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SEXUAL BEHAVIOR AND HIV RISK IN BLACK COLLEGE WOMEN: THE  
INFLUENCE OF GENDER, PEER, AND RELATIONSHIP BELIEFS

A thesis proposal submitted in partial fulfillment of the requirements for the degree of  
Master of Science at Virginia Commonwealth University

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## **Abstract**

### **SEXUAL BEHAVIOR AND HIV RISK IN BLACK COLLEGE WOMEN: THE INFLUENCE OF GENDER, PEER, AND RELATIONSHIP BELIEFS**

By: Melanie Paige Moore, B.S.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University.

Virginia Commonwealth University, 2015

Major Director: Faye Z. Belgrave  
Professor of Psychology  
Department of Psychology

Black women in the United States disproportionately represent 64% of women with an HIV infection (CDC, 2013). Research is needed to better understand gender and culturally-specific factors that contribute to Black women's HIV risk. The Theory of Gender and Power and the Theory of Planned behavior were used as theoretical frameworks in examining the effect of attitudinal beliefs (gender related beliefs), subjective norm beliefs (peer norms), and perceived behavioral control beliefs (relationship power) on sexual behavior in Black college women. Condom use and assertiveness in sexual communication were the dependent variables. Participants included 136 Black college women recruited through the department of psychology's subject pool and as student volunteers. Results revealed peer norms as a significant predictor of condom use, and agency and gender ratio imbalance beliefs as significant predictors of perceived relationship power. Findings have implications for understanding social and gender related factors for HIV prevention among Black women.



## Sexual Behavior and HIV Risk in Black College Women: The Influence of Gender, Peer, and Relationship Beliefs

The HIV epidemic is a major health crisis in the Black community in the United States, as Blacks currently face the most severe burden of HIV/AIDS infection among all racial/ethnic groups (CDC, 2014a). Although Blacks represent only 12% of the United States population, since the beginning of the HIV epidemic they have accounted for nearly half of all AIDS related deaths (CDC, 2014a). Blacks also represent nearly half (44%) of those currently living with HIV/AIDS, in addition to nearly half of all persons newly infected with HIV (44%) (CDC, 2014a).

Of specific concern, Black women represent 2 out of 3 women living with HIV (CDC, 2013). While in 2010 the CDC noted an encouraging 21% decrease in HIV infection rates among Black women from 2008 to 2010 (CDC, 2013), Black women still remain significantly more affected by HIV than women from other racial/ethnic groups. Currently, Black women have a concerning incidence rate of HIV infection that is 5 times that of Hispanic women and 20 times that of White women (CDC, 2013). Once infected, Black women are less likely to be linked to care, remain in care, receive appropriate treatment, or achieve viral suppression (CDC, 2014a). They also progress to AIDS faster and are more likely to die from an HIV infection. The overall goal of the present study was to examine risky and protective factors that influence sexual behavior and HIV risk among Black heterosexual women.

Understanding a Black woman's disproportionate risk for HIV infection, begins with an understanding of the underlying historical, political, and social factors that created an environment which allowed HIV/AIDS infections to thrive and spread among Blacks in the

United States. It also requires that one take into consideration the current social context that continues to create opportunity for HIV/AIDS infections to flourish among Black women.

Historically, AIDS was characterized as a White homosexual “male” disease, as the first cases of AIDS were recognized among five White homosexual males. This in turn influenced the way HIV/AIDS was initially characterized, diagnosed, treated, and intervened upon as these efforts did not include ethnic minorities or women.

Women were originally invisible in the HIV/AIDS epidemic. In fact, it wasn't until the 1990s after years of activist protesting that the CDC changed the original definition of AIDS to include symptoms that women with full-blown AIDS presented (Castro et al., 1993). Initially, the definition of AIDS only included male-related AIDS symptoms, resulting in many AIDS deaths among women by preventing them from receiving an AIDS diagnosis and adequate treatment. While many advances have been made to successfully reduce HIV infections among White homosexual males, inequitable advances have been made to decrease infection rates among Black women, where unprotected heterosexual sex is the most common mode of HIV transmission. Given the gravity of this issue, it is imperative to better understand drivers of sexual behavior among Black women that place them at risk for HIV transmission in heterosexual relationships.

The present study sought to investigate attitudinal influences such as gender role beliefs and gender ratio imbalance beliefs among Black women that contribute to their increased rate of HIV infection. This study also explored the roles of peer norms and perceived relationship power on behavioral outcomes such as sexual communication and condom use. This work adds to the body of literature which identifies influencers of risky and protective sexual behavior among Black women. The ultimate goal is to use this research to enhance HIV prevention and

intervention programs/efforts and to reduce the spread of HIV infection among Black women. Much of the past research on HIV prevention has focused primarily on the individual, without regard to the context in which one lives and how that context influences behavior (Amaro, 1995; Wingood & DiClemente, 2000). The background and theoretical framework of this study examine HIV within the social context that it exists. The literature review begins with a discussion of HIV among Black women, and then reviews socioeconomic and sociocultural factors that increase their risk for HIV infection. The influence of gender-related beliefs, peer norms, and relationship power on sexual behavior (condom use and sexual communication) is discussed. These relationships are discussed within the context of two theoretical frameworks: The Theory of Gender and Power and the Theory of Planned Behavior.

## **Review of Literature**

### **HIV among Black Women and Young Black Adults**

The reality for a Black woman living in the United States is that she has an approximately 1 in 32 lifetime chance of HIV infection (CDC, 2014a). Black women with heterosexual contact currently represent the fourth leading group for HIV infection in the United States following behind White, Black, and Latino men who have sex with men (CDC, 2014a). Currently, Black women represent approximately 2 out of every 3 women (64%) newly infected with HIV (CDC, 2013). Similar rates exist among Black female adolescents and young adults between the ages of 13-24, as they account for approximately 64% of diagnosed HIV infections among females in this age group (CDC, 2012).

HIV infection rates among young adolescents and young adults between the ages of 13 and 26 continue to rise, as individuals in this age group represented 26% of new infections in 2010 (CDC, 2014b). Black adolescents and young adults aged 13-24 represent over half of new

infections (57%) among youth in this age group. The majority of infections in this age group (78%) are among young adults between the ages of 20-24 (CDC, 2014b), which is the age period of many college students. Given the existing high incidence rates of HIV infection among Black women, and the increasing and disproportionate rate of HIV infection among Black youth and young adults, understanding drivers of HIV infection rates are vital to ending the HIV epidemic among Blacks.

While each person has an individual responsibility for his/her own health, disproportionate HIV infection rates cannot be adequately curtailed if the root causes are not understood and addressed. In other words, risky sexual behavior alone does not explain disproportionate rates of HIV infection. Black women are vulnerable to an “entire spectrum of issues that impact their lives” and increase their susceptibility to HIV infection by virtue of being in risky situations (Gilbert & Wright, 2003, p. 7). Drivers of high infection rates include a variety of biological, sexual risk related, socio-economical (e.g. poverty, education, economic vulnerability), political, gender, and cultural factors, all of which contribute to a Black woman’s increased risk and incidence rate of HIV infection. Problems such as institutionalized racism, the initial framing of HIV as a White homosexual male disease, lack of initial prevention efforts targeted toward ethnic minority populations and women, and lack of attention to HIV within a larger social context have all served to worsen the HIV epidemic. Ignoring the underlying root causes in groups identified as high risk for HIV and ignoring social factors that perpetuate the spread of HIV, stigmatizes Black women without acknowledging the mechanisms that place them in high risk situations (Gilbert & Wright, 2003). Gender role, gender ratio-imbalance, peer, and relationship power beliefs are influential factors in sexual decisions such as communication about safe sex and condom use practices. The current study aims to add to the body of HIV

prevention research among Black women that considers a broader social context in its impact on sexual behavior and decision making.

### **Sexual Risk Factors**

Black women are most likely to be infected with HIV through heterosexual transmission, and are more likely to become infected with HIV through heterosexual contact than Black men. In fact, high risk heterosexual contact, that is sexual contact with persons known to be infected or with high risk behaviors for HIV infection, accounts for 89% of diagnosed HIV infections among Black women (CDC, 2014c). Conversely, only 19% of new HIV infections among Black men are through high risk heterosexual contact (CDC, 2013b).

Biological differences in the sexual anatomy of women and men cause the HIV virus to be spread with greater likelihood during unprotected vaginal sex from an infected male partner to an uninfected female partner, than from an infected female partner to an uninfected male partner (CDC, 2013). This can be explained by the fact that the vagina (in comparison to the penis) has a greater amount of cells and tissues that are susceptible to infection or damage. Damaged cells and tissues in the vagina can create a greater likelihood for the HIV virus to be passed on during unprotected vaginal sex with an HIV positive partner. For example, during vaginal sex a woman's vagina can suffer from tears or small cuts which can provide the HIV virus more openings for entry into the body. Vaginal infections such as bacterial vaginosis or certain sexually transmitted infections can also increase a woman's risk for HIV infection. Last, the overall environment of a vagina provides an ideal environment for viruses to thrive and grow. These biological differences in the sexual anatomy between women and men may partially explain why Black women are more likely than Black men to be infected through heterosexual

vaginal sex. Given the inequitable risk of unprotected sex for women, factors that contribute to unprotected vaginal sex in Black women's heterosexual relationships must be better understood.

Indicators for increased risk of HIV infection in Black women can start at an early age. Young Black girls have their first act of sexual intercourse at a younger age than girls in other racial/ethnic groups (Lewis, Melton, Succop, & Rosenthal, 2000). Compared to 3% of White adolescent girls, 7% of Black adolescent girls begin sexual initiation (vaginal, anal, or oral sex) before age 13 (Eaton et al., 2008). Initiating sex at an earlier age increases risk for HIV infection (CDC, 2011), as it increases the likelihood of acquiring a greater number of lifetime sexual partners (Lewis, Melton, Succop, & Rosenthal, 2000). Higher numbers of lifetime sexual partners is associated with a past history of sexually transmitted infections (STIs) and irregular condom use. Earlier sexual initiation has also been linked to childhood sexual abuse. Black women who have been sexually abused as children are more likely to engage in consensual risky sexual behavior as adolescents and adults. Early childhood sexual abuse in Black women has been associated with the belief that one's partner does not care for them, intimate partner violence, history of anal sex, greater likelihood of reporting a lifetime STI, and increased worry about acquiring HIV (Wingood & DiClemente, 1997).

Higher rates of sexually transmitted infections also account for some of the higher prevalence of HIV among Black women. Black women have higher prevalence rates of gonorrhea and chlamydia (Gaydos, et al., 1998; CDC, 2014c) than women in other racial/ethnic groups. In 2010, Black women had incidence rates of gonorrhea, chlamydia, and syphilis at 12.2, 7, and 21 times that of White women respectively (CDC, 2014c). The link between the presence of an STI and HIV is twofold. First, the presence of an STI during exposure to the HIV virus places one at greater risk of acquiring HIV as the virus is able to enter the immune system faster

(CDC, 2010). In comparison to a person uninfected with an STI, persons infected with an STI are 2 to 5 times more likely to acquire HIV when exposed to the virus during sexual contact (CDC, 2010). The increased susceptibility to HIV infection with the presence of an STI can be explained by inflammation and breaks in the skin that sexually transmitted infections can cause.

Second, the presence of an STI in an HIV-positive individual can make them more infectious and increase their likelihood of transmitting the virus to an uninfected partner during unprotected sex (CDC, 2010). The presence of HIV along with another STI can result in higher concentrations of the HIV virus in genital secretions and semen; a higher concentration of HIV in genital fluids increases the likelihood of transmission (CDC, 2010). Regular HIV/STI testing is important in preventing the spread of HIV infection, particularly since HIV and many STIs often do not present with symptoms or symptoms are delayed. Negative perceptions about HIV testing have also been shown to negatively influence HIV infection rates (CDC, 2014d). Additionally, certain types of sexual networking patterns in conjunction with a lack of testing can cause HIV to be spread even faster.

### **Sexual Networking Patterns**

Sexual networking patterns characterized by concurrent sexual relationships or “partner mixing” can play a key role in exacerbating prevalence rates of STIs and HIV within a cultural group. Concurrent sexual relationships are described as sexual relationships overlapping in time with more than one sexual partner. Concurrent sexual relationships increase the speed in which STIs and HIV are spread within a community. STIs and HIV are spread more rapidly in this type of sexual networking pattern because once an individual becomes infected, they have another partner readily available that could potentially become infected as well (Adimora, Schoenbach, Bonas, Martinson, Donaldson, & Stancil, 2002).

Blacks are more likely than other racial/ethnic groups to have concurrent sexual partnerships, which may partly explain their increased risk for HIV infection (Adimora et al., 2002). An undiagnosed HIV infection in someone who maintains concurrent sexual relationships can rapidly increase the number of individuals that become infected. Concurrent sexual relationship practices may in part result from gender and cultural factors such as gender ratio imbalance beliefs and perceived cultural norms. Lack of detection and treatment of STIs or HIV infections, in combination with concurrent sexual partnerships, is a serious impediment to HIV prevention. Along with concurrent sexual relationships, sexual risk factors may be attributed to other cultural influences which shape norms surrounding sexual behavior.

### **Cultural Factors**

When all health and sexual behavioral factors are the same across all racial/ethnic groups, a Black woman engaging in risky sexual behavior at rates comparable to women of other ethnic groups still has a higher risk of HIV infection. This is due to the fact that Black women tend to choose sexual partners that are of their own racial and ethnic group (Andrinopoulos, Kerrigan, & Ellen, 2006). Compared to women from other racial/ethnic groups, existing high prevalence rates of HIV within the Black population put Black women at higher risk of HIV infection with each new sexual partner. In other words, a Black woman and a White woman could have the same number of unprotected sexual encounters yet their statistical risk for HIV infection is not equal. While Black women have a 1 in 32 lifetime chance of HIV infection, their primary partners, Black men, have an alarming 1 in 16 lifetime chance of HIV infection (CDC, 2014a). Black men currently account for 31% of persons newly infected with HIV, and have an incidence rate of infection twice that of Hispanic men and six times that of White men (CDC, 2014a). The HIV infection rates of Black men are relevant to Black women given that they are the primary sexual



partners of Black women, and given that they mainly obtain HIV through heterosexual contact (CDC, 2013).

Other cultural norms about sexual behavior of Black women may stem from family and community expectations, both of which can negatively impact HIV infection rates. For most Blacks, attending religious institutions such as Churches is a part of their family and culture (Billingsley, 1999). The majority of Blacks who attend Church on a regular basis attend Christian Churches. Religious ideologies from the Black Christian Church often oppose engaging in premarital sexual behavior, and view premarital sex as morally wrong. While there has been some change in recent years, historically most Black Churches have been silent on the subject of HIV/AIDs prevention. This is possibly due to discomfort in discussing sexuality and safe sex practices such as condom use (Adler, Simonsen, Duncan, Shaver, DeWitt, & Crookston, 2007).

The Black Church has also been criticized as contributing to HIV-related stigma and homophobia within the Black community. This may result in some men who have sex with men maintaining secrecy about their sexual preferences while simultaneously maintaining female relationships publically. These men are often referred to as being on the “down low.” Unknown risk behavior of a Black woman’s sexual partner is directly relevant to her HIV risk if her partner has sexual risk factors that she is unaware of (CDC, 2013). However, cultural factors are not alone in shaping risk factors for HIV, as socio-economic and social factors in a women’s life play a role as well.

### **Socio-Economic and Social Factors**

Low socio-economic status increases one’s risk for a variety of health illnesses and diseases, and HIV/AIDs is no exception. HIV is present at higher rates in low income areas

(Crosby, Yarber, DiClemente, Wingood, & Meyerson, 2002) and among women who have lower levels of education and higher levels of poverty (Shisana et al., 2010). Black women are more likely to be poor than White women (US Department of Commerce and Economics Statistics Administration, 2011), which may place a low priority on using money to purchase condoms and other protective barriers. Those with lower levels of education and lower income are also less likely to have information about HIV testing (Ebrahim, Andersen, Weidle, & Purcell, 2004). A combination of low HIV knowledge and lower levels of education can result in a low perception of risk of infection, which can increase chances of infection (CDC, 2014d). Although low socioeconomic status is linked to higher risk of HIV infection, racial differences in socioeconomic factors such as poverty and education do not offer a sufficient explanation for disproportionate HIV risk (Adimora & Schoenbach, 2002). Other contextual factors contribute to high infection risk as well.

Blacks are also less likely to have access to affordable high quality healthcare. The importance of access to high quality healthcare in HIV prevention cannot be overstated. Regular testing is important in preventing the spread of HIV and linking HIV-positive individuals to care (CDC, 2014d). Awareness of one's HIV status reduces transmission rates, as individuals unaware of their positive HIV status are responsible for over half of new HIV infections (Marks, Crepaz, & Janssen, 2006). Moreover, persons who are linked to quality healthcare and who maintain adherence to their medical regimen, are often able to get the HIV virus under control to the point that they become "undetectable." To have undetectable amounts of the HIV virus does not mean one is cured, however achieving viral suppression through antiviral therapy reduces the chance of HIV transmission by 96% (Cohen et al., 2011).

Other contextual and social factors also contribute to HIV risk in Blacks. Blacks are disproportionately incarcerated, and prisoners have higher rates of HIV infection than the general population (Gaiter & O’Leary, 2010). Lack of awareness of a partner’s HIV risk also puts a woman at risk for HIV (CDC, 2014d). For example, if a Black woman has only one committed sex partner, she may still be at risk for HIV infection if her sexual partner has unknown risk factors such as multiple sexual partners, injection drug use, or a history of incarceration. These issues represent other social factors that may contribute to the disproportionate risk of HIV infection among Black college women.

In summary, research points to low socioeconomic and educational status as a risk factor for HIV (CDC, 2014d). Therefore it may be assumed that college women would be at low HIV risk because of their advantaged educational status. However, Black college women still remain at high a risk for HIV infection. As discussed next, there are other context factors to consider which limit the protective role of education (Adimora & Schoenbach, 2002).

### **Risky and Protective Sexual Behaviors among College Students**

College students are in the emerging adulthood stage of development. Emerging adulthood is the age period between late adolescence and young adulthood (18-25). Emerging adulthood typically applies to young adults in developed countries who don’t own homes or have children, and lack sufficient income to support themselves (Arnett, 2000). During this stage young adults are faced with unique challenges of new personal freedom and responsibility. Students have left home (some for the first time), are developing new friendships and peer relations, and they are no longer under the supervision and monitoring of their parents.

This stage, characterized by experimentation with alcohol and other drugs, can contribute to risky sexual behavior that can lead to HIV/STI infections, partly due to underdeveloped

decision making abilities (Desiderato, & Crawford, 1995). Sexual risk-taking and sexual experimentation include unprotected sex, multiple sex partners, in addition to casual sexual encounters such “hooking up,” which involve engagement in sexual behaviors without intention of future commitment. Hooking up can increase risk for HIV as these sexual encounters often co-occur with alcohol consumption and binge drinking (Lambert, Kahn, & Apple, 2003).

Emerging adults also engage in other risk behaviors including having sex under the influence of drugs or alcohol. The prevalence of alcohol consumption is high among college students, as the National Institute on Alcohol Abuse and Alcoholism (NIAAA) reports that four out of every five college students drink (NIAAA, n.d). Alcohol impairs decision making abilities and distorts perception, and thereby can negatively influence safer sex decision making. Increased popularity of alcohol mixing with energy drinks (Snipes & Benotsch, 2013) and increased use of nonprescription drugs (Benotsch, Koester, Luckman, Martin, & Cejka, 2011) among college students can further increase sexual risk behavior.

College educated Blacks have high HIV/AIDS knowledge (Winfield & Whaley, 2002). However, although they have high HIV/AIDS knowledge, many still engage in risky sexual behaviors. In one study, only 20% of college students reported using condoms 100% of the time and over 25% reported never using condoms during sexual intercourse (Jemmott & Jemmott III, 1991). Incorrect, inconsistent, and non-condom use is associated with increased risk for HIV (CDC, 2013), as correct and consistent condom use is one of the few proven methods of effectively reducing HIV risk.

More Black women than Black men attend college and this differential may affect power in sexual relationships, and encourage engagement in sexual risk behaviors, due to the perceived low availability of men. Statistics from the Department of Education (2013) show that more

Black females are enrolled in college than Black men with attendance rates being about 39 % and 34 % respectively. Furthermore, existing birth sex-ratio imbalances along with higher rates of mortality and incarceration among Black men (Fullilove et al., 1990; Logan, Cole, & Leukefeld, 2002) may further limit the dating pool for Black women. Perceived relationship power of Black college women in heterosexual relationships may be affected by these perceived gender ratio imbalances.

While college education may appear to lower risk for HIV infection, some studies have shown that education may increase risk for Blacks. More educated persons are more likely to hold conspiracy beliefs about HIV, a risk factor for HIV in and of itself. HIV conspiracy theories assume that HIV was created by the government as a form of Black genocide (Klonoff & Landrine, 1999). Believers of conspiracy theories are more likely to be college educated (Waters, 1997; Klonoff & Landrine, 1999) and these conspiracy beliefs are a barrier to HIV prevention (Bogart & Thorburn, 2005). Belief in conspiracy theories increase risk because these beliefs imply that HIV has less to do with sexual decision making and more to do with a governmental scheme.

One protective factor that assists in safer sex decision making among women in emerging adulthood is assertiveness in a romantic relationship (Roberts & Kennedy, 2006). Other protective factors include limiting alcohol and drug use, correct and consistent condom use, favorable HIV testing attitudes, and the ability to negotiate condom use with one's sexual partner (CDC, 2013; CDC, 2014d). Women who fear condom negotiation are less likely to use condoms consistently (Crosby et al., 2013) and in turn don't communicate with their partner about their sexual preferences.

### **Condom Use and Sexual Communication**

While most Black college students are sexually active, many report inconsistent condom use (Burns & Dillion, 2005; Roberts & Kennedy, 2006). Many report that condoms are uncomfortable and that they interfere with sexual pleasure (Wingood, Hunter-Gamble, & DiClemente, 1993). Unfavorable beliefs about condoms discourage the use of condoms, and can increase risk for HIV infection. Unfavorable condom beliefs held by a woman's male partner can also have a negative influence on her ability to negotiate condom use in sexual relationships (Wingood, Hunter-Gamble, & DiClemente, 1993). The importance of condom negotiation skills cannot be understated as these skills empower women to make safer sex decisions about condom use.

Consistent and correct condom use during sex is one of the few identified means of effectively preventing the transmission of HIV and other sexually transmitted diseases. Although correct condom barrier usage is highly effective in preventing the spread of sexual transmitted infections, women may face many psychosocial, economic, and cultural barriers that limit condom usage. For example, male condoms are the most commonly available method for use in safe sex practices, however it requires male operation. Although female condoms are available as an alternative type of protection, they are less accessible and higher in cost (Amaro, 1995).

Men are more likely than women to carry condoms on their person and to have them otherwise available (Sacco, Rickman, Thompson, Levine, & Reed, 1993). Even when women have access to male condoms, they may have reservations about purchasing or carrying them. One study found that Black women reported that they feared that carrying condoms would cause others to view them as "loose" and "sexually available" (Fullilove, Fullilove, Haynes, & Gross, 1990). Women who carry condoms and who are knowledgeable about condom use may be viewed in a negative sexual light, as condom use is thought to be the male's responsibility. This

may be due to gender role beliefs that dictate societal norms about appropriate sexual behavior for each gender.

Fear and concern about relationship trust can also impact condom use. Some Black women have reported being physically abused when they asked their partners to use condoms (Wingood & DiClemente, 1997). Another study found that Black women were 4 times more likely to believe that asking their partner to use a condom would imply that he was unfaithful, if their partner was a noncondom user (Wingood & DiClemente, 1998). Further, women have reported accusations of cheating and suspicions of mistrust from their partners when they have asked them to use condoms (Fullilove and Colleagues, 1990). Women reporting deeper levels of trust in the relationship are also more willing to not use condoms with their sexual partner (Fullilove, Fullilove, Haynes, & Gross, 1990). Fear of physical harm or undermining trust in one's romantic relationship can impede condom negotiation self-efficacy, thereby giving the male partner more control in the sexual relationship.

Being able to effectively communicate about safe sex practices is important as it can increase condom negotiation self-efficacy, increasing the likelihood of safe sex behavior with a partner. Findings from studies of Black female college students have shown that most do not communicate about condoms with their partners (Foreman, 2003; Jemmott & Jemmott, 1991; Lewis, et al., 2000). This may be due to a variety of reasons, including traditional gender role and gender ratio imbalance beliefs held by Black women.

Women in long term relationships have a more difficult time initiating conversations about safe sex, whereas women in new or casual relationships have an easier time initiating this type of discussion (Wingood et al., 1993). This may be due to fear of undermining relationship trust or feelings of closeness in romantic relationships among women in long-term relationships.

Beliefs related to gender roles and gender ideologies may influence desires to maintain feelings of trust over engagement of safe-sex behavior.

### **Gender Role Beliefs and HIV Risk**

Gender role beliefs are internalized cultural, historical, and societal values and practices pertaining to behavioral expectations for each gender group (Tenebaum & Leaper, 2002). Gender role beliefs reflect perceived socially constructed ideals about appropriate roles, activities, behaviors, and responsibilities for one's ethnic and gender group (McHugh & Frieze, 1997). An individual's gender role beliefs can affect several aspects of their daily lives, including health related decisions (Kerrigan, Andrinopoulos, Johnson, Parham, Thomas, & Ellen, 2007), sexual behavior and attitudes (Amaro, Raj, & Reed, 2001), and important decisions about safe sexual behavior and condom negotiation.

Traditional gender role beliefs of women represent a specific ideology characterized by deference to male decision making, submissiveness, and unequal power balances between women and men (Wingood & DiClemente, 2000). These traditional beliefs about appropriate roles for women may result in decisions in sexual relationships that lead women to engage in risky sexual behaviors. Women reporting traditional gender roles may have trouble communicating in their sexual relationships. One study found that women reporting more feminine gender role beliefs were less comfortable engaging in sexual communication and sexual self-disclosure with their romantic partners than those reporting more masculine gender role beliefs (Greene & Faulkner, 2005). In this study, traditional gender role beliefs were expected to be associated with riskier sexual behavior (e.g., less sexual communication and less condom use) as a result of lower perceived relationship power.

### **Gender Role Beliefs of Black Women**



Black women differ from women in other racial/ ethnic groups in their gender role beliefs. Differences in historical, social, and economical factors may have resulted in varied experiences which uniquely shaped their gender role beliefs. Historically, Black women have had to be financially able to take care of the household while maintaining the traditional role of caregiver and nurturer (Belgrave & Allison, 2013). Due to racism, discrimination, and poverty, Black women also have had to take on male jobs and responsibilities in the absence of a male partner (Belgrave & Allison, 2009). As a result, Black women have developed a more complex gender role identity that may be considered androgynous (i.e., one that values both traditional feminine and masculine traits) (Ashcraft & Belgrave, 2005; Binion, 1990; Belgrave & Allison, 2013).

While Black women hold androgynous gender role beliefs in most aspects of their lives (Binion, 1990), they tend to have more traditional gender role attitudes in their family life (Fullilove, Fullilove III, Haynes, & Gross, 1990). Black women have been found to endorse primarily feminine/traditional gender roles in their romantic/sexual relationships while maintaining a caregiver identity (Fullilove, Fullilove, Haynes, & Gross, 1990). Research suggests that one reason Black women maintain traditional gender roles in their romantic relationships is due to pressure to make their male partners more comfortable with their own masculinity (Jones & Shorter-Gooden, 2003). Given that gender role beliefs affect our roles and behaviors in our sexual relationships (Amaro, Raj, & Reed, 2001), investigating the influence of gender role beliefs of Black women is important.

There are two primary measures that have been used in assessing the gender role beliefs of women, The BEM Sex Role Inventory (BEM; Bem, 1974) and the Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Strapp, 1974). Although used extensively as a

measure of gender roles ideologies of women, recent research suggests that these measures may not adequately assess the gender beliefs of Black women as they were developed using primary White university students (Bem, 1974; Nguyen et al., 2010; Spence, Helmreich, & Strapp, 1974). Further research suggests that there may be a misguided focus on placing women into categories of either having traditional or equalitarian gender role attitudes (Nguyen et al., 2010). For example, Nguyen et al. (2010) conducted a factor analysis using items from the BEM Sex Role Inventory and the Personal Attributes Questionnaire (PAQ) and found that reconceptualising traditional gender roles resulted in three domains that better predicted condom use among Black women. The domain of interpersonal sensitivity predicted condom use, such that higher interpersonal sensitivity was associated with less condom use. The domain of persistent/active coping was associated with higher condom use and better condom negotiation self-efficacy scores. New gender role measures which focus on the gender role ideologies of Black women may be more accurate in capturing the unique gender role beliefs of this group (Belgrave, Abrams, Hood, & Moore, in press). This is an important step in better understanding the gendered nature of sexual relationships in Black women which may affect their HIV risk.

### **Sexual Relationship Power and HIV Risk**

A woman's ability to protect herself from HIV/AIDs in her intimate sexual relationships is directly related to her feelings of self-efficacy within that relationship (Sanders-Phillips, 2002). One way in which gender affects sexual decision making is through relationship power. Power is a fundamental element of sexual relationships as it determines who makes the decisions regarding safe sex practices (Gillespie, 1971). In society there are stereotyped roles of each gender's expected behavior in romantic and sexual relationships. For example, feelings that men are the only ones who are permitted to initiate sex, result in women perceiving less power in their

sexual relationships (Fullilove, Fullilove, Haynes, & Gross, 1990). Women who have a low perception of power in their intimate relationships are less likely to be able to protect themselves from HIV. Low perceived relationship power has been found in women with abusive HIV positive partners (Lichtenstein, 2005).

Traditional masculine gender role beliefs such as assertiveness, may benefit women in their sexual relationships by increasing their control over sexual situations. Assertiveness has been found to be associated with condom use and increased sexual control in a sample of college women (Roberts & Kennedy, 2006). However, although the sample of women in the Roberts and Kennedy study reported high assertiveness, over half also reported they were having unprotected sex. They also admitted to not using condoms if their partner refused. This finding may suggest that while assertiveness is an important factor in negotiation of condom use, factors beyond assertiveness influence sexual protective/risk behaviors. Another factor that may affect sexual decisions and behaviors is gender ratio imbalance.

### **Gender Ratio Imbalance Beliefs and HIV Risk**

Gender ratio imbalance beliefs have recently received increased attention as a factor in HIV risk for Black women (Ferguson, Quinn, Eng, & Sandelowski, 2006; Lanier, 2013; Stevens-Watkins, Knighton, Mitchell, Oser, & Leukefeld, 2013). The ratio of Black women to Black men is larger than that of all other racial groups. For every 100 Black women there are only 91.4 Black men (US Census Bureau, 2011). Reasons for the gender ratio imbalance and perceived shortage of “eligible” Black men, include higher incarceration rates and higher morbidity and mortality of Black men (Bontempi et al, 2008).

The shortage of available men partially contribute to higher prevalence rates of unmarried Black women in comparison to other racial/ethnic groups. Perceptions of low mate availability

may in turn influence sexual behavior and decision making, as a perceived shortage of Black males has been associated with women's perceived relationship power and condom negotiation skills (Corneille, Zyzniewski, & Belgrave, 2008). In a study of older Black women, participants who perceived finding an eligible partner to be difficult were less likely to engage in consistent condom use behavior (Stevens-Watkins, Knighton, Mitchell, Oser, & Leukefeld, 2013).

A consequence of gender ratio imbalance beliefs is that men may have sex with multiple female partners and women may acquiesce to male condom use preferences (Ferguson, Quinn, Eng, & Sandelowski, 2006). Another consequence is that Black women may be more willing to tolerate non-monogamous behavior in order to have a romantic partner, or date men who have sex with men, both of which place them at higher risk for HIV infection. Women who are aware of gender ratio imbalances might choose not to date or they may accept the difficult dating environment by engaging in "man-sharing" out of their desire for an attachment (Ferguson, Quinn, Eng, & Sandelowski, 2006). This can also put women at increased risk of HIV infection.

Perceptions of gender ratio imbalance may be higher than actual numbers, as one study found that Black college students at a historically black college reported women to men ratio balances that were much higher than they were in reality (Ferguson, Quinn, Eng, & Sandelowski, 2006). One reason for exaggeration in perception of eligible men could be that although there are fewer men to women, some college women perceive that there are even fewer available men that are "datable" due to the desire to have an older male or a male of higher social status (Ferguson, Quinn, Eng, & Sandelowski, 2006). Here Black women may apply an exclusion criterion that further limits available men (Fullilove et al., 1990). Gender ratio imbalance and perceived beliefs that this imbalance is even more extreme than it actually is may result in a lower perception of relationship power and/or pressure women to engage in risky sexual behavior. A lower

perception of datable men may lead women to further acquiesce to male sexual preferences and may negatively impact condom negotiation self-efficacy. These beliefs may also encourage college men in particular to be noncommittal in sexual relationships due to knowledge of their additional options and feeling of being a “rare commodity.” These attitudes can have strong influences on normative beliefs regarding appropriate sexual behavior on a college campus. In this study, gender ratio imbalance beliefs were investigated as predictors of condom use and sexual communication. Greater gender ratio imbalance beliefs were expected to be associated with lower perceived relationship power, lower rates of condom use, and less sexual communication with one’s romantic partner.

### **Peer and Normative Beliefs and HIV Risk**

Gender-related beliefs, perceived relationship power, and decisions about safe sex behavior are directly and indirectly influenced by actual and perceived social norms within a community. The development of social and cultural shared norms that guide sexual decision making are referred to as sexual scripts (Simon & Gagnon, 1986). Sexual scripts often promote societal norms that provide men more sexual freedom and control in sexual relationships than women (Bowleg, Lucas, Tschann, 2004).

Furthermore, women may be more influenced by social norms about condom use than men (Baker, Morrison, Carter, & Verdon, 1996). These social norms may reinforce traditional gender role beliefs by supporting male control over condom use (Amaro et al., 2001), thereby increasing a woman’s HIV risk. For example, some Black women report that condom use is not normative among their peers (Lewis, Succop, & Rosenthal, 2000). The perception of one’s peers as noncondom users can affect a young woman’s HIV risk, as Black women who perceive their peers as having negative condom use perceptions may be less likely to use condoms themselves.

Perception of norms within the Black community can also affect condom use and HIV risk. One cross sectional study reported that Black women believed a double standard exists as it relates to sex in the Black community, such that priority should be given to male sexual pleasure and that men are expected to be the ones to initiate sexual encounters (Fullilove, Fullilove, Haynes, & Gross, 1990). In this study peer norms were expected to influence the dependent variables of sexual communication and condom use, such that greater perception of peers as non-condom users are related to less sexual communication and less condom use.

### **Theoretical Framework**

#### **The Theory of Gender and Power**

Two theories were used to frame this study, the Theory of Gender and Power and the Theory of Planned Behavior. The Theory of Gender and Power was developed by Robert Connell. Connell wrote on sexual inequality, gender, and power imbalances between men and women (Connell, 1987). The theory of gender and power hypothesized that condom use behavior is influenced by gender norms, relationship power imbalances, and socioeconomic factors. Given that sex, gender, power, and socioeconomic factors are all factors that influence condom use and safe sex practices in women, this theory aids in understanding influences that impact sexual decision making in Black women.

The theory of gender and power centers on the three main structures that describe relationships between men and women: division of labor, division of power, and structure of cathexis. This theory was developed during the 1990s when many HIV prevention researchers felt that current theories did not address the greater context of a woman's life, and HIV research was limited by an individualistic focus (Wingood, & DiClemente, 2000). These three social

structures are thought to be embedded within two different levels, the societal level and the institutional level.

The first main structure, sexual division of labor structure refers to the assignment of different types of work for men and women. This division of labor can be seen through inequalities in salaries, job placement and type, and education level in men and women. This structure suggests that Black women are more vulnerable to HIV infection due to poverty, having a lower socioeconomic status, and lack of resources as women of color. Black women are more likely to hold positions that pay lower salaries, they are less likely to be promoted, to be in managerial/supervisory positions, and they currently earn less money than men for the same amount of work. Women are also more likely to have children and other family members to take care of on a smaller salary, and are more likely to be the sole providers for their children. For example, a poor woman may not place a high priority on buying condoms when she is worried about feeding her family or keeping a home (Mays & Cochran, 1988). In tough economic circumstances she may be more vulnerable to engage in high risk sexual behaviors for financial or material compensation (Amaro and Raj, 2000).

The second structure is sexual division of power. This refers to assignment of control, authority, and coercion within a sexual relationship, such that the person with more power in the relationship is in charge of the decision making. As previously stated, power is a fundamental element of all heterosexual relationships (Gillespie, 1971). Women are less likely to have or to perceive that they have power in a relationship, economically or socially. Men have more resources, which can lead women to become more dependent in the relationship, resulting in a power imbalance. A power imbalance can result in an abuse of power, such as in physically abusive relationships. Wingood & DiClemente (1997) found that women in physically abusive

relationships were more likely to experience verbal, emotional, and physical abuse when requesting condom use from their partners. They were also less likely to require their partners to use condoms and had poorer condom negotiation skills. Women in this study who reported childhood abuse, also reported engagement in riskier sexual behavior. Underemployment or unemployment may force women to stay in unhealthy relationships because they rely on men for financial support. In turn, this power imbalance increases a woman's risk for HIV and other STIs by decreasing their ability to negotiate condom use in her sexual relationships (Wingood & DiClemente, 2000).

The third component refers to the structure of cathexis. This describes the emotional attachment component of relationships and the social norms and rules for appropriate sexual behavior in women. According to this structure there are rules that define social and cultural norms of femininity in sexual relationships, which enforce limits and restraints on sexuality. The desire to engage in safe sex behavior in romantic relationships can undermine feelings of closeness and trust in relationships (Wingood, Hunter-Gamble, & DiClemente, 1993), thereby hindering emotional attachment. Request for condom use can become more difficult once a relationship involving sexual intercourse has already begun, due to its perceived interference with relationship trust. Social repercussions of being labeled in a negative sexual light can affect sexual behaviors and decision making. The structure of cathexis component of this theory also discusses how gender ratio imbalance affects a woman's decision making in sexual relationships. This influence can happen through desire for emotional attachment in a relationship. This structure can be relevant to Black women as a lack of eligible male partners can result in power imbalances, permitting males to insist on noncondom use.



The theory of gender and power is helpful in understanding a Black's woman risk for HIV in a broader social context. Looking beyond individual behavior and choices provides a better framework for viewing how the HIV epidemic is embedded within social factors that affect Black women. The theory of gender and power accounts for the role of gender, socio-economic status, normative beliefs, and relationship power and how these factors all work together to account for Black woman's disproportionate risk for HIV infection. This theory has been applied extensively to HIV/AIDS research as it relates to Blacks women's risk for infection (Amaro & Raj; 2000, Wingood & DiClemente, 2000).

### **The Theory of Planned Behavior**

A second theory was utilized as the framework for the current study. The Theory of Planned Behavior (TPB), proposed by Icek Ajzen (1985), posits that our attitudes and beliefs influence our intentions which in turn influence our actual behavior. This theory states that one's attitude toward behavior, perceived subjective norms, and perceived behavioral control, all work together in predicting one's behavioral intentions and actual behavior. The TPB theory builds upon the predictive power of the previous theory of reasoned action, by including perceived behavioral control as a predictive component of behavior. This theory was utilized in examining how beliefs affect sexual decision making.

The TPB model was developed after the realization of a primary limitation of the Theory of Reasoned Action (TRA). The TRA model placed heavy weight on behavioral intention as a primary predictor of human behavior, however behavioral intentions do not always lead to the performance of the intended behavior (Ajzen, 1985). Nonmotivational factors can influence the intention-behavior relation such as time, money, new information, unforeseen events, skills/abilities, opportunity, and dependence on others (Ajzen, 1985). While we may have good

intentions to perform a certain behavior there are various circumstances that can limit or prevent the successful performance of any intended behavior. For example, a women may intend to use condoms with her male partner but the successful performance of this intended behavior could be limited or prevented by several factors. These factors may include embarrassment in purchasing condoms or carrying condoms on her person, her partner's beliefs about condoms and his desire to use them, or level of comfort in negotiation condom use. Intentions are now better thought of as predicting attempts to perform a behavior, not the attainment of a behavioral goal.

**Components of the theory of planned behavior.** The TPB model adds the component of perceived behavioral control to the TRA (Ajzen, 1985) to account for the fact that intended behaviors are not always completely under our control. The TRA posits that behavior is explained by intentions, however the TPB assumes that behavior is ultimately explained by beliefs. The TPB highlights the beliefs-behavior relation as opposed to the intention-behavior relation. There are three primary components of this theory: one's attitude toward behavior, perceived subjective norms, and perceived behavioral control.

Thoughts and feelings underlying an individual's attitude toward a behavior are referred to as behavioral beliefs. An attitude toward a behavior is a personal factor, defined as a positive or negative evaluation of a proposed behavior (Ajzen, 1985). If one concludes a positive evaluation of a behavior, they are more likely to engage in that behavior. For example, if a women believes that using condoms will protect against HIV transmission, that women is more likely to use condoms than another woman who may hold the opposite belief.

Normative beliefs are defined as "beliefs underlying the subjective norm" (Ajzen, 1985, p.14) concerning whether or certain individuals think one should act on a behavior or not. Subjective norms concern one's perception of social pressures to carry out a behavior or not. In

other words, if one perceives that their peer group and important others are supportive of a certain behavior, they are likely to be motivated to carry out that behavior. Peer groups influence normative beliefs and perceived subjective norms. For example, if a Black woman has friends who hold negative views about condom use, she is likely to experience subjective norms that decrease the likelihood of her using condoms during a sexual encounter. Peer groups, television, magazines, social media, and music all influence subjective norms.

Control beliefs are a set of beliefs that deal with the “presence or absence of requisite resources and opportunities” (Ajzen, 1991, p.196) to control behavior. A control belief, in combination with perceived power to be successful or fail at a given behavior, influence level of perceived behavioral control (Ajzen, 1991). Perceived behavioral control can be defined as one’s thoughts about their ability to engage in a certain goal behavior. The idea of perceived behavioral control originates from Albert Bandura’s self-efficacy component of social cognitive theory; self-efficacy is defined as one’s belief that he/she can successfully meet a goal behavior (Bandura, 1986). This theory takes into account perceived and actual control beliefs.

According to the TBP, attitudinal, subjective norms, and perceived behavioral control beliefs influence behaviors. The conceptualized relationships that follow the components of the TBP are depicted in Figure 1 below.

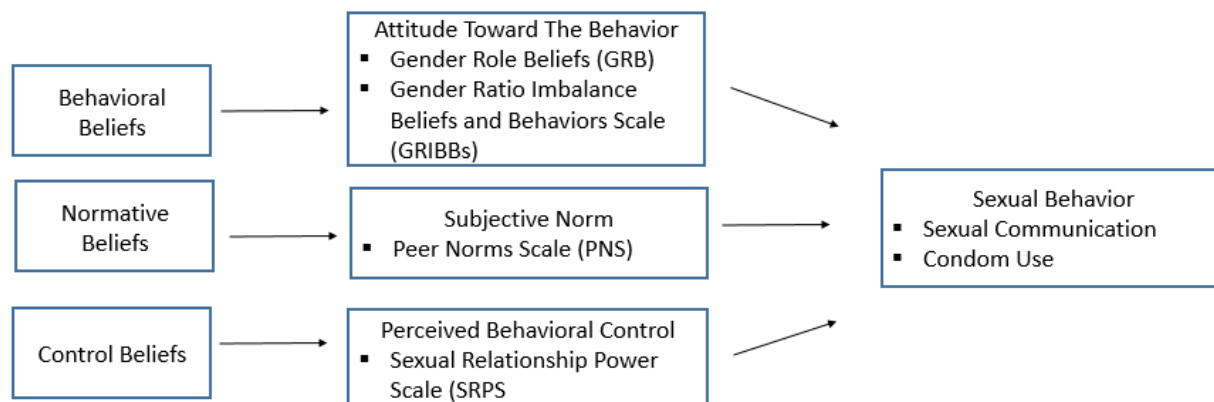


Figure 1. Hypothesized model of theory of planned behavior and sexual behavior.

### Purpose of the Study

While there has been a recent decrease in rates of HIV infection among Black women (CDC, 2013), Black women still carry a significantly disproportionate burden of HIV infection (CDC, 2013). High risk heterosexual contact remains the primary means through which Black women are infected, as it accounts for 89% of diagnosed cases of HIV among Black women (CDC, 2014c). Consistent and correct condom use is one of the few identified means of effectively preventing HIV transmission during sex. Much of the previous research has focused on individual behavior in informing HIV prevention programs. However, a woman’s social context must be taken into consideration when considering HIV risk and protective behaviors. The purpose of this study was to take into account socio-contextual factors that place Black women at higher risk for HIV.

This study used the Theory of Planned Behavior and the Theory of Gender and Power as theoretical frameworks for examining attitudinal beliefs, normative beliefs, perceived control beliefs, and sexual behavior. Specifically, traditional gender role beliefs, gender ratio imbalance beliefs, peer norms, and relationship control beliefs were examined in relation to condom use and

assertiveness in sexual communication in Black women. Gender role beliefs influence sexual decision making through roles and responsibilities deemed appropriate for one's gender (Amaro, Raj, & Reed, 2001). Peer norms may influence gender role beliefs surrounding safe sex behavior. Gender ratio imbalance beliefs also drive high HIV infection rates through the perceived lack of available/eligible men, which decreases perceived relationship power and ability to negotiate condom use (Corneille, Zyzniewski, & Belgrave, 2008). Relationship power is a fundamental aspect of a relationship, and can affect a woman's ability to protect herself from HIV if she lacks control over decisions regarding sex practices (Gillespie, 1971). Self-reports of condom use and assertiveness in sexual communication were specifically evaluated as dependent variables using two multiple hierarchical regression analyses.

## **Hypotheses**

### **Hypothesis 1**

Traditional gender role beliefs will predict condom use and assertiveness in sexual communication. Higher traditional gender role beliefs will be predictive of less condom use and less assertive sexual communication.

### **Hypothesis 2**

Gender ratio imbalance beliefs will predict condom use and assertive sexual communication. Stronger gender ratio imbalance beliefs will be predictive of less condom use and less assertive sexual communication.

### **Hypothesis 3**

Peer norms supporting condom use will positively predict condom use and assertive sexual communication. Stronger perception of peer condom use will be predictive of more condom use and more assertive sexual communication.

#### **Hypothesis 4**

Perceived relationship power will positively predict condom use and assertive sexual communication. Greater perceived relationship power will be predictive of more condom use and more assertive sexual communication.

#### **Hypothesis 5**

Traditional gender role beliefs and gender ratio imbalance beliefs will predict perceived relationship power. Greater traditional gender role and gender ratio imbalance beliefs will be associated with lower perceived relationship power.

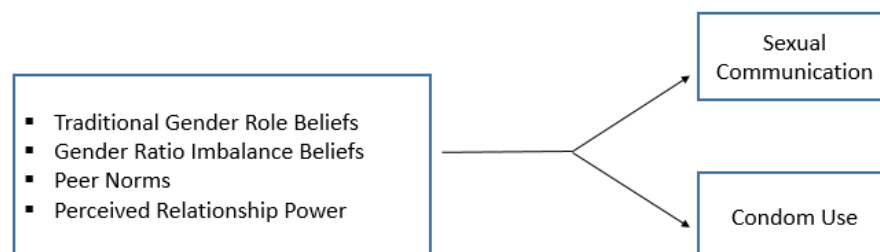
#### **Hypothesis 6**

Perceived relationship power will mediate the relationship between traditional gender role beliefs and condom use.

#### **Hypothesis 7**

Perceived relationship power will mediate the relationship between gender ratio imbalance beliefs and condom use.

Hypotheses 1, 2, 3, and 4, are depicted in Figure 2 below.



*Figure 2.* Hypothesized model of independent variables (e.g., traditional gender role beliefs, gender ratio imbalance beliefs, peer norms, perceived relationship power) and dependent variables (e.g., sexual communication and condom use).

Hypothesis 5 is depicted in Figure 3 below.



Figure 3. Hypothesized model of the traditional gender role beliefs and gender ratio imbalance beliefs on perceived relationship power.

Hypothesis 6 is depicted in Figure 4 below.

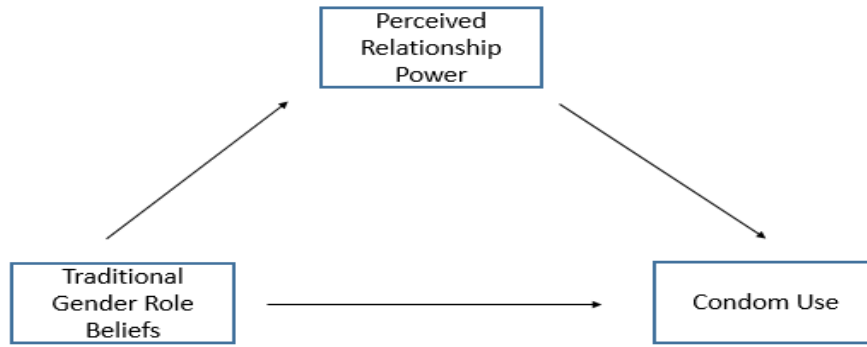


Figure 4. Hypothesized model of perceived relationship power as a mediator of the relationship between traditional gender role beliefs and condom use.

Hypothesis 7 is depicted in Figure 5 below.

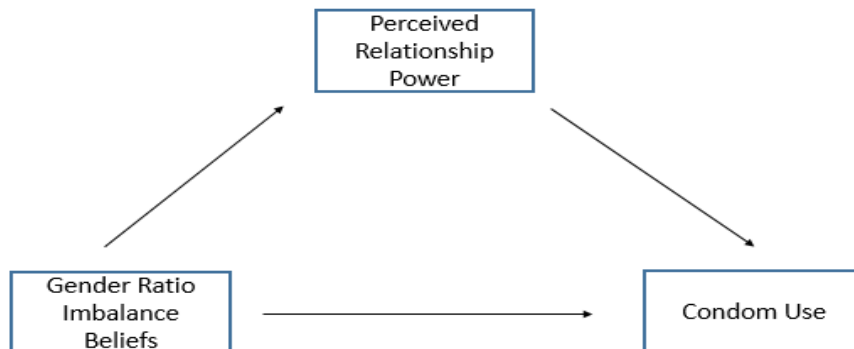


Figure 5. Hypothesized model of perceived relationship power as a mediator of gender ratio imbalance beliefs and condom use.

## **Method**

### **Design**

The current study employed a cross sectional correlational design. Self-report data were collected from Black women on gender role beliefs, gender ratio imbalance beliefs, peer norms concerning condom use, perceived relationship power, condom use, and assertiveness in sexual communication. This study also collected information on relationship factors and participant demographics.

### **Participants**

A sample of Black female college students from a large racially diverse southeastern university were recruited for study participation. Students were recruited through a web-based department site called SONA, which manages online research surveys and provides course credit for subject participation. Other students completed the study as student volunteers for a chance to receive one of two \$75 cash prizes. Recruitment strategies for these students included informing potential participants about the present study through classrooms, on-campus student groups/organizations, and word of mouth.

Inclusion criteria required that participants be between the ages of 18-30, as the majority of HIV infection occurs among young adults in their 20's (CDC, 2014). Inclusion criteria required participants to self-identify as Black, heterosexual, and to have been sexually active within the past year. Exclusion criteria included the following: non-heterosexual sexual orientation status, married, or not sexually active within the past year.

Data were initially available for 136 participants. Eleven were excluded from analyses due to missing more than 10% of study variables that were of primary interest (9 were missing more than 30% of these variables). Another 10 participants were excluded from analyses as they



failed to meet the study's inclusion criteria. One participant was removed because her age was reported as 41, three participants their race as White, two reported their race as Asian, and an additional two reported their race as "Other." Given that the present study was interested in women of heterosexual orientation and/or those who reported heterosexual behavior, one participant was removed because she reported her sexual orientation as "Unsure" and another was removed because she identified as "Other." Both of these participant reported not engaging in heterosexual sexual activity, and therefore were not included in the study. However, two participants reporting "Other" as their sexual orientation who reported engaging in heterosexual activity were included the following analyses. The removal of the aforementioned participants for not completing the questionnaire, extreme levels of missing data, and violations of inclusion criteria, resulted in a final sample of 121 participants.

**Power analysis.** A power analysis was conducted using an effect size of .15 (as estimated from previous literature), an alpha level of .05, and a power of .95. With 4 predictors in the model, a sample size of  $n = 84$  is sufficient to detect a medium effect (Cohen, 1992). This study aimed to recruit additional participants to account for the possible exclusion of some participant data due to unforeseen reasons such as missing data, or inconsistencies in responses to questions asked.

When using multiple regression, the minimum number of cases per variables ratio is 5:1, although 10:1 is better. Given that a maximum of five predictor variables were examined in any given analyses, the minimum number of cases to predictor ratio was satisfied.

### **Measures and Materials**

Following completion of an electronic informed consent, participants completed a questionnaire comprised of the study's items and measures. Dependent measures are discussed

next, followed by independent measures. The dependent variables in this study were condom use and sexual communication.

**Condom use.** Condom use was measured by having participants rate condom use behavior on a 5-point Likert scale (1 = n/a, have never done this sexual activity, 2 = have not done this sexual activity in the past 12 months, 3 = never, 4 = about 25% of the time, 3 = about 50% of the time, 4 = about 75% of the time, and 5 = always). One advantage to using this as a measure of condom use behavior is that participants are asked to report on their behavior in general instead of whether or not they used protection during the last sexual encounter only. This measure has been found to be a valid measure of condom use (Shai, Jewkes, Levin, Dunkle, & Nduna, 2010, Lanier, 2013).

**Unprotected vaginal sex.** Unprotected Vaginal Sex (UVS) was measured by asking participants to report the number of times they have had unprotected vaginal sex during the past 3 months. Participants were asked to first report the total number of times they had vaginal sex. UVS was calculated by dividing the number of unprotected vaginal sex acts by the total number of times they engaged in vaginal sex. This measure accounts for weakness in the previous measure of condom use, which does not take into account the actual number of risky sexual acts.

**Sexual communication.** This was measured using an adapted version of the Sexual Assertiveness for Communication Scale of HIV Risk-Related Information (Deither, 1994; SC-Info). The SC-Info is a 5-item scale that measures willingness to request information about sexual risk from one's sexual partner. Responses are rated on a 5 point scale, ranging from 1 = never and 5 = all or almost all of time. Higher scores indicate more assertiveness in sexual communication in requesting information about a sexual partner's potential HIV risks. The SC-

Info has an internal consistency of  $\alpha = .93$ . In the present study, this scale had a Cronbach alpha of  $\alpha = .85$ .

Independent variables included attitudes/beliefs, normative beliefs, and perceived behavioral control. Attitudes and beliefs were measured by the Gender Role Beliefs Scale (GRBS), The Belgrave Gender Role Inventory (BGRI), and the Gender Ratio Imbalance Beliefs and Behaviors Scale (GRIBBS). Normative beliefs were measured by the Peer Norms Scale (PNS). Perceived behavioral control was measured by the Sexual Relationship Power Scale (SRPS).

**Gender Role Beliefs Scale.** The GRBS (Kerr & Holden, 1996) is a 20-item scale which measures gender role ideology and beliefs about appropriate roles and behaviors for men and women. Responses are rated on 7-point scale, where 1 = strongly agree, 2 = strongly agree, 3 = somewhat agree, 4 = undecided, 5 = somewhat disagree, 6 = disagree, and 7 = strongly disagree. Items 2, 3, 7, 10, 12, and 17 are reverse coded, so that overall higher scores on this scale indicate less traditional gender role beliefs. The Gender Role Beliefs scale measures beliefs about roles, consistent with how this study conceptualized gender role beliefs. The GRBS has strong internal consistency of  $\alpha = .89$ . In the present study this scale demonstrated good reliability with a Cronbach's alpha of  $\alpha = .84$ .

**Belgrave Gender Role Inventory.** A second measure of gender role beliefs specific to African American women was included. The BGRI (Belgrave, Abrams, Hood, Moore, & Nguyen (in press) is a newly developed 9-item gender role measure specifically designed to measure gender role beliefs of Black women. Historically, gender role measures such as the BEM Sex Role Inventory have primarily included White participants and gender role beliefs of

Black women may not be adequately assessed by current measures of gender role beliefs. These measures have also not shown adequate reliability for Black women.

The BGRI measure includes two subscales: Agency (items 1-6) and Caretaking (items 7-9). The Agency subscale describes self-efficacy or one's belief they can complete a task at hand, mental hardiness, and an independent disposition. The Caretaking describes one's tendency to take care of others and to provide for their wellbeing. Responses for the BGRI are rated on a 5 point bipolar adjective scale format (Crocker & Algina, 2008) where each item consists of a pair of characteristics. Letters A – E are the response options, representing two extremes on the scale. Participants were asked to indicate their level of agreement or disagreement with each item pair, by circling the letter that best describes where they fall between the item pair. The alpha reliability coefficients are .74 for Agency, and .81 for Caretaking (Belgrave, Abrams, Hood, Moore, & Nguyen, in press). In the present study, items 1,2, 5, and 6 of the Agency subscale and items 7-9 of the Caretaking scale were reverse coded such that higher scores were indicative of a stronger sense of Agency and having a greater Caretaking identity. In the present study these subscales had a Cronbach alpha of  $\alpha = .753$  and  $\alpha = .544$  respectively. The low reliability coefficient of the caretaking sub-scale is attributed in part to the small numbers of items comprising the scale ( $N = 3$ ). Since the reliability for the Caretaking subscale was not adequate, only the Agency subscale was used in subsequent analyses.

**Gender Ratio Imbalance Beliefs and Behaviors Scale.** The GRIBBS (Lanier, 2013) is a 20-item scale which measures how gender ratio imbalance beliefs influence sexual behaviors. Responses are rated on 5-point scale where 1 = strongly disagree, 2 = disagree, 3 = somewhat agree, 4 = agree, and 5 = strongly agree. Higher scores indicate higher gender ratio imbalance beliefs. This is a newly developed scale to assess the mechanisms by which gender ratio

imbalance beliefs affect sexual choices, specifically in Black women. This scale has two separate subscales. The first is the Gender Ratio Imbalance Beliefs Subscale (GRIBeliefs), a 10-item measure of gender imbalance beliefs (items 1-5, 10-13, and 19). A sample item is “Fewer men in my community decrease my chances of dating.” The second is the Gender Ratio Imbalance Behaviors Subscale (GRIBehaviors), a 10-item measure of gender imbalance behaviors. The GRIBehaviors included items 6-9, 14-18, and 20 (items, 8, 9, and 15 are reverse coded. A sample item includes “If I make my man use a condom, he will go to another woman who will have sex without a condom.” In the present study, these subscales had a Cronbach alpha of  $\alpha = .75$  and  $\alpha = .66$  respectively. Only the GRIBeliefs subscale was utilized in this study as the construct of interest was gender ratio imbalance beliefs not behaviors.

**Peer Norms Scale.** The PNS (Choi, Coates, Catania, Lew, & Chow, 1995) is a 4-item scale which measures perceived peer norms in regard to condom use behavior. Responses are rated on 4-point scale, where 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Higher scores on this measure indicate stronger perceptions of condom use being normative. The PNS specifically addresses the influence of peer norms on consistent condom use behavior, and has shown initial alpha coefficients of .75 and .71 (Choi et al., 1995). In the present study, this scale had a Cronbach alpha of  $\alpha = .74$  demonstrating adequate internal consistency.

**Sexual Relationship Power Scale.** This scale measured perceived behavioral control. The SRPS (Pulerwitz et al., 2000) is a 23-item scale which measures perceived relationship power. Responses are rated on a 4-point scale, where 1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree. Higher scores on this measure indicate a greater perception of relationship power, which may indicate lower engagement in risky sexual acts. The SRPS

English version has an internal consistency of  $\alpha = .84$ . This scale has been used previously in samples of Black women (Amaro et al., 2007). The SRPS has two subscales; Relationship Control (items 1-15) and Decision-Making Dominance (8 items). These two subscales can be used individually or together when combined. The entire scale was utilized in this study. In the present study Cronbach alpha was  $\alpha = .85$ , demonstrating good internal consistency.

**Demographic variables and covariates.** Participants were asked to complete a brief demographic questionnaire. This questionnaire inquired about age, educational level, relationship status, and relationship length in months. Participants were asked for the age of their most recent sexual partner, STI history, and number of sexual partners in the last 12 months. Relationship status was controlled for in subsequent analyses, as relationship factors have been shown to be related to sexual communication and HIV risk (Quina, Harlow, Morokoff, Burkholder, & Deiter, 2000). Demographic variables that showed significant relationships with condom use and sexual communication were also used as covariates.

**Social desirability.** This variable was measured using the Social Desirability Scale-17 (SDS-17; Stober, 2001). The SDS-17 is a 16-item scale which measures socially desirable responding. Formerly, the scale used to be 17 items however the currently used 16-item scale excludes one item that was dropped due to issues with its internal consistency. Responses for this scale are rated on a true or false scale. Higher scores on this measure indicate a tendency to answer questions in a manner that will be viewed as favorable by others. This scale has demonstrated an internal consistency of  $\alpha = .72$  (Stober, 2001). In the present study, this scale had a Cronbach alpha of  $\alpha = .73$ , which indicates good reliability (Kline, 1999).

## **Procedure**

This study utilized two primary recruitment strategies. The first strategy included the recruitment of undergraduate Black female college students through a web-based SONA program in which research studies are made available for course credit to students taking an introduction to psychology class. Participants logged onto the web-based SONA program to view the study description and inclusion criteria. If they were interested in participating in the study, they were then directed to a survey monkey link to view the consent form and to complete the questionnaire. Participants were given course credit in exchange for study participation. The second recruitment strategy involved using student volunteers who were recruited from classes, student groups, and student organizations. They were given a description of the study along with inclusion criteria, and were offered a chance to receive one of two \$75 cash prizes for their participation. These participants were sent a direct link to the survey monkey study via email. All participants read an electronic consent form on survey monkey describing study procedures and potential benefits and risks to study participation. Participants were informed that they could stop at any time while answering the questions, and that they did not have to answer any question they did not want to. They were informed that all responses were completely confidential. The questionnaires took approximately 40 minutes to complete. Participants were provided with the study coordinator and principal investigator's contact information in case they had any questions or concerns. Last, participants were given appropriate class credit for study involvement via the SONA web-based program by the study coordinator, or alternatively entered into a raffle for one of two \$75 cash prizes.

### **Data Analysis Plan**

All data screening and analyses were conducted using The Statistical Package for the Social Science (SPSS) 22.0. Data screening was conducted first, followed by bivariate and

descriptive analyses which were performed prior to examining the study's hypotheses. Potential control variables were then identified. Last, the study's hypotheses were tested.

### **Data Screening**

Thorough data cleaning was performed prior to data analysis. Data were screened for any violations in inclusion criteria, in addition to violations of normality and test assumptions for each type of analysis performed.

**Univariate outliers.** An outlier refers to an unusual score that is not representative of the rest of the data points, or a score that is very different from the rest of the data. This assumption was tested by checking the standardized values (z-scores) of each variable to assure that no points were extremely high or low. For this assumption to be met, 5% or less of the sample should have absolute values greater than 1.96, only 1% should have values greater than 2.58, and no absolute values should be greater than 3.29. Two outliers were identified on the gender ratio imbalance behavior subscale and were dealt with by transforming the abnormal score to the next closest score that was not an outlier. The outliers were values of 37 and 42 and were both changed to 36. One of the outliers had a z-score that exceeded the 2.58 threshold (along with 6 other values which resulted in one needing to be changed, as 6% of the values were past the 2.58 threshold) and the other was past the 3.20 threshold. There was one additional outlier identified on the sexual communication scale. This outlier was changed from 9 to 12 as it was past the 3.20 threshold. No other outliers were identified on the other variables of interest.

**Multivariate outliers.** This assumption differs from the univariate outlier assumptions, in that there should be no *combination* of variables that are very different or extreme from other combinations of variables. This assumption is tested by calculating Mahalanobis distance and assessing if any of the values obtained exceed the critical chi-square values associated with the



number of independent variables to be tested. For the most complicated multiple regression, five predictor variables were utilized which indicated a critical cut off value of 20.52. When Mahalanobis distance was assessed for all independent variables, no chi-square values exceeded the critical value of 20.52.

**Multicollinearity.** Multicollinearity refers to a phenomenon in which predictor variables are highly correlated such that one or more independent variables can be linearly predicted from another. This assumption is deemed to be violated if correlation coefficients are higher than .7. Multicollinearity can also be tested by examining the tolerance and variance inflation factor (VIF) levels; tolerance values lower than .10 and VIF values higher than 10 indicate a violation of this assumption. This assumption was checked by computing a correlation coefficient among all predictor variables. No violations of this assumption were found.

**Univariate normality.** This assumption's criteria is that each variable be normally distributed, which can be assessed by checking skewness and kurtosis values. Values greater than +/-1 are not normal, and may require transformations of the data. Skewness and kurtosis values were examined for all variables of interest. All of the variables, except for sexual communication, fell outside of the +/-1 cut off range for skewness and kurtosis. A natural log transformation was conducted for the sexual communication variable to get skewness and kurtosis values closer to normal. A natural log transformation involves creating a new variable that takes the natural log value of all old values, to create a new set of values.

**Linearity.** This refers to the assumption that all predictor variables have a linear relationship with the DV. Examining this assumption requires plotting the data on a scatterplot and eyeballing the plot for nonlinear relationships (i.e., curvilinear). All predictor variables were

determined to have a linear relationship with both dependent variables; therefore this assumption's criteria were met.

**Normality of residuals, linearity of residuals, homoscedasticity.** These three assumptions were assessed through a visual inspection of residuals scatterplots. The normality of residuals assumption assumes that each predictor variable's residuals are normality distributed. Linearity of residuals assumes that there is a linear relationship between residual and predicted values. Homoscedasticity assumes that the variance at each level of each predictor be approximately the same. No violations of the aforementioned assumptions were found. If there are any violations of these assumptions, it would first be handled by going back to address the previous assumptions. The next step would be to perform a transformation of the data (i.e., square root, natural log, or inverse transformation) if violations still remained.

## **Results**

### **Descriptive Analyses**

Prior to conducting the primary analyses of this study, descriptive statistics on all variables of interest were computed for the study's sample. A summary of these findings are below.

### **Descriptive Statistics for Demographic Variables and Covariates**

Descriptive analyses for demographic variables and covariates were computed. These variables included: age, race, sexual orientation, year in college, and relationship status. Results revealed that participants were within the target population group. Of all participants, 49% were recruited from the SONA participation pool, and 51% were recruited as student volunteers.

**Age.** The majority of participants (91%) were in the emerging adulthood period of development, aged 18-24. Participants' age ranged from 18-30 years old with a mean age of 21 years ( $SD = 2.55$ ).

**Year in school.** Participants reported various education levels. Approximately one fifth ( $N = 24$ ; 20%) were first year undergraduates, 19 (16%) were second year undergraduates, 30 (25%) were third year undergraduates, 28 (23%) were fourth year undergraduates, 11 (9%) were in their fifth year of undergraduate education or beyond, and 9 (7%) were in graduate or professional school.

**Race.** The majority of participants (92%) identified as Black or African American ( $N = 111$ ). A minority of participants (8%) identified another racial/ethnic group in addition to Black or African American ( $N = 10$ ).

**Sexual orientation.** The majority of participants (89%) identified as Straight or Heterosexual ( $N = 108$ ). Eleven (8.8%) participants identified as Bisexual and 2 (2%) identified as Other. Both participants identifying as "Other" reported heterosexual behavior within the past 30 days, and, therefore, were included in the study's analyses.

**Relationship status.** Slightly above half of the sample reported being in a relationship ( $N = 63$ ; 52%). Approximately 13% ( $N = 16$ ) reported being in a casual relationship, 31% ( $N = 36$ ) were in a committed relationship but not living together, and 7% ( $N = 6$ ) were in a committed relationship and living together. Forty percent ( $N = 56$ ) were not in a relationship and 2 participants did not report their relationship status. Those participants who were not in a relationship or in a casual relationship were coded as 0. Those who were in a committed relationship, not living together or living together, were coded as 1.

**Marital status.** The vast majority of participants reported being single ( $N = 113$ ; 93%). Seven participants (6%) were married or partnered, and one participant (less than 1%) reported “Other” as their relationship status.

**Social desirability.** Given the sensitive nature of some of the questions in this study, participants were asked to complete a measure on socially desirable responding to if this influenced their responses. Response options were 0 and 1 and the mean score was .45 ( $SD = .2$ ), which indicated just below average scores on this measure. A higher score on this measure indicated greater socially desirable responding. Bivariate analyses conducted with this measure and the dependent variables (condom use and sexual communication) revealed non-significant results, therefore social desirability was not controlled for in the regression analyses.

### **Descriptive Statistics for Dependent Variables**

**Condom use.** Condom use was measured using a single item, with response options ranging from 1 to 5 among those who were sexually active. Higher scores on this measure indicate higher rates of condom use. The mean score was 3.38 ( $SD = 1.48$ ), indicating that on average participants use condoms slightly between sometimes and most of the time. Minimum and maximum scores ranged from 1 to 5 in the current sample.

**Unprotected vaginal sex.** This measure was used as a second measure of condom use. Participants were asked how many times they had had sex in the past six months and how many times was sex unprotected. Unprotected vaginal sex was calculated by dividing the reported number of times participants reported unprotected sex by the total number of times they had sex in the past 6 months, to obtain a percent of unprotected sex. Higher scores indicated engaging in unprotected sex a greater percent of the time. The mean score was .45 ( $SD = .4$ ), and was only calculated for participants who reported ever having had sex. This mean score indicated that on

average, participants engaged in unprotected vaginal sex 45% of the time. Among participants who had ever had sex, thirty-one percent reported engaging in protected sex 100% of the time, and 21% engaged in unprotected sex 100% of the time. The remaining participants who had ever been sexually active fell in between 0% and 100% condom use (they did not report *always* having protected sex or *always* having unprotected sex). This measure was not used in subsequent analyses as a measure of condom use because it had more missing responses compared to the other measure of condom use, which was more complete. Given that participants had to report the number of times they engaged in protected or unprotected sex over a course of several months, concerns about recall accuracy was another reason why this measure was not used in subsequent analyses.

**Sexual communication.** The Sexual Assertiveness for Communication Scale of HIV Risk-Related Information was used to measure willingness to request information about sexual risk from one's sexual partner. Response options were 1 to 5, with higher scores reflecting higher assertiveness in sexual communication. The mean score was 4.33 ( $SD = .64$ ), indicating that participants had high assertiveness in sexual communication. Minimum and maximum scores ranged from 1.80 to 5 in the current sample.

### **Descriptive Statistics for Independent Variables**

**Gender role beliefs.** The Gender Role Beliefs Scale was used to measure gender role beliefs of women. Response options ranged from 1 to 7, with higher scores reflecting less traditional gender role beliefs. The mean score was 4.63 ( $SD = .86$ ), indicating that on average participants endorsed more feminist gender role beliefs. Minimum and maximum scores ranged from 2.65 to 6.75 in the current sample.

**Agency Subscale of the Belgrave Gender Role Inventory.** The Agency subscale of the Belgrave Gender Role Inventory was also used as a measure of gender role beliefs. This scale was chosen to be used in subsequent analyses as the primary measure of gender role beliefs, as it was originally developed specifically for Black women, who were the focus of the present study. Only the Agency Subscale was used given the low reliability of the Caretaking subscale in this study, and the interest in traditional versus modern gender role beliefs. Response options for this scale were from 1 to 5, and higher scores indicate a stronger sense of agency (lower traditional gender role beliefs). The mean score was 4.17 ( $SD = .85$ ), indicating that on average participants reported a high sense of agency.

**Gender Ratio Imbalance Beliefs.** The Gender Ratio Imbalance Beliefs subscale was used to measure beliefs about the perceived availability of eligible partners for Black women. Response options were 1 to 5, with higher scores reflecting higher gender ratio imbalance beliefs. The mean score was 2.03 ( $SD = .59$ ), indicating that on average participants had below average gender ratio imbalance beliefs. Minimum and maximum scores ranged from 1 to 3.40 in the current sample.

**Peer Norms.** The Peer Norms Scale was used to measure beliefs about the perceived use of condoms among peers. Response options were 1 to 4 with higher scores reflecting higher perceptions of condom use as normative. The mean score was 3.14 ( $SD = .64$ ), indicating that on average participants had moderately high perceptions of condom use as normative. Minimum and maximum scores ranged from 1.25 to 4.00 in the current sample.

**Relationship Power.** The Sexual Relationship Power Scale was used to measure perceived power in a relationship. Response options were 1 to 4, with higher scores reflecting a greater perception of power within one's relationship. The mean score was 1.64 ( $SD = .64$ ),

indicating that on average participants perceived themselves to have low relationship power. Minimum and maximum scores ranged from 1.35 to 2.30 in the current sample.

### **Bivariate Correlations among Demographic and Dependent Variables**

Bivariate correlations for demographic variables and the two dependent variables were performed (see Table 1).

Table 1.

#### *Correlations among Demographic and Dependent Variables*

Variable	1	2	3	4	5
1. Condom Use	----				
2. Assertiveness in Sexual Communication	-.058	----			
3. Age	.136	.033	----		
4. Year in School	-.009	.026	.668**	----	
5. Relationship Status	-.289**	.117	.127	.173	----

\* Correlation is significant at or below the .05 level (2 tailed)  
 \*\* Correlation is significant at or below the .01 level (2 tailed)

Age and year in school were not significantly correlated with condom use or assertiveness in sexual communication ( $p > .05$ ). Relationship status was significantly correlated with condom use,  $p = .006$ , but not assertiveness in sexual communication.

### **Bivariate Correlations among Predictor Variables and Dependent Variables**

Bivariate correlations for the predictor variables and the two dependent variables were performed (see Table 2).

Table 2.

*Correlations among Predictor and Dependent Variables*

Variable	1	2	3	4	5	6	7
1. Condom Use	----						
2. Assertiveness in Sexual Communication	-.058	----					
3. Agency (BGRI Subscale)	.158	.163	----				
4. Gender Ratio Imbalance Beliefs (GRIBBS Subscale)	.094	-.018	-.03	----			
5. Peer Norms Scale	.309**	.039	.113	-.146	----		
6. Relationship Power Scale	.092	.112	.180*	-.333**	.153	----	
7. Social Desirability Scale	.031	-.134	-.09	.002	-.127	-.17	----

\* Correlation is significant at or below the .05 level (2 tailed)  
\*\* Correlation is significant at or below the .01 level (2 tailed)

A greater perception of condom use as normative among peers (peer norms) was significantly correlated with greater reported condom use,  $p = .003$ . None of the other variables were significantly correlated with condom use ( $p < .05$ ). There were no significant correlations with any variables and the dependent variable, assertiveness in sexual communication.

Agency was significantly associated with greater relationship power,  $p = .049$  with higher scores on agency being associated with a greater perception of relationship power. Higher gender ratio imbalance beliefs were significantly correlated with lower relationship power,  $p < .001$ , such that a higher perception of a gender ratio imbalance between men and women was associated with a lower perception of power in a relationship.

**Hypothesis Testing**



**Hypothesis 1-4: Traditional gender role beliefs, perceived gender ratio imbalance beliefs, peer norms, and perceived relationship power will predict condom use and sexual communication.** The hypothesized directions of these relationships are as follows: stronger traditional gender role beliefs, greater perceived gender ratio imbalances, stronger peer norms supporting condom use, and lower perceived relationship power will be predictive of less condom use and less assertiveness in sexual communication. Multiple hierarchical regressions were conducted to determine the relation between the four independent variables and the two dependent variables; condom use and sexual communication. Two separate multiple hierarchical regression analyses were computed for each dependent variable, with relationship status being controlled for by entering it in the first step. For each hierarchical regression analysis, traditional gender role beliefs, perceived gender ratio imbalance beliefs, peer norms, and perceived relationship power were entered into the second step to determine the relation between the four independent variables and the two dependent variables (e.g. condom use and sexual communication).

Relationship status was a significant predictor of condom use (being in a relationship was correlated with less condom use), and therefore was controlled for in all of the subsequent analyses. The Agency Subscale of the Belgrave Gender Role inventory was utilized as the measure of traditional gender role beliefs.

The first step of the model revealed that a significant proportion of the variance in condom use was accounted for,  $F(1, 87) = 7.81, p = .006, R^2 = .08$ . Relationship status was a significant predictor of condom use,  $t(87) = -2.79, p = .006, \beta = -.29$ , such that being in a committed relationship was associated with less reported condom use.

The second step of the model also accounted for a significant proportion of the variance in condom use,  $F(1, 87) = 3.75, p = .004, R^2 = .19$ . The R-squared change from step 1 to step 2 was significant  $F(4, 87) = 2.59, R^2 = .10, p = .04$ . Peer norms emerged as the sole significant predictor of condom use among the added predictors in the second model,  $t(87) = 2.16, p = .034, \beta = .23$ , such that a greater perception of condom use as normative among peers, was associated with more reported condom use among participants. Relationship status remained significant,  $t(87) = -2.68, p = .009, \beta = -.28$ , such that being in a relationship was associated with less condom use. Agency approached marginal significance,  $t(87) = 1.68, p = .098, \beta = .18$ , such that higher agency was marginally predictive of increased condom use. The remaining predictors, gender ratio imbalance beliefs,  $t(87) = .81, p = .42, \beta = .23$ , and relationship power,  $t(87) = .45, p = .65, \beta = .05$ , were not significant predictors.

The second part of hypotheses 1-4 predicted that gender role beliefs, gender ratio imbalance beliefs, and peer norms were significant predictors of sexual communication. Relationship status was entered as a control variable. The first step of the model was non-significant, such that being in a relationship did not have a significant effect on sexual communication.

With all four predictors in the model in addition to the control variable relationship status, the overall model was not significant in accounting for the variance in sexual communication  $R^2 = .01; F(4, 116) = .72, p = .4$ . Relationship status  $t(116) = .65, p = .52, \beta = .06$ , agency  $t(116) = .68, p = .5, \beta = .07$ , gender ratio imbalance beliefs,  $t(116) = -.44, p = .66, \beta = -.04$ , peer norms,  $t(116) = .67, p = .5, \beta = .07$ , and relationship power,  $t(116) = 1.06, p = .3, \beta = .11$  were not significant predictors of sexual communication ( $p$  values  $> .05$ ).

**Hypothesis 5: Traditional gender role beliefs and gender ratio imbalance beliefs will predict perceived relationship power.** The fifth hypothesis predicted that traditional gender role beliefs and gender ratio imbalance beliefs would predict perceived relationship power, such that greater traditional gender role beliefs and higher gender imbalance beliefs will be predictive of lower perceived relationship power. A multiple hierarchical regression was conducted to determine the relation between gender role beliefs and gender ratio imbalance beliefs, and perceived relationship power. Relationship status was controlled for by entering it into the first step. Traditional gender role beliefs (agency) and gender ratio imbalance beliefs were entered into the second step.

The first step of the model was non-significant ( $p > .05$ ), such that being in a relationship did not have a significant effect on relationship power. With both predictors in the model, the overall model was significant  $R^2 = .16$ ;  $F(3,118) = 9.58$ ,  $p < .001$ . Agency was a significant predictor of relationship power,  $t(120) = -1.98$ ,  $p = .04$ ,  $\beta = .17$ , such that greater agency was associated with greater perceived relationship power. Gender ratio imbalance beliefs also emerged as a significant predictor of relationship power,  $t(101) = -3.84$ ,  $p < .001$ ,  $\beta = -.33$ , such that higher gender ratio imbalance beliefs were associated with lower perceived relationship power.

**Hypothesis 6: Perceived relationship power will mediate the relationship between traditional gender role beliefs and condom use.** The sixth hypothesis predicted that perceived relationship power would act as a mediating variable between traditional gender role beliefs and condom use. The mediation method recommended by Baron and Kenny (1986) was used in determining a mediation effect. Three criteria must be met for perceived relationship power to mediate the relation between traditional gender role beliefs and condom use. First, traditional

gender role beliefs must be significantly related to the dependent variable of condom use.

Second, traditional gender role beliefs must also be significantly related to the mediator variable of perceived relationship power. Last, the mediator variable of perceived relationship power must be significantly related to the dependent variable of condom use. Should perceived relationship power fully mediate the relation between traditional gender role beliefs and condom use, when perceived relationship power is controlled for, the effect of traditional gender role beliefs on condom use should no longer be significant.

Hypothesis six was not supported, as bivariate analyses did not reveal the necessary correlations to support and compute mediation analyses. While gender role beliefs (agency) was significantly correlated with relationship power,  $p = .05$ , the other necessary correlations were determined to be non-significant.

**Hypothesis 7: Perceived relationship power will mediate the relationship between gender ratio imbalance beliefs and condom use.** The seventh hypothesis predicted that perceived relationship power will act as a mediating variable between gender ratio imbalance beliefs and condom use. The mediation method discussed previously was used to determine if there is mediation. The three criteria for a mediation effect follow the same criteria previously discussed hypothesis six. Should perceived relationship power fully mediate the relation between gender ratio imbalance beliefs and condom use, when perceived relationship power is controlled for, the effect of gender ratio imbalance beliefs on condom use should no longer be significant.

Hypothesis seven was not supported, as bivariate analyses did not reveal the necessary correlations to support and compute mediation analyses. While gender ratio imbalance beliefs were significantly correlated with relationship power,  $p < .001$ , the other necessary correlations were determined to be non-significant.

### **Exploratory Analyses.**

The same analyses for hypotheses 1 - 4 were computed using the Gender Role Beliefs Scale (Kerr & Holden, 1996) as a measure of gender role beliefs, in place of the Agency Subscale. These analyses revealed that this measure of gender role beliefs was also a non-significant predictor of condom use and sexual communication (*p values* > .05).

### **Discussion**

The purpose of the current study was to examine sexual decision making among Black women within their unique social context, by exploring factors that contribute to HIV risk or protective behaviors. Specifically, the independent variables, gender role beliefs (measured by agency), gender ratio imbalance beliefs (beliefs about partner availability), peer norms (normative perceptions about condom use among peers), and relationship power (perceptions of control in one's relationship) were tested as predictors of condom use and assertiveness in sexual communication. Condom use and assertiveness in sexual communication were the primary dependent variables of interest, as this study aimed to assess women's engagement in HIV risk or protective behaviors. While this study was limited in the scope of social factors examined, the identification of contextual factors that contribute to Black women being at increased risk for HIV was of importance to the goals of this study. Findings from the present study are presented next, followed by the study's limitations and implications, and suggestions for future research.

### **Summary of Findings**

Hypotheses 1-4 predicted that gender role beliefs, gender ratio imbalance beliefs, peer norms, and relationship power would predict condom use and assertiveness in sexual communication after controlling for relationship status. Agency was used to measure gender role beliefs; such that lower scores on the agency was indicative of more traditionally feminine

gender role beliefs. These relationships are discussed in turn with each predictor variable as it related to condom use first and second as it related to assertiveness in sexual communication. These analyses were tested using two separate hierarchical multiple regressions to test the effects of the predictor variables on each dependent variable. Relationship status was controlled for in both analyses, as it was found to be significantly associated with condom use in bivariate analyses.

Hypothesis 1 predicted that more traditional gender role beliefs would be predictive of less condom use after controlling for relationship status. This hypothesis was not supported and diverged from other studies that have found that traditional gender roles are related to less condom use (Fullilove, Fullilove, Haynes, & Gross, 1990). Traditional gender role beliefs were measured by lower scores on the Agency Subscale of the Belgrave Gender Role Inventory. Agency refers to the ability to make and carry-out one's own decision and to be able to accomplish one's goals. Therefore, it was hypothesized that women who scored high on agency would be more likely to insist on condom use and to be more confident in making decisions about condom use. This non-significant finding suggest that a high sense of agency may not translate into decision making within a Black woman's sexual relationship, and that other factors may be more important drivers of condom use. Indeed, previous research indicates that while Black women report masculine and androgynous gender roles in general, they maintain traditional gender role identities within their romantic relationships and sexual encounters (Binion, 1990; Bowleg, Lucas, Tschann, 2004).

While agency was not a significant predictor of condom use, it did approach marginal significance. This marginally significant finding suggests that this effect may have been significant if this relationship was tested in a larger sample. However, these non-significant

findings are consistent with those of a previous study which also found no relationship between sexual agency and condom use in a sample of young women (Masters, 2010). Masters concluded from her findings that the relation between sexual agency and condom use may be more complicated than the simple assumption that increased sexual agency predicts increased condom use.

Hypothesis 1 also predicted that more traditional gender role beliefs (lower scores on agency) would be predictive of decreased assertiveness in sexual communication after controlling for relationship status. This hypothesis was not supported. Agency was not a significant contributor to assertiveness in sexual communication. Past research has shown that women reporting more traditional gender role beliefs are less comfortable engaging in sexual communication with their romantic partners (Greene & Faulkner, 2005). Similarly to condom use, agency may not be a contributor to sexual communication for Black women as may be the case for women in other racial/ethnic groups. As previously mentioned, high levels of agency may not translate into assertiveness in sexual communication for Black women as they tend to maintain traditional gender role ideologies within romantic relationships. Black women may adjust their gender role orientation in relationships to make men more confident with their masculine identities (Jones & Shorter-Gooden, 2003).

Hypothesis 2 predicted that stronger gender ratio imbalance beliefs would be predictive of less condom use, after controlling for relationship status. This hypothesis was not supported. Gender ratio imbalance beliefs refer to the perceived availability of eligible male partner's for romantic relationships. These non-significant findings are inconsistent with previous work that has suggested that perceived shortage of eligible male partners influence relationship power and condom negotiation skills in Black women (Corneille, Zyzniewski, & Belgrave, 2008). These

findings are also consistent with research that has found that gender ratio imbalance beliefs cause women to be more likely to defer to male condom use preferences, (Ferguson, Quinn, Eng, & Sandelowski, 2006).

One reason for the non-significant findings in this study is that participants reported low gender ratio imbalance beliefs; therefore they did not perceive there to be a shortage of available men to date. Another potential reason for the lack of significant relationship between gender ratio imbalance beliefs and condom use was that the majority of women reported being in a committed relationship. Women in long-term or committed relationships may not perceive there to be a gender ratio imbalance among men and women (Wingood & DiClemente, 1998).

Hypothesis 2 also predicted that stronger gender ratio imbalance beliefs would be predictive of less assertiveness in sexual communication, after controlling for relationship status. This hypothesis was not supported. Gender ratio imbalance beliefs were not a significant contributor to assertiveness in sexual communication. These findings suggest that while gender ratio imbalance beliefs may influence the perception of male partner availability, these beliefs may not affect willingness to engage in sexual communication with a romantic partner.

Hypothesis 3 predicted that a stronger perception of peer norms supporting condom use would be predictive of increased reported condom use, after controlling for relationship status. This hypothesis was supported. Peer norms surrounding condom use emerged as the sole significant predictor of condom use, such that more positive perceptions about condom use among peers was predictive of increased condom use. This finding suggests that peer norms are important in influencing safe sex behavior. This significant finding also echoes previous research on the effect of perceived social norms on HIV risk/protective behaviors (Scholly, Katz, Gascoigne, & Holck, 2005).



Given that participants were current college students, peer norms may be especially salient. College students are likely to be influenced by peers for several reasons. They are often away from home for the first time and no longer under the influence or supervision of parents (Arnett, 2000). College women also often live in close proximity to their peers (or with their peer groups as roommates), and they spend a considerable amount of time socializing with their peers (within classes, organizations, social groups, etc.). On average participants in this sample perceived condom use to be fairly normative, as the majority agreed to statements about their peers using condoms when they have sex and to statements indicating that their peers think condom use is important. It also highlights the importance of normative perceptions of peer condom use on sexual decision making, and how knowledge of this can inform intervention and prevention programs targeted at reducing risk behaviors.

Hypothesis 3 also predicted that a stronger perception of peer norms supporting condom use would be predictive of increased assertiveness in sexual communication, after controlling for relationship status. This hypothesis was not supported. While, perceived peer norms about condom use were a significant predictor of reported condom use, perceived peer norms about condom use were not a significant contributor to assertiveness in sexual communication.

Hypothesis 4 predicted that perceived relationship power would be predictive of condom use, after controlling for relationship status. This hypothesis was not supported. Studies have found a strong association between relationship power and consistent condom use among women (Gómez & Marin, 1996; Pulerwitz, Gortmaker, & DeJong, 2000; Pulerwitz, Amaro, Jong, Gortmaker, & Rudd, 2002). Studies have also found a correlation between relationship power and the ability to negotiate condom use (Harris, Gant, Pitter, & Brodie, 2009). Therefore, it was expected that relationship power would have the same effect in this study. However, these non-

significant findings are consistent with those from a past study that also showed that the relationship between relationship power and condom use was non-significant (Harvey, Bird, Galavotti, Duncan, & Greenberg, 2002). Harvey et al. (2002, p. 81) suggests that evaluating relationship power within “specific decision-making domains” manner (i.e., relationship power as it relates specifically to condom use) may be a better predictor of sexual decisions such as condom use, as opposed to evaluating relationship power in general. In the Harvey et al. study a condom use decision making measure significantly predicted condom use, whereas the general measure utilized for relationship power did not.

Hypothesis 4 also predicted that relationship power would be predictive of assertiveness in sexual communication, after controlling for relationship status. This hypothesis was not supported. Power imbalances between men and women can make communication about sex difficult (Fullilove, Fullilove, Haynes, & Gross, 1990); consequently it was hypothesized that low relationship power would be predictive of less assertiveness in sexual communication. Assumptions about the meaning of relationship power, in addition to assumptions about its potential to influence sexual decision making, may potentially explain these non-significant findings. For example, one study found that among some women relationship power was associated with decision making in relationships while for other women relationship power was associated with factors such as respect from one’s partner and relationship security, rather than decision making (Harvey & Bird, 2004). This suggests that relationship power may be more reflective of relationship attributes such as respect and/or security in a relationship, rather than agency and decision making. While examining sexual decision making outcomes, a relationship power measure that is specific to the sexual outcome of interest (as opposed to a general relationship measure) may be most appropriate.

For Hypotheses 1-4, relationship status was entered in each regression as a control variable. Relationship status was not significantly predictive of assertiveness in sexual communication. However it did predict condom use, such that being in a relationship was predictive of less condom use. Previous studies have shown that the use of condoms can undermine relationship trust in long-term relationships (Conley & Collins, 2005; McNair & Prather, 2004), such that women are less likely to use condoms in a committed relationship. In the current study over half of participants reported being in a relationship. In the context of a committed relationship participants may be more willing to engage in unprotected sex with their romantic partner. Also, women in a committed relationship may not be concerned about contracting an STD as they may assume they are the only sexual partner. These women may opt to use non-barrier methods to prevent pregnancy.

Hypothesis 5 predicted that gender role beliefs (agency) would predict perceived relationship power, while controlling for relationship status. This hypothesis was supported. Agency was a significant contributor to relationship power. Given the definition of relationship power and given that agency refers to the ability to make and enforce one's own decision, it is understandable that these were related as they tap into similar underlying constructs. This significant finding suggests that women with less traditional gender role beliefs are more likely to perceive themselves as more powerful in their sexual relationships. While agency and relationship power were significantly associated, neither were related to measures of sexual decision making. As discussed previously, these findings are consistent with the literature that suggests that while Black women may have less traditional gender role beliefs, these beliefs may not translate in decision making within romantic and sexual relationship (Fullilove, Fullilove, Haynes, & Gross, 1990). The concept of relationship power may need to be further examined, as

Puterwitz, Gortmaker, and DeJong (2000) argued in the development of their relationship power scale that “power is an ubiquitous term... expressed at many levels (p. 638)” with an unclear application to sexual decision-making.

Hypothesis 5 also predicted that gender ratio imbalance beliefs would predict perceived relationship power, while controlling for relationship status. This hypothesis was supported. Gender ratio imbalance beliefs were a significant predictor of relationship power, such that higher gender ratio imbalance predicted lower perceived relationship power. This finding is consistent with previous research which has found gender ratio imbalance beliefs among Black women to be predictive of perceived relationship power (Corneille, Zyniewski, & Belgrave, 2008). Beliefs about the availability of males may affect power dynamics in romantic relationship, such that women who perceive there to be a shortage of available males perceive themselves to have less power in romantic relationships. Gender ratio imbalances that favor men (i.e., more datable women for men) give men more options in partner selection, while simultaneously women have fewer options. Thus, it is understandable how this situation may undermine a women’s perceived power in a relationship.

Hypothesis 6 predicted that perceived relationship power would be a mediating variable between gender role beliefs (agency) and condom use. This hypothesis was unsupported, as the necessary correlations for these analyses to be conducted did not emerge. While gender role beliefs were significantly correlated with perceived relationship power, perceived relationship power was not significantly correlated with condom use and gender role beliefs were not significantly correlated with condom use. The aforementioned points are potential reasons for this finding.

Hypothesis 7 predicted that perceived relationship power would also act as a mediating variable between gender ratio imbalance beliefs and condom use. Hypothesis 7 was also unsupported for similar reasons mentioned in Hypothesis 6. As mentioned previously, perceived relationship power and gender ratio imbalance beliefs were not significantly correlated with condom use, although gender ratio imbalance beliefs were a significant predictor of relationship power. The overall non-significant findings of this hypothesis suggest that relationship power does not explain the relationship between gender ratio imbalance beliefs and condom use.

### **Limitations**

While the current study has some potential to contribute to understanding HIV risk and protective behaviors among Black women, there are important limitations to note. These limitations relate to the study's design, generalizability, and sample.

A primary limitation of the study is the cross sectional nature of the data. With cross sectional data one is not able to make causal inferences about the nature of the relationships or the temporal sequence of beliefs and behaviors. The data is also limited through the use of self-reports, as sensitive information was collected (i.e. sexual behaviors). Some of the questions required participants to recall events/information that happened in the past and this recall may be subject to bias.

Another limitation was the measure of condom use. The primary measure of condom use asked participants to rate their condom use over the period of 12 months using a likert scale ranging from never to always. This single item assessing condom use may have been problematic. For example, pattern of condom usage may have drastically changed in the span of 12 months if a woman entered a committed relationship within that time frame. Given that being in a committed relationship is associated with is a lower likelihood of using condoms, women

who previously used condoms during sexual encounters could have discontinued use of condoms. While an alternative measure of condom use (e.g., percentage of time having unprotected vaginal sex) was also considered, this measure was also problematic due to missing data and potential recall problems. Also, the desire to become pregnant to or prevent pregnancy was not accounted for and this may affect use of condoms.

Underlying assumptions about condom use beliefs of women may have been problematic. Questions were asked and study hypotheses were made with the assumption that women *want* to use condoms if they have the power within their sexual relationships to do so, and if permitted to by their male partners. Not every woman in a sexual relationship will want to use condom, irrespective of their perceived relationship power. In fact, women who perceive themselves to have high relationship power (and those that have authority in their relationships to make decisions related to sex) may choose to use that authority to *not* use condoms.

Another potential limitation is that the majority of the sample reported being in a committed relationship. This may explain why women reported low gender ratio imbalance beliefs. Being in a committed relationship may change the dynamics of factors that influence sexual decision making. Studies using these measures with single women not in a committed relationship may have yielded different results. Likewise, differences may have emerged in factors that predict sexual decision making if single versus partnered women were compared. For example, gender ratio imbalance beliefs may influence sexual decision making among women who are in casual sexual relationships that desire committed relationships, but may not influence the sexual decisions of women who are already partnered.

Last, generalizability of the study's findings may be limited by the use of college students and these findings may not hold true in other populations or groups of women. Findings from

this study may differ in community samples of young women. Additionally, while the current sample was statistically large enough for analyses, a larger sample size may have resulted in more variability in responses and increased power to detect smaller effects.

## **Implications**

This study contributes to understanding increased risk that Black women have for HIV, by way of further investigating and understanding social factors that influence Black women's risk for HIV. Much of the past research on sexual risk has focused primarily on the individual and individual behavior, without regard to social context (Amaro, 1995). Social context is an important influential factor in health behaviors (Amaro, 1995). A lack of consideration for social context when examining health risk behavior can lead to misunderstanding of health issues, further stigmatization of already stigmatized groups (Gilbert & Wright, 2003), and may even waste resources directed toward HIV prevention. Studying and understanding the social context which continues to drive high HIV infection rates among Black women is paramount in preventing the further spread of HIV among this population.

Although most of the hypotheses were not supported, there were some findings that have implications for culturally tailored prevention interventions aimed to reduce HIV risk among Black women. The present study found that perceptions of peer use of condoms as normative were predictive of self-reported condom use. The significant findings of peer norms as important in influencing condom use among Black college women can be utilized in peer-based interventions. There have been numerous studies that have shown peer norms to be predictive of alcohol and other drug use (Haines & Spear, 1996; Kilmer et al., 2006; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; Perkins, 2002) among college students. Findings from the present study reiterate the importance of peer norms on risky health behaviors of college women, and the

importance of safer sex interventions that focus on utilizing peer norms to increase positive health behaviors.

Knowledge of normative perceptions among peers may be an effective strategy in promoting protective sexual health messages via social media. Social networking sites (SNS) may be an effective median in which to deliver HIV messages, as previous sexual health promotion campaigns on SNS have been effective in reaching young adults (Nguyen et al., 2013). One study found that SNS influence the perceived prevalence of sexual behaviors among peers, in addition to one's own condom use intentions (Young, & Jordan, 2013). Given the influence of peer norms on condom use in the present study and the effectiveness of previous social media interventions on condom use among youth (Bull, Levine, Black, Schmiege, & Santelli, 2012), social media interventions incorporating peer norms knowledge may have a positive impact on safer sex behaviors among young adults.

The significant finding that gender ratio imbalance beliefs predicted perceived relationship power also has some implications for programs. Previous studies have found evidence that Black women apply exclusion criteria that limits the number of men perceived to be datable (Fullilove et al., 1990) and that Black women overestimate gender ratio imbalance rates although women in this study had low gender ratio imbalance beliefs (Ferguson, Quinn, Eng, & Sandelowski, 2006). While women in this study reported low gender ratio imbalance beliefs on average, the women who reported higher gender ratio imbalance beliefs reported less power in their relationships. Interventions for women with high gender ratio imbalance beliefs could focus on increasing the perception of datable men by presenting women with actual statistics of gender ratio imbalances, in hopes of decreasing these false perceptions.

## **Future Research**



Further exploration of the gender and social nature of sexual decision making in Black women is needed. While Black women remain at high risk for HIV, the CDC has noted a 21% decrease in HIV infection. Future studies should examine factors that may have led to this decrease in HIV infection, as the identification of these factors is important in preventing HIV transmission. These factors may include other social and cultural variables that might affect HIV protective and risk behaviors, such as racial/ethnic identity, body image, socio-economic status, and social support.

Additionally, future studies on other demographic groups of Black women are needed. Women in college may be considered a more “privileged” sample in the sense that they have a higher level of education. Women from community samples and those attending historically black colleges and universities may have different risk and protective factors as participants in this study were recruited from a predominantly white institution. Study results may also differ for older women, who may have more traditional gender role beliefs.

Future studies should also explore HIV risk and protective behaviors among women in committed relationships and those who are single and not in committed relationships. In the present study the majority of women reported being in a committed relationship. There may be other factors that influence HIV risk and protective behaviors for women in committed relationships. These may include trust, the length of time of being in the relationship, age of one’s romantic partner, and strength of relationship commitment. Trust in particular may be an important factor to examine. Previous studies have found that condom use can undermine relationship trust (Wingood, Hunter-Gamble, & DiClemente, 1993); therefore the perception of trust in a relationship may influence whether or not condoms are used.

Future studies should also design studies without operating under the assumption that all women want to use condoms. Not all women want to use condoms and increases in relationship power or assertiveness in sexual communication may not necessarily lead to increased condom use. Here there may be other indices of HIV sexual behavior that should be examined.

Last, many studies have only examined HIV risk among Black women who report a heterosexual orientation. However, actual sexual behavior is what puts a woman at risk, not her sexual orientation. For example, in the present study, there were women who identified as a sexual minority who also reported engaging in heterosexual behavior. Self-identification as a sexual minority does not predict engagement or frequency of engagement in a particular type of sexual behavior. Given that sexual behavior is what puts a woman at risk for HIV and not their reported sexual orientation, future studies should include sexual minority reporting heterosexual behavior when assessing HIV risk (Kennedy, Scarlett, Duerr, & Chu, 1994).

### **Conclusion**

HIV remains a significant public health concern that disproportionately affects Black women compared to women of other racial/ethnic groups. There is a need to further examine factors that influence the social context which places Black women at a higher risk for acquiring HIV. HIV risk in Black women must be view through a historical and social context with the consideration of important relevant factors such as gender, social factors, and the social dynamics of relationships. Understanding these factors and implementing appropriate evidence-based prevention interventions is paramount in reducing rates of transmission among this population. The present study found that peer norms were significant predictor of condom use among Black college women, and that agency and gender ratio imbalance beliefs were predictive of perceived relationship power. Findings suggest that intervention preventions that focus on

these factors may be effective in promoting HIV protective sexual behaviors among Black women, thereby reducing their risk of infection.

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## **Appendix A**

### **Items to Be Used in this Study**

#### **Gender Role Beliefs Scale**

1. It is disrespectful for a man to swear in the presence of a lady.
2. Women should not expect men to offer them seats on buses. (R)
3. Homosexual relationships should be as socially accepted as heterosexual relationships. (R)
4. The initiative in courtship should usually come from the man.
5. It bothers me more to see a woman who is pushy than a man who is pushy.
6. When sitting down at the table, proper respect demands that the gentleman hold the lady's chair.
7. Women should have as much sexual freedom as men. (R)
8. Women should appreciate the protection and support that men have traditionally given them.
9. Women with children should not work outside the home if they don't have to financially.
10. I see nothing wrong with a woman who doesn't like to wear shirts or dresses. (R)
11. The husband should be regarded as the legal representative of the family group in all matters of law.
12. I like women who are outspoken. (R)
13. Except perhaps in very special circumstances, a gentleman should never allow a lady to pay the taxi, buy the tickets, or pay the check.
14. Some equality in marriage is good, but by and large the husband ought to have the main say-so in family matters.
15. Men should continue to show courtesies to women such as holding open the door or helping them on with their coats.
16. It is ridiculous for a woman to run a locomotive and for a man to darn socks.
17. A woman should be as free as a man to propose marriage. (R)
18. Women should be concerned with their duties of childrearing and housetending, rather than with desires for professional and business careers.
19. Swearing and obscenity is more repulsive in the speech of a woman than a man.
20. There are some professions and types of businesses that are more suitable for men than women.

## **Belgrave Gender Role Inventory (BGRI)**

1. Independent/Dependent
2. Trustworthy/Not Trustworthy
3. Weak/Strong
4. Irresponsible/Responsible
5. Resilient/Can Not Bounce Back Easily
6. An Advisor/Does Not Advise Others
7. Supportive of Others/Not Supportive of Others
8. A Caregiver/Not a Caregiver
9. Keeps Family Connected/Not Involved in Family Activities

## Gender Ratio Imbalance Beliefs and Behaviors Scale (GRIBBS)

Higher gender ratio imbalance beliefs indicate that a woman believes that the ratio of men to women affects her decisions related to sexual behavior. Not using condoms to maintain a relationship based on the belief that there are fewer men in the population is an example of gender ratio beliefs.

Directions: Please complete the questionnaire using the criteria below. For each of the following items, place an "X" in the box of the response which best characterizes your opinion. If you have more than one partner please answer for your primary partner, the one with whom you have the closest, most steady relationship.

Key: 1 = Strongly Disagree

2 = Disagree

3 = Somewhat Agree

4 = Agree

5 = Strongly Agree

1. There are fewer men than women in my community.
2. Fewer men in my community decrease my chances of dating.
3. Fewer men in my community decrease my chances of getting married.
4. Fewer men in my community decrease my chances of having children.
5. Fewer men in my community decrease my chances of maintaining a steady relationship.
6. To maintain my relationship, I do not use a condom when having oral, vaginal, or rectal sex.
7. I allow my male partner to have sex with other female partners to maintain our relationship.
8. I use a condom even if it causes me to lose my mate.
9. I do not have sexual relationships when I know the man has multiple partners.
10. There are not enough men for all women to be in a steady and exclusive relationship.
11. Men are in demand and I will do whatever is required to keep them as my sexual partner.
12. If I make my man use a condom, he will go to another woman who will have sex without a condom.
13. Not having a man in my life means that I cannot have children.
14. I do not use condoms in order to keep my male sexual partner.
15. I always determine condom use in my relationship.
16. To maintain my relationship, I let my partner set what is expected in our sexual relationship.
17. To maintain my relationship, I do not question my partner about his involvement with others sexually.
18. I do not ask my partner to be tested for sexually transmitted infections (STIs) prior to having sex with him.
19. I believe if I ask my man to use a condom, I will lose him.
20. I negotiate condom use with my partner.



### Peer Norm Scale (PNS)

Directions: Please complete the questionnaire using the criteria below. For each of the following items, place an "X" in the box of the response which best characterizes your opinion.

Key: 1 = Strongly disagree  
2 = Disagree  
3 = Agree  
4 = Strongly agree

Item

1. "Most of my friends think you should always use condoms when having sex with a new person."
2. "Most people my age are using condoms these days."
3. "Most of my friends think you should use condoms whenever you have sex, including a primary sex partner."
4. "Most of my friends use condoms when they have sex with a new partner."

## Sexual Relationship Power Scale (SRPS)

Directions: Please complete the questionnaire using the criteria below. For each of the following items, place an "X" in the box of the response which best characterizes your opinion. If you have more than one partner please answer for your primary partner, the one with whom you have the closest, most steady relationship.

Key: 1 = Strongly Agree  
2 = Agree  
3 = Disagree  
4 = Strongly Disagree

### Relationship Subscale

1. If I asked my partner to use a condom, he would get violent.
2. If I asked my partner to use a condom, he would get angry.
3. Most of the time, we do what my partner wants to do.
4. My partner won't let me wear certain things.
5. When my partner and I are together, I'm pretty quiet.
6. My partner has more say than I do about important decisions that affect us.
7. My partner tells me who I can spend time with.
8. If I asked my partner to use a condom he would think I'm having sex with other people.
9. I feel trapped or stuck in our relationship.
10. My partner does what he wants even if I do not want him to.
11. I am more committed to our relationship than my partner is.
12. When my partner and I disagree, he gets his way most of the time.
13. My partner gets more out of our relationship than I do.
14. My partner always wants to know where I am.
15. My partner might be having sex with someone else.

### Decision-Making Subscale

Item

Your  
Partner = 1

Both of  
You  
Equally= 2

You= 3

16. Who usually has more say about whose friends to go out with?
17. Who usually has more say about whether you have sex?
18. Who usually has more say about what you do together?
19. Who usually has more say about how often you see one another?
20. Who usually has more say about when you talk about serious things?
21. In general, who do you think has more power in your relationship?
22. Who usually has more say about whether you use condoms?
23. Who usually has more say about what types of sexual acts you do?

## Social Desirability Scale-17 (SDS-17)

Key: 1=True

2=False

1. I sometimes litter. (R)
2. I always admit my mistakes openly and face the potential negative consequences.
3. In traffic I am always polite and considerate of others.
4. I have tried illegal drugs (for example, marijuana, cocaine, etc.). (R)
5. I always accept others' opinions, even when they don't agree with my own.
6. I take out my bad moods on others now and then. (R)
7. There has been an occasion when I took advantage of someone else. (R)
8. In conversations I always listen attentively and let others finish their sentences.
9. I never hesitate to help someone in case of emergency.
10. When I have made a promise, I keep it – no ifs, ands or buts.
11. I occasionally speak badly of others behind their back. (R)
12. I would never live off other people.
13. I always stay friendly and courteous with other people, even when I am stressed out.
14. During arguments I always stay objective and matter-of-fact.
15. There has been at least one occasion when I failed to return an item that I borrowed. (R)
16. I always eat a healthy diet.
17. Sometimes I only help because I expect something in return. (R)

**Sexual Assertiveness for Communication Scale of HIV Risk-Related Information (SC-Info;  
Deither, 1994)**

Directions: Think about a person you usually have sex with or someone you used to have sex with regularly. Answer the next questions with that person in mind. Think about what you would do even if you have not done some of these things.

- 1 = Never
- 2 = Disagree
- 3 = Somewhat Agree
- 4 = Agree
- 5 = All or almost all of the time

1. I would ask if I want to know if my partner ever had an HIV test.
2. I would ask my partner about the AIDS risk of his or her past partners, if I want to know.
3. I would ask if I want to know if my partner ever had a sexually transmitted disease.
4. If I want to know, I would ask my male partner if he ever had sex with another man.
5. I would ask if I want to know if my partner ever had sex with someone who shoots drugs with a needle.

## **RESEARCH SUBJECT INFORMATION AND CONSENT FORM (SONA participants)**

### **TITLE: Gender, Peer, and Relationship Beliefs of Black Women**

**VCU IRB NO.: HM20003078**

If any information contained in this consent form is not clear, please contact the researchers to explain anything that you do not fully understand.

### **PURPOSE OF THE STUDY**

The purpose of this research study is to explore gender, peer, and relationship beliefs and factors that influence decision making in romantic/sexual relationships. You are being asked to participate in this study because you are a Black woman between the ages of 18 and 30 and enrolled in courses at Virginia Commonwealth University (VCU).

### **DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT**

If you decide to be in this study, you will be asked to consent to participate in this study by selecting “I choose to participate in this study”, after you have had all your questions answered and understand what you will do.

In this study you will be asked to complete an online survey that includes questions about your thoughts and beliefs about romantic/sexual relationships. You will also be asked questions pertaining to health behaviors (e.g., condom use, sexual behavior, etc.), gender roles of men and women, and peer norms surrounding sexual behavior. Your participation will last approximately 45 minutes. All responses will be strictly anonymous, and there will be no way for anyone to trace your answers back to you. Approximately 200 women are expected to participate in this study.

### **RISKS AND DISCOMFORTS**

The risks and discomforts are not greater than those associated with daily living.

### **BENEFITS TO YOU AND OTHERS**

You may not get any direct benefit from this study, but, the information we learn from people in this study will help advance knowledge of factors that influence sexual decision-making in Black women. If enrolled in Psychology 101, you will be assigned credit via SONA for your time.

### **COMPENSATION**

There will not be monetary compensation for the completion of this study. However you will be awarded .75 SONA credit hours for completing this questionnaire should you decide to participate. Once you have successfully completed the questionnaire, you will be manually awarded .75 SONA credits online within one week by a member of our research team.

### **COSTS**

There are no costs for participating in this study other than the time you will spend filling out questionnaires.

### **ALTERNATIVES**

The alternative is to not participate in this study. You may choose to participate in another SONA study or complete an alternative research assignment (which would be determined by your instructor) for Psychology 101 credit.

### **CONFIDENTIALITY**

Data is being collected for research purposes only. Your data will be stored in a password protected computer in a locked research area by the principal investigator. Access to all data will be limited to study personnel. What we find in this study may be presented at meetings or published in scientific journals; however, your name will never be used in these presentations or papers.

### **VOLUNTARY PARTICIPATION AND WITHDRAWAL**

You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study. There is no penalty for study withdrawal.

### **QUESTIONS**

If you have any questions, complaints, or concerns about your participation in this research, contact:

Project Coordinator  
**Melanie Moore**  
**paigema2@vcu.edu**

Principle Investigator  
**Faye Z. Belgrave, PhD**  
**fzbelgra@vcu.edu**  
**Office number: (804) 827-3908**

The researcher/study staff named above is the best person(s) to call for questions about your participation in this study.

If you have any general questions about your rights as a participant in this or any other research, you may contact:

Office of Research  
Virginia Commonwealth University  
800 East Leigh Street, Suite 3000  
P.O. Box 980568  
Richmond, VA 23298  
Telephone: (804) 827-2157

Contact this number for general questions, concerns or complaints about research. You may also call this number if you cannot reach the research team or if you wish to talk with someone else. General information about participation in research studies can also be found at <http://www.research.vcu.edu/irb/volunteers.htm>.

**CONSENT**

*I have been given the chance to read this consent form. I understand the information about this study. Questions that I wanted to ask about the study have been answered and I am willing to participate in this study. I also verify that I am between the ages of 18 and 30.*

- I choose to participate in this study.
- I choose to not participate in this study.



## **RESEARCH SUBJECT INFORMATION AND CONSENT FORM**

FOR STUDENT VOLUNTEERS

**TITLE: Gender, Peer, and Relationship Beliefs of Black Women**

**VCU IRB NO.: HM20003078**

If any information contained in this consent form is not clear, please contact the researchers to explain anything that you do not fully understand.

### **PURPOSE OF THE STUDY**

The purpose of this research study is to explore gender, peer, and relationship beliefs and factors that influence decision making in romantic/sexual relationships. Participants in this study will be recruited from classes and on-campus student groups/organizations as volunteers. You are being asked to participate in this study because you are a Black woman between the ages of 18 and 30 and enrolled in courses at Virginia Commonwealth University (VCU).

### **DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT**

If you decide to be in this study, you will be asked to consent to participate by selecting “I choose to participate in this study”, after you have had all your questions answered and understand what you will do.

In this study you will be asked to complete an online survey that includes questions about your thoughts and beliefs about romantic/sexual relationships. You will also be asked questions pertaining to health behaviors (e.g., condom use, sexual behavior, etc.), gender roles of men and women, and peer norms surrounding sexual behavior. Your participation will last approximately 45 minutes. All responses will be strictly anonymous, and there will be no way for anyone to trace your answers back to you. Approximately 200 women are expected to participate in this study.

### **RISKS AND DISCOMFORTS**

The risks and discomforts are not greater than those associated with daily living.

### **BENEFITS TO YOU AND OTHERS**

You may not get any direct benefit from this study, but, the information we learn from people in this study will help advance knowledge of factors that influence sexual decision-making in Black women.

### **COMPENSATION**

For your participation as a volunteer in this study you will be entered into a drawing for two \$75 cash prizes. The drawing will be conducted by the project coordinator through the use of an online random number generator. The two participants randomly selected to receive \$75 each will receive notification via email by April 30<sup>th</sup>, and will have until May 7<sup>th</sup> to claim their cash prize.

### **COSTS**

There are no costs for participating in this study other than the time you will spend filling out questionnaires.

### **ALTERNATIVES**

The alternative is to not participate in this study.

### **CONFIDENTIALITY**

Data is being collected for research purposes only. Your data will be stored in a password protected computer in a locked research area by the principal investigator. Access to all data will be limited to study personnel. What we find in this study may be presented at meetings or published in scientific journals; however, your name will never be used in these presentations or papers.

### **VOLUNTARY PARTICIPATION AND WITHDRAWAL**

You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study. There is no penalty for study withdrawal.

### **QUESTIONS**

If you have any questions, complaints, or concerns about your participation in this research, contact:

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**CONSENT**

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- I choose to participate in this study.
  
- I choose to not participate in this study.

## Vita

Melanie Paige Moore was born on March 28<sup>th</sup>, 1990 in Raleigh, North Carolina. She graduated from William G. Enloe High School in Raleigh, North Carolina in 2008. She received her Bachelor of Science in Psychology from North Carolina State University in 2012.