * $p < .05$.

Table 6
Summary of Hierarchical Regression Analysis Predicting Protective Sexual Behaviors (N=64)

Variable	B	SE B	β	R^2	ΔR^2
Moderation Model 1					
Step 1				.17	.17*
Gay Norms	.47	.15	.38**		
IH	.04	.03	.19		
Stigma	.01	.02	.05		
Violence	.06	.40	.02		
Step 2				.24	.08
Gay Norms X IH	.04	.02	.29		
Gay Norms X Stigma	-.002	.02	-.01		
Gay Norms X Violence	.72	.56	.18		
Moderation Model 2					
Step 1				.13	.13
Straight Norms	.34	.13	.32*		
IH	.04	.03	.18		
Stigma	-.001	.02	-.01		
Violence	.29	.40	.09		
Step 2				.22	.09
Straight Norms X IH	.01	.02	.05*		
Straight Norms X Stigma	.03	.02	.31		
Straight Norms X Violence	.01	.36	.01		
Moderation Model 3					
Step 1				.04	.04
Connectedness	-.03	.03	-.13		
IH	.12	.03	.09		
Stigma	-.001	.02	-.01		
Violence	.28	.42	.09		
Step 2				.17	.13*
Connectedness X IH	.006	.004	.27		
Connectedness X Stigma	.006	.004	.26		
Connectedness X Violence	-.09	.07	-.27		

Notes. **p < .01. *p < .05.

Community Connectedness as a Moderator

To test the moderation effects of connectedness with GLB community on the relationship between minority stress predictors (i.e., internalized homophobia, social stigma, and experience of antigay violence) and condom use self-efficacy, as well as between minority stress factors and protective sexual behaviors, hierarchical, regression analyses were conducted following Frazier et al. (2004) suggestions for testing moderating effects. The independent variables were centered. Then, two regression equations were estimated that included all independent variables. The set of interaction terms was then added to the two equations and the increase in the amount of variance explained calculated. Linear regression analysis was used to determine whether perceived gay and straight peer norms collectively and independently predicted connectedness with the GLB community. Preliminary exploratory analyses indicated that there were no multicollinearity problems in the data (largest variance inflation factor was 1.44) and that the assumptions of independence, normality, and heteroschedasticity were met.

The first regression analysis examined the moderation effects of connectedness with the GLB community on the relationship between minority stress factors and condom use self-efficacy. Simultaneous regression testing main effects of all independent variables was significant [$R^2 = .35$, $F(4,91) = 11.96$, $p < .001$]. The increase in variance explained by the addition of the interaction terms was not statistically significant (R^2 change = .01; $F_{change} = .32$, $df = 3, 88$; $p = .81$), indicating that connectedness with the GLB community does not moderate the relationship between minority stress variables and condom self-efficacy (see Table 5).

The second regression analysis examined the moderation effects of connectedness with the GLB community on the relationship between minority stress measures and protective sexual behaviors. Simultaneous regression testing main effects of all independent variables was not significant [$R^2 = .04$, $F(4, 59) = .62$, $p = .65$]. Although the simultaneous regression model was not significant, the increase in variance explained by the addition of the interaction terms was statistically significant (R^2 -change = .13; $F_{change} = 2.87$, $df = 3, 56$; $p = .04$), indicating that connectedness with the GLB community may have a moderating effect on the relationship between minority stress predictors and protective sexual behaviors (see Table 6). However, the overall model was not statistically significant ($R^2 = .17$, $F(7, 56) = .62$, $p = .15$), and an examination of individual beta coefficients revealed no statistical significance for any particular minority stress variable interaction term with community connectedness, therefore the data did not warrant post-hoc analysis.

Chapter 5

Discussion

The following is a discussion of the results of this study, considered within the existing body of research. First, predictors of protective sexual behaviors will be discussed followed by the relationship between perceived peer norms and community connectedness, then minority stress as a moderator, and lastly community connectedness as a moderator. The limitations and implications for clinical consideration and directions for future research will be presented.

Predictors of Protective Sexual Behaviors

The reported mean for the current sample ($n = 64$) was 2.46 out of a range of 1.00 to 4.00 on the four items measuring protective sexual behaviors, with 4.00 indicating greater engagement in protective sexual behaviors. After examining the frequencies, it appears that the distribution was bimodal with most participants reporting either never using a condom or always using a condom.

The first research question explored the relationship between perceived peer norms endorsing protective sexual behaviors related to different reference groups (i.e., straight male friends and gay male friends), connectedness with a GLB community, minority stress, condom use self-efficacy and protective sexual behaviors among MSM. As expected, perceived peer norms, connectedness with a GLB community, minority stress, and condom use self-efficacy significantly predicted protective sexual behaviors. The variables that had a significant positive relationship to protective sexual behaviors were perceived peer norms of both gay and straight peers endorsing protective sexual behaviors and greater condom use self-efficacy. This is consistent with the research

regarding the influence of social-cognitive factors on health behaviors, specifically the theory of planned behavior (TPB; Ajzen, 1991, 2006; Ajzen & Madden, 1986).

According to TPB, perceived peer norms, in combination with a sense of self-efficacy, can influence whether one engages in a behavior. Furthermore, participants who endorsed being more connected with the GLB community reported less engagement in protective sexual behaviors and several studies have found similar results (Flores et al., 2009; Meyer & Dean, 1995). However, this finding contrasts with Ramirez-Valles' (2002) theory that being more connected with individuals involved in the community would lead to greater awareness of risks and therefore one would be more likely to engage in protective sexual behaviors.

Connectedness with GLB Community

The current study also examined the relationship between the perceived norms of two peer reference groups (gay and straight) and participants' connectedness with the GLB community. Overall, the current sample had a mean score of 24.87 out of a range of 0 to 32, indicating that this sample had a strong connection with the greater GLB community. As hypothesized, the results indicated that GLB community connectedness predicted greater perceived gay peer norms regarding protective sexual behaviors compared to perceived straight peer norms. Specifically, greater community connectedness was positively related to MSM reporting the perception that their gay peers engage in protective sexual behaviors. Furthermore, community connectedness accounted for 23% of the variance in perceived gay peer norms, indicating that community connectedness plays a significant role in MSM perceptions of their gay peers' sexual behaviors or vice versa.

This relationship is interesting when considering the previous analysis indicating that GLB connectedness was negatively related to engagement in protective sexual behaviors. It appears that connection with the GLB community provides MSM with a reference group that supports engagement in protective sexual behaviors, which is consistent with Ramirez-Valles (2002), who theorized that greater community connectedness would provide GLB identified individuals with healthier norms concerning sex. However, greater connection with GLB community was negatively related to actual protective sexual behaviors. Perhaps more contact with a larger pool of gay peers may lead to more opportunities to engage in risky sexual behaviors even though healthy sex norms exist.

Minority Stress as a Moderator

Contrary to the hypotheses, this study did not reveal significant results using minority stress factors as moderating variables in the relationship between perceived peer norms and condom use self-efficacy, or perceived peer norms and protective sexual behaviors. Though minority stress factors were not found to be a significant moderator this could be a result of the small sample size because the additional amount of variance accounted for by the interaction terms was substantial.

Furthermore, internalized homophobia was found to be a significant negative predictor of condom self-efficacy. Based on the fact that internalized homophobia uniquely predicted condom use self efficacy and other minority factors did not, future research could explore this relationship more in depth. Perhaps the unique relationship between internalized homophobia and condom use self efficacy is because both are related to how one views him or herself, specifically the internalizing negative

stereotypes and one's feeling of competence un engaging in the specific behavior of using a condom.

There are several possible explanations for this lack of significance between minority stress and peer norms and protective sexual behaviors. Compared to earlier research by Hamilton and Mahalik (2009), this sample was younger, with a mean age of 36.6 in contrast to their mean of 46. Based on this age difference there could be a cohort effect, in which a younger sample may have experienced less prejudice and greater acceptance in society. Over the past several years, U.S. popular opinion has become more accepting of homosexuality (Williams, Giuffre, & Dellinger, 2009). In addition, there have been many advancements made in GLB rights within the U.S. , for example more states have passed laws to legalize marriage (National Conference of State Legislatures, 2011) and "Don't Ask, Don't Tell," the law that required GLB individuals who were on active duty in the military to refrain from disclosing their sexual identity at the risk of being dishonorably discharged, was repealed (Lee, 2010). Therefore, because of changes in cultural attitudes, the current sample may have experienced a low level of minority stress. The current sample had an average score of 31.8 out of a range of 11 to 66 for social stigma, indicating a moderately low feeling stigma as GLB individuals. Furthermore, the current sample had an average score of 14.3 out of a range of 9 to 36 for internalized homophobia, indicating low levels of discomfort with one's own sexual orientation. Also, a minority of participants (N=17) reported experiencing antigay violence.

In addition, the small number of participants who endorsed the experience of antigay violence item may have contributed to low statistical power making it difficult to

accurately assess its relationship to other variables. Another limitation of the experience of antigay violence measure was that it was a one item measure, which can lead to a less complex understanding of experiences of violence.

Community Connectedness as a Moderator

Similarly, GLB community connectedness was not found to be a significant moderator in the relationship between minority stress factors and condom use self-efficacy and protective sexual behaviors. Furthermore, though the interaction between the minority stress variables and GLB community connectedness did not significantly predict condom use self-efficacy above and beyond the individual variables, the independent variables (i.e., internalized homophobia, social stigma, experience of antigay violence, and connectedness with the GLB community) were significant predictors of condom use self-efficacy. However, for protective sexual behaviors the individual predictor variables of minority stress and GLB community connectedness were not significant predictors. Further examination of the results also indicated that in two of the three moderation analyses examining the dependent variable of protective sexual behaviors, the main effect of the individual predictor variables lacked significance. This lack of significance could be related to how protective sexual behaviors were measured. As mentioned previously, engagement in protective sexual behaviors had a bimodal distribution. One factor that may impact engagement in protective sexual behaviors could be relationship status. In addition, post-hoc analysis examined the possible correlation between relationship status and relationship length and community connectedness, which may have impacted the relationship between community connectedness and safer sex practices. Neither correlation between relationship status nor relationship length was found to be significant

with community connectedness. Relationship status was also not found to be significantly correlated with safer sex behaviors, however, relationship length had a significant negative correlation with safer sex behaviors.

In addition, the lack of significance could have other explanations. Similar to the lack of significant findings related to minority stress as a moderator there could be a cohort effect. Another explanation could be the limitations with the experience of antigay violence measure; the fact that it consisted of a single item and a lack of power with 17 participants reporting antigay violence.

Limitations

The current study had several limitations. First, although a significant effort was made to include experiences of MSM of various racial backgrounds, as well as educational and income levels, the majority of participants were White and highly educated. Thus, results cannot be generalized to MSM with multiple minority statuses nor to those who lack higher education. Furthermore, due to the low number of participants and the number of independent variables and analysis procedures, the current study had relatively low statistical power.

In addition, participants completed the study online. Though researchers have found that web-based surveys are just as reliable and valid as paper and pencil surveys (Gosling, Vazire, Srivastava, & John, 2004), it is possible that restricting the sample to those who have computer access resulted in a skewed sample in terms of education and income. Also, participants were recruited via websites dedicated to providing supportive services for GLB people, therefore, they may have experienced less minority stress and be more connected to the GLB community in comparison to community samples.

However, given the sensitive nature of the study focus, a web-based approach may have allowed men to respond to the questions authentically.

Furthermore, participants self-selected to participate therefore preventing us from gathering information about the experiences from MSM who did not wish to share information about their sexual health behaviors. As with most survey research, the data was gathered via self-report and measures with a high degree of face validity, therefore it is possible that participants' responses were influenced by social desirability. Finally, results were calculated using linear and multiple regression analysis procedures, which does not allow for the testing of causation.

Clinical Implications

The significant findings regarding the relationship between perceived peer norms and protective sexual behaviors provides additional support for using interventions that address pluralistic ignorance about sexual behaviors (i.e., the belief that more people are engaging in unsafe sexual behaviors than actually are; Perkins, 2003). Furthermore, because perceived norms of both reference groups were found to be positively related to safer sex practices, it is important to consider and use interventions that address the norms of important people identified by individuals even if they may not seem to be important reference groups (e.g., straight male friends). This study asked participants to consider "their close gay/straight male friends" not the reference group as a whole. Based on this phrasing as well as research by Ajzen (1991) and Cialdini (2008), it is the people with whom one has a significant relationship and considers important who are going to most greatly influence and individual's behaviors.

In addition, this study found that condom-use self efficacy was positively related to engagement in protective sexual behaviors. Based on these results, interventions focused on improving self-efficacy related to condom use including negotiating the use with a partner and the process of applying and subsequently disposing of the condom correctly, could help to improve the likelihood that an individual engages in protective sexual behaviors. This could include skills training regarding how to properly use a condom and assertiveness training for engaging in safer sex practices.

Future Directions and Research Emphasis

Although the results of the current study indicate a positive relationship between perceived peer norms of protective sexual behaviors and GLB community connectedness, as well as between condom use self-efficacy and GLB community connectedness, the relationship between GLB community connectedness and protective sexual behaviors is negative. More research is needed to better understand what GLB community connectedness factors are related to riskier sexual practices and protective sexual behaviors. For example, future studies could examine the methods/activities that people use to connect with the community and whether certain activities or relationships with particular groups within GLB community are related to greater sexual risk taking.

According to the current study, there is a significant relationship between perceived social norms and actual behavior. Future research could consist of a qualitative project that examines how norms are created and communicated, as well as determining factors that may impact the salience of norms.

Finally, the intended measure of minority stress was found to lack reliability therefore the current study used three measures that assessed the three factors theorized to

be embedded in the minority stress model. Based on the lack of reliability more research needs to be conducted into the development of an objective measure of minority stress.

Conclusion

Results of this study were that protective sexual behaviors in men who have sex with men is related to perceived peer norms regarding sexual health behaviors of reference groups (both gay and straight male peers), connectedness with the GLB community, and condom use self-efficacy. Additionally, GLB community connection was positively related to both perceived gay and straight peer norms endorsing protective sexual behaviors. Minority stress factors were not found to moderate the relationship between perceived peer norms and condom use self-efficacy or protective sexual behaviors. Similarly, GLB community connection was not found to moderate the relationship between minority stress and condom use self-efficacy or protective sexual behaviors. Overall, the findings of this study draw attention to the complexity of the social-cognitive factors that impact MSM engagement in protective sexual behaviors.

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Appendix A

Informed Consent

Principal Investigators:

Rebecca A. Aycock, M.Ed.

Description of the study:

Participants in this study will be asked to complete an online survey that will require approximately 15-20 minutes to complete. The purpose of the study is to explore possible influential factors related to the sexual behaviors of men who have sex with men.

Qualifications:

To participate in this study, participants must be a male/MTF/Trangendered/Intersexed individual, at least 18 years of age, be living in the United States.

Risks:

There are no foreseeable risks to individuals for participating in this study. However, individuals will be asked to disclose their STI status (e.g. HIV, Chlamydia, etc.), which may expose them to feeling a sense of risk. Participants are assured this information is confidential and that the survey is anonymous therefore no identifying information will be asked. Furthermore, if a person feels distressed they are encouraged to call the CDC's national Hotline (1-800-CDC-INFO [1-800-232-4636])

Benefits:

Participants who are interested may enter their email addresses into a lottery for a chance to win 1 of 4 \$50.00 gift certificates. Participants will be notified that these email addresses will not be linked with the data collected. Furthermore, participants may benefit from participation in this study by developing a greater awareness of their personal GLB experience by reflecting on their experiences with others, both prejudiced and GLB affirming. Participants may also benefit by knowing they are contributing to research that is GLB-affirmative.

Confidentiality:

Participation will be anonymous. Volunteers will complete online surveys which do not ask for participants' names.

Questions:

If you have any questions or concerns about this study, you may contact the principal investigators, Becky Aycock at raaycock@memphis.edu or Sharon Horne, Ph.D. at (901) 678-1413. Questions about your rights as a research participant may also be directed to the Chair of the Committee for the Protection of Human Research Participants of the University of Memphis at (901) 678-2533.

Terminating the study:

Participation in this study is entirely voluntary. Beginning the survey in no way obligates participants to complete the survey. Participants may quit the study at any time with no consequences.

Concluding Statement:

By completing the survey acknowledge that I am at least 18 years of age, have read and understood the above statements, and have decided to take part in the study.

Appendix B

Recruitment Email

The University of Memphis' GLBT Research Team is conducting a GLBT-affirmative study on the sexual behaviors of men who have sex with men, and we are hoping you will be interested in participating and/or helping us recruit participants.

The purpose of the study is to explore possible influential factors related to the sexual behaviors of men who have sex with men. We believe this research will improve our understanding of ways to enhance practice, intervention and preventions services for men who have sex with men.

Participants must be male/MTF/Trangendered/Intersexed, at least 18 years of age, and living in the United States. The study should take approximately 15-20 minutes to complete online and meets human subjects approval by our university Institutional Review Board (___). Once completing the survey you will be entered into a raffle to win 1 of 4 \$50 gift cards.

<http://www.surveygizmo.com/s3/364851/Sexuality-Survey>

An overview of our research areas can be found on our school webpage at <http://www.memphis.edu/cepr/glbtr-research.htm>.

Thank you for your participation and support.

Rebecca A. Aycock, M.Ed.
Sharon G. Horne, Ph.D. & Heidi Levitt, Ph.D., Directors
GLBT Research Team
Counseling, Educational Psychology & Research
The University of Memphis
glbtresearch.uofm@gmail.com

Appendix C

Demographics

1. Gender
 - a. Male
 - b. Transgendered
 - c. Intersex
 - d. FTM Transgender
 - e. Two Spirit
 - f. Other: _____
2. Are you a man who has sex with men?
 - a. Yes
 - b. No
3. Sexual Identity
 - a. Straight
 - b. Gay
 - c. Same Gender Loving
 - d. Down Low
 - e. Queer
 - f. Bisexual
 - g. Questioning
 - h. I choose not to identify, but have sex with men.
 - i. Other: _____
4. Age: _____ (in years)
5. Race
 - a. African American, Black
 - b. Asian American
 - c. Caucasian, White
 - d. Latino, Hispanic
 - e. Native American,
 - f. Pacific Islander
 - g. Biracial, Multiracial
 - h. Other: _____
6. Educational Attainment
 - a. Up to 8th Grade
 - b. Up to 11th Grade
 - c. HS Diploma
 - d. Some College
 - e. Associates Degree
 - f. Vocational/Technical School
 - g. College Degree
 - h. Master's Degree
 - i. Doctoral / Professional Degree
7. Employment
 - a. Full Time Student

- b. Full Time Student, Part Time Employed
 - c. Full Time Student, Full Time Employed
 - d. Full Time Employed
 - e. Part Time Employed
 - f. Disabled
 - g. Unemployed
8. Income Level
- a. Under \$15,000
 - b. \$15,001 to \$25,000
 - c. \$25,001 to \$35,000
 - d. \$35,001 to \$45,000
 - e. \$45,001 to \$55,000
 - f. \$55,001 to \$65,000
 - g. \$65,001 to \$80,000
 - h. \$80,001 to \$100,000
 - i. \$100,001 +
 - j. No Income, Student
9. Have you ever been tested for an STD?
- a. Yes
 - b. No
10. In the past, have you been diagnosed with an STD? Check all that apply:
- a. No
 - b. Herpes
 - c. Gonorrhea
 - d. Chlamydia
 - e. Syphilis
 - f. HPV
 - g. Hepatitis A
 - h. Hepatitis B
 - i. Hepatitis C
 - j. Other
11. Currently, are you positive for HIV/AIDS or another STD? Check all that apply.
- a. Unsure
 - b. No
 - c. HIV
 - d. AIDS
 - e. Herpes
 - f. Gonorrhea
 - g. Chlamydia
 - h. Syphilis
 - i. HPV
 - j. Hepatitis A
 - k. Hepatitis B
 - l. Hepatitis C
 - m. Other
12. State of Primary Residence

13. Are you currently in an intimate relationship?
 - a. Yes
 - b. No
14. If you are in an intimate relationship, how long have you been with your current partner?
 - a. Less than 6 months
 - b. 6 months to 12 months
 - c. 1 year to 2 years
 - d. 3 years to 5 years
 - e. 5 years to 8 years
 - f. Greater than 8 years
15. What is your partnership status:
 - a. Legally Married
 - b. Civil Partnership
 - c. Personal Commitment
 - d. None of the above
16. In the past year how many sexual partners have you been involved with including your main partner.
17. If you have a primary sexual partner, do you know their HIV/AIDS/STD status?
 - a. Yes
 - b. No
18. If you have had sex with someone who is not your primary partner in the last year, were you aware of each of your sexual partners' HIV/AIDS or STD status?
 - a. Yes, all
 - b. Yes, most
 - c. Yes, a few
 - d. No
19. Where do you get information regarding safe sex? Check all that apply:
 - a. Friends
 - b. Family
 - c. Doctor/ Medical Staff
 - d. Information Session/Class
 - e. Online
 - f. Other (please specify)
20. Are most of your male friends:
 - a. Straight
 - b. Gay/Bisexual
 - c. Men who have sex with men
 - d. Half straight/Half Gay,Bisexual
21. How do you connect with members of the GLB community? (Check all that apply)
 - a. Not connected with members of the GLB community
 - b. Online
 - c. GLB community centers
 - d. GLB bars/restaurants
 - e. GLB social groups

- f. GLB community events
- g. Other (please specify)

Appendix D

Peer Norms

1. My straight male friends usually use condoms during sexual intercourse (both vaginal and anal) with their main female partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

2. When my straight male friends have casual sex intercourse (vaginal and anal), they don't usually wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

3. Most of my straight male friends don't think you should use a condom when having sexual intercourse (vaginal and anal) with your main female partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

4. Most of my straight male friends think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.) with your main female partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

5. Most of my straight male friends don't think you should use a condom when having casual sexual intercourse (vaginal and anal).

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

6. Before having casual sex, most of my straight male friends think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.).

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

7. My straight male friends usually don't use condoms during sexual intercourse (both vaginal and anal) with their main female partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

8. When my straight male friends have casual sex intercourse (vaginal and anal), they usually wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

9. Most of my straight male friends think you should use a condom when having sexual intercourse (vaginal and anal) with your main female partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

10. Most of my straight male friends don't think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.) with your main female partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

11. Most of my straight male friends think you should use a condom when having casual sexual intercourse (vaginal and anal).

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

12. Before having casual sex, most of my straight male friends don't think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.).

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

13. When my gay male friends have sex with their main male partner they usually wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

14. When my gay male friends have sex with their main male partner, they don't ask their main partner to wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

15. When my gay male friends have casual sex, they usually wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know N/A

16. When my gay male friends have casual sex, they usually don't ask that casual sex partner to wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

17. Most of my gay male friends think you should use a condom when having anal sex with your main male partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

18. Most of my gay male friends don't think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.) with your main male partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

19. Most of my gay male friends think you should use a condom when having casual anal sex.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

20. Before having casual sex, most of my gay male friends don't think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.).

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

21. When my gay male friends have sex with their main male partner they usually don't wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A **22. When my gay male friends have sex with their main male partner, they usually ask their main partner to wear a condom.**

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know
N/A

23. When my gay male friends have casual sex, they usually don't wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know N/A

24. When my gay male friends have casual sex, they usually ask that casual sex partner to wear a condom.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

25. Most of my gay male friends don't think you should use a condom when having anal sex with your main male partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

26. Most of my gay male friends think you should have safe sex discussions (STD/STI status and history, the use of condoms, etc.) with your main male partner.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

27. Most of my gay male friends don't think you should use a condom when having casual anal sex.

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

28. Before having casual sex, most of my gay male friends think you should have safe sex discussions (STD status and history, the use of condoms, etc.).

Strongly Agree Generally Agree Generally Disagree Strongly Disagree Don't Know

N/A

Appendix E

Sexual Behaviors

1. In the past month, have you used a condom when having insertive anal sex with your main male partner?

Always Generally Sometimes Never No main partner No Male

Partner

2. In the past month, have you used a condom when having receptive anal sex with your main male partner?

Always Generally Sometimes Never No main partner No Male

Partner

3. In the past month, have you used a condom when having insertive anal sex with your casual male partner(s)?

Always Generally Sometimes Never No casual partner No Male

Partner

4. In the past month, have you used a condom when having receptive anal sex with your casual male partner(s)?

Always Generally Sometimes Never No casual partner No Male

Partner

Appendix F

Connectedness with GLB Community (Frost & Meyer, 2009; Herek & Glunt, 1995; Mills, et al., 2001)

1. You feel you're a part of the LGBT community.
2. Participating in the LGBT community is a positive thing for you.
3. You feel a bond with the LGBT community.
4. You are proud of the LGBT community.
5. It is important for you to be politically active in the LGBT community.
6. If we work together, gay, bisexual and lesbian people can solve problems in the LGBT community.
7. You really feel that any problems faced by the LGBT community are also your own problems.
8. You feel a bond with other gay males.

Appendix G

Internalized Homophobia Scale (Martin & Dean, 1987)

The following questions ask you about your feelings about being gay and thoughts you might have had about your sexual orientation.

1. In the past year how often have you thought it best to avoid personal or social involvement with other gay men?

- Never
- Almost Never
- Sometimes
- Often

2. In the past year, how often have you tried to stop being attracted to men in general?

- Never
- Almost Never
- Sometimes
- Often

3. If someone offered you the chance to be completely heterosexual so that you would only be sexually attracted to women and no longer sexually attracted to men, would you accept the offer?

- Never
- Almost Never
- Sometimes
- Often

4. In the past year how often have you wished you weren't gay?

- Never
- Almost Never
- Sometimes
- Often

5. In the past year how often have you felt alienated from yourself specifically because of being gay?

- Never
- Almost Never
- Sometimes
- Often

6. In the past year how often have you felt you wanted to develop more erotic feelings about women?

- Never
- Almost Never
- Sometimes

Often

7. In the past year how often have you thought that being gay was a personal shortcoming?

Never

Almost Never

Sometimes

Often

8. In the past year how often have you sought or wanted to seek professional help in order to change your sexual orientation from gay to straight?

Never

Almost Never

Sometimes

Often

9. In the past year how often have you tried to become more sexually attracted to women in general?

Never

Almost Never

Sometimes

Often

Scoring:

Items are scored on a 4-point scale ranging from 1 (never) to 4 (often). Higher scores indicate greater internalized homophobia.

Appendix H

Social Stigma Scale (Martin & Dean, 1987)

Please select the answer that best describes your amount of agreement with each of the statements. Don't spend too much time thinking about your responses since your initial reaction to each statement is generally best.

1. Most people would willingly accept a gay man as a close friend.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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2. Most people believe that a gay man is just as intelligent as the average person.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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3. Most people believe that a gay man is just as trustworthy as the average citizen.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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4. Most people would accept a gay man as a teacher of young children in public school.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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5. Most people feel that homosexuality is a sign of personal failure.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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6. Most people would not hire a gay man to take care of their children.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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7. Most people think less of a person who is gay.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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8. Most employers will hire a gay man if he is qualified for the job.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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9. Most employers will pass over the application of a gay man in favor of another applicant.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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10. Most people in my community would treat a gay man just as they would treat anyone.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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11. Once they know a person is gay, most people will take his opinion less seriously.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
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Scoring:

The measure is scored using a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Items are scored on a scale of 1-6. Items 1, 2, 3, 4, 8, and 10 are reversed. The 11 items are totaled. Higher scores indicate greater perceived stigma.

Appendix I

Experience of Antigay Violence (Hamilton & Mahalik, 2009)

Have you ever been physically attacked because of your sexual orientation?

Yes No

Appendix J

Condom Self-efficacy Scale (Hanna, 1999)

1. I could talk about using condoms with any sexual partners.
2. I could talk about using a condom if I were unsure of my partner's feelings about condoms.
3. I could talk about using condoms with a potential sexual partner before we started to hug and kiss.
4. I could talk a into using a condom when we have sexual intercourse.
5. I could say no to sex if my partner refused to use a condom.
6. I could use a condom if drinking beer, wine, or other liquor.
7. I could stop to put a condom on myself or my partner.
8. I or my partner could unroll a condom all the to the base of the penis.
9. I could use a condom without it slipping.
10. I or my partner could get rid of a condom in the garbage after sex.
11. I or my partner could hold on the condom at the base of the penis while withdrawing after sex.
12. I could carry a condom with me in case I needed one.
13. I could use a condom each time I and my partner had sex.
14. I could use new condom each time I and my partner had sex.

USE THE FOLLOWING RESPONSE CATEGORIES

1 = very unsure, 2 = unsure, 3 = somewhat sure, 4 = sure, and 5 = very sure