

**CONDOM USE AMONG U.S. YOUNG ADULT BLACK WOMEN: AN INTEGRATED  
COGNITIVE APPROACH**

**BY**

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## Abstract

**Background:** This study examines how cognitive influences such as sexual self-schema, HIV-related stigma (stigma knowledge, perceived individual stigma and perceived community stigma) and perception of HIV risk and condom sexual self-efficacy influence condom use at last sex among sexually active young adult Black women. The study sought to determine which of these predictors contributed the most to explaining condom use at last sex. The study also aimed to determine whether the predictors, as a set, created a model explaining condom use at last sex. An integrated theoretical framework consisting of The Health Belief Model, Social Cognitive Theory and Intersectionality Theory was utilized to explain how these cognitive influences impact condom use at last sex among young adult Black women.

**Methods:** This was a secondary data analysis collected by the Baylor College of Medicine Teen Health Clinic located in Houston, TX. The clinic offers reproductive health and family planning services primarily to young adolescents and low income populations. A total of 240 inner city young adult Black women, ages 18-23, completed the cross-sectional survey. Participants voluntarily completed the surveys while waiting for clinic services.

**Results:** 43% of the sample reported condom use at last sexual encounter whereas 56% reported no use at last sex. Bivariate findings suggested that HIV-related stigma knowledge related to HIV transmission in casual contact distinguished young adult Black women reporting condom use at last sex from those who did not. Specifically, the more HIV-related stigma knowledge they had the less likely they were to use a condom at last sex. Additionally, findings indicated sexual self-schema was positively related to condom sexual self-efficacy. Multivariate analysis revealed the predictors as a set were statistically significant ( $X^2 = 14.63, P < .05$ ). The model indicated condom sexual self-efficacy as the only significant predictor distinguishing between

condom users and non-users at last sex. Young adult Black women with high condom sexual self-efficacy were 33.2% more likely to report condom use at last sex, when all other factors were constant.

**Conclusion:** Young adult Black women with average sexual self-schema, low HIV-related stigma knowledge, low perceived individual stigma and high perceived community stigma, high condom sexual self-efficacy and a high perception of HIV risk are more likely to report condom use at last sex in this sample. Condom sexual self-efficacy is the most reliable predictor of condom use at last sex found significant in the model. These findings have important implications for future research, the development of targeted prevention strategies, and social work practice with young adult Black women.

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## **Chapter I**

### **Introduction**

#### **Problem Background**

Worldwide over half of all people living with human immunodeficiency virus or acquired immune deficiency syndrome (HIV/AIDS) is women and girls. In 2009, there were an estimated 33.3 million people living with the virus and of those approximately 17.3 million were women and young girls (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2010). The numbers of infected women are remaining steady despite global trends in which some countries are slowly reversing annual HIV incidence rates. For example, in 33 countries, primarily in Sub-Saharan Africa, rates of infection declined by more than 25% in 2009 (UNAIDS, 2010).

These gains are attributed to a collaborative effort consisting of more access to health care services, improved anti-retroviral medications, public education, prevention efforts, financing and the acknowledgement of human rights as an HIV/AIDS issue (UNAIDS, 2010). This demonstrates a concerted effort to structure and operate HIV prevention programs that can work when they are tailored to address the needs of specific populations. To date, rate of infection among marginalized groups in some locations to include injection drug users (IDU's), sex workers and certain groups of men who have sex with men (MSM's) are stabilizing or decreasing in some areas due to structured prevention efforts such as clean needle exchange programs, free and available condoms and confidential access to treatment (UNAIDS, 2010).

Reports in North America, Western and Central Europe cite an estimated 2.3 million people living with HIV as of 2009 which is a 50% increase within the past eight years (UNAIDS, 2010). Much of this increase reflects an improvement in access and treatment whereas people are living longer thus resulting in fewer fatalities (Centers for Disease Control and Prevention

[CDC], 2010) however, HIV incidence is still increasing with an estimated 100,000 new infections annually (UNAIDS, 2010). What is particularly interesting is that these countries are not demonstrating the same trend observed in certain third world countries thus making them less probable to achieve the first global goal of halting and reversing the spread of HIV/AIDS by 50% at the close of 2015 (UNAIDS, 2011). Women account for 26% of those living with HIV in the United States (U.S.) and 29% of those in Western and Central Europe (UNAIDS, 2010). In higher income countries such as these, men living with HIV are the majority but women still face a precarious situation because many are contracting the disease within the confines of a committed relationship or marriage (CDC, 2010). This is a contextual situation that entails its own set of norms and interpersonal behaviors (Maia, Guilhem & Freitas, 2008) which further compound women's sexual risk.

HIV in the U.S. appears racially stratified in that minority women have higher rates of HIV/AIDS diagnoses and death than White women (CDC, 2011). Specifically, the minority group most inundated with the disease is young adult Black women. The rate of diagnoses is significantly increasing among Black women of all ages despite the fact that this group only accounts for 7% of the total 13.6% Black U.S. population (U.S. Census Bureau, Population Division, 2010). In 2006, HIV/AIDS diagnoses among Black women and adolescent girls were highest among those ages 13-39 (CDC, 2009) and by 2009 that figure expanded to include Black women up to the age of 49 (CDC, 2011). HIV/AIDS diagnoses in people 50 and older are on the rise as well with an estimated 7,689 new cases in 2009 (CDC, 2011; Tables 3b & 4b). Black women in this age group are extremely vulnerable in this regard because many are beyond reproductive age and may equate condom use solely with pregnancy prevention (Cushman, Romero, Kalmuss, Davidson, Heartwell & Rulin, 1998), distrust and/or infidelity (Maia,

Guilhem & Freitas, 2008) which could make them less willing to incorporate the use of a condom into their sexual routines.

Young adult Black women are an important subgroup to focus on because reports indicate young adults are a leading group demonstrating significant changes in sexual behavior which reduces overall sexual risk (UNAIDS, 2010). For instance, young adults ages 15-24 in Botswana, South Africa, Zambia, Zimbabwe and the United Republic of Tanzania are reporting a decrease in early sexual activity before the age of 15 and multiple sexual partners while increasing sexual knowledge (UNAIDS, 2010; Measure Demographic and Health Surveys [DHS], 2010). However, it should also be noted that although some young adults are reporting decreases on specific sexual indicators, the rate of infection has been considerably high to begin with (UNAIDS, 2010) leaving substantial room for improvement. Also, young adults are one of the largest groups of people both abroad and in the U.S. (U.S. Census Bureau, Population Division, 2010) which means that effective HIV/AIDS intervention programs must be consistently targeted to this group to achieve long-term reduction in rates of infections. Since young adult U.S. Black women are the new face of HIV/AIDS it is evident that more research must focus on this population using a myriad of perspectives to better understand factors influencing their sexual risk.

### **Statement of the Problem**

Heterosexual sex with a partner of high or unspecified risk is the primary route of HIV transmission among young adult Black women (CDC, 2011; Tables 3b & 4b). This seems simple enough in that it is easy to conclude if young adult Black women were not engaging in reckless sex then there would not be such a problem. Unfortunately, this type of reasoning is

situated in a racist and sexist line of thinking that often insidiously permeates effective public health approaches, research studies and access to health services. The fact that the disease is consistently transmitted within the context of heterosexual contact and heavily concentrated in such a small segment of the population quite naturally speaks to underlying factors that cannot be exclusively attributed to sole individual behavior.

Thirty years into the epidemic, research has identified a number of behavioral and social factors that seem to repeatedly manifest when studying communities and individuals impacted by HIV/AIDS. Worldwide, social issues such as decreased HIV knowledge, lack of access to resources, drug use, crime, poverty (Gentry, Elifson & Sterk, 2005), an inability to negotiate safety, partner influence, direct violence (Maia, Guilhem & Freitas, 2008; Mizuno, Purcell, Latka, Metsch, Gomez & Latkin, 2007) and structural/contextual violence (Adimora, Schoenback & Floris-Moore, 2009) are cited as frequent barriers to reducing sexual risk among women. Reviewing the literature, one can observe a progression of risk factors that center on the individual and is just now starting to expand outward in efforts to consider other latent factors that may contribute to the epidemic as well (Raiford, Wingwood & DiClemente, 2007; Wingwood & DiClemente, 2000).

The natural tendency to want to separate an individual from their environment is often an approach reserved for the elite and those in power (Chan & Reidpath, 2003) as it allows oversight of ongoing structural inequities. This can no longer be the case because the consequences of HIV/AIDS disproportionately impacting young adult Black women are many when considering there are approximately 11 million women in this subgroup who have never married, are widowed or divorced (U.S. Census Bureau [ACS], 2010) and as a group already

exceed the number of available Black men (U.S. Census Bureau, 2010; Adimora, Schoenbach & Floris-Moore, 2009; Jones-DeWeever, 2005).

The rapid progression of HIV/AIDS among Black women in the past two decades and its maintained rates are prompting studies which focus on learning more about women's condom use practices because it is a proven method of decreasing one's HIV risk beyond abstinence in sexual encounters (CDC, 2011). Studying condom use in itself is inherently individualistic but it is useful in 'grounding' the research to highlight factors that impact sexual risk and condom use. However, the focus on condom use should not restrict one's ability to assess factors which are not clearly manifested such as community influences, group ideology, historicity, duality and self-perception. The present study contributes to knowledge in this direction because the aim is to bridge the gap between traditional aspects of research with a culturally sensitive approach by respectfully acknowledging the peculiarities in this population and what they mean to understanding sexual risk.

### **Purpose of the Study**

The purpose of this study is to apply an integrated theoretical framework using the Health Belief Model, Social Cognitive Theory and Intersectionality Theory to better understand the impact and relationship of cognitive factors that influence condom use at last sex among young adult Black women. In structuring a framework as such the study is applying what is traditionally known about behavioral change with more convoluted socially related influences to tease out pertinent relationships. Examining facets of cognition are important because it is what helps one to identify, process, organize and respond to external events (Robbins, Chatterjee, Canda & Hussey, 2006). This has been demonstrated in numerous studies that measure

cognitive variables such as one's perception of their own HIV risk and condom sexual self-efficacy based on long-standing cognitive theories meant to understand behavior. These are demonstrated as very informative constructs however; the problem is that these theories and its resultant studies are self-restrictive because they limit recognizing other external influences such as community values, social inequities and the need to prioritize risk due to competing needs. These are just some of the factors that could prompt an individual to make what would appear to be an irrational decision as it pertains to their safety when utilizing just one type of behavioral theory.

Young adult Black women are disproportionately impacted by HIV/AIDS and one possibility underlying what is known about this disparity could be a reflection of applying restrictive behavioral theoretical frameworks. Cognitive factors such as sexual self-schema and HIV-related stigmas are reliable latent constructs demonstrated to influence and/or predict individual behaviors (Anderson & Cyranowski, 1994; Herek & Capitano, 1993; Muturi and An, 2010). Furthermore, these constructs provide glimpses into how a person's environment could impact or be a reflection of their worldview and influence their interactions with others. Since the early 1970's schemas, of which there are many, are identified as an important component of one's self-concept that assists in processing relevant information that comes through daily interactions and communication.

Copeland (1977) began writing about the lack of recognizing the self-concepts of Black women and what it means to be both Black and female because there are many models of Black womanhood which are rooted in shared common experiences. She specifically lamented research that lumped information about Black women and men into the same group or made inferences about Black women based on findings from women of other ethnic groups. Stigma is

a force that contributes to feelings of inadequacy, shame and negative internalizations which inhibit personal growth. Racism, sexism and classism are real in the 21<sup>st</sup> century and its subtleties begin to influence at a very early age (Copeland, 1977). It is necessary to know how these external factors influence sexual risk in this group because many individuals live within a social matrix (Collins, 2000) in which they have limited ability to push back against oppressive forces and as a result must adapt to.

A major concern is that these constructs are less studied in the sexual realm and infrequently studied among at-risk sexually active young adult Black women. This study attempts to address this gap by measuring sexual self-schema and HIV-related stigma among a sample of young adult sexually active Black women. What is known is that perception of HIV risk and condom sexual self-efficacy are valuable cognitive constructs reflecting health-seeking related behaviors. In some groups the relationship between subjective perceptions of sexual risk, condom sexual self-efficacy and actual condom use is clear in that many properly assess themselves which is reflected in their behaviors. However, in studies assessing Black women's sexual risk the relationship is not as clear as their reported risk level is low and their sexual behaviors indicate otherwise. What is not understood are plausible reasons as to why this trend is not reflected in this population and if the appropriate analytical methods are being applied to understand the needs of this group.

An integrated theoretical framework starts by understanding the individual behavior but then draws from other information that is culturally and structurally based which may reveal important factors impacting sexual decision making in this group. Based on the literature review discussed in the next chapter this study hypothesizes that "Sexually active young adult Black women with positive sexual self-schema, low HIV-related stigma, and high perceptions of HIV

risk and condom sexual self-efficacy will be more likely to report condom use at last sex.” This study is unique because it is building upon cognitive constructs previously demonstrated to influence sexual behavior but highlighting multi-level modes of cognition that are culturally and structurally reinforced which has not been done to date. The specific aims of the present study are as follows:

*S.A.1.* Describe the prevalence of condom use at last sex among a group of sexually active young adult Black women;

*S.A.2.* Assess relationships between condom-related socio-demographics and condom use at last sex among a group of sexually active young adult Black women;

*S.A.3.* Assess relationships between condom use at last sex and sexual self-schema among a group of sexually active young adult Black women;

*S.A.4.* Assess relationships between condom use at last sex and HIV-related stigma among a group of sexually active young adult Black women;

*S.A. 5.* Assess relationships between condom use at last sex and perception of HIV risk among a group of sexually active young adult Black women;

*S.A. 6.* Assess relationships between condom use at last sex and condom sexual self-efficacy among a group of sexually active young adult Black women;

*S.A.7.* Assess associations between sexual self-schema and condom sexual self-efficacy among a group of sexually active young adult Black women;

*S.A. 8.* Assess the relationship between perception of HIV risk and HIV-related stigma among a group of sexually active young adult Black women;



*S.A.9.* Assess the influence of sexual self-schema, HIV-related stigma, perception of HIV risk, condom sexual self-efficacy and condom use at last sex among a group of sexually active young adult Black women.

## **Chapter II**

### **Literature Review**

#### **Black Women, Sexual Risk and Condom Use**

HIV infection is increasing among women worldwide as they now account for 50% of all those living with the disease (UNAIDS/WHO, 2009). U.S. nationwide estimates indicate approximately 95,000 U.S. Black women were living with HIV/AIDS at the close of 2007 and of that over 8,000 were new reports that same year (CDC, 2010, Table 24). U.S. statewide and territorial ethnic comparisons with confidential reporting indicate Black women as being diagnosed with the virus at a rate 18 times higher than White women and 4 times higher than Latina women (CDC, 2010, Table 6a). In Texas, this trend appears consistent among all ages of Black women however in 2008 women, ages 20-45, had the highest rates of infection (TDSHS, 2010). In 2008 alone, available Texas figures show Black women make up 485 new HIV cases compared to 128 White and 158 Hispanic women (TDSHS, 2010). In Houston, there are a minimum of 3,738 Black women living with HIV/AIDS compared to 538 White and 733 Hispanic women (HHS, 2010). HIV/AIDS figures are often affected by delayed reporting and many individuals not even knowing they are infected. In Texas, HIV did not become reportable until 1999 (HHS, 2010) so the actual numbers among Black women are most likely higher.

There is no information that explicitly concludes why Black women are contracting the virus at such an alarming rate in comparison with women from other ethnic groups. All agree that rubber latex condoms are the best defense against HIV transmission and using them correctly and consistently significantly reduces the risk of contracting HIV or another sexually transmitted infection (STI) (CDC, 2009). The use of condoms varies extensively according to

situational contexts. Most Black women are contracting HIV heterosexually versus injection drug use when compared to women from other ethnic groups (CDC, 2010). Although the majority of Black women are not reporting primary transmission via injection drug use, the use of alcohol and non-injecting drugs are still a major risk factor in HIV vulnerability. Women engaging in these practices are more likely to not use condoms during heterosexual sex (Wingwood & DiClemente, 1997).

Condom use is also inhibited in situations where women are relegated to using sex as a means of survival to pay their bills or to take care of their children. This creates a situation where these women lack power in sexual relationships and often cannot insist on safe sex (Forna, Fitzpatrick, Adimora, McLellan-Lemal, Leone, Brooks, Marks & Greenberg, 2006). Furthermore, within a context as such the need to use condoms may get lost in the competing demands and pressures that women face daily. The 1991 Human Immunodeficiency Virus Research Study (HERS) and 1994 Women's Interagency HIV Study (WIHS) concluded that for many women HIV precaution is secondary to survival needs such as food, transportation and housing (AIDS Action Council, 2001).

Another contextual situation that can increase women's vulnerability to HIV is the norms associated with marriage or long term relationships (Soler, Quadagno, Sly, Riehman, Eberstein & Harrison, 2000). Marriage or commitment used to be understood as a protective factor but that is no longer the case. Renwick (2002) conducted a study among international HIV positive women and reported 80% of them contracting the virus while in a long term relationship with a stable partner. Furthermore, for those women who are married or are in committed relationships using a condom is often considered antithetical to their concept of monogamy and fidelity even if

they or their partner are suspected of having sex with others outside the relationship (Maia, Guilhem & Freitas, 2008; Rosenthal, Moore & Flynn, 1991).

The bulk of research attributes the spread of HIV to a complex combination of physiological, behavioral and social factors. Physiologically, women are more susceptible to contracting the virus from a man during sexual intercourse than men from women. This is often attributed to the fragile structure of the vagina, semen having higher levels of HIV infection than vaginal fluids and untreated asymptomatic STI's common among women (Office on Women's Health, 2009). Behavioral factors such as access to medical care, getting tested and knowing a sexual partner's status are necessary to combating and defending oneself against the spread of HIV (CDC, 2009) and if one does not have access to these resources his or her risk for infection increases. Social factors identified as contributing to the spread among Black women include poverty (Gentry, Elifson & Sterk, 2005), an overall higher prevalence of STI's, violence and drug use (CDC, 2009, HHS, 2010). Although not all Black women are poverty stricken, many do live within limited means and resources. For those affected this can lead to unstable living conditions which in turn lead to higher risk behaviors such as drug use and exchanging goods and/or money for sex. Where a person lives can affect how that person behaves or has to adapt (Gentry et al., 2005). STI's are credited with transmitting HIV at a much more accelerated rate and Black women and girls are reported as having overall higher rates of chlamydia, gonorrhea and bacterial infections (CDC, 2009).

Not all Black women face the same set of factors that inhibit condom use. Recently, more studies are demonstrating that Black women are not less likely to not use condoms than women from differing ethnic groups (Tillerson, 2008; Davis, Sloan, MacMaster & Kilbourne, 2007; Moreno, El-Bassel & Morrill, 2007). In light of this, the problem is still glaring because

the disproportionate level of HIV/AIDS saturation within the Black community inherently increases Black women's actual level of risk as they are more likely to engage in sex with an infected partner (Adimora, Schoenbach & Floris-Moore, 2009). Jones-DeWeever (2005) reported Black women are less likely to establish relationships outside of their own ethnic group when compared to women of varying ethnicities. These findings coupled with Black women still reporting the highest number of HIV infections in comparison to women from other ethnic groups reiterates an even more pressing need for this population to use condoms consistently and correctly in every single encounter.

### **Cognition, Sexual risk and Condom Use**

What is lacking in the literature is a focus on alternative cognitive factors that could potentially influence condom use among Black women. Insight about cognition is relative in terms of understanding and explaining sexual behavior while offering a basis for potentially promoting change. Jean Piaget's (1952) early work in cognitive and moral development determined resultant behaviors to be an adaptation to one's environment and social interactions which are controlled through mental organizational processes called schemas. Although most of his research was conducted among children he made known that adults can and do have multiple schemas which continue to develop and refine new ideas and behaviors throughout their adulthood (Robbins, Chatterjee & Canda, 2006). Lev Vygotsky (1994) further expanded this reasoning to include shared cultural interpretations and meanings as a result of language as also impacting cognitive development, functioning and behavior. In his 1934 lecture *The Problem of the Environment* he argues that an "emotional experience" is the culmination of a person's individual and environmental characteristics which is always related to something found outside of the individual (Vygotsky, 1994). This suggests that there is a synergistic relationship between

a person's cognitive schematic representations, the culturally reinforced environment in which they exist and their behavioral responses.

The relationship between various types of cognitions and high risk sexual behavior are studied extensively in the adolescent and college age populations thus demonstrating its utility in providing some insight about sexual behavior (O'Sullivan, Udell, Montrose, Antonello & Hoffman, 2010; van Empelen & Kok, 2008; Abraham, Henderson & Der, 2004; Goggin, Malcarne, Murray, Metcalf & Wallston, 2007; Fife-Schaw & Abraham, 2009; Hill & Abraham, 2008; Rosenthal et al., 1991; Taylor-Seehafer, Johnson, Rew, Fouladi, Land, & Abel, 2007; Aubrey, 2007; Downing-Matibag, & Geisinger, 2009; Brown, Kessel, Lourie, Ford & Lipsitt, 1997; Impett & Tolman, 2006; Murry, Brody, McNair, Luo, Gibbons, Gerrard & Wills, 2005). However, there are fewer studies that specifically look at the cognitive influence of schematic representations on high risk sexual behaviors (Mason, 2002; Sapanaro, 2003; Boyce, 2006; Avants & Margolin, 2004; Boesten, 2008).

Due to the nature of numerous cognitive constructs used in many studies, it is often implied that there are culturally reinforced cognitions involved in the sexual decision making process but rarely measured. Rosenthal, Moore and Flynn (1991) conducted a study among 17-20 year old male and female adolescents measuring the association between cognitive aspects, sexual self-esteem and sexual self-efficacy, in relation to sexual risk-taking behavior (types of sex, partners and condom use consistency). They found that most adolescents had high levels of sexual self-esteem and self-efficacy in terms of their perceived ability to perform various safe sexual behaviors but these findings did not equate to using condoms more often with either a casual or main partner. The researchers concluded that several culturally reinforced influences such as attitudes and beliefs in being labeled promiscuous among women and condom use

discussions beyond pregnancy prevention as reflecting negatively on themselves and their partners. They suggested these influences may have contributed to the high levels of inconsistent condom use (Rosenthal et al., 1991). It would seem useful then to target cognitions that are potentially predicated on cultural influences since they seem to have a great effect on aspects of sexual decision making.

To date, there are no known studies that examine both cognitive schematic representations and culturally reinforced cognitive influences on high risk sexual behaviors. One reason for this may have to do with cognitive schemas being a broad multidimensional yet latent construct that is often inferred and physically unobservable (Robbins et al., 2006). Thus, one may question the overall utility of a broad and inferred variable accurately reflecting a specific behavior and not measure for it. Another reason could be its application to sexuality is still in its infancy and research has yet to fully recognize the potential contribution of cognitive schemas and culturally reinforced influences. However, this may have more to do with adhering to a particular type of theoretical framework thus limiting the purview of one's study.

A review of HIV prevention programs targeted toward Black women seems to support this line of reasoning. As a result of what has been learned over the years, nationally funded prevention programs primarily focus on changing high risk behavior through STD/HIV/AIDS knowledge and interpersonal skills building. Popular programs funded by the CDC, designed to resonate with Black women often incorporate afro centric literature and encourages the use of Black female instructors as ways to fully engage participants. Programs such as Sisters Informing Sisters on Topics about AIDS (SISTAS), Women Involved in Life Learning from Other Women (WILLOW) and Sister-to-Sister are implemented regularly in most urban cities with high rates of HIV diagnoses (CDC, 2009). These programs are primarily designed to

enhance participant's sexual knowledge about HIV/AIDS, teach proper condom usage, improve condom negotiation skills, provide resources and referrals for medical prevention screenings and support group counseling for infected and non-infected women and their families (National Alliance of State & Territorial Directors [NASTAD], 2008).

These programs are funded by the government and primarily delivered through non-profit organizations and community health bureaus situated within the respective communities. Many of the organizations and bureaus are dependent on external funds to operate which means that although a program is marginally effective it may still be propagated to ensure the organization's continuity. In terms of lasting effect, studies indicate these programs have demonstrated some levels of efficacy in reducing individual behavioral risk with minority women when comprised of combinational techniques such as role playing, individual and group dialogue and focusing on empowerment (Johnson, Scott-Sheldon, Smoak, Lacroix, Anderson & Carey, 2009; O'Leary, Jemmott & Jemmott, 2008; Crepaz, Marshall, Aupont & Jacobs, 2009). However, they also receive negative reviews because women are essentially still learning the mechanics of proper sex and knowledge and the protective gains do not sufficiently reflect a reduction of high risk sexual behaviors (Adimora et al., 2009).

All of these HIV prevention programs are exclusively designed with a streamlined version of Social Cognitive or Learning Theory (SCT/SLT) (Bandura, 1977) as its foundation (CDC, 2009). The underlying theme amongst them all is to cognitively build on learning and internalizing new sexual skills while improving maladaptive decision making processes that can result from a lack of assertiveness and/or negotiation skills. However, the ability of one being able to exert sexual assertiveness and successful negotiation skills also relies on a combination of positive sexual self-concepts (Rostosky, Dekhtyer, Cupp & Anderman, 2008) and freedom from



inhibiting culturally reinforced ideology which these programs do not seem to fully address (Branch-Vital, Hale & Mason, 2009). The overall complexity of sexuality and findings as such clearly delineate a need to examine these other cognitive factors that may contribute to high risk sexual behaviors.

### **Factors Impacting Condom Use**

Factors impacting condom use among women are prevalent in the literature. Studies suggest reported condom use is primarily influenced by cognitively related factors perception of HIV risk and sexual self-efficacy. Perception of HIV risk encapsulates one's level of seriousness and susceptibility in terms of contracting HIV based on what she or he believe the current circumstances to be. This is often comprised of overall sexual knowledge, awareness and individual experiences. It follows then that Black women who believe themselves to be at risk are more likely to increase protective sexual behaviors. Sexual-self efficacy is a reflection of one's belief in his or her capability to successfully accomplish "behaviors and affective responses" within a sexual context (Bailes, Creti, Fichten, Libman, Brender & Amsel, 1998). This is found in many studies to have a profound effect on how people feel, think and do because it is an indicator of one's attitude about a given task and quite possibly how cooperative they think their partner will be in relation to this given task. Nevertheless, other studies suggest depending on the contextual situation, as previously mentioned, there can be breaks between what people believe themselves capable of doing and then actually doing (Hoffman, Jarrett, Kelvin, Wallace, Augenbraun, Hogben, Liddon, McCormack, Rubin & Wilson, 2008). It is anticipated that this division in Black women's capabilities does not render the construct futile but simply differs among various macro-system relationships such as type of sexual partner or relationship, contraceptive use, age and other social and structural contexts.

Factors less prevalent in the condom use literature but relevant in sexuality studies include sexual-self schema (SSS) and HIV-related stigma. These are both cognitive constructs that are often excluded from health behavioral studies most likely because they are not a sole reflection of individualism and/or the dyadic relationship. Condom use studies tend to emulate an epidemiologic style that is situated within an individualistic behaviorally driven approach. This approach appears unable to take into consideration larger implications of socially embedded structural influences (Amaro, 1995) especially those associated with a collective legacy of sexual shame, oppression and distrust which could have an effect on the spread of HIV and condom use practices among Black women (Adimora et al., 2009).

### **Sexual Self-schema and Condom Use**

Sexual self-schema (SSS) is a smaller component that makes up one's self concept. Specifically, it is a selective representation of one's personality used to perceive and then act based on a person's sexual self. Anderson and Cyranowski (1994) used Bandura's (1994) social cognitive framework to design and create two separate constructs for men and women because it was determined SSS is gender specific, built upon past and current experiences and influential upon processing sexually relevant information thus guiding sexual behavior. Their research on women's sexual response identified two primary groups, positive and negative, which indicate the type and degree of schematic influence. Women with positive schema are reported to be less inhibited, more likely to engage in relationships and express positive emotions while in these relationships. Women with negative schema or a negative view of their sexual self may have had less sexual experiences or relationships, weaker positive effect, less influence in sexual matters and are less comfortable in sexual relationships. The construct can also be used as a bivariate model in which two additional groups complete the continuum-aschematic and co-

schematic. Women with aschematic or co-schematic schemas are simultaneously endorsing or rejecting both positive and negative schemas. Aschematic women would be thought to have no schematic representation to draw from and less positive aspects of sexuality. Co-schematic women strongly endorse both which means that they may be conflicted in their feelings compared to their actual behavior (Anderson & Cyranowski, 1994). Anderson and Cyranowski (1994) did not use their measure in terms of measuring high risk sexual behavior among women but they did demonstrate that there are differences in women's views of their sexual selves which are relevant to their sexual behaviors (Anderson & Cyranowski, 1998; Donague, 2009).

Due to its recent development there are very few studies that have used Anderson and Cyranowski's SSS scale or similar schematic constructs to assess high risk sexual behaviors. One study looked at the effects of presenting 12-19 year old adolescents with persuasive condom use messages matched to their identified sexual schemas in hopes of increasing their intentions to arm themselves with and to use condoms (Boesten, 2008). In this study, the author was unsuccessful in matching sexual schemas to persuasive condom use messages possibly because her sample size included very young adolescents whose sexual schemas may not have been as influential as needed in order to make accurate assessments. Anderson and Cyranowski (1998) propose that during this time many adolescents are still actively in the process of attaining knowledge about their sexual selves and this process is largely dependent on parenting style and peer influence rather than a sexual sense of self. Boyce (2006) conducted a study examining differences in condom use between Hispanic and Non-Hispanic Black women. She measured SSS based on three affects, high sexual esteem, sexual depression and sexual preoccupation, and found a positive correlation between the type of sexual schema and one's perception and ability to influence condom use during sex (Boyce, 2006). In particular, the women in her sample also

reflected a low adherence to traditional feminine roles and an ability to speak comfortably with sexual partners about their needs which proved to be influential in reported condom use. This is consistent with Anderson and Cyranowski's (1998) statement in that the way in which SSS manifests is a reflection of attachment styles and the characteristics of positive schematic women foster strong interpersonal connections and high levels of sexual esteem.

There are other researchers who have measured the influence of SSS among women in different settings to include those with vaginismus versus those without (Reissing, Binik, Khalife, Cohen & Amsel, 2003), predicted sexual changes among women following breast cancer surgery (Yurek, Farrar, & Anderson, 2000), gauged the recovery of sexual functioning among spinal cord injury survivors (Davidov, 2007), examined women's overall subjective wellbeing and life satisfaction (Donaghue, 2009), and predicted sexual responsiveness of gynecologic cancer survivors (Anderson, Woods, & Copeland, 1997). Meston, Rellini and Heiman (2006) conducted a comparison study of child sexual assault (CSA) survivors versus those without a CSA history using the bipolar model of SSS as a predictor of sexual functioning. They found that women in the CSA group experienced more negative sexual functioning than women without a CSA history even after controlling for anxiety and depression. However, they found among the CSA group, differences in levels of negative sexual functioning based on their scores along the positive effect. This meant that CSA survivors with more positive SSS scores were more likely to have better sexual functioning and "adjustment" so they could engage in meaningful intimate relationships (Meston, Rellini, & Heiman, 2006).

It appears SSS may be a useful construct in determining what types of cognitive schematic representations influence condom use among Black women. It is expected that Black women with a positive SSS will be comfortable asserting their needs within a sexual relationship

and more likely to report higher condom usage than women with a negative SSS. Also, because SSS is independent of personality and based on past experience meant to guide future behavior (Anderson & Cyranowski, 1994) it may be useful to better understand how SSS could potentially influence sexual decision making in this group.

### **HIV-Related Stigma and Condom Use**

HIV-related stigma encompasses unfavorable attitudes, beliefs and policies directed toward persons living with HIV/AIDS (PLHA) (Herek & Capitano, 1993). Erving Goffman is best known for his ethnographic studies in learning how and in what manner stigma comes about and is perpetuated throughout society. In his book *Stigma: Notes on Management of Spoiled Identity* (1963) he describes it as “an attribute that is deeply discrediting [often occurring] within a particular social interaction.” Furthermore, he states that this process usually takes place during socialization in which the stigmatized incorporates the beliefs and ideas of the “so-called normal” while learning they either possess the stigma itself or become very aware of the consequences of possessing it (Robbins et al., 2006).

HIV-related discrimination, enacted stigma, is the final outcome of HIV-related stigma. Several studies have reviewed stigma related discrimination against PLHA’s and the negative effects thereof (Chakrapani, Newman, Shunmugam & Dubrow, 2010; Maulana, Krumeich & Van Den Borne, 2009; Sarkar, 2008; Longfield, Astatke, Smith, McPeak & Ayers, 2007). Most of these studies are conducted in samples already diagnosed with HIV and based on the premise that stigma and discrimination inhibit an individual’s ability to insist on condom use, obtain consistent HIV treatment, disclose their status and seek assistance and support from others (Nyblade & MacQuarrie, 2006).

Herek and Capitano (1993) found that HIV-related stigma can go beyond the individual experiences of PLHA's. A series of U.S. national telephone surveys in 1991, 1992 and 1997, completed in the earlier stages of the epidemic, found that many people in the general public harbored morally punitive views about the types of people who became infected (gay men and bisexuals) and even agreed that these groups should be separated and/or quarantined from the larger population (Herek & Capitano, 1993). Today, the most extreme views are not as prevalent as they used to be but there is still a sizable portion of the general public that assign a deviant label to those who are infected, exaggerate fears about socializing with these high risk groups and blame PLHA's for their current condition (Herek, Capitano & Widaman, 2002).

Despite the pervasiveness of HIV-related stigma and discrimination, efforts to measure its influence on condom use are scarce (UNAIDS, 2007). One review suggested some reasons for this neglect may have to do with the complexity of stigma as a concept, its manifestation changing depending on the cultural setting and whether it is being studied within intrapersonal or societal settings (Mahajan, Sayles, Patel, Remien, Sawires, Ortiz, Szekers & Coates, 2008). It is at this juncture where examining cultural influences can provide a useful roadmap to envisioning how stigma may influence condom use among Black women. Previous research identified Black people as more likely to overestimate their risk for infection but less likely to stigmatize PLHA's when compared to Whites. Women as whole also fell into this group in that they were less likely than men to harbor stigmatizing beliefs about infected persons (Herek & Capitano, 1993). Thus, Whites were the group that directed their beliefs and attitudes mainly onto the principal groups infected and Blacks and women, two historically disenfranchised groups, were more likely to direct theirs onto the disease itself (Herek & Capitano, 1993).

This division in placement of stigmatizing beliefs and attitudes appears to be a social reflection of “legitimate oppression” or the historically insidious influence of those with power versus those usually without (Henslin, 1999). Goffman argues that stigma management, attempts to disassociate the self from the stigma, can create ambivalence about one’s own self sometimes resulting in secrecy, anxiety, disloyalty and dishonesty (Robbins et al., 2006). Within these oft marginalized groups, a historical lack of power coupled with an overestimation of risk could likely hinder which types of valid public health information is actually taken in and how sexual behavior is acted upon. Black women are an important population in this respect because this group’s sexuality has often been culturally and politically manipulated on both sides of the equation. Historically, Black ideologies such as conservatism and nationalism set the tone for what was important in terms of actively resisting social oppression (Sawyer, 2008). As a result, more Black women suffered rather than gained due to the negative sexual stereotypes and belief systems these ideologies purported (Collins, 2005).

Today, remnants of these ideologies are still prevalent in the Black community. The church is a major cornerstone in the Black community and Black women were reported to be more religious when compared to people from other ethnic groups (Levin, Taylor, & Chatters, 1994). Muturi and An (2010) measured the influence of religiosity on HIV related stigma among a sample of Black women and found in the majority of their sample those who were more religious endorsed more stigma about PLHA’s. Furthermore, they learned that these women believed their viewpoints were shared by others in their faith institutions. The growing HIV epidemic among Black women makes the consequences of stigma hard to ignore. Working from a theoretical framework that can accommodate the influence of shared culture will provide some

insight as to how much HIV-related stigma impacts beliefs and attitudes that in turn can affect high risk sexual behavior among Black women.

Presently, there are not many studies that examine the association between HIV-related stigma and high risk sexual behaviors in the general population or among Black women as a group. Liu, Li, Stanton, Fang, Mao, Chen and Yang (2005) conducted an exploratory study among Chinese migrants and found that those with higher levels of stigmatizing beliefs about PLHA's reported more high risk behaviors such as a history of STI's, involvement in commercial sex and multiple sex partners. In a separate model they identified a negative relationship between these same stigmatizing beliefs and condom use within the same group. Sales, DiClemente, Rose, Wingwood, Klein and Woods (2007) measured STI related shame and stigma among young Black female adolescents from teen health clinics and found that higher rates of STI related shame predicted higher rates of condom use in this group. STI related stigma did not have the same relationship to condom use in this group. In another study, among a slightly older and larger sample, researchers found that individuals with higher levels of STI stigma were less likely to have been tested for gonorrhea or HIV within the past year (Fortenberry, McFarlane, Bleakley, Bull, Fishbein, Grimley, Malotte & Stoner, 2002). This means that STI related stigma acted as a significant barrier to obtaining sexual health related services in this group.

Collectively, these articles discuss the role of stigma as a major barrier to STI/ HIV treatment and consistent condom use. Based on findings from the Fortenberry, McFarlane, Bleakley, Bull, Fishbein, Grimley, Malotte and Stoner (2002) study, one could infer that if stigma is preventing individuals from obtaining diagnosis and treatment they may be more likely to not have been using protection to begin with. Although these studies conclude slightly



different findings they both noted that STI related shame and stigma are separate but related constructs that build from one another but diverge at some point. Based on this, measuring HIV-related stigma among young adult Black women will provide some insight as to its overall influence and impact on condom use that has not been done before.

### **Perception of HIV Risk and Condom Use**

The literature indicates, perception of risk, whether high or low, is influential on condom use amongst almost all ethnicities and cultures. In one study Hispanic women were found to report higher levels of perceived risk when compared to Black and White women and they reported more use of dual method contraceptives one of which was most often a condom (Soler et al., 2000). The study even suggests some Hispanic women took extraordinary measures to conceal their effective birth control method such as the pill or IUD just to increase condom use as based on their level of perceived risk. On the other hand, a common theme among several studies are women who are high risk based on reported sexual behaviors but underestimate their risk of contracting the HIV virus (Maharaj & Cleland, 2005; Stringer, Sinkala, Kumwenda, Chapman, Mwale, Vermund, Goldenberg & Stringer, 2004; Takahashi, Johnson, & Bradley, 2005; Boyce, 2006).

What is interesting is that a low perception of risk and high behavioral risk exists in most groups despite differences in education and/or socioeconomic status. Women who are well educated may often live in an urban area and score high on HIV knowledge, transmission and prevention tests but still engage in high risk behaviors because they do not perceive themselves at risk. Women who have less education are more likely to live in rural or smaller areas and may or may not be as knowledgeable about the facts surrounding safe sexual behaviors and

disease prevention while reporting high risk sexual behaviors as well (Cornelius, Okundaye, & Manning, 2000). Findings such as these indicate perception of risk is very relevant in sexual behavior and may be a more influential factor than what is commonly measured such as HIV knowledge and sexual mechanics.

O'Sullivan, Udell and Patel (2006) delved further into the construct perception of risk and suggested the variable as currently studied may not fully capture its relationship to condom use. In their study the authors also found that women reported low perception of risk and high risk sexual behaviors which is similar to the aforementioned studies. However, they determined that condom use for these women had more to do with their perceived safety as it pertained to the length of time in having known their partner. Most of the women had known their partner for at least one year or more and engaged in unprotected sex quite often but reported low risk for contracting HIV. Women who had had sex with a new, unfamiliar or secondary partner were more likely to report their level of safety risk had increased which correlated with how often condom were used (O'Sullivan, Udell, & Patel, 2006). The authors support their findings with research outlining the cognitive processes involved when one has to determine risk. They state that general knowledge comes about from an objective understanding whereas personal knowledge comes about from a subjective understanding of experiences. They suggest an increase in condom use will take place when accurate perceptions of risk and safety are fully integrated (O'Sullivan et al., 2006). In other words, women's understanding of their risk is mainly determined by the proximity of intimate partners rather than a lack of knowledge about disease transmission.

Schroder, Hobfoll, Jackson and Lavin's (2001) study looked at Black and White women's safe sex behaviors and determined perception of risk to be the single most influential

factor in safe sex in both groups. These women evaluated their perception of sexual risk as it pertained to their community (news stories, other people, etc.) and personal interactions (partner behavior, drug use, etc.). Black women that were more likely to report higher awareness of personal and community risk reported higher levels of condom use when compared to White women. However, Black women in comparison to other groups were more likely to engage in “optimistic bias” which is when one devalues their own perceived risk despite the obvious because they are comparing it to the perceived risk of other’s within their community. The authors were unable to fully account for this difference. They suggested it may be a type of coping style that this sample of low income, inner city Black women adopted to counter life stressors. However, they did note among those who still reported higher rates of condom use that they also exhibited a stronger sense of sexual self-efficacy which was believed to have countered the “optimistic bias” (Schroder, Hobfoll, Jackson, & Lavin, 2001) and contributed to an increase in reported condom use.

### **Sexual Self-efficacy and Condom Use**

Condom sexual self-efficacy is one of the more reliable constructs in understanding sexual behavior because it is consistent with most cognitive behavioral theories and supported in the literature in that no behavioral change can take place unless an individual believes they are able to make the change. This concept applied within the realm of sexuality, sexual self-efficacy, suggests the individual would perceive they are able to successfully exercise the same level of influence in whether a condom is actually used during a sexual act or not.

Studies measuring the influence of sexual self-efficacy and condom use are consistent. Soler et al., (2000) measured sexual self-efficacy (ability to resist unprotected/unwanted sex,

plan to have condoms around and communicate with partner about condoms) among a group of low income Black, Hispanic and White women and found it to be most relevant among Black and Hispanic women thus making them more likely to be consistent condom users than White women. Hoffman et al. (2008) conducted a study measuring differences between West Indian Black immigrant and U.S. born Black men and women's sexual risk. They determined sexual self-efficacy to have more of an effect among U.S. born Black versus West Indian immigrant women in their confidence to use and discuss condom use with main partners. Seth, Raiji, DiClemente, Wingwood and Rose (2009) determined sexual self-efficacy is a significant mediator between psychological distress and inconsistent condom use among Black adolescent females.

Some researchers disagree with using sexual self-efficacy as a construct in predicting condom use (Cochran & Mays, 1993) because it does not overcome the fact that using a condom requires the cooperation of two people rather than one (Bowleg & Belgrave, 2000). However, Bandura (2007) acknowledges this limitation in his theory and argues that in measuring self-efficacy it is not necessarily about specific components of a task, i.e. the ability to put a condom on, rather than the level of belief in one's ability to influence the outcome (condom use during sex) within the pressures of their environment. Furthermore, he states that self-efficacy in terms of sexuality is about managing relationships while enhancing interpersonal efficacy because no action can take place in absence of self-efficacy (Bandura, 1994). More researchers than not agree with this line of thinking and the literature reflects this sentiment. To date, researchers using cognitive behavioral theories have studied and validated sexual self-efficacy in a variety of methods to include situational or resistive sexual practices (Rosenthal et al., 1991), how it impacts the likelihood of sexual adjustment (Reissin et al., 2003), levels of sexual knowledge or

disease education (O'Leary, et al., 2008) and sexual confidence levels to perform certain behaviors while enhancing sexual satisfaction (Lauby, Semaan, O'Connell, Person, & Vogel, 2001). Sexual self-efficacy is determined to be a good predictor of sexual behavior regardless of age or experience (Baele, Dusseldorf & Maes, 2001) and is reciprocally related to partner cooperation (Bowleg & Belgrave, 2000).

### **Macrosystem Relationships and Condom Use**

Socio-demographics reported to influence condom use as a whole amongst women are age, education level, socio-economic status, drug use and religious background (Smith, 2006; Wagstaff, Kelly, Perry, Sikkema, Solomon, Heckman, & Anderson, 1995; Wingwood & DiClemente, 1997). Other socio-demographics demonstrated to influence condom use in this group include type of sexual relationship (Alleyne, 2008) and contraceptive use (Anderson, Brackbill & Mosher, 1996; Cushman et. al., 1998). Branch-Vital, Hale and Mason (2009) conducted a recent study among Black adult women in Harris County, Texas and determined that younger women (ages 18-29) with some college education, single and of a Baptist affiliation were more likely to report condom use. Finer, Darroch and Singh (1999) examined data from the 1988 and 1995 National Survey of Family Growth and 1988-1996 General Social Survey for sexual behavioral risk factors and confirmed that women with low income, less education, lived in non-metropolitan areas or regions outside the northeast and Protestant were less likely to be current condom users.

Type of sexual relationship is an extremely important condition of condom use among women. Alleyne (2008) conducted a study of high risk sexual behaviors among Black college women and found type of partner, casual or exclusive, to have a significant impact on condom

use among this group. Women with casual partners reported more condom use than women in exclusive partnerships. Wagstaff et al. (1995) went further in assessing types of exclusive partnerships among women. He conducted a study with a sample of over 80% adult Black women and found condom use differences between women with multiple partners versus exclusive high (with partners that engage in sex outside the relationship or injection drug use) and exclusive low risk (partner is not known to have sex outside the relationship or injection drug use) relationships. The findings were consistent with previous literature in that women with multiple partners reported the most condom use, followed by women with perceived exclusive high risk and finally, women with perceived exclusive low risk.

Type of contraceptive use also impacts whether a condom is used among women (Anderson et al., 1996; Cushman et al., 1998). Cushman et al. (1998) conducted a study among three major clinics in Pittsburgh, Dallas and New York and concluded that the overall frequency of condom use declined when women initiated hormonal contraceptives such as the implant or the injectable. Comparatively, the study found that Black women and teenagers were more likely to use a condom with a hormonal contraceptive than White or Hispanic women (Cushman et al., 1998). A more recent review of dual contraceptive use indicated a negative relationship exists between hormonal contraception (including the IUD) and condom use (Rosenberg, 2010; Pazol, Kramer & Hogue, 2010). The new report also suggests of those using long term hormonal methods Black women are less likely than Hispanic or White women to use a condom as a dual method (Rosenberg, 2010; Pazol et al., 2010). It is possible that this difference may be a result of sampling in that Cushman et al.'s sample was predominantly Hispanic females age 25 and younger whereas Pazol, Kramer and Hogue's (2010) analysis of the National Survey of Family and Growth included women up to the age of 44. The present study used information in the

aforementioned studies to support examining contraceptive use as well as the influence of other socio-demographics to assess their influence on condom use among a group of sexually active young adult Black women.

### **Relationships between the Factors**

Applying the literature as discussed and what is known about the constructs it is expected there will be differences along condom sexual-self efficacy (Bandura, 2007) as it pertains to SSS (Anderson & Cyranowski, 1994) and perception of HIV risk should vary according to levels of HIV-related stigma (Liu, Li, Stanton, Fang, Mao, Chen & Yang, 2005). Based on what is known about the construct SSS, theoretically, positive schematic women will be more likely to exhibit higher levels of sexual self-efficacy in influencing condom use during sexual acts versus negative schematic women reporting lower levels of efficacy. Likewise, women with higher levels of HIV-related stigma (Muturi & An, 2010) will be more likely to report a lower perception of HIV risk and vice versa (Liu et al., 2005). As previously mentioned there are no studies that examine the influence of cognitive variable SSS on sexual risk and very few that examine HIV-related stigma on condom use. Furthermore, there are no studies that look at the relationship between these variables; however it may be worthwhile to do so because a significant relationship could elucidate other important sexual risk factors contributing to the spread of HIV in this population.

### **Summary**

Black women are disproportionately impacted by HIV/AIDS, typically those within their reproductive years (CDC, 2010). One of the most effective methods to biologically combating the spread of the disease is by utilizing correct and consistent condom use in every sexual

encounter (CDC, 2009). Black women are at a particular disadvantage in this regard because of the various social and structural contextual situations they are often presented with in their day to day lives that may undermine sexual protective factors (AIDS Action Council, 2001). Cognitive factors, such as perception of HIV risk (Maharaj & Cleland, 2005; Stringer, Sinkala, Kumwenda, Chapman, Mwale, Vermund, Goldenberg & Stringer, 2004; Takahshi et al., 2005) and condom sexual self-efficacy (Seth et al., 2009; Bandura, 2007; Soler et al., 2000; Hoffman et al., 2008) are identified in the literature as significantly impacting reported condom use and as such are analyzed in this study as well.

Although much research is done on condom use, there is very little focus on other cognitive factors such as sexual-self schema and HIV stigma related knowledge, which not only reflect the outcome of dyadic interactions (Anderson & Cyranowski, 1994; Herek et al., 2002; Liu et al., 2005) but may provide insight to social and structural influences which impact sexual decision-making as well. For example, some researchers identify structural factors such as a high mortality rate, racially stratified drug laws, disproportionate incarceration among Black males and the resultant increase in concurrent relationships as just some of the structural problems encouraging the spread of HIV/AIDS which can often have long-term consequences for the women affected (Adimora et al., 2009). The present study is limited in that it will not specifically measure these reported influences, however, analyzing SSS and HIV stigma related knowledge will provide information as to just how much these constructs impact the sexual domain of young adult Black women and potentially indirect associations to the structural factors reported in previous studies. Therefore, due to the magnitude and scope of this problem it is imperative that further research incorporate a mode of analysis that not only attempts to span the



individual, interpersonal and structural levels but builds upon what has already been accomplished.

## **Chapter III**

### **Conceptual Framework**

#### **Theoretical Framework**

Literature surrounding prediction and/or explanation of high risk sexual behaviors are often led by popular behavioral theories Theory of Reasoned Action (Fishbein & Ajzen, 1980; Fishbein & Ajzen, 1975), Theory of Planned Behavior (Ajzen, 1988), Transtheoretical Model (Prochaska & DiClemente, 1983), Social Learning Theory (Bandura, 1977), and AIDS Risk Reduction Model (Catania, Kegeles & Coates, 1990). All of these frameworks use the individual and the resultant behavior as its unit of analysis. These frameworks are well respected and offer various perspectives to predict and better understand human behavior.

Increasingly, more studies are being conducted with a sociological perspective such as the Theory of Gender and Power (Connell, 1987) to ask broader questions and encourage new perspectives relative to HIV/AIDS risk (Kalichman, Simbayi, Cloete, Cherry & Strebel, 2008; Wingwood & DiClemente, 2000). In contrast to individual behavioral theories, the sociological approach takes into consideration unique relationships that gender and race can construct with the external environment as manifesting in a sexual division of labor, sexual division of power and emotional energy (Connell, 1987). Wingwood and DiClemente (2000) adapted the Theory of Gender and Power to the public health realm of HIV risk and identified exposures as risk factors and biological properties that exist and are maintained on both the social and institutional levels while increasing women's vulnerability to HIV. The present study is poignant because it placed women's understanding of their relationships in their environment (social and institutional) as the focal point rather than the actual behavior itself.

This study's theoretical framework is built upon constructs of additional behavioral and sociological theories to include the Health Belief Model (HBM) (Rosenstock, 1974), Social Cognitive Theory (SCT) (Bandura, 1986; 1977) and Intersectionality Theory (IT) (Crenshaw, 1991). The specific unit of analysis, the individual, is the same in all three of these theories but the way in which information is attained, analyzed and interpreted spans the individual, interpersonal and structural levels. This study primarily collects information from individual women about their current sexual behavior and analyzes it in conjunction with cognitive variables to ascertain if these sexual behaviors are a reflection of cultivated and/or reinforced cultural shared beliefs. Based on the results, this could reinforce future research as well as an epidemiological trend toward enhancing knowledge and interventions that utilize a multi-level and combinational approach to HIV.

As previously mentioned, most U.S. HIV prevention behavioral interventions for young adult Black women are situated within one type of theoretical framework (CDC, 2009) with marginal levels of effectiveness (Adimora, Schoenback & Floris-Moore, 2009) and no real indication of sustainability beyond 12-months (Coates, Richter & Caceres, 2008). As such, these interventions are often based on empirical research concluding some level of efficacy and touting its feasibility. In years past, many research studies would take a limited approach in predicting and explaining high risk sexual behaviors because only one type of theoretical framework was used (Logan, Cole & Leukefeld, 2002). This is problematic because any one approach is not sufficient in understanding and/or predicting sexual behavior. Sexuality is fluid, complex and multiple factors influence it so the approach for addressing the problem should be similar (Cole, 2005). Today, more studies are applying multiple or non-traditional theoretical approaches to understanding sexual behavior which include analyses of more contextual factors (Raiford,

Wingwood & DiClemente, 2007; Wingwood & DiClemente, 2000). However, in most studies the outcomes are similar to those before in that a few individual or gender specific related elements alone are often cited as the culprit to HIV reduction and increased condom use (Logan, Cole & Leukefeld, 2002). This study incorporates the utility of behavioral theory combined with a sociological theory to shed light on individual, interpersonal and structural contexts that may influence sexual decision making as it pertains to condom use. Using specific constructs from each of these theories with an integrated approach will provide a more comprehensive and multi-level analysis of sexual behavior and risk among young adult Black women.

### **Health Belief Model**

The Health Belief Model (HBM) initially came about as a way to better understand and explain factors that impact individual health behaviors. Particularly, the model emerged in the 1950's due to U.S. Public Health Service psychologists noting most individuals were failing to "...accept disease preventatives or screening tests for the early detection of asymptomatic disease" (Janz & Becker, 1984). The original underlying concept of the HBM is that health behaviors are determined by personal beliefs or perceptions about a disease and/or strategies to prevent it (Hochbaum, 1958).

Rosenstock (1974), one of the psychologists at the U.S. Public Health Service at this time, worked with other psychologists, Hochbaum and Kegels, to research and develop this theory because preventive health programs such as free chest x-rays and Salk vaccine inoculations were not being utilized by the public. During this time, illnesses such as polio and tuberculosis were uncontrolled and it was not clear as to why individuals would not take preventative actions in knowing their status or getting vaccinated when appropriate. Rosenstock

concluded individual health behaviors or the lack thereof to be motivated by varying degrees of fear. The resulting model consists of four primary constructs 1) Perceived susceptibility (vulnerability) or a person's belief of their chances of getting a certain condition; 2) Perceived severity (seriousness) or a person's belief about how serious the condition is; 3) Perceived benefits or a person's belief about the effectiveness of the behavior reducing or eliminating the condition; and 4) Perceived barriers or a person's belief about the actual and psychological costs in completing this behavior (Campbell, 2001). The model acknowledges the influence of what are called modifying variables or individual characteristics to help explain variation in health seeking behaviors. These variables can be anything from education, skill and motivation due to past experiences. Acknowledging these modifying variables helps explain why the intensity of each primary construct varies from person to person.

Over the years, the model has expanded to include additional constructs such as cues to action and self-efficacy. Cues to action are events, people or things that move people to change their behaviors. These cues can be internal or external and can come early or late in the course of preventative health. Due to the multiplicity of what a cue to action is Janz and Becker (1984) noted many studies do not incorporate this construct into their analyses. Self-efficacy was added to the model in 1988 (Rosenstock, Strecher & Becker, 1988) as it was determined that an ability to overcome perceived barriers was critical to maximizing each of the four primary constructs. Rosenstock (1998) learned this improved explaining the challenges involved in a study about changing unhealthy behaviors (Campbell, 2001). In other words, no change in behaviors will take place unless an individual believes they are able to do them. In sum, the model posits those who engage in positive health related behaviors do so because they recognize the benefits of

making a change versus doing nothing, perceive themselves able to overcome barriers and have a certain type of motivation or cue to action thus completing the behavior (Campbell, 2001).

The model has been applied to understanding preventative health behaviors, sick role behaviors, patient response to symptoms and medical compliance (Janz & Becker, 1984). With the increase in sexual risk in a number of different populations the HBM is now commonly used as a framework for understanding a variety of sexual outcomes and risks (Andreas & Theologia, 2010; Jain, Saggurti, Mahapatra, Sebastian, Modugu, Halli, Verma & Ravi, 2011; Hounton, Carabin & Henderson, 2005; Lollis, Antoni, Johnson, Chitwood & Griffin, 1995). The present study is applying HBM constructs perceived susceptibility and seriousness of HIV as it pertains to condom use among young adult Black women. Based on the model, young adult Black women will provide information about their susceptibility to and seriousness of HIV through selecting their risk level for transmission. Perception of HIV risk is an important component because it offers valuable insight into the subjective perceptions of those making their own determination about their health and sexual behaviors (Morrison-Beedy, 1997).

### **Social Cognitive Theory**

Social Cognitive Theory (SCT) (Bandura, 1986) is based in a triadic reciprocal interaction between the environment, personal factors and behaviors. The interaction between the person and the behavior involves the influence of a person's thoughts, self-perceptions and actions. The interaction between the person and the environment involves human beliefs and cognitive competencies that are developed and modified by social influences and structures within the environment. The third interaction, between the environment and behavior, involves a person's behavior determining aspects of their environment and in turn their behavior is modified by that environment (Davis, 2006). The triadic interaction primarily demonstrates that

no one factor shapes life experiences or explains the decision making process as it pertains to behavior.

SCT is bound by the construct self-efficacy or an individual believing in their ability to successfully execute health related behaviors. Bandura modified Social Learning Theory in changing the name to SCT because he wanted to emphasize just how influential the cognitive processes are in the decision making process which determines behavior (Davis, 2006). Bandura (1997) points out that self-efficacy impact individuals in four ways to include cognition, motivation, mood and affect. Cognitively, people with high self-efficacy are more likely to guide their actions based on what they think a successful outcome is and prefer not to dwell on personal deficiencies. Self-efficacy impacts motivation by way of goal-setting, perseverance and resiliency. In the case of mood and affect individuals with high self-efficacy are able to adjust their moods in a way that makes their environment less threatening for them (Bandura, 1997). This is an interesting point when considering previous studies of sexual outcomes among women who report high levels of condom efficacy but their demonstrated use is something altogether different.

SCT is an appropriate model for examining the conceptual relationship between young adult Black women's sexual self-schema and their condom sexual self-efficacy because it takes into account their own perceptions of their sexual selves, their behaviors in relation to what they think and know about their sexual selves, and the manner in which they choose to allow their perceptions to manipulate their sexual environments. More specifically, it will provide a glimpse into how this population believes in their own ability to "successfully" accomplish behaviors and affective responses within a sexual context (Reissing et. al., 1998). Cyranowski and Anderson (1998) state sexual self-schemas are "well-articulated and accessible self-views" that respond to

the interaction effects found in an individual's environment. Depending on how strong these sexual self-schemas are they should affect sexual behavior. SCT will allow one to determine how and if this group's sexual self-schema impacts their condom use practices.

As previously mentioned, both the HBM and SCT are intra and interpersonal health behavioral models widely used and respected in understanding and predicting health behaviors. However, in its entirety these theories, derivatives of the theories of cognitive and moral development, are criticized because they assume that all behaviors and choices are within an individual's control all of the time (Amaro, 1995; Ickovics, Druley, Grigorenko, Morrill, Beren, & Rodin 1998; Rostosky, Galliher, Welsh & Kawaguchi, 2000; Logan, Cole & Leukefeld, 2002). Furthermore, HBM does not take into consideration that health related beliefs and attitudes must compete with other beliefs and attitudes that influence behavior as well (Campbell, 2001). Finally, both HBM and SCT do not fully take into account the effects of culture, gender and ideology which can also play a role in how sexual cognition develops thus affecting sexual behavior (Hylton, 1999; Logan, Cole & Leukefeld, 2002). Despite their limitations these models are still useful because they include self-efficacy as a construct which is identified as a major component of behavioral change.

### **Intersectionality Theory**

Intersectionality Theory (IT) (Crenshaw, 1991) is an appropriate addition to this framework because as a sociological theory it acts as a social locator in which all human behavior takes place. The theory draws from the classic works of Max Weber (Henslin, 1999), Karl Marx (1978a) and Georg Simmel (Frisby, 1992) in that they sought to understand the complications that social attributes such as status, power and modern city life brought in terms of



social class stratification and relationships among individuals. These works specifically addressed and placed many of these issues within a hierarchy whereas IT argues that oppression occurs simultaneously. Furthermore, IT highlights interlocking and overlapping oppressions associated with the effects of multiple and layered social identities. It maintains that individuals are members of more than one community at a time and have aspects that can make them both oppressed and oppressors at the same time.

Similar to the Theory of Gender and Power, IT critically analyzes the concept of power within a dominant culture and what it means to be the “other” in normative settings. Unlike the Theory of Gender and Power, IT highlights multi-dimensional activities and subsequent outcomes surrounding those interlocking margins of difference such as race, gender, disability, sexual orientation, ideology and religion, etc. It is this ongoing activity that often results in an individual’s ability to uniquely process and respond to external events. Sociologist Patricia Hill Collins (McCann & Kim, 2010) refers to this unique location as a “matrix of domination” and argues that as an epistemology it can provide very valuable and useful information about the influence of social structures because it is a ‘partial’ view that is often ignored within dominant ideology. IT presents a new way of understanding social inequalities that possesses potential to reveal previously unknown health inequalities (Venstra, 2011). In and of itself IT does not predict or explain phenomena but it does bring to the forefront the effects of power, in a variety of contexts, on disadvantaged groups.

Studies utilizing this theory take several approaches to organizing “the margins” of interest by using an anti-categorical, intra-categorical and inter-categorical approach (Knudsen, 2006). An anti-categorical mode of inquiry looks at the effects of inclusion and exclusion within normative social structures and rejects the notion of categories to explain behavior and/or needs.

Intra-categorical modes of inquiry acknowledge categories do exist but a person's identity or attempts to understand behavior begins where the categories intersect. An inter-categorical mode of inquiry is different from the aforementioned modes primarily because it is most often used to examine the relationship between many social groups at one time rather than looking for subtleties within one or two groups at a time. This approach tends to study attributes of many groups at one time and often at the expense of more subtle differences. This mode of analysis is often used in multi-group comparative studies and easily lends itself to quantitative modes of measure whereas the others are often measured qualitatively (Knudsen, 2006).

Applying an intra-categorical approach to understanding condom use among young adult Black women goes beyond just acknowledging that individual differences exist or distinguishing between those who use condoms and those who do not. The purpose of this approach is to elucidate the structural and contextual unknowns that may indirectly impact condom use. The decision to use or not use a condom in intimate settings is about covert and overt power, in the sense of who wields it and how it came to be. Numerous studies have measured a variation of women's power in the form of negotiation (Do & Fu, 2011) ability to communicate, sexually related knowledge (Holmes Jr., Ogunbade, Ward, Garrison, Peters, Kalichman, Lahai-Momohe & Essien, 2008) and gender equity (Jama Shai, Jewkes, Levin, Dunkle & Nduna, 2010) to name a few.

In this study IT is used to analyze oppressive modes of hegemonic power that influence structural contexts and interpersonal domains (Collins, 2000) such as HIV related stigma. Sexual self-schema also fits into this model when analyzed from a larger perspective of how Black female sexuality has evolved over time. Black female sexuality, personifying the intersection of race and gender, is unique because of the recurring stereotypes and false images

which lay the foundation for having to actively resist sexual exploitation. Douglas (2003) argues power is exerted through attacks on sexuality. Consistent with Foucault's writings she states power is relational and 'bottom up' in that it is primarily exercised among individuals as a response to larger social influences and institutions. Furthermore, she states this same power is "disciplinary" and "productive" (Douglas, 2003). What makes the power disciplinary is that it encourages individuals to adhere to a certain standard and/or behave a certain way. Doing so ensures one's assimilation into the mainstream with accorded rights and privileges. Those who do not follow the guidelines risk being ostracized and labeled as deviant. What makes the power productive is that individuals must be aware of the social rules and constrained to behave a certain way in private and public. In other words, their realization is the productivity. Stigma and a denigrated appreciation for female sexuality are both oppressive forms of hegemonic power that permeates individuals within groups.

Overcoming stigma and hindrances to a full expression of one's sexuality require awareness otherwise it is taken in and becomes the baseline for guiding behavior and decision-making (Amuri, Mitchell, Cockcroft & Andersson, 2011). In the Black community the readings suggests one of the reasons progress in sexually related issues pertinent to the Black community is stunted is because of a general lack of dialogue about sexual matters (West, 1993; Douglas, 2003; Giddings, 1992; Townes, 1995). This would seem applicable in light of the HIV/AIDS crisis as well. Therefore, it is important to understand the extent these powers influence the belief patterns and sexual behaviors of young adult Black women and how it impacts their condom use practices.

## **Conceptualization of Integrated Cognitive Influences**

It is expected that socio-demographics will reflect those of previous studies in that there are not many differences in reported condom use between women with higher and lower levels of household income and education (Finer, Darroch & Singh, 1999). It is also expected that women with multiple sexual partners are more likely to report condom use at last sex versus those who report being in a sexually exclusive and/or committed relationship with one partner (Alleyne, 2008; Wagstaff et. al., 1995). Type of contraceptive use appears to be influenced by age in that younger women may be more likely to use a dual method, one of which is a condom, when compared to older women (Cushman et. al., 1998; Rosenberg, 2010; Pazol, Kramer & Hogue, 2010).

Another aspect of the study consists of examining relationships between independent variables. Applying the literature discussed and what is known about the constructs differences should be observed along SSS scores (Anderson & Cyranowski, 1994) as it pertains to condom sexual self-efficacy (Bandura, 2007). The same also applies to HIV-related stigma and perception of HIV risk (Liu, Li, Stanton, Fang, Mao, Chen & Yang, 2005). Based on what is known about the construct SSS, theoretically, positive schematic women would be more likely to exhibit higher levels of condom sexual self-efficacy during sexual acts versus negative schematic women reporting lower levels of efficacy. Likewise, women with higher levels of HIV-related stigma (Muturi & An, 2010) may be more likely to report less perception of HIV risk and vice versa (Liu, Li, Stanton, Fang, Mao, Chen & Yang, 2005).

As previously mentioned there are no studies that examine the influence of cognitive variable SSS on sexual risk and very few that examine HIV related stigma on condom use within

a non-HIV identified sample. Furthermore, there are no studies that look at the relationship between these variables; however it may be worthwhile to do so because findings could elucidate important factors impacting condom use in this group.

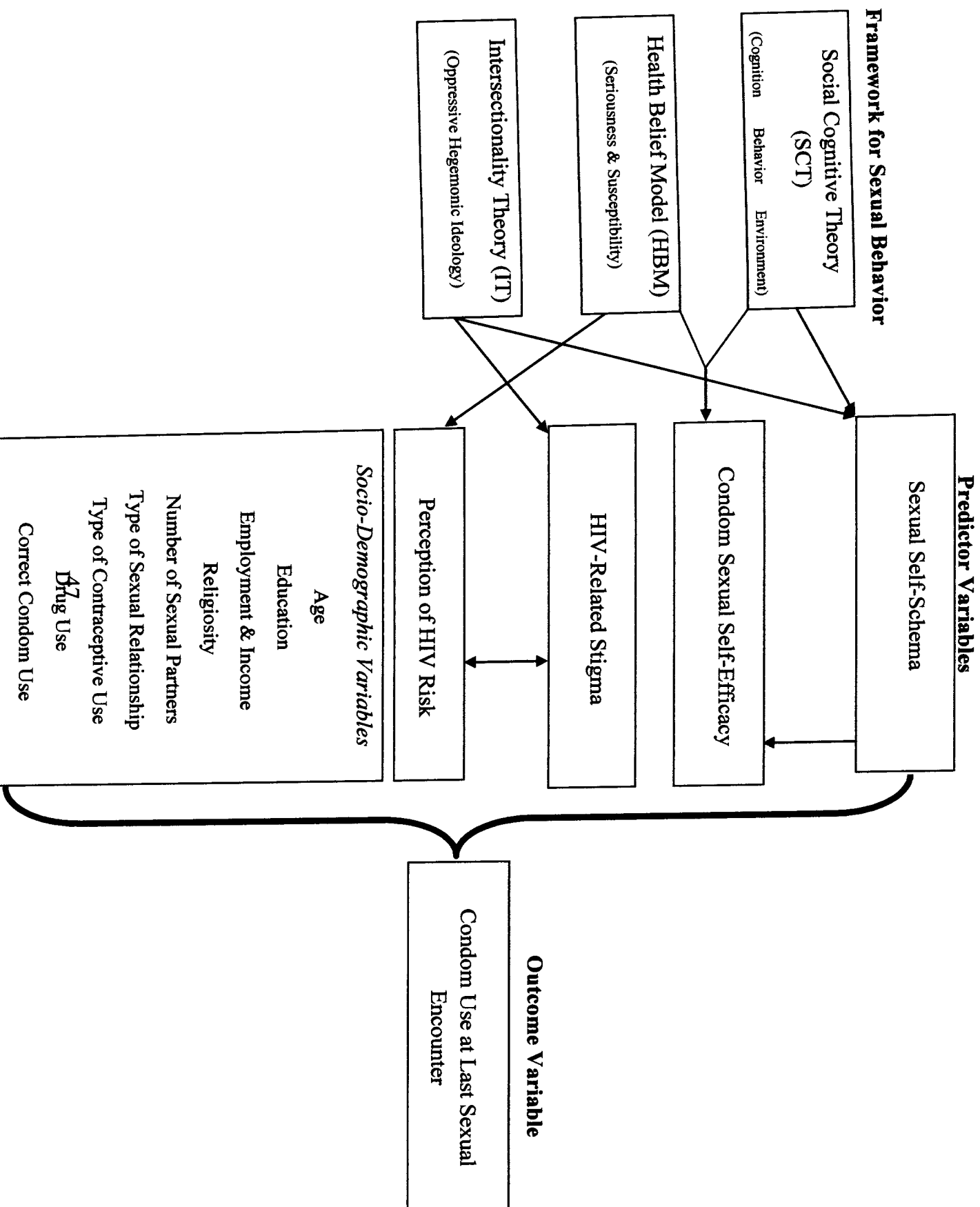
### **Conceptual Framework for the Present Study**

The objective of the framework is to explore, predict and better understand condom use among young adult Black women using constructs derived from the Health Belief Model, Social Cognitive Theory and Intersectionality Theory (see Figure 1). Due to increasing public health concerns in this population the Health Belief Model was used to assess the degree of susceptibility and seriousness of HIV risk in this population. Social Cognitive Theory was incorporated to recognize the influence of one's immediate environment which impacts schema development and sexual decision-making in interpersonal relationships. Both the Health Belief Theory and Social Cognitive Theory allow an in-depth examination of the role of condom sexual self-efficacy in sexual decision-making and current condom use practices. Intersectionality Theory, as the final component of the framework, offers a multi-level analysis of culturally reinforced power structures such as HIV-related stigma and understanding about female sexuality on sexual behaviors. Collectively, this framework addresses whether sexually active young adult Black women with positive sexual self-schema, low HIV-related stigma, and high perceptions of HIV risk and condom sexual self-efficacy were more likely to report condom use at last sex. The aims of this study were as follows:

*S.A.1.* Describe the prevalence of condom use at last sex among a group of sexually active young adult Black women;

- S.A.2.* Assess relationships between condom-related socio-demographics and condom use at last sex among a group of sexually active young adult Black women;
- S.A.3.* Assess relationships between condom use at last sex and sexual self-schema among a group of sexually active young adult Black women;
- S.A.4.* Assess relationships between condom use at last sex and HIV-related stigma among a group of sexually active young adult Black women;
- S.A. 5.* Assess relationships between condom use at last sex and perception of HIV risk among a group of sexually active young adult Black women;
- S.A. 6.* Assess relationships between condom use at last sex and condom sexual self-efficacy among a group of sexually active young adult Black women;
- S.A.7.* Assess associations between sexual self-schema and condom sexual self-efficacy among a group of sexually active young adult Black women;
- S.A. 8.* Assess the relationship between perception of HIV risk and HIV-related stigma among a group of sexually active young adult Black women;
- S.A.9.* Assess the influence of sexual self-schema, HIV-related stigma, perception of HIV risk, condom sexual self-efficacy and condom use at last sex among a group of sexually active young adult Black women.

**Figure 1: Conceptualization of Integrated Cognitive Influences on Condom Use**



## **Chapter IV**

### **Methodology**

This is an exploratory study using secondary data obtained from Baylor College of Medicine Teen Health Clinics located in Houston, Texas, Southwest United States.

#### **Sample/Participants**

Young adult sexually active Black women, ages 18-23, were recruited from five Baylor College of Medicine Teen Health Clinic sites in various sections of Houston. The clinics provide family planning and reproductive health services primarily serving a low income inner-city population.

Inclusion criteria consisted of young adult females identifying as 1) African-American or Black; 2) 18 years of age or older; 3) able to understand and complete the questionnaire in English; 5) report having had vaginal penetration within the past three months; 6) not actively trying to get pregnant and 7) legally unmarried. Those not meeting all of the criteria were excluded from participating in the study. The justification for this sample was based in empirical research which documents this group as disproportionately impacted by STI's and HIV when compared to other ethnic groups (CDC, 2010, Table 24). Participant status as Black/African American, ability to understand and respond in English, confirmation of sexual encounters, pregnancy intent and marital status were based solely on her own self-report. Each participant's age was confirmed through picture identification due to the clinics serving patients younger than 18 years of age. Those meeting eligibility inclusion criteria and agreeing to participate completed informed consent forms from Baylor College of Medicine that explained the purpose and nature



of the study. Questionnaires were administered four days a week, Monday-Thursday, during clinic hours 8:00 a.m. - 6:30 p.m.

To determine adequate sample size a power analysis was conducted using G\*Power 3.1.2 (Faul, Erdfelder, Lang & Buchner, 2007). For a logistic regression of a dichotomous outcome variable at a .05 significance level, 95% power and medium effect size required a minimum of 203 participants. The study oversampled by including an additional 98 participants for a total of 301 cases. Previous studies drawing their samples from this site have had similar sample sizes ranging from 204-290 participants (Small, Weinman, Buzi & Smith, 2009; Small, 2009).

### **Procedures**

Clinic staff screened and recruited participants as they checked in for office visits. The purpose of the study was explained and participants were informed the study was collecting information about their socio-demographics, sexual behaviors and condom use practices. Informed consent was obtained prior to data collection. Questionnaires were distributed by clinic staff during the course of visits. Participants completed the questionnaires in a private room adjacent to the waiting room while waiting for clinical services. A clinic staff member was available to address any questions and clarify instructions. The estimated time to complete the questionnaire was 35 minutes. Every participant was informed their participation in the study was voluntary and refusing would not affect their clinic services. No incentives were offered for participation. Every participant had the option of debriefing with a clinic staff member as needed following the survey. The study resulted in a sample survey of all patients attending the five clinics commencing October 2011 through February 2012.

## **Human Subjects Review**

The study was initially approved through Baylor College of Medicine Institutional Review Board (BCM-IRB) on October 6, 2011 (See Appendix A). The Committee for the Protection of Human Subjects at the University of Houston approved this study as a secondary data analysis January 20, 2012 (See Appendix B).

## **Instrumentation**

Respondents completed a modified questionnaire extracted from the national Youth Risk Behavior Surveillance Survey (YRBSS) with additional scales. The YRBSS collects information about health risk behaviors, intentional and unintentional injuries, tobacco, alcohol and drug use, sexual behaviors, unhealthy diets, obesity, asthma and physical activity (CDC, 2010). It is administered by the Centers for Disease Control and Prevention (CDC) through the state and the local level every two years in the spring semester to school-age adolescents. The last survey was administered in 2011 to students attending public/private and alternative schools grades 9-12 (CDC, 2012).

The modified questionnaire adapted questions from the YRBSS that pertain to sexual behaviors about condom use, condom sexual self-efficacy, perception of HIV risk and contraceptive use. The Sexual Self Schema Scale-Women's Version (SSS) (Anderson & Cyranowski, 1994) and three subscales measuring HIV-related stigma (United States Agency for International Development [USAID], 2005 & 2006) were added to the questionnaire. The SSS scale and three additional HIV-related subscales were incorporated because of their relevance to the research questions and because they avoided technical language. As a secondary data analysis, this study analyzed and reported on condom use at last sex based on predictor variables:

1) SSS; 2) HIV-Related Stigma; 3) Perception of HIV Risk; 4) Condom Sexual Self-Efficacy; and 5) Related Socio-demographics.

### **Socio-Demographics**

Participants answered a series of questions about their socio-demographics to include age, marital status, education level, employment, income, type of sexual relationship within past three months, religiosity, drug use and contraceptive use. Age was a continuous variable where respondents had the option to write in their age. Marital status was a nominal variable with response options 1) Married; 2) Separated/divorced; 3) Widowed; 4) Never married; and 5) Common law married. Highest level of education was asked and response items were 1) Currently enrolled in high school; 2) Completed high school/received GED; 3) Some college; and 4) Completed associate degree or higher. Employment was a categorical variable where respondents indicated if they were currently employed as “yes/no”. Income was an ordinal variable and respondents selected their current household income level from 1) Less than 10,000; 2) Between 10,000 and 24,999; and 3) More than 25,000”. Type of sexual relationship was categorical and operationalized as engaging in sexual activity with one or multiple persons within the past 3 months. Respondents were asked “In the past 3 months, have you had the same sexual partner for every act of sexual intercourse?” “In the past 3 months, has your sexual partner had sexual intercourse with anyone other than you?” Response items were “yes/no”. Only those respondents who answered yes to question 1 and no to question 2 were classified as being in a sexually exclusive relationship with one and the same partner within the past 3 months. All others were categorized as sexually in-exclusive or having multiple sexual partners within the past 3 months.

Religiosity was categorical and captured as “How religious would you say you are?” Response items were 1) Not at all religious 2) Not too religious 3) Fairly religious and 4) Very religious. Due to the likelihood of drug use impairing one’s ability to make unsafe sexual decisions respondents were asked “Have you used alcohol, marijuana or other drugs in the past month?” Response items for this question were “yes/no”. Type of contraceptive use was a categorical variable and response items were 1) Withdrawal 2) Rhythm (safe time) 3) Female condom and 4) Birth control pills (CDC, 2009). Other types of contraceptives such as the patch, ring and injections are commonly used as well (Anderson, Brackbill, Mosher, 1996; Cushman et al., 1998) but often require private health insurance to offset the expense which was anticipated as not readily available for many of the participants. All of these demographics were analyzed according to condom use at last sex and subsequent analyses.

### **Condom Use**

Self-reported condom use is the outcome variable and participants answered one single event recall item from the YRBS, “The last time you had sexual intercourse, did you or your partner use a condom?” Response options were “yes/no”. Condom use at last sex as a single item is reported a valid measure of sexual behaviors and a good indicator of condom use practices spanning longer periods of time. Younge, Salazar, Crosby, DiClemente, Wood and Rose’s (2008) study measured condom use at last sex and condom use in the previous 14 and 60 days in a sample of African-American female adolescents. The authors found that of those participants reporting condom use at last sex they were also more likely to be consistent users in the past 14 and 60 days as well.

### **Sexual Self Schema Scale (Women's Version)**

The Sexual Self Schema scale was developed by Anderson and Cyranowski (1994) to covertly measure the cognitive representation of a woman's sexuality. The underlying premise for developing the scale was to have the ability to tap into a traditionally private and personal domain while gathering valid information about one's sexual attitudes, beliefs, and interpersonal relationships. The scale is cemented in social cognitive theory which maintains that schemas are built from past experiences, actively manifested in current experiences, influential in the processing of relevant information and guides behavior (Anderson & Cyranowski, 1994). The scale was created in a series of six studies administered to young female college students and older women ages 18-74. Scale items were developed by participants rating 300 adjectives as being descriptive of them. In each study participants were given a reduced item list demonstrated to have had the highest mean ratings in the previous study until 50 items remained. The final study consisted of measuring the remaining items with other sexuality measures for convergent and discriminant validity resulting in the final 26 items and three emerging factors.

Study participants completed Anderson and Cyranowski's (1994) Sexual Self Schema Scale for Women (SSS). Respondents were asked "To what extent does the term describe me?" They then rated the full list of 50 adjectives (25 of which are fillers) by selecting 0 (not at all descriptive) to 6 (very much descriptive). The adjectives factor into three subscales: 1) Passionate/Romantic (positive), 2) Open/Direct (positive) and 3) Embarrassed/Conservative (Negative). The scale can be scored for both bipolar (high scores=positive versus low scores=negative) and bivariate (high positive score/low negative score = positive schematic; high positive/high negative = coschematic; low positive/low negative = aschematic; low positive/high negative = negative schematic) scoring. For the bipolar method factors 1 & 2 are summed and

factor 3 is subtracted from the summed two factors for a final score and then a median split creates the positive and negative groups. In the bivariate model a median split is also used to delineate the four groups (Anderson & Cyranowski, 1994; Reichert, Xue & Fosu, 2005). This study utilized the bipolar method, positive versus negative, in assessing participant's schemas. SSS reliabilities were as follows: .85 for full SSS scale; .77 (Factor: 1 Passionate/Romantic); .73 (Factor 2: Open); and .58 (Factor 3: Conservative). Prior research demonstrated acceptable scale reliability ( $\alpha=.85$ ) (Cash, Miakkula & Yamamiya, 2004; Anderson & Cyranowski, 1994) as well as two and nine week test-retest reliability ( $\alpha=.89$ ;  $\alpha=.88$ ) (Anderson & Cyranowski, 1994). Anderson and Cyranowski (1994) conducted a series of studies demonstrating the scale's content, construct (convergent and discriminate) and criterion (predictive) validity.

### **HIV-Related Stigma Scale**

United States Agency for International Development ([USAID] 2005 & 2006) published recommended stigma indicators from a series of field tests completed in Ethiopia, Tanzania and Zimbabwe (Nyblade, Pande, Mathur, MacQuarrie, Kidd, Banteyerga, Kidanu, Kilonzo, Mbwambo & Bond, 2003). The researchers conducted a mix of qualitative and quantitative methods to gather new information about stigma, to disentangle the complexities in understanding stigma and to develop indices for quantitative stigma measures. Their studies sampled individuals living with HIV/AIDS, the general population and health-care professionals. Their goal was to systematically disentangle the cause and role of stigma in different contexts.

In this study, HIV-Related Stigma was assessed using three subscales with a total of 19 items recommended by USAID (2005). The first subscale, HIV-Related Knowledge assesses stigma as it relates to fear of casual contact of persons living with HIV/AIDS (PLHA's). It asks participants five questions: "Please tell me if you agree, disagree or do not know in response to

the following questions” (1) “Are you fearful/afraid that you could become infected with HIV if you are exposed to the saliva of a PLHA?” (2) “Are you fearful/afraid that you could become infected with HIV if you are exposed to the sweat of a PLHA?” (3) “Are you fearful/afraid that you could become infected with HIV if you are exposed to the excreta of a PLHA?” (4) “Are you fearful/afraid that your child could become infected with HIV if they play with a child who has HIV or AIDS?” (5) “Are you fearful/afraid that you could become infected if you care for a PLHA?” None of these items are correct modes of HIV/AIDS transmission. Previous research indicated social desirability hinders questions such as these when they are positively framed (USAID, 2005 & 2006). More variability was evident when the questions were negatively framed due to respondents having to think carefully about their answers. Theoretically, lack of knowledge is indicated as one factor in stigma studies as individuals who are not aware of proper transmission are more likely to overcompensate in their personal beliefs about and behaviors among PLHA’s (Nyblade, et. al, 2003; Herek & Capitanio, 1993; Herek et al, 2002).

This study analyzed the subscale to gauge participant’s stigma levels as it pertains to their knowledge. Those participants responding “do not know” to any of the items were counted as agreeing with the items. A stigma index was created as a percentage of knowledge questions answered correctly from 0% (Highest manifestation of HIV-related stigma/No knowledge indicated) to 100% (No manifestation of HIV-related stigma/Knowledgeable). Scale reliability in this study was .79. This scale demonstrated acceptable reliability ( $\alpha=.82$ ) and high levels of variability in previous studies (USAID, 2005; Nyblade, et. al, 2003). Previous research demonstrated this scale has construct validity (USAID, 2005) and all relationships tested behaved in the expected direction with a statistical significance at the  $p\leq .05$  level (USAID, 2005).

The second subscale is a subjective stigma measure meant to capture their personal and moral beliefs about how HIV came to be and the types of individuals prone to contracting the disease. There are 7 items that ask participants if they agree or disagree with the following statements (1) "HIV is a punishment from God." (2) "HIV/AIDS is a punishment for bad behavior." (3) "It is women prostitutes who spread HIV in the community." (4) "People with HIV are promiscuous." (5) "I would be ashamed if I were infected with HIV." (6) "I would be ashamed if someone in my family had HIV/AIDS." (7) "People with HIV should be ashamed of themselves."

On the third subscale participants were then asked to answer the same seven items based on how they think most people in their communities would agree or disagree with the questions. Participants were given no further instructions and allowed to envision their community based on what it meant for them. Separate stigma indexes were created for both the second and third subscales with 0 (no manifestation of stigma) to 7 (highest manifestation of stigma). This measure factored on two dimensions (shame/blame and judgment) in previous studies (Nyblade, et. al, 2003; USAID, 2005) and was analyzed in this study as well. The same factor structures were identified in this sample where all observations loaded onto two factors consistent with shame/blame and judgment (See Table. 3).

Reliabilities for each of the subscale were as follows: .61 (Subscale 2); and: .81 (Subscale 3). The scales demonstrated acceptable reliability in previous studies ( $\alpha=.79$ ;  $\alpha=.70$ ) (USAID, 2005; Ogden & Nyblade, 2005; Pulerwitz, Lippman, Setubal, Chinaglia, Takae-Ogura & van Dam, 2004 & POLICY Project, ICRW, Horizons, MEASURE/Evaluation, 2004) as well. Previous research further demonstrated this scale's construct validity (USAID, 2005) and all relationships



behaved in the expected direction with a statistical significance at the  $p \leq .05$  level (USAID, 2005; Ogden & Nyblade, 2005; Pulerwitz et al, 2004 & POLICY Project et al, 2004 ).

### **Perception of HIV Risk**

To assess respondent's perception of their own HIV risk all participants answered one question modeled from the YRBS "My personal risk for contracting HIV is...?" Response items were 1) Low 2) Medium and 3) High. The purpose of using a single item to capture perception of HIV risk was to obtain a general sense of where respondents believed they were on this question. Comparison assessments of HIV risk were reviewed using criteria established by the CDC as it pertains to the number of partners in the past three months, reported condom use and type of sexual relationship. Responses were coded based on each of the response items and analyzed for differences among them and self-reported condom use at last sex.

### **Condom Sexual Self-Efficacy Scale**

To assess participants' abilities to influence condom use in sexual settings respondents answered seven hypothetical situational items modeled from the YRBS. Based on the literature, condom sexual self-efficacy is a cognitive construct meant to indicate the intensity of an individual's ability to accomplish a given task. Bandura (2007) cites self-efficacy as a necessary component for any given task when considering the revolving and multiple influences in one's environment.

The first two scale questions ask participants to imagine that you and your boyfriend 1) "Decide to have sex but he will not use a condom. You do not want to have sex without a condom. How sure are you that you could keep from having sex, until your partner agrees it is 'OK' to use a condom?" 2) "Have been having sex but have not been using condoms. You really want to start using condoms. How sure are you that you could tell your partner you want to start

using condoms?" Question 3 asks "Imagine that you are having sex with someone you just met. You feel it is important to use condoms. How sure are you that you could tell that person that you want to use condoms?" Question 4 states "Imagine that you use birth control pills to prevent pregnancy. You want to use a condom to keep from getting STD's and HIV. How sure are you that you could convince your partner you need to use condoms?" The remaining questions stated "How sure are you that you could use a condom correctly or explain to your partner how to use a condom correctly?" "If you wanted to get a condom, how sure are you that you could go to the store and buy one?" "If you decided to have sex, how sure are you that you could have a condom with you when you need it?" Response items for all questions were "totally sure, kind of sure and not sure at all". A composite scale was constructed based on these seven items and scaled from 0 (No condom sexual self-efficacy) to 7 (Total condom sexual-self efficacy) for subsequent analyses. Reliability analysis indicated the scale was internally consistent with  $\alpha = .74$ .

### **Data Analyses**

All statistical analyses were run using the PASW Statistics 18 program. Missing data patterns were assessed and tested on socio-demographics for differences (See Table 1). Minor significant differences were observed with small effects and as such the data were determined missing at random (MAR) and excluded from further analyses (Tabachnik & Fidell, 2007). A Principle Component Analysis with a Varimax rotation confirming a 2-factor solution on the HIV-Related Stigma subscale 3, Perceived Community HIV Stigma, was run and compared to the previous study. This study assessed and reported its own reliability estimates for each of the measured predictors, Sexual Self-Schema, HIV-Related Stigma and Condom Sexual-Self Efficacy using Cronbach's alpha. Univariate statistics consisting of frequency analyses were run on all variables of interest as well as the outcome variable condom use at last sex to review

descriptive statistics. Bivariate analyses using chi-squares were run on all socio-demographics and the outcome condom use at last sex. Additional bivariate analyses were run using independent t-tests, correlation and ANOVA to determine differences in group means and associations between the variables. The primary multivariate analysis using a logistic regression was conducted to determine the best model that fit the data in predicting condom use at last sex and to determine the relative importance of each predictor in influencing condom use in this group.

### **Logistic Regression Description and Assumptions**

Logistic regression is a multivariate binary logit statistical technique that allows prediction of a discrete outcome from a set of predictors that are nominal, interval or a combination of both. Based on the predictors, it determines the probability of an outcome for every case in a study. It is also used to determine the contribution of individual predictors to the outcome. The test allows users to calculate effect sizes and proportions of variance associated with the predictors (Tabachnick & Fidell, 2007). Logistic regression assumptions include independence of observations, a binary or ordinal outcome, a minimum of 25 observations per variable, only a moderate association between predictors and the outcome variable and no violation of multicollinearity (Drake & Johnson-Reid, 2008). The model produced by logistic regression is nonlinear based on an arrangement of the best predictors available. The resulting linear equation is the natural log ( $\log_e$ ) of the probability of being in one group divided by the probability of being in the other group (Tabachnick & Fidell, 2007). Coefficients are estimated using the maximum likelihood estimation which varies in direction and size based on the predictors entered into the model. Logistic regression is a popular technique because it is more flexible than other tests in that there are no assumptions of the distribution of predictors,

normality, linear relations among predictors or equal variance required in different groups (Tabachnick & Fidell, 2007) however meeting these assumptions do increase the test's power. A primary limitation to logistic regression is that of causation or implying any one variable causes an outcome. Using these planned analyses, the study seeks to address the hypothesis that sexually active young adult Black women with positive sexual self-schema, low HIV-related stigma, and high perceptions of HIV risk and condom sexual self-efficacy would be more likely to report condom use at last sex. The study aims were as follows:

*S.A.1.* Describe the prevalence of condom use at last sex among a group of sexually active young adult Black women;

*S.A.2.* Assess relationships between condom-related socio-demographics and condom use at last sex among a group of sexually active young adult Black women;

*S.A.3.* Assess relationships between condom use at last sex and sexual self-schema among a group of sexually active young adult Black women;

*S.A.4.* Assess relationships between condom use at last sex and HIV-related stigma among a group of sexually active young adult Black women;

*S.A. 5.* Assess relationships between condom use at last sex and perception of HIV risk among a group of sexually active young adult Black women;

*S.A. 6.* Assess relationships between condom use at last sex and condom sexual self-efficacy among a group of sexually active young adult Black women;

*S.A.7.* Assess associations between sexual self-schema and condom sexual self-efficacy among a group of sexually active young adult Black women;

*S.A. 8.* Assess the relationship between perception of HIV risk and HIV-related stigma among a group of sexually active young adult Black women;

*S.A.9.* Assess the influence of sexual self-schema, HIV-related stigma, perception of HIV risk, condom sexual self-efficacy and condom use at last sex among a group of sexually active young adult Black women.

## **Chapter V**

### **Results**

This chapter describes and summarizes the statistical analyses used to evaluate the specific study aims established in previous chapters. Subsequent to the data screening process, descriptive statistics and preliminary analyses on measured scales are discussed. Next, univariate and bivariate variable analyses are reported. Finally, the result of a multivariate logistic regression analysis is reported with an overview of the data and a statement of the hypothesis.

#### **Data Screening**

Prior to main analyses, all the variables of interest were examined through PASW Statistics 18 program for accuracy of data entry, missing values, univariate and multivariate outliers, and normality of distribution. Three miscoded scores of 11, 33 and 44 on the Sexual Self Schema Scale-Women's Version (SSSS) (Anderson & Cyranowski, 1994; the items scores only range from 0-6) were corrected after confirming them as data entry errors. Five variables with greater than 5% missing values were dummy coded into two groups 'missing (0)' and 'nonmissing (1)' observations and tested on other demographics, age, education level and employment status, to detect significant group differences with at least a medium effect size,  $r = .30$  (Tabachnick & Fidell, 2007; Fields, 2005). The variables with missing observations are 'HIV related stigma; subscales 2 (Perceived Individual Stigma,  $N = 29$ ) and 3 (Perceived Community Stigma,  $N = 27$ ), SSS Scale ( $N = 13$ ), and two demographics: income ( $N = 16$ ) and correct condom use ( $N = 26$ ). Table [1] presents outcomes of missing data group analyses using Chi-squares and their effect sizes. There was one analysis with a statistically significant

difference between observed and missing observations, Perceived community stigma and education level, however the effect size was small,  $r = .17$  with an odds ratio of .34. This indicated that a respondent with a perceived community stigma observation was .34 times more likely to have been college educated than an individual with a missing observation. As a result, missing observations on Perceived community stigma were determined missing at random (MAR) due to their predictability from other variables and not included for further analyses as a result of non-significant effect size (Tabachnick & Fidell, 2007).

One demographic, number of sexual partners in the past three months, was found to have three univariate outliers with extreme Z-scores of 9.18 and two with 3.85. It was determined that these cases were entered correctly into the dataset and from the intended population but these cases simply reported more extreme values than other respondents. The decision to delete the cases or replace the values with less extreme values did not seem appropriate given the nature of the study. The decision was made to dichotomize this variable into 'one partner (0)' (N = 182) and '2+ partners (1)' (N = 56) with a 76/23 split for other analyses. It is recommended to delete dichotomous variables with a 90/10 split or more due to their potential for increasing Type I and II errors (Tabachnick & Fidell, 2007). This variable as dichotomized is not as extreme and was retained for further analyses. The values for skew and kurtosis among study scales fit into an appropriate range (i.e. below the absolute value of 2), indicating a potentially normal distribution of scores across all other continuous variables of interest. The only measured variable that revealed skew and kurtosis greater than an absolute value of 2 was the Condom Sexual Self-efficacy Scale (skew = -2.21, kurtosis = 5.55, N = 235). This variable was explored with the Kolmogorov-Smirnov normality test and found significantly nonnormal,  $D(235) = .29, p < .000$ . This seems to be the result of the majority of study participants indicating high condom self-

efficacy with very little variation ( $M = 6.11$ ,  $SD = 1.39$ ,  $s^2 = 1.93$ ). The study's primary analysis, logistic regression, does not require a normal distribution so other bivariate analyses using condom sexual self-efficacy were completed using non-parametric tests.



TABLE 1

## MISSING OBSERVATION ANALYSES

Variables with 5% missing	Chi-Square Analyses		
	Age (Dichotomous)	Education	Employment
Perceived Individual Stigma	$X^2(1) = 3.12, p = .077$ ;	$X^2(1) = 3.60, p = .058$	$X^2(1) = .037, p = .848$
Perceived Community Stigma	$X^2(1) = 1.16, p = .281$ ;	$X^2(1) = 6.42, p = .011^*, r = .17$	$X^2(1) = .057, p = .811$
Sexual Self Schema Scale (Total)	$X^2(1) = .003, p = .957$ ;	$X^2(1) = 1.09, p = .296$	$X^2(1) = .289, p = .591$
Household Income (Dichotomous)	$X^2(1) = 2.99, p = .083$ ;	$X^2(1) = 1.56, p = .212$ ;	$X^2(1) = 3.38, p = .066$
Correct Condom Use	$X^2(1) = .254, p = .615$ ;	$X^2(1) = .020, p = .888$ ;	$X^2(1) = .002, p = .961$

Note: No expected frequencies below 5

\* $P < .05$

## **Descriptive Statistics**

The secondary dataset initially included 301 participants. The sample was restricted based on study inclusion criteria. A total of 12 participants either did not provide their age or indicated being under the age of 18, thus all were removed from the sample. Fifteen participants reported ethnicities other than Black or African-American and were removed as well. Twenty-one participants stated they were legally married and 13 participants denied sexual activity within the past three months and were not included. The final sample included 240 self-reported African-American or Black participants meeting inclusion criteria.

Demographic variables were recoded to establish relationships between the variables of interest. Age (18-20 vs. 21-23), education level (some college vs. no college), employment (yes or no), household income (less than, greater than 10,000), religiosity (very, fairly, not too religious), drug and contraceptive use (yes or no), number of sexual partners in past three months (1 partner vs. 2+ partners), correct condom use (yes or no), and type of sexual relationship in the past three months (exclusive vs. inclusive).

Table [2] provides the sample demographic characteristics of the study participants. Participants ages 18-20 comprised 61% (N=146) of the sample whereas those ages 21-23 represented 39% (N=94). All participants identified as legally unmarried however 4% (n=9) claimed marital status as separated/divorced, .04% (n=1) as widow and 96% (n=230) as single, never married. Of the 240 participants, 52% (n=124) stated their highest level of education was some college and 47% (n=112) reported high school and/or GED. Of the sample, 53% (n=126) of participants confirmed they were currently employed and 46% (n=110) were unemployed. 63.3% (n=152) reported an annual household income of less than 10,000 and 30% (n=72) reported incomes above 10,000.

Participants were asked “How religious would you say you are?” 22.1% (n=53) were ‘very religious’, 59% (n=141) ‘fairly religious’ and 18% (n=43) were ‘not too or not all religious’. To ascertain the rate of drug use respondents were asked three questions to include “Have you used alcohol, drugs or marijuana in the last month?” Alcohol: 50% (n=120) answered yes whereas 47% (n=112) responded no; Drugs: 14% (n=33) answered yes and 86% (n=206) said no. Marijuana: 21.3% (n=51) said yes and 78% (n=187) responded no. Other methods of contraceptive use beyond the male condom were analyzed to include the withdrawal, rhythm method, female condom and birth control pills. Respondents were asked “what primary method of birth control did you or your partner use in the last three months?” Withdrawal: 26.3% (n = 63) stated yes and 69% (n =165) said no. Rhythm method: 3.3% (n = 8) said yes and 92.1% (n = 221) said no. Female condom: .8% (n = 2) said yes and 94.6% (n =227) said no. Birth control pills: 15% (n = 36) said yes and 80.4% (n = 193) said no. Correct condom use was assessed by asking participants “Did you use the condom correctly?” Response items were ‘yes and no’. 62% (n= 149) reported using the condom correctly whereas 27.1% (n = 65) reported they had not. Participants were asked two questions to determine the type of sexual relationship in the past three months. The first question asked “In the past 3 months, have you had the same sexual partner for every act of sexual intercourse?” Response options were ‘yes and no’. 76.3% (n= 183) stated yes and 23% (n= 54) said no. The second question asked “In the past 3 months, has your partner had sexual intercourse with anyone other than you?” Response options were ‘yes, no, I don’t know’. 11.3% (n= 27) said yes, 45.4% (n= 109) said no, and 43% (n= 109) responded they did not know. Respondents that answered yes to question 1 and no to question 2 were categorized as being in an exclusive sexual relationship (42%; N= 100) and all others in an inexclusive sexual relationship (58%; N= 139).

**Table 2**  
**Sample Demographic Characteristics of Participants (N =240)**

	%	(N)
<b>Age (M = 20, SD = 1.4)</b>		
18-20	61	146
21-23	39	94
<b>Marital Status</b>		
Single, never married	96	230
Divorced/Separated	4	9
Widowed	.4	1
<b>Education Level</b>		
Some College	52	124
No College	47	112
Missing		
<b>Employment</b>	53/46	126/110
Yes/No	1.7	4
Missing		
<b>Household Income</b>		
<10,000	63.3	152
>10,000	30	72
Missing	6.7	16
<b>Religiosity</b>		
Very	22.1	53
Fairly	59	141
Not Too/Not at all	18	43
Missing	1.3	3
<b>Drug Use</b>		
(Yes/No)		
Alcohol	50/47	120/112
Drugs	14/86	33/206
Marijuana	21.3/78	51/187
Missing		
<b>Contraceptive Use</b>		
(Yes/No [Missing])		
Withdrawal	26.3/69 [5]	63/165 [12]
Rhythm	3.3/92.1 [4.6]	8/22 [11]
Female Condom	.8/94.6 [4.6]	2/22 [11]
Birth Control Pills	15/80.4 [4.6]	36/193 [11]
<b>Number of Sexual Partners</b>		
1 Partner	76	182
2+Partners	23.3	56
Missing	.8	2
<b>Correct Condom Use</b>		
Yes/No	62/27.1	149/65
Missing	10.8	26
<b>Type of Sexual Relationship</b>		
Exclusive	42	100
Inexclusive	58	139
Missing	.4	1
<b>Condom Use at Last Sex</b>		
Yes	43	103
No	56.3	135
Missing	.8	2

## **Preliminary Analyses**

Estimates of internal consistency were examined for measures Sexual Self Schema (SSS) and HIV-Related Stigma. The alpha coefficients for SSS were as follows: .85 for full SSS scale; .77 (Factor: 1 Passionate/Romantic); .73 (Factor 2: Open); and .58 (Factor 3: Conservative). The estimates of reliability suggest the entire SSS scale has an acceptable level of internal consistency whereas the individual factors are low to moderate in this sample. Anderson and Cyranowski (1994) reported similar alpha coefficients as follows: .82 for full scale; .81 (Factor 1: Passionate/Romantic); .77 (Factor 2: Open); and .66 (Factor 3: Conservative). Differences in internal consistency in this study compared to Anderson and Cyranowski's (1994) are most likely the result of variations in sample sizes, missing data and survey sophistication. The 1994 study reported a much larger sample (N = 387) administered to college and middle aged women compared to this study (N = 240). Also, over 50% of the sample did not respond to all 26 items and had varying levels of missingness. Due to the significant loss of data, this study obtained each respondent's SSS score by averaging their responses to items that were answered rather than using the summation as recommended by Anderson and Cyranowski which excluded those who did not answer all items. This allowed the researcher to include all available data and a sufficient number of observations for subsequent analyses. Several studies cite this measure's 3 factor loadings as consistent (Cyranowski, Aarestad & Anderson, 1999; Cyranowski & Anderson, 1998; Reichert, 2005; Vickberg & Deaux, 2005) and as a result were not explored in this study.

The HIV-Related Stigma subscales were published recently (USAID, 2005 & 2006) and to date tested only in international populations (Tanzania stigma-indicators field testing group, 2005). The first subscale, HIV-Related Stigma Knowledge was tested for internal

consistency. The reliability for this scale was .79 with item-total correlations above .3 and an average correlation of .57. Based on factors found and reported in the original study, subscales 2 (Perceived Individual HIV Stigma) and 3 (Perceived Community HIV Stigma) were analyzed using Principle Components Analyses (PCA) with a Varimax rotation to locate the underlying dimensions of perceived individual and community stigma and how each item contributes to these dimensions. PCA assumptions were met for both scales based on the KMO (Perceived Individual Stigma, .65; Perceived Community Stigma, .77) and the Bartlett's Test of Sphericity (Perceived Individual and Perceived Community,  $p = .000$ ). Factor loadings of subscales 2 and 3 were consistent with its original study (POLICY Project et al, 2004) in that individual items loaded onto two factors originally labeled "shame/blame" and "judgment" for both perceived individual and community stigma. Table [3] presents factor loadings of each item.

**Table 3**

**Principle Component Analyses of Perceived Individual and Community HIV Stigma Subscales**

	Factor 1 (Judgment)	Factor 2 (Shame/Blame)	$h^2$
<b>Perceived Individual Stigma (N = 211)</b>			
1. People with HIV are promiscuous.	.756	.162	.598
2. HIV/AIDS is a punishment for bad behavior.	.716	.124	.529
3. It is women prostitutes who spread HIV in the community.	.718	.159	.540
4. HIV is punishment from God.	.438	-.103	.202
5. I would be ashamed if someone in my family had HIV/AIDS.	-.025	.818	.670
6. I would be ashamed if I were infected with HIV/AIDS.	.075	.633	.406
7. People with HIV should be ashamed of themselves.	.140	.668	.465
<b>Perceived Community Stigma (N = 213)</b>			
1. People with HIV are promiscuous.	.774	.216	.646
2. HIV/AIDS is a punishment for bad behavior.	.745	.095	.564
3. It is women prostitutes who spread HIV in the community.	.725	.201	.566
4. HIV is punishment from God.	.527	.288	.361
5. My community would be ashamed if someone in my family had HIV/AIDS.	.182	.904	.851
6. My community would be ashamed if I were infected with HIV/AIDS.	.176	.887	.819
7. People with HIV should be ashamed of themselves.	.445	.591	.548

Note: Principle Component Analyses with Varimax Rotation. Subscale 1 factor loadings  $>.40$ . Subscale 2 loadings  $>.50$ . Adapted from "Tanzania stigma-indicators field testing group" by USAID, 2005.

Estimates of internal consistency were examined for the USAID recommended HIV Related Stigma Subscales. The alpha coefficients were as follows: Subscale 1: .79 (HIV Related Stigma Knowledge/Fear of Casual Contact); Subscale 2: .61 (Perceived Individual HIV Stigma); and Subscale 3: .81 (Perceived Community Stigma) which indicates low to moderate reliability in this population. The coefficients in this study are somewhat similar to those reported in the original study, .82 (Subscale 1), .79 (Perceived Individual HIV Stigma) and .70 (Perceived Community HIV Stigma) (USAID 2005; 2006) however this study's sample size of (N = 978) which consisted of PLHA, health professionals and older adults most likely had some influence on their reported reliability.

Estimates of internal consistency were examined for the Condom Sexual-Self Efficacy scale consisting of 7 items from the national level YRBS. The alpha coefficient for this scale was .74 demonstrating high reliability in this sample. Scale item-total correlations were all above .3 with an average correlation of  $r = .49$  indicating item congruency with overall scale scores.

Measured study variables were assessed for multicollinearity and information about other relationships between the variables of interest. To guard against alpha inflation, a Bonferroni correction was used to establish the alpha level at .003 (.05/18), which is the original alpha level (.05) divided by the number of statistical tests. As shown in Table [4], statistically significant correlations meeting adjusted alpha levels existed between Perceived Individual Stigma and Perceived Community Stigma ( $r = .505$ ,  $p = .000$ ) and Perceived Individual Stigma and HIV-Related Stigma Knowledge ( $r = -.340$ ),  $p = .000$ ). These are moderate relationships that indicate perceived individual and community stigma are related yet still distinct constructs as evidenced by the different responses in the sample. Also, the association between HIV-related knowledge

as it pertains to casual transmission and personal beliefs about HIV and PLHA's appear to have a statistically significant negative relationship in that as one's level of reported stigma increases the potential for stigma related knowledge decreases and vice versa.

### **Univariate Analyses**

#### *Sexual Self-Schema Scale*

Participant responses on 26 adjectives using a 7 point Likert scale were summed and averaged on three factors (Factor 1: Romantic/Passionate; Factor 2: Open; Factor 3: Conservative). Scores on factors 1 and 2 were first added together and factor 3 was then subtracted from the summed factors for a final sexual-self schema score (N = 227; N = 13, Missing). The groups were then divided using a median split of 6.50, plus and minus 1.5 points, resulting in a split of positive (N = 32) and negative (N = 44) groups. The purpose of taking the upper and lower limits of the scale was to prevent too many observations around the median included in further analyses which would provide a clearer picture of each group at the most extreme ends of the continuum. The positive schema group scores range from 8.04 to 10.78. The negative group scores range from 2.46 to 4.96. The means are as follows for the total Sexual Self Schema Scale (M = 6.40, SD = 1.59,  $s^2 = 2.55$ ) and the positive (M = 8.96, SD = .721,  $s^2 = .519$ ) and negative groups (M = 4.14, SD = .683,  $s^2 = .467$ ).



Table 4

**Spearman's Correlation between Measured Variables**

Measures	CES	Pos. Schema	Neg. Schema	Total Schema	Stigma Knowledge	Ind. Stigma
CES	---	---	---	---	---	---
Positive Schema	.194*	---	---	---	---	---
Negative Schema	.034	---	---	---	---	---
Total Schema	.167*	---	---	---	---	---
Stigma Knowledge	-.017	.129	-.130	.042	---	---
Individual Stigma	-.088	.049	-.241*	-.002	-.340**	---
Community Stigma	-.080	.102	-.205*	.006	-.102	.505**

Note: CES: Condom Sexual Self-Efficacy Scale; Positive and Negative Schema Groups are 1.5 (+, -) the median of 6.50.

\*p<.05, \*\*p<.001

### *HIV-Related Stigma Subscales*

Participants were asked to answer 5 indicators of HIV transmission in casual contact and whether they agreed, disagreed or did not know if they could become infected ( $M = 49.04$ ,  $SD = 39.21$ ,  $s^2 = 1537.39$ ;  $N = 228$ ). All of the questions were incorrect modes of HIV transmission and scored from 0% (no correct knowledge/high stigma) to 100% (all correct knowledge/no stigma). On subscale 1, HIV related stigma knowledge, 27% of respondents ( $n = 64$ ) answered all 5 items incorrectly, 10% each answered questions 1 and 2 correctly ( $n = 24$ ), 13% answered 3 questions correctly ( $n = 30$ ), 14% answered 4 questions correctly ( $n = 33$ ), and 22% answered all 5 questions correctly ( $n = 53$ ) ( $N = 12$ , Missing).

On subscale 2 ( $M = 1.85$ ;  $SD = 1.49$ ,  $s^2 = 2.23$ ;  $N = 211$ ) participants answered whether they agreed or disagreed with 7 indicators of individual HIV-related stigma. The scale was scored from 0 (no manifestation of stigma) to 7 (highest manifestation of stigma). Majority of the sample, 77% ( $n = 184$ ) reported lower levels of individual stigma with scores ranging from 0-3 compared to 11.3% ( $n = 27$ ) reporting higher stigma levels of scores ranging from 4-7 ( $N = 29$ , Missing).

Subscale 3 ( $M = 2.38$ ,  $SD = 2.23$ ,  $s^2 = 4.99$ ;  $N = 213$ ) requested participants answer the same 7 indicators based on whether they thought their community would agree or disagree with the HIV-related stigma indicators. The scale was scored from 0 (no manifestation of perceived community stigma) to 7 (highest manifestation of perceived community stigma). A similar trend in participant responses was observed with 68% ( $n = 145$ ) of respondents reporting lower community stigma than the 28.4% ( $n = 68$ ) at the higher end of the spectrum ( $N = 27$ , Missing).

### *Perception of HIV Risk*

The range for ordinal variable Perception of HIV Risk was 1 (low risk) to 3 (high risk). Participants were asked to identify their personal HIV risk level by answering whether they thought they were low, medium or high risk for HIV transmission. 73% (n = 174) indicated their risk level as low, 15% (n = 36) medium, and 9% (n = 21) as high risk, (N = 9, Missing).

### *Condom Sexual Self-Efficacy*

Participants answered seven hypothetical questions indicating their belief in their ability to influence condom use in relevant contexts (N = 235). Response items ranged from 1 (not sure at all), 2 (kind of sure) to 3 (totally sure). The variable was recoded and a scale index compiled from 0 (no condom self-efficacy) to 7 (total condom self-efficacy) was computed. 1.3% of respondents (N = 3) indicated no condom sexual self-efficacy whereas 54% (n = 129) reported total efficacy. Over 90% of the sample (n = 223) reported an efficacy score of 4 or higher compared to 5.1% (n= 13) reporting lower scores or 3 or below, (N = 5, Missing).

*Specific Aim 1:* Describe the prevalence of condom use at last sex among a group of sexually active young adult Black women.

The outcome variable asked respondent's "The last time you had sexual intercourse, did you or your partner use a condom?" Response options were 'yes and no'. A frequency analysis was used to assess self-reported condom use. The majority of respondents indicated they did not use a condom at last sex 56.3% (N=135) and 43% (N=103) of participants reported they had used a condom at last sex.

## **Bivariate Analyses**

*Specific Aim 2:* Assess relationships between condom-related socio-demographics and condom use at last sex among a group of sexually active young adult Black women.

The effects of socio-demographics on the outcome, condom use at last sex, were analyzed using Chi-square analyses. There were no statistically significant differences in demographics among those who reported condom use at last sex versus those who did not. Demographic variable 'correct condom use' was not analyzed in relation to the outcome variable because the survey question did not clarify if it was referring to last use or use within the past three months; however it was retained for descriptive purposes. Table [5] presents results of demographic analyses.

*Specific Aim 3:* Assess relationships between condom use at last sex and sexual self-schema among a group of sexually active young adult Black women.

An independent samples t-test was conducted to examine mean differences between condom users and non-condom users at last sex on the total Sexual Self Schema Scale, Positive and Negative groups. The Levene's Test for Equality of Variances determined the t-value used for these study variables. On average, condom users at last sex were more likely to report slightly lower total SSS scores ( $M = 6.33$ ,  $SD = 1.63$ ,  $N = 99$ ) than no condom users at last sex ( $M = 6.45$ ,  $SD = 1.57$ ,  $N = 128$ ),  $t(225) = -.566$ ,  $p = .572$ . Further analyses indicated slight differences within separate schema groups in that positive schematic condom users at last sex indicated higher scores ( $M = 9.26$ ,  $SD = .814$ ,  $N = 13$ ) than positive schematic no condom users at last sex ( $M = 8.76$ ,  $SD = .587$ ,  $N = 19$ ),  $t(30) = -2.03$ ,  $p = .051$ . Negative schematic condom users at last sex reported slightly higher scores as well ( $M = 4.26$ ,  $SD = .586$ ,  $N = 21$ ) than

negative schematic no condom users at last sex ( $M = 4.04$ ,  $SD = .760$ ,  $N = 23$ ),  $t(42) = -1.05$ ,  $p = .299$ . A point-biserial correlation was also run to test for associations between the variables. Condom use at last sex was statistically non-significant when measured with the total SSS scale  $r_{pb} = .038$ ,  $p = .572$ , the positive schematic group,  $r_{pb} = -.083$ ,  $p = .381$  or the negative schematic group,  $r_{pb} = .063$ ,  $p = .505$ . Specific aim 3 was not supported.

*Specific Aim 4:* Assess relationships between condom use at last sex and HIV related stigma among a group of sexually active young adult Black women.

An independent samples t-test was conducted to test mean differences between condom users and non-condom users at last sex on the three HIV Related Stigma Subscales. The Levene's Test for Equality of Variances determined the t-value used for these study variables. HIV Related Stigma Knowledge was statistically significant with condom use at last sex,  $t(226) = -2.081$ ;  $p = .039$  but with a very small effect,  $r = .14$ . It appears non-condom users at last sex reported higher HIV related stigma knowledge scores ( $M = 53.69$ ,  $SD = 39.30$ ) than condom users ( $M = 42.86$ ,  $SD = 38.42$ ). A point-biserial correlation between the variables also reflected a statistically significant association,  $r_{pb} = -.137$ ,  $p = .039$ .

Perceived Individual and Community Stigma were not statistically significant with condom use at last sex,  $t(209) = -.153$ ;  $p = .879$ ;  $t(211) = -1.103$ ;  $p = .271$ . Although these scales were not statistically significant group trends demonstrated slightly higher stigma score means in both condom use at last sex groups (Individual Stigma:  $M = 1.87$ ,  $SD = 1.45$ ; Community Stigma:  $M = 2.58$ ,  $SD = 2.19$ ) compared to no use (Individual Stigma:  $M = 1.84$ ,  $SD = 1.53$ ; Community Stigma:  $M = 2.24$ ,  $SD = 2.26$ ). Point-biserial correlations between the variables reflected the same in that the variable condom use at last sex was not significantly

associated with perceived individual stigma,  $r_{pb} = .011$ ,  $p = .879$ , or perceived community stigma,  $r_{pb} = .076$ ,  $p = .271$ . Specific aim 4 was partially supported.

**Table 5**  
**Results of Socio-Demographic Chi-Square Analyses and Condom Use at Last Sex**

Variable	Condom Use at Last Sex	N
Age (Dichotomous)	$X^2(1) = 1.30, p = .255$	238
Education Level	$X^2(1) = .071, p = .789$	234
Employment	$X^2(1) = .399, p = .528$	234
Household Income (Dichotomous)	$X^2(1) = 1.78, p = .182$	222
Religiosity	$X^2(2) = .658, p = .720$	235
Drugs	$X^2(1) = .235, p = .628$	238
Alcohol	$X^2(1) = .658, p = .417$	231
Marijuana	$X^2(1) = .769, p = .381$	237
Withdrawal	$X^2(1) = 2.951, p = .086$	227
Rhythm	$X^2(1) = .127, p = .722$	228
Birth Control	$X^2(1) = .429, p = .512$	228
Female Condom	$X^2(1) = .031, p = .860$	228
Number of Sexual Partners	$X^2(1) = 1.45, p = .229$	237
Type of Sexual Relationship	$X^2(1) = 2.77, p = .096$	238

Specific Aim 5: Assess relationships between condom use at last sex and perception of HIV risk among a group of sexually active young adult Black women.

A chi-square analysis was conducted to look for associations between reported condom use and perception of HIV risk. There were no statistically significant associations between the variables as it pertained to condom use at last sex  $\chi^2(2) = 4.76, p = .093$ . Specific aim 5 was not supported.

Specific Aim 6: Assess relationships between condom use at last sex and condom sexual self-efficacy among a group of sexually active young adult Black women.

An independent samples t-test was conducted to test differences between condom users and non-condom users at last sex on the Condom Sexual Self-Efficacy scale. There were no statistically significant differences between the groups  $t(232) = -1.74, p = .084$ . However, mean scores were slightly higher in the condom use group ( $M = 6.30, SD = 1.10$ ) than the non-condom use group ( $M = 6.00, SD = 1.48$ ). A point-biserial correlation between the two variables revealed the same in that there was no statistically significant association,  $r_{pb} = .095, p = .149$ . Specific aim 6 was not supported.

Specific Aim 7: Assess associations between sexual self-schema and condom sexual self-efficacy among a group of sexually active young adult Black women.

A Spearman correlation was conducted to test the association between variables Sexual Self-Schema (total, positive and negative) and Condom Sexual Self-Efficacy. The total SSS scale correlated with condom efficacy,  $r = .167, p = .013$ . The coefficient of determination,  $R^2$ , indicates only 2.3% of variability accounts for schema explaining condom sexual self-efficacy. Neither of the groups at the most extreme ends of the continuum, positive ( $r = .329, p = .76, N =$



30) or negative ( $r = .170$ ,  $p = .270$ ,  $N = 44$ ) correlated with condom sexual self-efficacy separately. When the groups were analyzed using all observations with just the median split the positive schematic group correlated with condom efficacy,  $r = .194$ ;  $p = .042$ ,  $N = 114$ . However, the coefficient of determination,  $R^2$ , indicates only 3.8% of variability in condom sexual self-efficacy is explained by positive schema. The negatively schematic group was not statistically significant and did not correlate with condom efficacy,  $r = .034$ ,  $p = .725$ ,  $N = 113$ . Specific aim 7 was partially supported.

*Specific Aim 8:* Assess the relationship between perception of HIV risk and HIV-related stigma among a group of sexually active young adult Black women.

To determine if there was a statistically significant difference among the three types of Perception of HIV Risk groups as it pertains to the three HIV-Related Stigma subscales, one-way analysis of variance (ANOVA) procedures were conducted. The results revealed no statistically significant differences in the mean scores of HIV-Related Stigma Knowledge,  $F(2, 220) = .175$ ;  $p > .05$ , Perceived Individual Stigma,  $F(2, 203) = .973$ ;  $p > .05$ ; and Perceived Community Stigma,  $F(2, 205) = .592$ ;  $p > .05$  among the three risk groups in this sample. Specific aim 8 was not supported.

### **Multivariate Analyses**

*Specific Aim 9:* Assess the influence of sexual self-schema, HIV-related stigma, perception of HIV risk, condom sexual self-efficacy and condom use at last sex among a group of sexually active young adult Black women..

To address this aim a logistic regression analysis was performed on the outcome variable (condom use at last sex) to determine whether all the main predictors fit the model and could

predict condom use at last sex. A test of the full model with all predictors was statistically reliable,  $X^2 = 14.63$ ,  $p < .05$ , indicating that the predictors, as a set, did reliably distinguish between sexually active young adult Black women who did and did not report condom use at last sex. This set of predictors' accounts for 6% of the variance in condom use at last sex with a 95% confidence interval. The model correctly predicts 39.2% of reported condom users and 80.2% of reported non-condom users for an overall success rate of 63.2%. Table [6] shows regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals for odds ratios for each of the predictors in this model. According to the Wald criterion only Condom Sexual Self-Efficacy reliably predicted condom use at last sex,  $X^2 (1, N = 190) = 4.67$ ,  $p < .05$ .

For additional comparisons, two additional logistic regressions were run to 1) gauge the influence of condom related socio-demographic variables with the main predictors and 2) to determine the influence of the main predictors at various steps on condom use at last sex. The first model ( $N = 165$ ) which included all condom related socio-demographics using the enter method was not statistically significant,  $X^2 = 24.50$ ,  $p > .05$  although it reported a greater Nagelkerke of .187 which contributes to more of the variance accounted for. Table [7] shows regression coefficients, Wald statistics, odds ratios and 95% confidence intervals for each of the predictors in this model. Overall, this model indicates that with all of the socio-demographics and main predictors included it was not a good fit of the data and did not reliably distinguish between condom use at last sex groups. The second model ( $N = 190$ ), which omitted the socio-demographics, entered the main predictors using the block entry method with a total of six blocks to determine how the model improved after each predictor was entered. Condom sexual self-efficacy was entered into block 1 and was not an improvement over the constant only model,  $X^2 = 3.83$ ,  $p = .05$ ,  $R^2 = .027$  and it was not a significant predictor with a Wald criterion of  $X^2 (1,$

$N = 190) = 3.44, p > .05$ . The model became significant when Perception of HIV risk was entered into block 2,  $X^2 = 9.31, p < .05, R^2 = .064$ . Block 2 Wald criterion indicated condom sexual self-efficacy was a statistically significant predictor,  $X^2(1, N = 190) = 4.00, p < .05$ . SSS was entered into block 3 and further improved the model,  $X^2 = 11.128, p < .05, R^2 = .077$ . Condom sexual self-efficacy remained the only statistically significant predictor with a Wald criterion of  $X^2(1, N = 190) = 5.14, p < .05$ . HIV related stigma knowledge was added to the model in block 4,  $X^2 = 14.03, p < .05, R^2 = .096$ . Condom sexual self-efficacy was still the only significant predictor in the model with a Wald criterion of  $X^2(1, N = 190) = 4.84, p < .05$ . Perceived individual stigma was added to the model in block 5,  $X^2 = 14.08, p < .05$  but with no change in the explained variance,  $R^2 = .096$ . Condom sexual self-efficacy was the only significant predictor with a Wald criterion of  $X^2(1, N = 190) = 4.73, p < .05$ . Perceived community stigma was added to the final block,  $X^2 = 14.63, p < .05, R^2 = .100$  resulting in condom sexual self-efficacy as the only reliable predictor distinguishing between the condom use at last sex groups after controlling for the remaining variables.

A review of the three logistic regression models indicated including the condom related socio-demographics in the model resulted in a non-significant and unreliable model. It also demonstrated that the statistically significant progression of condom sexual self-efficacy was dependent on the remaining predictors and not necessarily statistically significant in and of itself. This confirms the finding that condom sexual-self efficacy is a statistically significant predictor of condom use at last sex among the variables only when controlling for the remaining variables. The predicted logit of condom use at last sex is mathematically presented as:  $-1.122$  (constant)  $- .133$  (SSS)  $- .007$  (HIV-Related Stigma Knowledge)  $- .072$  (Perceived Individual HIV Stigma)  $+ .061$  (Perceived Community HIV Stigma)  $+ .287$  (Condom Sexual Self-Efficacy)  $+ .721$

(medium risk) + .967 (high risk). From the model, condom sexual self-efficacy can be explained as positively related to reported condom use at last sex ( $P < .05$ ) and distinguishes between those who reported condom use at last sex and those who did not. In the case of this sample, as the log odds of condom sexual self-efficacy increased by one unit the logit of condom use increased by 33.2. Therefore, young adult Black women with condom sexual self-efficacy are 33.2% more likely to report condom use at last sex, all other factors being constant, than women without condom sexual self-efficacy.

**Table 6**  
**Multivariate logistic regression analysis of condom use at last sex with main predictors (N = 190)**

Included Predictors	Condom Use Reported (N = 48)			
	B	OR (exp b)	95% CI	p.
Sexual Self-Schema	-.133	.875	[.713, 1.076]	.206
HIV Related Stigma Knowledge	-.007	.993	[.984, 1.001]	.085
Perceived Individual Stigma	-.072	.930	[.725, 1.194]	.569
Perceived Community Stigma	.061	1.063	[.905, 1.249]	.456
Condom Sexual Self-Efficacy	.287	1.332	[1.027, 1.728]	.031*
Perception of Risk (Medium)	.721	2.057	[.902, 4.691]	.086
Perception of Risk (High)	.967	2.630	[.877, 7.888]	.084
Constant	-1.122	.326		
Model $X^2$	14.63			
Nagelkerke $R^2$	.100			

Note.  $R^2 = .93$  (Hosmer & Lemeshow),  $.07$  (Cox & Snell), \* =  $p < .05$

Perception of HIV Risk reference group: Low risk

**Table 7****Multivariate logistic regression analysis of condom use at last sex with socio-demographics (N = 165)**

Included Predictors	Condom Use Reported (N = 32)			
	<i>B</i>	OR (exp <i>b</i> )	95% CI	<i>p</i> .
Age (dichotomous)	.452	1.572	[.723, 3.418]	.254
Highest Education (No college)	-.789	.454	[.206, 1.001]	.050
Currently Employed (Yes)	-.013	.999	[.490, 2.036]	.998
Income (Less than 10,000)	.531	1.700	[.771, 3.750]	.188
Religiosity (Very Religious)	.151	1.163	[.343, 3.950]	.582
Religiosity (Fairly Religious)	-.313	.731	[.267, 2.000]	.808
Type of Sexual Relationship (Inexclusive)	.402	1.495	[.674, 3.317]	.542
Number of sexual partners (1 Partner)	.205	1.227	[.457, 3.291]	.323
Method: Withdrawal (Yes)	-.658	.518	[.211, 1.271]	.685
Method: Rhythm (Yes)	-.213	.808	[.118, 5.523]	.151
Method: Female Condom (Yes)	1.143	3.135	[.134, 73.105]	.828
Method: Birth Control Pills (Yes)	-.463	.629	[.245, 1.616]	.477
Alcohol Use (Yes)	.630	1.878	[.873, 4.038]	.336
Drug Use (Yes)	.364	1.439	[.338, 6.133]	.107
Marijuana Use (Yes)	-.385	.681	[.207, 2.238]	.622
Sexual Self-Schema	-.240	.786	[.606, 1.020]	.526
HIV Related Stigma Knowledge	-.005	.995	[.985, 1.005]	.070
Perceived Individual Stigma	-.123	.884	[.652, 1.199]	.292
Perceived Community Stigma	.078	1.081	[.898, 1.300]	.428
Condom Sexual Self-Efficacy	.325	1.383	[1.014, 1.888]	.041**
Perception of HIV Risk (Medium)	.729	2.074	[.785, 5.474]	.141
Perception of HIV Risk (High)	.871	2.390	[.558, 10.235]	.240
Constant	-1.326	.266		.363
Model $X^2$	24.50			
Nagelkerke $R^2$	.187			

## Overview

There were no differences in the groups as it pertained to age, education level, employment status, household income, religiosity, drug and contraceptive use, number of sexual partners and type of sexual relationship. As such, they were quite similar on most of these variables which was expected considering the research setting. In general, respondents confirmed they were primarily single/never married, educated, fairly religious, employed and living in a low income household. Most of the participants reported no condom use at last sex, having had only one sexual partner in the past three months, low perception of risk and extremely high levels of condom sexual-self efficacy.

Most of the sample was classified as being in an in-exclusive sexual relationship primarily as a function of not knowing their partner's sexual behaviors outside their relationship. In bivariate analyses the only statistically significant difference in condom users at last sex versus non-condom users was on the variable HIV related stigma knowledge. With non-condom users' reporting higher stigma knowledge scores (more knowledge/less stigma) this trend underscores findings in other studies documenting the limitations of knowledge accurately assessing sexual risk behaviors commonly associated with knowledge acquisition (Younge, Salem & Bybee, 2010; Branch-Vital et al, 2009).

As anticipated, total schema correlated with condom sexual-self efficacy and the group most influencing this correlation was the positive schematics. This was a reasonable expectation in light of the fact that in order for an individual to feel as if they can influence condom use in an intimate setting she would need to have many of the attributes associated with a positive schematic frame such as assertiveness, openness, willingness to engage in emotional matters and

ability to communicate one's needs (Anderson & Cyranowski, 1994). There were no statistically significant bivariate differences on condom use at last sex as it pertained to sexual-self-schema, perception of HIV risk or condom sexual-self efficacy. Interestingly, condom sexual self-efficacy was not significant on condom use at last sex in bivariate analyses however it was the only statistically significant predictor in the multivariate logistic regression model that fit the observed data and performed better than the constant. A review of the model residuals indicated there were no cases demonstrating an extremely poor fit with the model and no values above (+, -) 2.5. Influence was assessed using Cook's distance and although some of the cases were high none of them exceeded the value .19, which was the same for leverage, both of which indicating there were no overly influential cases having an effect on the resulting model. Finally, the standardized residuals of all the predictors were under (+, -) 2.

The study's original hypothesis was not supported which stated that sexually active young adult Black women with positive sexual self-schema, low HIV-related stigma, and high perceptions of HIV risk and condom sexual self-efficacy would be more likely to report condom use at last sex. Based on this sample it appears that young adult Black women with average level schema, low HIV-related knowledge stigma, low perceived individual stigma and high perceived community stigma, condom sexual self-efficacy and perception of risk would be more likely to report condom use at last sex.

## Chapter V

### Discussion

This study explored relationships and group differences between unique cognitive constructs, sexual self-schema, HIV-related stigma, perception of HIV risk and condom sexual self-efficacy on condom use at last sex among sexually active young adult Black women. The study also assessed these variables' predictive power in creating a model to predict condom use at last sex as well. The study's primary objective was to apply a cross sectional approach in exploring these constructs individually and then analyze their effects collectively along outcome variable condom use at last sex.

The study consisted of nine specific aims to address the primary objectives. To answer the first aim, a frequency analysis was conducted on outcome variable condom use at last sex. The results indicated the majority of participants did not use a condom at last sex. To address specific aim two chi-square analyses were ran to look for differences on condom use based on condom related demographics. The demographics analyzed were age, type of education, employment, household income, religiosity, drug and contraceptive use, number of sexual partners, correct condom use<sup>1</sup> and type of sexual relationship. No socio-demographics were statistically significant in distinguishing condom users from non-condom users at last sex. Specific aims three, four and six were analyzed using independent samples t-tests. These analyses consisted of measuring group means on variables sexual self-schema, HIV related stigma and condom sexual self-efficacy and their effects on condom use at last sex. Most of these variables, with the exception of HIV related stigma knowledge, did not distinguish between condom users and non-users. As previously stated, non-users scored higher as to knowing how

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<sup>1</sup> Correct condom use was not analyzed with condom use at last sex due to this question's ambiguity in timeframe. It was retained for descriptive purposes.



HIV is transmitted during casual contact than condom users. Both perceived individual and community HIV stigma had no obvious effects on condom use at last sex. Specific aim five used a chi-square analysis to determine associations between condom use at last sex and the three perceptions of risk groups. There were no statistically significant associations between the groups. To answer specific aim seven, a Spearman correlation was run between sexual self-schema (total, positive and negative groups) and condom sexual-self efficacy due to condom sexual self-efficacy being a skewed variable. The total sexual self-schema scale and positive schematic group (all positive schematics included) were positively correlated but with a weak effect. Condom sexual self-efficacy did not correlate with either the most extreme positive or negative schematic groups. Specific aim eight was analyzed with an ANOVA due to the three perceptions of HIV risk groups and HIV-related stigma subscales as a measured variable. There were no statistically significant differences between the groups on HIV-related knowledge or perceived individual and community stigma.

The purpose of using logistic regression to address aim nine was to gauge the collective influence of these variables while creating a predictive model for condom use at last sex among a group of sexually active young adult Black females attending urban health clinics in the United States. After assessing two additional models, one with the socio-demographics and another using the block enter method, it was determined that the model with the main predictors only was the best fit to the observed data. This model only reported a pseudo  $R^2$  of 10% which indicates that the model, although a good fit, did not explain very much of the outcome. Of all the predictors entered into the logistic regression models condom sexual self-efficacy was the only statistically significant predictor distinguishing between condom users and non-users. In light of condom sexual self-efficacy's statistical significance in the multivariate analysis rather

than the bivariate analysis suggests the other variables, particularly, HIV related stigma knowledge, may have been acting as suppressor variables in that they were not statistically significant but contributed in highlighting the effects of condom sexual self-efficacy on reported condom use.

Additional demographics considered potentially influential in affecting condom use were assessed as well. Most respondents (N = 141) identified as being fairly religious although religiosity did not appear to distinguish between those who used and did not use condoms at last sex. It may be important to note here that the way religiosity was captured using a single item probably was not sufficient for gathering enough information about this area of their lives. Studies have reported African Americans as having a stronger religious orientation than other ethnic groups (Markstrom, 1999; Rozie-Battle, 2002) which is suggested in this sample but not compared to other groups. It is quite possible that religiosity means different things to different people. Some of the women may have answered this question based on their family affiliations or just a belief in God with or without accompanying religious or ritual behaviors.

Finally, the preferred contraceptive methods analyzed in this study, excluding the male condom, were withdrawal (N = 63) and birth control pills (N = 36). The primary study provided additional contraceptive options for respondents to choose from to include rhythm (safe time), the female condom, Depo-Provera, Implanon, IUD and condoms. In the original study, respondents identified their preferences for the male condom (N = 124) as their primary method followed by Depo-Provera (N = 77) and then withdrawal. The other options were not included in the secondary data analysis due to the research design and extremely uneven splits with most respondents claiming little use of the female condom (N = 2), Implanon (N = 11) or IUD (N = 3). This study initially anticipated low use of hormonal methods potentially due to a lack of

insurance, financial hardship and previous research citing birth control pills as a preferred method in this age group. It appears the shift away from birth control pills in this population may be a result of most of the women reporting current employment and are thus able to afford clinic sliding scale fees. With the ability to purchase these hormonal contraceptive methods comes additional freedom from having to take a daily pill to manage their reproductive needs which may be a more enticing option.

The fact that this study sample was an extremely homogenous group cannot be overstated. Although the women varied in age, 60% were 18-20 and 39% were 21-23, the sample was not evenly distributed enough to elucidate any major differences on other variables. Also, it is quite possible that these two age groups are much more alike than they are different with respect to personal experiences and interpersonal relationships. Taking into consideration that most of the inner-city women identified as low income, working class, with no need for parental consent collectively seeking a variety of services at family planning clinics demonstrates some similarity in thought and circumstance. Findings may have been drastically different had the study obtained respondents from a community sample that included the perspectives of young women who did not frequent these clinics. In Aronowitz, Rennells and Todd's (2006) study they determined sexual knowledge and attitudes of Black adolescent females as an indicator of the type of community sexual exposures and support systems they encountered. As such, these exposures and support networks framed their perspective on sexual risk and behavioral response. Since this study found no major differences between condom users and non-condom users on socio-demographics it is likely these young women resulted in having similar perspectives on sexual risk simply because they sought clinic services.

## *Overview of the Findings*

This study demonstrates that the prevalence of lack of condom use among young adult Black women is high in this sample with 56% reporting no use at last sex. Another study conducted at the same site with over 55% young adult Black and 32% Hispanic women ages 13-23 reported similar figures when assessing condom use in that 54% reported no use at last sex (Small, 2009). Other comparison studies have also documented that the rate of condom use is not significantly different between ethnic groups (Tillerson, 2008; Davis et al, 2007; Moreno et al, 2007). Branch-Vital, Hale and Mason's (2009) study of condom use in an all-Black sample of Harris County women 18 and up reported similar results of 57% of women stating they did not use condoms at last sex. Another study sample of all-Black adolescent females reported slightly higher condom use rates of 55% over a two-week time span (Sales, et. al, 2007). What is clear is that there does not appear to be any major differences between ethnic groups when it comes to lack of condom use. However, when analyzing groups independently Black adolescents and women are more likely to report no use. Variations of intra-group reported condom use are expected depending on locale and the fact that this is a self-report measure requiring women to recall when a condom was used in past sexual encounters which may or may not be consistent with what actually takes place.

Study findings indicate condom sexual-self efficacy was positively associated with sexual-self schema among young adult Black women. Specifically, those with positive schemas were more likely to report greater condom sexual-self efficacy than those with negative schemas. This was the first study that assessed the valence of sexual self-schema in an all-Black sample. For positive schematic women these attributes seem to support their ability in believing they can influence condom use in a sexual setting. Negative schematic views did not correlate with

condom sexual-self efficacy which suggests there are other factors impacting their negative schema or subduing the effects of whether they perceive themselves able to influence their sexual environment. Although not an original aim of this study, preliminary analyses revealed a weak negative correlation between the negative schematic group and perceived individual stigma about HIV or PLHA's. This implies that an increasing negative schematic orientation will result in a decreasing level of perceived individual stigma and vice versa. According to Anderson and Cyranowski (1994) positive schematic women are expected to have a behavioral openness to sexual encounters, regular feelings of love, ability for arousal, ongoing romantic involvement and more sexual partners over a period of time with negative schematic women demonstrating the opposite. Even though most of the women in this study fell into the inclusive sexual category by research design the majority reported having one sexual partner in the past three months. This could be understood as an indicator of ascribing to feelings of love and romantic involvement because some semblance of a commitment does exist which the norm in our society is. Furthermore, this is suggested because most condom users reported slightly lower overall schema scores than non-condom users but the range of scores was still close to the median split of 6.50 which was the lower limit of the positive group. This would imply that when observing condom practices among both positive and negative schema groups together positive schematic women are engaging in sexual intercourse without a condom more often than negative schematics.

### *Overview of Sexual Self Schema*

Combining the attributes of what a positive schematic is and the fact that condom sexual self-efficacy was not correlated with the highest identified positive schematics further suggests that a condom is probably perceived as interrupting the level of intimacy sought and engaged in

with their partners. However, when you observe the trend of condom use at last sex and the positive and negative schematic groups separately schema scores were slightly higher for condom users than non-condom users in each of the groups. This slight, though statistically non-significant difference, may be propelled by one's condom sexual self-efficacy in that if a positive schematic young adult woman wanted to use a condom she would be more likely to influence the realization of that outcome versus a negative schematic woman.

Several considerations must be taken into account when trying to assess schema in this sample. First, most of the young women did not consistently answer all 26 items which would provide an incomplete take on properly assessing their schema as the scale is designed. Had only the summation technique been used then the loss of data would have practically rendered no analyses because all respondents who did not answer the relevant items were excluded resulting in groups without enough observations in the upper and lower limits. Using the summation and averaging method allowed grouping of a sufficient size to complete the analyses. With a sample demonstrating extreme homogeneity such as this one it may have been more appropriate to utilize the bivariate approach of positive, negative, aschematic and co-schematic rather than the bi-polar method of positive versus negative. After taking the upper (+.5) and lower (-.5) limits of the SSS scale median this resulted in excluding 151 observations. This indicates many of the respondents were closest to the median of 6.5 and either strongly endorsed or was weak on both positive and negative schematic orientations rather than a strong orientation of either positive or negative. It is possible that due to their age many may not have had enough experiences to draw from. Had respondents answered all items it is likely there may have been differences in the range of schematic orientations with varying outcomes. It is not clear as to why respondents did not answer all items. It is possible some of the vocabulary used may not have been familiar to

them. A review of all items indicated those with the most missing observations were: uninhibited (N = 68), prudent (N = 55), stimulating (N = 50) and frank (N = 39) which were all included in their respective factors and subsequent analyses.

### *Overview of HIV Related Stigma*

The study also found that young adult Black women with more HIV related stigma knowledge were less likely to report condom use at last sex. This scale specifically captured whether respondents knew how HIV was transmitted in casual contact with PLHA's and indicated the potential for stigma as a result of a lack of knowledge. As previously indicated other studies have demonstrated an increase in condom use practices is not necessarily related to an increase in knowledge about STD's and HIV and this study is no exception. This situation is two-fold because although improving knowledge may not always facilitate behavioral change lack of it does increase sexual risk as an individual does not know the facts about proper transmission and would be much more likely to run the risk of making an error. On the other hand, it appears that of those who were more knowledgeable about correct HIV transmission routes may have been more certain about their decision not to use a condom simply because they have more information to make a decision from. Morrison-Beedy (1997) found a similar trend in her study where respondents with lower overall AIDS knowledge tended to evaluate their sexual behaviors at an unnecessarily higher risk compared to women with more knowledge who reported their behaviors as low risk when in fact it should have been higher.

In terms of understanding this subscale's indication of stigma as it relates to a lack of knowledge, 27% of respondents exhibited no knowledge of proper routes of HIV transmission compared to 59% answering one or more questions correctly. Nonetheless, it is important to

note that only 22% (N = 53) of respondents answered all five questions correctly which is supposed to indicate that of those remaining there are varying levels of stigma present in the sample due to a lack of knowledge. The first subscale does not allow one to infer as to how this knowledge related stigma impacts interactions with PLHA's but as a whole it did distinguish between those who used and did not use condoms at last sex. It seems safe to suggest that increasing what these women know about proper HIV transmission would most likely not increase the rate of condom use in sexual encounters especially if the stigma factor is not properly addressed. Since it appears that HIV-related knowledge stigma is present in this sample but the benefit of knowledge is not positively impacting their condom use practices there is a need to delve further into understanding how this stigma manifests and what it means.

The duality of this first subscale may be more a reflection of formal and informal community influences (Aronowitz, Rennells & Todd, 2006) where young adults often learn about these matters from engaging with others to include their parents, friends and the media. When assessing subscales 2 and 3 for better explanations of subscale 1 it was noted that individual and community stigma scores were much lower than anticipated and that community scores were on average higher than individual scores. This suggests that, collectively, respondents and their communities are not excessively stigmatizing toward PLHA's and HIV but they perceive their community as being harsher about HIV and PLHA's than they themselves are. Preliminary analyses indicated there is an association between HIV related stigma knowledge and perceived individual stigma ( $r = -.340$ ,  $R^2 = .12$ ). This would mean that knowledge about HIV through casual contact and its resulting stigmatic influences are more pronounced when assessing one's own subjective and moral perceptions about HIV and PLHA's.



When examining the individual stigma items separately most of the respondents indicated a high degree of compassion and low stigma on shame/blame and judgment questions referencing others with or about HIV. The only exception to this was when respondents were asked if they would feel shame if they were infected with HIV in that 68% said they would feel shame compared to 25% (N = 224, N= 16 Missing) who said they would not feel ashamed. It is not clear why the majority of respondents indicated internal shame should they become infected with HIV. When assessing this item from the community perspective 56% of respondents said their community would not feel shame compared to 37% who said their community would feel shame if they were infected with HIV (N = 223, N = 17 Missing). There was a positive correlation between individual and community perceptions of HIV,  $r = .505$ , which was expected since the scales are utilizing the same questions however this is not a perfect correlation. This means that although the scales are similar they are not measuring the same constructs and offer valuable information as to the impact of one on the other. This progression indicates that perceived community stigma does impact perceived individual stigma which in turn highlights the deficiencies in knowledge about HIV through casual contact and its resulting stigmatic influences (HIV related stigma knowledge). Furthermore, these findings suggest that the shame and stigma present in this sample, due to a lack of knowledge and subjective moral individual perceptions, is not necessarily directed toward PLHA's but is rather internalized amongst perceptions of themselves.

Shame as a result of stigma is reported to be an influential motivator of condom use (Sales et al, 2007) and stigma acts a barrier to health seeking behaviors (Fortenberry et al, 2002) and condom use (Liu et al, 2005). This study did not gather information about respondent's STD history or their reasons for visiting the clinic however the high levels of reported internal shame

may have been a factor for some respondents in that the clinic does offer counseling and STD services. The internalized stigma, however, may act as a barrier to reported condom use at last sex. It is also possible that the sample's high rates of condom sexual self-efficacy mitigated the effects of shame and stigma on reported condom use. Sales' et al (2007) study determined that adolescents with high self-esteem were more likely to report lower levels of STD-related shame, and when coupled with social support, STD-related stigma as well.

Respondents own assessments of their community's perception of shame/blame and judgment was more forgiving towards them (should they become infected with HIV) than they were of themselves which does reflect strong social support. This indicates that they believe their community is supportive toward them and the internal shame and stigma they do report comes from social influences greater than their immediate community. One reason for this could be because this is a subset of a disenfranchised ethnic group that has a collective historical tie to social inequities they may relate to feelings associated with stigmatization and as a result are less willing to stigmatize other groups of individuals. Corbett, Troiden and Dodder's (1977) early work in sexuality studies found that those individuals identified as having a same-sex orientation were more likely to report higher tolerance for other unconventional groups of people than the general public. A later study found that conspicuously stigmatized individuals frequently interacting with similar others acts as a buffer to the effects of negative self-perceptions (Frale, Platt & Hoey, 1998) which would situate itself in a sympathetic frame of reference. Another possibility for this finding could be a reflection of familiarity in that these respondents know the effects of macro-level stigmatization (race and gender) and have first-hand knowledge of individuals in their communities infected with HIV. Given the extent of HIV/AIDS saturation in the Black community it is not uncommon to know someone who is infected yet still not

necessarily believe their lifestyle is similar to those individuals (Morrison-Beedy, 2007) which would further explain the sympathetic perspective but not reflect it in their own condom use practices.

### *Overview of Condom Sexual Self-Efficacy*

Finally, this study repeatedly noted condom sexual-self efficacy as a construct that must be considered in understanding sexual behaviors, condom use practices and the effects of stigma and shame on health seeking behaviors. Sayles, Pettifor, Wong, MacPhail, Lee, Hendriksen, Rees and Coates' (2006) study of sexual self-efficacy using a nationally representative sample determined factors associated with higher efficacy among women were knowing how to avoid HIV, having spoken to someone other than an authority figure about HIV/AIDS and having life goals. This sample demonstrated varying increasing levels of knowledge in how HIV is transmitted in casual contexts, indicated a perception of strong communal social support and although life goals was not captured in this study the respondents attending a family planning suggests there are expectations in improving one's health. In this sample, condom sexual self-efficacy did not predict condom use at last sex in bivariate analyses but its influence was evident when analyzing how all of these components impact one another.

Studies have demonstrated a relationship between condom efficacy and actual reported use (Soler et al., 2000) but many analyze it in relation to its mediating effect on other constructs of interest (Seth, Rajji, DiClemente, Wingwood & Rose, 2009; Rosenthal et al., 1991; O'Leary, et al., 2008; Lauby, Semaan, O'Connell, Person, & Vogel, 2001; Reissing et al., 2003). The decision to use this variable as a predictor was based on the study's exploratory nature and the fact that what someone believes themselves capable of doing and actually doing usually diverges at

some point which is demonstrated in other studies assessing sexual risk among Black women (Hoffman et al., 2008). The importance of condom sexual self-efficacy proved itself in the logistic regression analysis in that it was the only predictor that distinguished between condom use at last sex groups. Specifically, this variable demonstrated that within this sample of young adult Black women with high levels of condom sexual self-efficacy, all other factors being constant were more likely to use a condom in sexual encounters. It is also important to note that condom sexual self-efficacy alone was not a significant predictor unless the other predictors were present and vice versa. This indicates condom sexual self-efficacy is the variable that binds the model together when it comes to understanding the influence of sexual self-schema, HIV related stigma and perception of HIV risk on condom use at last sex among a clinic sample of sexually active young adult Black women.

#### *Overview of Theoretical Integration*

This study was particularly interested in learning how Sexual Self-Schema and HIV-Related Stigma influenced sexual decision-making and condom use practices among young adult Black women. Although bivariate analyses revealed neither of these variables were statistically significant in distinguishing condom users at last sex their overall influence on other condom related variables should not be discounted. Sexual self-schema was viewed from two perspectives situated within Social Cognitive Theory and Intersectionality Theory. Sexual self-schema, as a cognitive generalization, provided some information as to the influence of one's perception of their self as a sexual being. This only becomes manifest when an individual has experiences to draw from that then acts as a filter in processing sexually relevant information and influences behaviors. In this sample it was observed that many of the young women did not endorse a clear positive or negative sexually schematic orientation. In fact, they were

somewhere in the middle which suggests that they are conflicted about or strongly endorsing both orientations. Cues about one's sexuality are often a learned behavior that is molded in their immediate environment and is in turn shaped by a larger environment.

Intersectionality Theory as a framework allowed for a more in-depth understanding of how cognitive dissonance in sexual matters is a factor among sexually active young adult Black women. Specifically, the study highlighted the fact that this sample demonstrated low levels of stigma toward others such as PLHA's but resulted in directing shame about HIV inward. This did not appear to be a negative consequence of their immediate environment but more of an indication of shared cultural knowledge about and affiliation with stigmatizing aspects of their own collective existence. This is further supported by the revealing of negative schematics having a statistically significant negative association with perceived individual stigma about HIV and PLHA's. Anderson and Cyranowski (1994) describe negative schematics as individuals with weaker positive effect and/or less sexual experiences and romantic involvement (i.e. reported instances of falling in love). Furthermore, they found that one defining difference between positive and negative schematics is how they view themselves throughout the course of a relationship. Positive schematic women still expressed positive views of their sexuality whether they had a partner or were actively in a relationship which was not the case for negative schematics. Negative schematic women only expressed more positive views when they reported having a partner or being in a relationship. This association between negative schematics and perceived individual stigma suggests their stigma perception, which shares some association with their perception of community stigma, has an impact on how they view their sexual selves. This means they are probably more constrained in thought and behavior due to social inhibitions and more likely to allow themselves to be defined by others.

The Health Belief Model from which the perception of HIV risk variable is drawn was useful in understanding this sample's self-perception but not necessarily distinguishing between condom use groups. Actual reported condom use rates seems consistent with the theory's premise in that most of the sample identified as low risk and subsequently were not using condoms. Essentially, using the variable as such highlighted the deficiencies in assuming a linear relationship exists between the two because these women appear to define their risk level based on the type of relationship they are in or an increasing number of sexual partners. This concurs with the fact that there are competing levels of priority when it comes to sexual behavior rather than just making a rational decision about one's health. It is quite possible that the traditional norms associated with sexual exclusivity trump the effect of potentially extreme negative outcomes as a result of unprotected sexual activity. Had this study been guided only by traditional behavioral theories such as the Health Belief Model or Social Cognitive Theory separately the opportunity to interpret how these women understand themselves and manage their multiple identities within their social environments would have been overlooked.

### **Contributions to the Literature**

This study adds to the literature in that the socio-demographics studied mirrored those routinely analyzed in other studies such as age, education level, income, employment, drug and contraceptive use and number of sexual partners. Statistically non-significant findings as it relates to condom use at last sex are not surprising given the homogeneous sample. Descriptively speaking, the demographics reflected a relatively young, low income, working class group which is a common population in condom use studies. However, this study honed in on understanding the unique influences impacting sexuality among only young adult Black women which there does not appear to be enough of in current literature. Given the public health

risks this group is facing the need for more specific research is dire which this study attempts to address.

Other socio-demographics of unexpected interest in this sample were that of alcohol and contraceptive use. The effects of alcohol and drugs on sexual risk and condom use are well documented in the literature. This study supports that consensus in that 50% of the sample reported alcohol use in the past 30 days although there was no clarification in this study as to whether use took place during a sexual encounter or not. A small caveat observed in this sample was that alcohol use was much more prevalent among young adult Black women ages 21-23 rather than those ages 18-20. This would then seem to suggest a maturity level not often represented in younger populations. Also, it was interesting to note that birth control pills as a primary contraceptive was not a preferred method. Other studies examining contraceptive use with young adult populations report younger women as more likely to use birth control pills than older women or younger women more likely to use birth control pills as a dual method. As previously mentioned these trends were not reflected in this sample which may be a result of a shift toward hormonal methods due to increasing out of pocket affordability and only having to maintain the method quarterly or annually depending on the hormonal method chosen. With greater access to these contraceptives in the adolescent population the trends appear more similar to those of mature women in that an increase in hormonal methods is associated with a decrease in condom use.

This was the first study to attempt to understand the influence of sexual self-schema on condom use as last sex among young adult Black women. In doing so, findings indicated that schema is not a good predictor of condom use but it may be a more effective gauge of one's level of efficacy. Also, this sample indicated that many of these women do not appear to have a clear

schematic framework possibly because of a lack of experiences or due to the effects of socially related negative ideologies about female sexuality.

Findings gathered from the HIV-related stigma subscales are useful in understanding the influence of shame and stigma on health seeking behaviors. However, stigma and shame are clearly separate constructs that can parallel or diverge in direction depending on the frame of reference. In this sample, the shame and stigma present was more a reflection of one's internal perception of themselves rather than a projection onto others or PLHA's. This is an important distinction that must be made if effective intervention programs are pursued. This may even be more important in minority groups where socially shared knowledge and perceptions (Fortenberry et al, 2002) becomes the backdrop for interacting with macro-level social forces.

This study supports previous trends in that young adult Black women are more likely to assess their own HIV risk level as low despite what are commonly referred to as markers of increasing sexual risk. This study supports the emerging consensus that sexual type of sexual relationship may be a more accurate indicator of personal risk (More respondents who identified as low risk were in an exclusive relationship and vice versa). Although not statistically significant between the condom use groups, there were more young adult Black women reporting condom use at last sex with two or more partners versus those who stated having only one partner in the past three months. From both points of view it appears these women are defining their sexual relationships in a way that makes sense to them and responding accordingly.

This study as well as the available literature concurs in that not knowing your partner's sexual status increases the risk of deleterious outcomes. Just as many respondents who reported knowing their partner's sexual status within the past three months, almost the same number



indicated they did not know their partner's status. What is intriguing is that 68% of those classified as being in an inexclusive sexual relationship compared to 86% of exclusives identified their perception of HIV risk as low. It is not clear why women who identified themselves as having more than one sexual partner, identified their partner as having outside sexual relationships or did not know their partner's status would consider themselves at low risk for HIV. The reasons for this are unknown in this study but it clearly indicates there are many other factors that go into making decisions about one's risk other than simply recognizing the benefits of changing unhealthy sexual behaviors. Unless an individual is with their sexual partner every minute of the day every day there are no guarantees beyond a level of mutual trust that a couple is truly monogamous or in an agreed upon sexual relationship. Perhaps these women are using behavioral cues rather than direct communication to signal concern or they are assessing their risk level only on their behaviors alone.

This study supports previous trends in that young adult Black women are more likely to demonstrate high rates of condom efficacy but that does not always translate to an increase in condom use. For this study, women that exhibited high condom sexual self-efficacy were not more likely to report condom use in bivariate analyses. However, condom efficacy did show a small increase in condom use at last sex in the multivariate analysis. The concern is that women with positive schema showed an inverse relationship with condom use at last sex in the multivariate analysis and positive schema was positively correlated with condom sexual self-efficacy in bivariate analysis. This would suggest that the effects of condom sexual self-efficacy and positive schema would make a woman more confident as to her invulnerability to HIV. With reported efficacy levels as high as they were partner influence does not appear to be a primary issue here. Mainly, confidence about one's sexuality, increased knowledge of HIV

transmission in casual contact and low reported sexual partners seemed to make them overconfident about their susceptibility to HIV.

### **Future Implications**

Future research would benefit by taking the constructs measured in this study and examining them qualitatively to better understand condom use among young adult Black women. With the exception of the outcome variable all of these were latent variables that shift according to one's environment and social location over time. Due to this study's cross sectional and exploratory nature it is limited in its ability to confirm causality. Other investigations using a focus-group approach can help further identify factors that may be related to condom sexual self-efficacy, sexual self-schema, perceptions of HIV risk and the neutralizing effects of knowledge. Specifically, it may be useful to analyze sexuality based on the development of positive or negative schematic frameworks and/or what makes them conflicted and why. Another point of interest may be to focus on whether efficacy, as power exhibited in the sexual domain, is a reflection of limited power in the greater environment. Finally, it may be worthwhile to delve into the shame and stigma factor to differentiate between various directions of stigma and shame and how they impact or are compensated through sexual behavior.

### **Implications for Social Work Practice, Policy and Research**

Study findings suggest that to better understand sexual behavior, specifically condom use in high risk young adult groups, cultivating and enhancing a sex-positive approach may be the first step. The purpose of using such an approach is to revamp the dialogue around sexual issues and work toward eliminating stereotypes by making sexual health and pleasure the focus of loving and intimate relationships. In doing so, the opportunity to provide a fuller perspective of

human sexuality becomes available without overlooking the dangers of poor sexual decision-making. Social work practitioners have a role in this in that they are the first line of contact for many of these individuals who are seeking a safe space to fully express themselves. Sexual health speaks to an ongoing process of sexual well-being that continues throughout one's life and does not necessarily have to be defined by one's current situation.

Second, HIV risk reduction programs that focus on education are needed but they must be integrated with culturally relevant aspects of sexual health. One way to achieve this is by reducing self-blame as young adult Black women begin to redefine how they choose to respond to oppressive sexual influences. This redefinition comes by way of enhancing personal responsibility in sexual matters and self-determination in sexual development. Brown and McNair (1995) suggest the way young Black women can achieve this is by developing an identity that encourages them to confront sexual issues endemic to them simply because of the construction of their gender and race. Since it appears the effects of a communal environment are beneficial grass roots programs in the community such as sororities, fraternities, civic-minded Black churches and community centers may be great partners in developing evidenced-based rites of passage programs designed to enhance young women's resiliency to stigmatizing social forces.

Third, we must bridge the gap between the epidemiological construction of sexual risk and risk as perceived by the population in day to day life. There is no clearer barrier to behavioral change than this. The physiological information is available but no one is listening mostly because the desire to "tune out" what is probably perceived as an attack on one's sexuality is ongoing. As a result, young adults are constructing their own definition of what sexual risk is and how it applies to them. It is important for practitioners to adopt the language

and encourage young adults to adjust their perceptions of risk so that it includes not just their behavior but their partner's behavior as well. Also, it is important to capitalize on the positive aspects of reconstructions of risk. Many studies have demonstrated that women with multiple sexual partners are more likely to report condom use. Increasing the number of one's sexual partners does inherently increase sexual risk but if a condom is used consistently it has to decrease risk levels lower than that of someone who has multiple partners and is not using condoms. These are points of variation in addressing risk that capitalizes on areas of empowerment so they can build into better forms of dialogue.

### **Strengths and Limitations**

A significant strength of this study is that it measured concepts; Sexual Self-Schema and HIV Related Stigma, which to date were relatively unexplored in this population. Also, the study incorporated an integrated theoretical framework that considered culturally related aspects potentially influential on condom use. Most empirical research about condom use is almost always limited to a particular type of theoretical framework that is limiting at best and employs analytical variables that are somewhat restrictive in truly understanding sexual behavior (Amaro, 1995; Ickovics et al 1998; Rostosky et al, 2000). Despite the utility of and information gained from these studies the problem of disproportionate sexual infections, particularly HIV/AIDS, among sexually active young adult Black women are steadily increasing. This imbalance demands multifarious approaches to research that result in offering more than just an educational workshop. The way a study is designed is critical to the type of conclusions that are drawn. Current research is moving towards applying frameworks that incorporate the concepts of gender, oppression and culture which are increasingly reported as having relationships to condom use (Kalichman, et al, 2008; Wingwood & DiClemente, 2000). This study is important

because it moved in the direction of the growing consensus and identified trends in the sample that can be developed in future studies.

This study has several limitations worth mentioning. First, respondents answered very personal and private questions about their sexuality that they may or may not talk about on a regular basis. Despite every effort to ensure confidentiality many respondents were most likely impacted by social desirability (Drake & Johnson-Reid, 2008). Although respondents were not required to put their names on surveys, completed them in private and returned them in sealed envelopes they were still approached and asked about participating in the study by clinic staff members who most likely had other personal information on hand for clinic services.

Second, the outcome variable, condom use at last sex, hinged on a participant's ability to recall past information. Self-report studies are problematic because there is no way to ensure respondents are being truthful or actually remembering events as they occurred (Heppner & Heppner, 2004). The inability to accurately recall what has happened in the past casts doubt on what is actually taking place.

Third, the sample was restricted to sexually active young adult Black women receiving family planning services from an urban clinic setting. Many of the respondents reported living in a low income household which may have some influence as to why they are seeking services at a public teen health clinic. Although study data was collected at five different teen clinic locations within an urban area, the sample is still not representative of all young adult Black women. Furthermore, these women had to identify as legally unmarried, able to read and write in English and report sexual activity within the past three months. Technically, the concepts measured in the study are applicable to married women as well as this group is also susceptible to contracting

STD's and HIV from their spouses. Women whose primary language is not English and those who did not report sexual activity in the past three months but may have had activity immediately preceding this timeframe may have contributed to a more heterogeneous sample. As a result, findings are not generalizable to other Black women in different settings or to women from different ethnic groups.

Fourth, the instruments used to collect the information were compiled, modified and not specifically adjusted for this population. For example, a large portion of respondents did not respond to all the Sexual Self-Schema Scale items although most of those who did not answer continued the survey until the end. Respondents were asked to rate themselves on a series of adjectives and it is possible that some of the words may not have been familiar to them based on the pattern of missingness. It is also possible that using the 50-item scale rather than just the 26-item scale required more time and effort than some respondents had available or anticipated giving. Also, the HIV-Related Stigma subscales were developed in international African countries where the rate of HIV is proportionately greater than the United States with very different cultural perceptions of what it means to be in the company of PLHA's. It is quite possible due to the differences in locale the varying communal perspective of "blame" may differ in that the concept of promiscuity, for example, would be drastically different in a group of American young adult women compared to that of Tanzanian health care providers and older adults for multiple reasons.

Finally, the study is limited by its cross sectional and secondary analytic approach (Heppner & Heppner, 2004). Sexuality is fluid and measuring it at one point in time can potentially ignore other variables that may influence how it progresses over time. The cross sectional approach is further limiting because it has an inherently higher potential for threats to

internal validity however it is the most appropriate due to this being an exploratory study gathering information and trends on the variables of interest. A secondary analytic approach incorporates its own special limitations because the researcher has little to no influence over the resulting research design and its implementation. Adjustments in research methods and analyses are ultimately determined by what is available in the dataset. As a result, many variables of interest were recoded, collapsed and altered which changes the information gleaned from the original items.

## **Conclusion**

In sum, the overarching message here is that among this study's sample young adult Black women's decision to use or not use a condom was significantly impacted by their confidence in their ability to influence that outcome. Based on the responses when young adult women want to use a condom they believe they would be able to do so. Although this confidence is not singularly related to actual use its effect is pronounced when other factors such as sexual schematic orientation, perception of HIV risk and different modes of HIV-related stigma are taken into account.

Furthermore, applying an integrated theoretical framework such as the one utilized in this study highlighted nuances about the complexities this behavior entails that would have been otherwise overlooked with traditional theoretical methods. This framework allowed a review of contextual and structural factors such as HIV-related stigma, reconstructed notions of HIV risk and self-blame, which were demonstrated to have relevance in understanding the behaviors surrounding condom use practices of young adult Black women. This study has implications for social work practitioners, policy makers and especially researchers primarily in making efforts to

redesign the way we approach understanding and discussing sexuality. Future studies would benefit from applying a variety of qualitative methods to better understand how constructs in this study are developed and maintained thus motivating a positively framed and supportive environment to improve the sexual health of sexually active young adult Black women.



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**APPENDIX A**  
**INSTITUTIONAL REVIEW BOARD FOR BAYLOR FOR BAYLOR COLLEGE OF**  
**MEDICINE AND AFFILIATED HOSPITALS-APPROVAL LETTER**

October 06, 2011



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RUTH S BUZI  
BAYLOR COLLEGE OF MEDICINE  
OB-GYN: ADMINISTRATIVE

**H-29360 - CONDOM USE AMONG YOUNG MINORITY WOMEN: AN INTEGRATED COGNITIVE APPROACH  
APPROVAL VALID FROM 10/6/2011 TO 8/23/2012**

Dear Dr. BUZI

The Institutional Review Board for Human Subject Research for Baylor College of Medicine and Affiliated Hospitals (BCM IRB) is pleased to inform you that the research protocol and consent form(s) named above were approved.

The study may not continue after the approval period without additional IRB review and approval for continuation. You will receive an email renewal reminder notice prior to study expiration; however, it is your responsibility to assure that this study is not conducted beyond the expiration date.

Please be aware that only IRB-approved informed consent forms may be used when written informed consent is required.

Any changes in study or informed consent procedure must receive review and approval prior to implementation unless the change is necessary for the safety of subjects. In addition, you must inform the IRB of adverse events encountered during the study or of any new and significant information that may impact a research participants' safety or willingness to continue in your study.

The BCM IRB is organized, operates, and is registered with the United States Office for Human Research Protections according to the regulations codified in the United States Code of Federal Regulations at 45 CFR 46 and 21 CFR 56. The BCM IRB operates under the BCM Federal Wide Assurance No. 00000286, as well as those of hospitals and institutions affiliated with the College.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "V. R. Sutton".

VERNON R SUTTON, M.D., B.S.

Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals



**APPENDIX B**

**UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN  
SUBJECTS LETTER-EXEMPT STATUS**

# UNIVERSITY of HOUSTON

## DIVISION OF RESEARCH

January 20, 2012

Ms. Grace Loudd  
c/o Dr. Maxine Epstein  
Dean, Social Work

Dear Ms. Grace Loudd,

Based upon your request for exempt status, an administrative review of your research proposal entitled "Condom use among U.S. young adult Black women: An integrated cognitive approach" was conducted on November 18, 2011.

At that time, your request for exemption under **Category 4** was approved pending modification of your proposed procedures/documents.

The changes you have made adequately respond to the identified contingencies. As long as you continue using procedures described in this project, you do not have to reapply for review. \* Any modification of this approved protocol will require review and further approval. Please contact me to ascertain the appropriate mechanism.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,



Kirstin M. Rochford, MPH, CIP, CPIA  
Director, Research Compliance

\*Approvals for exempt protocols will be valid for 5 years beyond the approval date. Approval for this project will expire **November 1, 2016**. If the project is completed prior to this date, a final report should be filed to close the protocol. If the project will continue after this date, you will need to reapply for approval if you wish to avoid an interruption of your data collection.

Protocol Number: 12131-EX

## **CURRICULUM VITAE**

**Grace A. Loudd, M.P.A.**  
**Graduate College of Social Work**  
237 Social Work Building  
Houston, TX 77204  
Email:graceloudd@uh.edu

### **Education**

- 2007-Present PhD Candidate, Graduate College of Social Work, University of Houston  
Houston, TX  
Expected Graduation: May 2012  
Research Interests: Condom use among Black women, Intimate partner violence  
and mental health, Female sexual agency, women and HIV
- 2012 Women's Studies Graduate Certificate, University of Houston  
Houston, TX
- 2006 Masters of Public Administration, Lamar University  
Beaumont, TX
- 2004 B.S., Corporate Communication, Cum Laude, Lamar University  
Beaumont, TX

### **Fellowship**

- 2006 Graduate Student Assistant, Lamar University  
James Vanderleeuw Ph.D., Center for Public Policy Studies  
Professor of Political Science, Supervisor  
Statewide economic development survey

### **Awards and Honors**

- 2012 Phi Alpha Honor Society-Mu Lambda (Social Work Honor Society)-University of  
Houston, Graduate College of Social Work
- 2010 Friends of Women's Studies Graduate Essay Scholarship-University of Houston
- 2010 International Education Fee Scholarship-Houston Junior Chamber of Commerce  
Scholarship (IEFS-HJCC)-University of Houston
- 2006 Pi Sigma Alpha-Zeta Lambda Chapter (National Political Science Honor  
Society)-Lamar University

## **Professional Service**

2007-Present Investigator/Case Worker, Adult Protective Services  
5425 Polk Street  
Houston, TX

## **Service to GCSW**

2007-Present Perspectives on Social Work Journal Reviewer  
University of Houston  
Houston, TX

## **Internship**

Summer 2006 Community Assistant Intern, Beaumont Housing Authority  
1890 Laurel Avenue  
Beaumont, TX

## **Community Service**

2009-present Crystal Clear Communal Concepts and Consulting Board Member  
3353 Elgin Street  
Houston, TX

2007-2008 Houston Area Women's Center Volunteer  
1010 Waugh Drive  
Houston, TX

2005-2006 English Tutor, Girl's Haven Shelter  
3380 Fannin Street  
Beaumont, TX

2004-2005 Activity Assistant, Clairmont Nursing Home  
1020 S. 23<sup>rd</sup> Street  
Beaumont, TX

## **Professional Associations**

The Society for the Scientific Study of Sexuality (SSSS)-Member

The National Council of Negro Women, Incorporated-Member

## **Presentations**

Loudd, G. (2010). **Conceptual Framework: Examining the Impact of Sexual Self Schema on High Risk Sexual Behaviors among At-Risk Black Women.** Sixth Annual Doctoral Research Symposium of the University of Houston GCSW Doctoral Program & GCSW Alumni Association, March 4, Houston, TX.

Loudd, G. (2011). **Applying Feminist Standpoint Theory in Light of the HIV/AIDS Crisis among U.S. Minority Women.** Unsettling Feminisms Conference sponsored by the board of directors of *Affilia, Journal of Women and Social Work* and co-sponsored by the UIC-Jane Addams College of Social Work, May 22-24, Chicago, IL.

Loudd, G. (2011). **Condom Use among Young Adult Black Women: An Integrated Cognitive Approach.** Poster presented at The Gulf Coast Health Research Forum at The Methodist Hospital Research Institute, September 30, Houston, TX.

Loudd, G. (2011). **Condom use among U.S. young adult Black women: An integrated cognitive approach.** Poster presented at The Society for Scientific Study of Sexuality 2011 Annual Meeting: Coming Together: Integrating Sexuality, Theory, Research and Practice, November 3-6, Houston, TX.

Loudd, G. (2011). **Condom use among U.S. young adult Black women: An integrated cognitive approach.** Social Work Research Conference. University of Houston, December 2-3, Houston, TX.