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Condom use among young African American women: Modeling and extending the Theory of Gender and Power

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# Condom use among young African American women: Modeling and extending the Theory of Gender and Power

By

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Master of Science, Georgia State University, 2005

Advisor: Ralph DiClemente, PhD

An abstract of
A dissertation submitted to the Faculty of the Graduate School of Emory University in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
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Abstract

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The three structures of the Theory of Gender and Power (TGP): the sexual division of labor; the structure of affective attachments and social norms (SAASN); and the sexual division of power, are hypothesized to have profound influences on risk for HIV/STDs among African American females. However, relationships between the structures have not been articulated and the processes by which influences with the SAASN affect sexual decision making (SDM) have not explored among African American young women. The goals of this research were to: (1) examine the existing literature to understand how the structures have been linked previously, (2) empirically test the direct and indirect effects of the structures on condom use, and (3) qualitatively explore in depth constructs within the SAASN as influences on SDM. The systematic review indicated variability in the measurement of TGP constructs and a paucity of analyses of mediation. The empirical test of the structures (N=701) provided evidence of direct and indirect associations between condom use and associated social and behavioral risk factors. The qualitative study (N=20) indicated that expectations of relationships varied based on the nature of parental relationships and SDM was related to these expectations. The systematic review and the empirical test of a model of condom use suggest that there are important relationships between TGP structures for interventionists to understand. Exploring processes within SAASN provided insight into how caregivers influence SDM. These findings provide new directions for measuring and modeling TGP constructs.

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# CHAPTER 1. Literature Review

## Introduction

**African Americans are overrepresented in rates of HIV/AIDS and STDs in the United States and in Georgia.** The Centers for Disease Control and Prevention (CDC) has recently issued a call for an increased response to HIV/AIDS among African Americans, citing concerns that the high rates of infection in this population continue despite preventive efforts [1]. African Americans comprised nearly half of the HIV/AIDS diagnoses in 2006 [2]. Among African American women, the estimated rate of HIV/AIDS was 55.7 per 100,000 people, nearly four times that of the next highest rate among females in any other racial or ethnic group. Although men demonstrated higher rates than women across all racial or ethnic groups, the disparity for HIV/AIDS was most evident among females. African Americans of both genders are also disproportionately affected by other sexually transmitted diseases (STDs) [3].

In 2007, Georgia was the fifth highest state for the number of reported AIDS cases and the eighth highest state for cumulative AIDS cases reported from the beginning of the epidemic [4]. African Americans comprised 79% of new HIV diagnoses and 77% of new AIDS diagnoses in 2005 [5]. AIDS was the leading cause of death among African American women aged 25-34 between 1999 and 2002 in contrast to unintentional injuries for White women in the corresponding age group [6]. These findings indicate the importance of preventive behaviors such as consistent condom use among young African American women.

**Adolescent and young females are disproportionately affected by STDs.** Incidence estimates of sexually transmitted diseases (STDs) among sexually active youth in America indicate that young adults, aged 15-24, account for nearly half of new infections [7]. Adolescents who are sexually active are at higher risk for STDs compared to adults, and African American adolescents and young adults are overrepresented in rates of incidence [8]. In 2007, among youth aged 13-19, African Americans accounted for 72% of AIDS [9]. The rates of gonorrhea acquisition for African American adolescents of both genders have been increasing since 2004 [10]. Gonorrhea rates among African American female adolescents were 14 times that of white female adolescents in 2005 [8] and in 2006 [10]. Finally, the highest rate of syphilis infections in 2006 among African American females was for women aged 20-24 years [10]. In 2007, the percentage of African American female adolescents that reported ever having sex was much higher at 61% than that of White (44%) or Hispanic (46%) female adolescents [11]. African American female adolescents also reported greater than four lifetime sexual partners and earlier initiation of sex more frequently than their White and Hispanic counterparts, underscoring the need to further understand the adoption of preventive behaviors in this population.

## Theoretical Context

**Several individual level theoretical frameworks have been developed specifically to address HIV sexual risk behavior.** These include the AIDS Risk Reduction Model [12], the Information Motivation Behavioral Skills Model [13], and the Multiple Domain

Model [14]. These models seek to explain HIV among a wide range of individuals through cognitive and relational variables, including sexual communication.

## The AIDS Risk Reduction Model (ARRM)

The ARRM includes psychosocial variables categorized by stages within the process of individual behavior change [12]. The first stage requires the labeling of behaviors that place one at risk for HIV/STDs, the second involves a commitment to reducing risk, and the third addresses the enactment of related behaviors including the negotiation of sexual behaviors. Labeling includes perception of susceptibility and knowledge of transmission. Commitment is comprised of perceptions of enjoyment and risk reduction as well as self-efficacy. Enactment, the final stage, involves sexual communication and help seeking. Social factors are hypothesized influences across all three stages. The model has been used as a framework to understand sexual risk behavior among multiple populations including urban high school students [15], adolescents in a juvenile correction facility [16] and HIV positive women [17].

The need for the inclusion of factors not defined by the ARRM in studies that apply the model has been discussed. A study of male and female adolescents in a correctional facility included demographic characteristics and life experiences such as number of sexual partners and intravenous drug use history along with labeling and commitment variables as independent predictors of enactment constructs [16]. The authors suggested that due to the strong relationships of demographic characteristics and life experiences with sexual risk reduction behaviors there is a compelling argument to

include demographic and experiential variables in the framework. Among ninth graders, male gender was the only demographic variable to significantly increase the likelihood of condom use [15]. Despite success in articulating constructs that may be important to understanding risks among adolescents in general, the broad intent of the ARRM may limit its ability to explicate the specific paths by which female adolescents are less likely to use condoms.

It follows that characteristics of women who are more likely than others to enact preventive behaviors may not always be identifiable when applying the ARRM unless investigators choose to include factors that may be more specifically salient to women. For example, in a study of HIV positive women, the most significantly associated construct under the commitment stage was having a lot of power over partner's condom use along with the perception that condoms reduce sexual enjoyment and a partner's lack of desire for more children [17]. Similarly, arguments in general with the primary partner during the preceding six months were found to inhibit condom use within the enactment stage. The emergence of these factors within the structures of the ARRM demonstrates the importance of a more in-depth understanding of what consistently impacts condom use for women. While the ARRM provides a broad conceptual model for organizing psychosocial factors related to HIV risk, the authors of the theory state that in order to enhance this final stage of enactment, antecedents of sexual communication and attitudes towards condoms need to be examined [18]. In the seminal article describing the theory, the authors note that it would be "of interest to specify the social conditions that facilitate or inhibit continued problem solving efforts" [12]. It is important to consider that in order to be more specific, a theory that is narrower in focus may be useful.

The Information Motivation Behavioral Skills Model (IMB)

The IMB is another individual level theory conceived to understand HIV risk behavior. Developed by Fisher and Fisher in 1992, the constructs of the IMB include three fundamental determinants of sexual risk behavior: information, motivation, and behavioral skills [13]. Knowledge of transmission and methods of preventing disease and the motivation to change risk behavior are both posited as prerequisites of behavior change. Behavioral skills that include communication about sex are also vital, as even a highly informed and motivated person may not change behavior without the ability to enact preventive behaviors.

The IMB model has been empirically tested in diverse populations including gay men [19], male and female university students [19], urban minority adolescents [20], adolescents in psychiatric care [21], juvenile offenders [22] and adolescents receiving substance abuse treatment [23].

In a sample of primarily African American and Hispanic American urban adolescents, support for the relationships between information and motivation and behavioral skills and between behavioral skills and behavior has been demonstrated among males and females [20]. However, information and motivation were not directly associated with preventive behaviors among the females in this sample, indicating that the effects of these constructs were completely acting through behavioral skills. In contrast, for males, there was a direct association between motivation and preventive

behaviors. Additionally, the study found that the structural equation model explained more of the variance among males compared to females.

Part of the reason may be that the construct of motivation does not work the same way for males and females. For example, motivation failed to demonstrate a significant association with preventive behaviors in a sample of university students with equal numbers of both genders while the association was significant in a sample of gay men [19]. In a sample of adolescents receiving substance abuse treatment in which two-thirds of the sample was male, the association between motivation defined as pro-condom norms and preventive behaviors was again significant [23]. Taken together, these results may indicate that the association between motivation and behavior is different based on the gender composition of the sample. In the discussion of the study of urban adolescents in which the theoretical model was empirically tested by gender, Fisher et al [20] hypothesized that male adolescents can express their motivation directly through patterns of behavior, while female adolescents must express the same motivation indirectly through a more complicated skill set to make certain that male partners use condoms.

## The Multiple Domain Model (MDM)

More recently, Noar and colleagues [14] introduced the MDM to explain HIV risk behavior among young adults. This framework integrates the personality constructs of sexual sensation-seeking and sexual impulsive decision-making as antecedents of condom specific measures of attitudes, norms, and self-efficacy. The personality constructs were among those used in the message design of a safer sex media campaign

aimed at young adults [24]. A composite measure of the two constructs was used to divide the sample into high and low risk young adults and a comparison of sexual behaviors across the two groups revealed significantly more risky behavior among the high risk young adults. In a test of the multiple associations within the theoretical model using structural equation modeling, the personality constructs explained roughly a quarter of the variance in attitudes and self-efficacy [14]. However, the structural equation model as a whole only explained 25% of condom use behaviors. The authors asserted that future research would be needed to address demographics and type of sexual relationship. A recent study by Zimmerman and colleagues [25] analyzed an extension of the MDM that incorporated such measures as socioeconomic status, gender, race, and relationship status among adolescents. When the final structural equation model was compared across males and females, the researchers found that the strongest direct predictor of condom use with the exception of previous condom use was preparatory behaviors and for males the strength of this association was more than twice that of females. The authors hypothesized that this may be because condom use is a male controlled method. This result supports similar conclusions drawn regarding the ARRM and IMB that highlight the possibility that additional or different constructs may be required to explain condom use decision making among females.

**Individual-level behavioral theories may not be able to explain consistent condom use among African American female adolescents.** It has been asserted that contextual factors such as power differentials must be incorporated when considering the ability of females to protect themselves from HIV [26]. However, this requires a shift in thinking

about how to influence risk behaviors because it acknowledges that individual behavior may not always be personally motivated [27]. More than being just ineffective, preventive programs that do not consider gender roles and norms when promoting assertive approaches to safer sexual behavior among women may be dangerous [28]. To address issues of power and gender, Amaro and Raj [29] described how theoretical models would need to account for contextual variables including violence, fear, and internalized oppression that may underlie more direct predictors of HIV sexual risk behavior such as self-efficacy for protective behaviors. The impact of reduced societal power may also influence individual level theories through ethnicity. In an analysis of predictors of relationship power in which the sample of adolescents was partitioned by gender and ethnicity, self-efficacy for condom use was positively associated with relationship power among African American females but not for any other group [30]. Thus, the call for theoretical models that incorporate gender studies [31] may be particularly important for African American female adolescents. Although there have been multiple theories developed specifically to understand HIV sexual risk behavior, only the theory of gender and power sharpens the focus on the impact of gender, power and culture on sexual risk behavior [32]. Further, it is the only one of these to concentrate exclusively on women.

## The Theory of Gender and Power

**The social structural theory of gender and power provides a framework to understand the contextual factors that may affect consistent condom use.** Adapted

from Connell's [33] sociological theory, the application of the theory of gender and power (TGP) as applied to HIV risk by Wingood and DiClemente [34] incorporates contextual factors that are intrinsic to understanding consistent condom use among females. The adaptation proposes that the sexual division of labor, the structure of affective attachments and social norms, and the sexual division of power have profound influences on risk for HIV/STDs among females. The sexual division of labor generates acquired economic risks and the individual risk factors of being a minority or being under the age of 18. The structure of affective attachments and social norms produces aspects of relationships that create vulnerability to HIV for females such as older partners or conservative gender norms that represent acquired social risks for disease. Personal risk factors in this structure include knowledge and psychological factors that can influence HIV risk. The sexual division of power creates acquired physical risks such as interpersonal violence and exposure to sexually explicit media. Behavioral risk factors created through the sexual division of power include a history of substance use as well as the lack of skills that help protect females from HIV risk such as communication about condoms. The TGP is one of the major underlying theoretical frameworks guiding the design of three evidence-based HIV interventions developed for African American females by Wingood and DiClemente [35] and the CDC is preparing to disseminate these interventions nationally [36].

**Acquired risks defined by the TGP describe societal and relational factors that may impact consistent condom use among adolescent and young African American females.**

The sexual division of labor: acquired risks

The sexual division of labor generates risks for HIV/STDs including living at poverty level, being unemployed, having less than a high school education, being homeless and lacking medical insurance [34]. The results of a study conducted in five developed countries revealed that in the United States there was an 8% increase in the number of adolescents who used a contraceptive at first intercourse among those who were not at a socioeconomic disadvantage compared to those who were disadvantaged [37]. The same study demonstrated that the percentage of adolescents who used a contraceptive at first intercourse was 8% to 11% higher among those who had completed high school compared to those with less than a high school education. Analyses conducted with a sample of African American adolescent males and females demonstrated that grade point average was positively associated with condom use [38]. Results from an analysis of a national sample of adolescents found that those with mothers who had more education were more likely to have used a method of contraception at first intercourse [39]. In a community sample of high school students, socioeconomic status was found to be associated with condom use among White female adolescents [40]. However, the relationship did not hold for African-American female adolescents.

In a sample of primarily white homeless adolescents, inconsistent condom use was the most important predictor of STD acquisition [41]. Although HIV rates were not high in the specific population of homeless youth, the researchers commented that the high prevalence of hepatitis B and C and the related risk behavior of inconsistent condom

use indicated risk for HIV. In samples of homeless and runaway adolescents in which the majority of participants were African American, researchers found that only 30 percent reported consistent condom use [42] and nearly half were not motivated to use a condom [43].

Insurance may also impact adolescents through affecting their decision to seek care. In a qualitative study of adolescents that developed a list of characteristics of providers that would affect their decision to seek preventive health care, equal treatment of patients was among the top 15 items. As part of this theme, it was revealed that some participants believed that a lack of health insurance would result in inferior treatment [44].

The structure of affective attachments and social norms: acquired risks

The TGP identifies social risks for HIV/STDs acquired through the structure of affective attachments and social norms that may be important to understanding condom use among African American female adolescents. These include generally having older sexual partners, family influences that are not supportive of HIV prevention, religious affiliations that forbid the use of contraception, conservative cultural and gender norms, the desire to become pregnant and mistrust of the medical system [34].

Having an older partner has been associated with biological indicators of STDs [45] as well as unprotected sex at last sexual episode [46] among African American female adolescents. Having an older partner has also been associated with unprotected sex at last sexual episode in a sample of Hispanic and African American female adolescents [47]. Acceptance of the power differential that may result from relationships

with older partners could represent a normative attachment to a social exposure for disease.

Family support and parental communication have also been shown to be important for reducing risk behavior and lowering STD rates in a recent review of HIV/STD preventive interventions [48]. Among African American adolescents, the protective factor of parent-adolescent sexual risk communication may represent an important advantage for this population as it has been found that a higher percentage of African American young women reported such discussions compared to Hispanic and White adolescents [49]. In that study, those who reported greater communication about condoms and higher quality communication in general with their mothers were also more likely to report consistent condom use. This association has also been demonstrated among African American and Hispanic female adolescents in a prospective analysis of number of sexual topics discussed at baseline and number of days of unprotected intercourse at follow-up [50]. Frequency of parental discussion about sex has been found to be associated with a faster rate of initiation of condom use in a sample of primarily African American adolescents [51] and consistent condom use in a sample of African American female adolescents [52]. More general family characteristics have also been found to be associated with condom use. For example, African American female adolescents that reported high perceived family support and living with their mothers were also approximately half as likely to report unprotected sex [53]. Alternatively, family conflict has been found to be negatively associated with condom use among African American adolescents of both genders [38].

Other acquired risks within this structure may include social norms such as those instilled by religious institutions [34]. The TGP asserts that conservative religious norms that do not support the use of birth control limit options for women with regard to HIV. In a study of college freshmen comprised of mainly Catholic, white females, high rates of religiosity were associated with less sexual activity and less consistent condom use [54]. However, among African American female adolescents, it has been shown that greater religiosity was associated with initiating sex at a later age and a greater likelihood of having used condoms in the past six months [55]. The variation here may be due to measurement. The former study assessed what the participants expected to gain from religion and how it guided their actions while the latter examined frequency of participation in religious activities.

The TGP also includes the desire to conceive a child as an acquired social risk for females [34]. This may refer to a male partner's desire or a female's own desire. As referenced previously, a partner's lack of desire for additional children has been found to be associated with an increase in the likelihood of consistent condom use in a sample of HIV positive women [17]. Similarly, in a sample of primarily African American females of child-bearing age, the participants' own desire to have a baby was found to reduce the likelihood of consistent condom use [56]. The desire to not become pregnant has also been found to be predictive of consistent condom use among African American young women [57].

A final social risk described by the structure of affective attachments and social norms is that of mistrust of the medical system [34]. One way this construct has been conceptualized is as HIV/AIDS conspiracy beliefs. The association between such beliefs

and consistent condom use has been explored among a national random sample of African American adolescents and adults [58]. Men reported a greater endorsement of HIV/AIDS conspiracy beliefs than women and among men these beliefs were associated with poorer attitudes toward condoms and a reduced likelihood of consistent condom use. This question was also addressed in a community sample of men and women of multiple ethnic/racial groups [59]. The association between conspiracy beliefs and reduced condom use was again only significant for African American men.

Although peer norms are not specifically delineated by the TGP, previous research has demonstrated that perceptions of these norms may also influence sexual behavior among adolescents [40, 60-62]. African American female adolescents who believe their friends are not practicing safer sexual behaviors consistently have been found to be less likely to use condoms themselves [63] while peer norms supportive of safer sexual behavior have been independently associated with greater odds of consistent condom use among male and female African American adolescents [60].

The sexual division of power: acquired risks

Acquired physical exposures produced by the sexual division of power include relational aspects such as sexual or physical abuse or a partner who disapproves of condoms [34]. Research has also found that verbal abuse may also play a role in the use of condoms [64, 65]. Additional risks stemming from the sexual division of power include higher risk steady partners, greater exposure to sexually explicit media, and limited access to HIV prevention [34].

Among adolescents, sexual abuse has been associated with inconsistent condom use [66-70] and acquisition of STDs [66, 68, 71]. In a nationally representative sample of adolescents, physical dating violence in the past 12 months has been associated with a lack of condom use at last intercourse [72]. Physical violence alone and the combination of physical and sexual violence has been associated with a diagnosis of an STD or HIV among sexually active female adolescents within a statewide probability sample [73]. Qualitative research with adolescent males being treated for violence perpetration revealed that the young men sampled described the impracticality of using a condom during a rape and further described a lack of perceived obligation to use a condom in this context [74]. However, sexual or physical violence may not always be necessary for abuse to affect protective behaviors. A study of a national sample of adolescents has shown an association between current involvement in a verbally abusive relationship and not using a condom at the most recent sexual encounter [65].

African American female adolescents who experienced physical violence have been found to be less likely to demonstrate consistent condom use [75]. Additionally, fear of a negative reaction to condom negotiation has been associated with unprotected sex at last intercourse [46] as well as confirmed STDs among African American female adolescents [76], suggesting that partner disapproval may represent an acquired risk related to power that affects consistent condom use. Condom use at last intercourse has also been found to be negatively associated with verbal abuse in an ethnically diverse sample of young woman aged 14 to 26 [64]. It may be important to consider multiple kinds of abusive relationships when generating hypotheses about sexual risk behavior among African American adolescent and young women.

Higher risk partners may also create risk for African American young women [34]. In a national sample of adolescents, it was shown that among African Americans, males were more likely to report having more than one partner than females [77]. The acceptance of male infidelity as normative has been found in a qualitative study of African American adolescents [78].

The media may represent an important physical exposure for HIV risk among women [34]. A large sample of African American and White adolescents revealed that exposure to sexual content in the media and the perception of permission by the media to engage in sexual activities were associated with an increase in the intention to have sex in the near future as well as previous engagement in sexual activities other than sexual intercourse [79]. A study that analyzed the impact of exposure to sexual lyrics identified as degrading to females demonstrated three important findings: rap music comprised the highest percentages of degrading sexual content, African American adolescents were more likely than White adolescents to be exposed to rap music, and exposure to degrading sexual lyrics predicted initiation of intercourse at an earlier time point [80]. Exposure to rap music videos has been shown to increase the likelihood of STD acquisition and having had sex with multiple partners among African American female adolescents although it failed to achieve significance in an association with having never used condoms [81]. Similarly, a study of sexual stereotypes in rap videos within a sample of African American female adolescents found that exposure to rap videos was associated with having multiple sex partners but was not associated with condom use frequency [82]. However, exposure to X-rated movies has been significantly associated with a lack of contraceptive use, STD acquisition and multiple partners [83].

Access to prevention is also an important physical exposure within the TGP [34]. A study of African American adolescents found that for both genders, greater percentages of participants reported that an open clinic, available appointments, and adequate time with clinic staff were extremely important compared to items addressing confidentiality [84]. Having discussed AIDS with a doctor has been shown to more than double the likelihood of an adolescent being tested for HIV in a statewide survey of adolescents [85], underscoring the importance of having access to care. An analysis of the effect of mandatory parental notification in order to obtain oral contraceptives found that although African American female adolescents were less likely to stop using all family planning clinic services due to the law compared to female adolescents of other racial and ethnic descent, they were similar to other groups in that they would delay testing and treatment for STDs if parental notification were in effect even though notification only covers contraceptives [86]. This development may represent a new physical risk created by the sexual division of power.

In addition to the acquired risks outlined by the TGP, risk factors stemming from the three structures of the framework are important to understanding consistent condom use [34].

**Socioeconomic, personal, and behavioral risk factors defined by the TGP may influence consistent condom use among adolescent and young African American females.**

Socioeconomic risk factors created by the sexual division of labor

The sexual division of labor describes the *socioeconomic* risk factors of being an ethnic minority and being under age 18 as increasing the risk of HIV in females [34]. HIV and STD statistics described earlier demonstrate the relevance of these factors for African American female adolescents [2, 9]. However, among a sample of African American adolescents and young adults, a higher percentage of consistent condom use was reported by younger participants [60], and it may be worth exploring the effect of age in a population of adolescents and young adults. Risk factors within the sexual division of labor are closely linked to personal risk factors produced by the structure of affective attachments and social norms [34].

Personal risk factors created by affective attachments and social norms:

Important *personal* risk factors arising from the structure of affective attachments and social norms include cognitive constructs such as perceived invulnerability, beliefs not supportive of safer sex including negative attitudes toward condoms, knowledge of HIV prevention, as well as psychological distress [34].

A lack of perceived invulnerability, defined as perceived risk, has demonstrated associations with more barriers to condom use and an increased probability of initiating sexual intercourse in an ethnically diverse sample of adolescents [87]. Conversely, perceived risk has also demonstrated a significant positive associations with condom use among African American female adolescents [30]. Positive attitudes towards using condoms have also been associated with consistent condom use in a study of a random

sample of African American women and female adolescents [58]. However, unfavorable attitudes toward condom use did not demonstrate an association with STD acquisition [45] or an association with measures of consistent condom use [63] in a purposive sample of African American female adolescents. Knowledge has also been associated with a composite measure of risk that included condom use and STD history among African American female adolescents [62]. In contrast, knowledge has failed to demonstrate an association with condom use among ethnically diverse female adolescents [88] and African American young women [57]. While these cognitive factors are important to consider, constructs that are more affective in nature may also play a role.

In a national sample of adolescents, depression was found to be associated with having had an STD among females [89]. A history of depression or psychological distress has also been associated with inconsistent condom use among African American female adolescents [90, 91]. Additionally, although not outlined specifically by the TGP, self-esteem may be a related construct as it has been negatively associated with unprotected sex in the past 30 days in a sample that was largely composed of African American and Hispanic adolescents [92]. However, its role as a direct predictor of condom use has not been consistent [93]. These mixed findings among personal risk factors indicate that it may be worth exploring their role as antecedents of other potentially more closely linked risk factors such as the behavioral risk factors generated by the sexual division of power [34].

Behavioral risk factors created by the sexual division of power

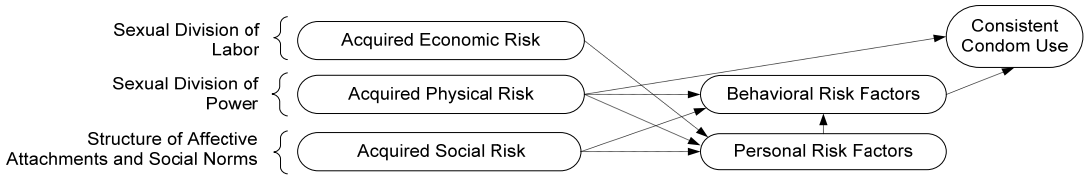
The sexual division of power produces *behavioral* risk factors that are of importance to preventive behaviors such as consistent condom use. These include a history of substance abuse, poor assertive communication and condom use skills, reduced self-efficacy to protect oneself from HIV and the specific perception of a lack of control over condom use [34]. Substance use has demonstrated an association with STD acquisition in a sample of adolescents of both genders [94]. A recent meta-analysis reported a significant effect for the association between communication with a sexual partner about sex and condom use, underscoring the importance of this relationship in a variety of samples [95]. Although intuitively necessary for consistent condom use, condom use skills were not different between never condom users, inconsistent condom users and consistent condom users in a sample of African American women [96]. However, self-efficacy to put on a condom and self-efficacy to refuse sex have both demonstrated associations with consistent condom use in a sample of primarily African American adolescents of both genders [97].

Among African American female adolescents and young women specifically, behaviors in this structure that are associated with inconsistent condom use or unprotected sex include substance use [45, 61, 62, 98], poor assertive communication skills [57, 60], infrequent sexual communication [52], lower self efficacy to avoid HIV [57], self-efficacy for condom use [30], and limited perceived control over condom use [57]. Condom use skills, an additional risk factor in this structure identified by the TGP, have also failed to demonstrate an association with consistent condom use in a sample of African American women aged 18-29 years [57] and demonstrations of skill in the use of

condoms have failed to show associations with consistent condom use or STD diagnoses [99].

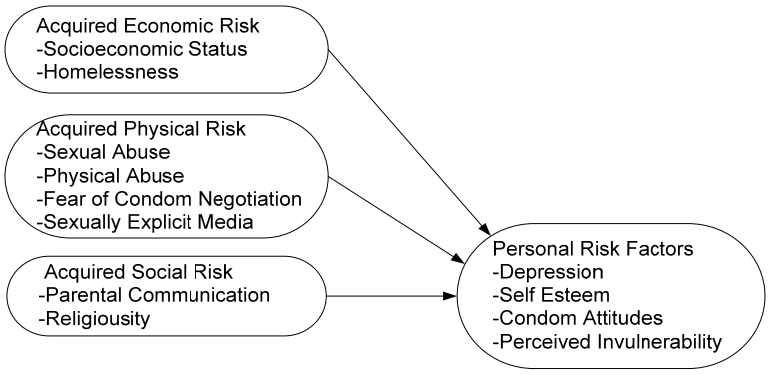
**Acquired risks and risk factors are associated in complex ways that may influence consistent condom use among adolescent and young African American females.** The three structures of the sexual division of labor, the structure of affective attachments and social norms and the sexual division of power are closely linked [34], and as a consequence each may have indirect effects on condom use because of multiple associations with other constructs described by the theory. Figure 1 provides a visual representation of the acquired risks and risk factors described by the theory. Note that socioeconomic risk factors described by the TGP are not included in the model as the characteristics of age and minority status are not acted upon by contextual factors such as acquired risks and risk factors.

**Figure 1.1. Hypothesized associations between acquired risks and risk factors**



***Acquired economic, social and physical risks may be associated with personal risk factors for HIV/STDs.*** Figure 2 displays the associations described in this section.

**Figure 1.2. Acquired Risks and Personal risk factors**




Acquired economic risks have demonstrated associations with personal risk factors. In a study of depression among adolescents, those in the lowest socioeconomic group reported a significantly higher percentage of participants in the high depression group [100]. Financial problems have also been shown to be associated with self-esteem among a predominantly African American sample of women that were selected for high risk behavior [101]. Similar to socioeconomic status or financial problems, episodes of homelessness have been found to be independent predictors of depression among adolescents [102].

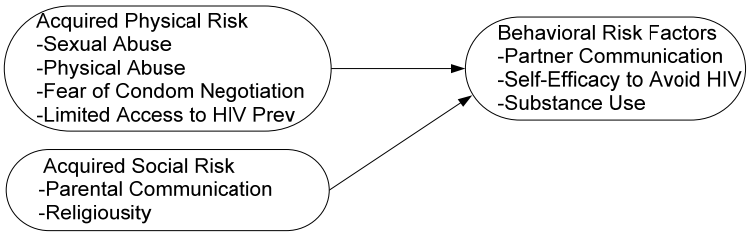
Acquired social risks may also influence personal risk factors. For example, parental communication about sex has demonstrated an association with self-esteem

[103]. Aspects of religiosity have revealed differential effects on personal risk factors among late adolescents. Religious service attendance has demonstrated a negative association with perceived vulnerability to HIV while religion in daily life has been positively associated [104]. In the same study, adherence to religion was found to reduce preventive outcome expectancies for condom use. However, a study of African American female adolescents found that higher religiosity defined as the frequency of participation in religious activities was associated with positive attitudes toward condoms and greater support for safer sex [55].

Research addressing the acquired physical risks of sexual abuse, physical abuse, and a partner who disapproves of condom use has revealed associations with personal risk factors, including depression and self-esteem. Studies of adolescents have demonstrated a positive association between child sexual abuse or forced intercourse and depression [100, 105, 106] and self-esteem [105]. This association with depression has also been observed for physical abuse among adolescents [100]. Additionally, physical abuse has been shown to be associated with a decrease in self-esteem among women [107], and self-esteem has also has been shown to have an association with fear of condom negotiation among African American female adolescents [103]. Exposure to sexual stereotypes in the media has also been found to be associated with negative body image [82] which could be interpreted as an aspect of self esteem.

***Acquired social and physical acquired risks may be associated with behavioral risk factors for HIV/STDs.*** Figure 3 displays the associations described in this section.

**Figure 1.3. Acquired social and physical risks and behavioral risk factors**




Social risks acquired through the structure of affective attachments and social norms have been shown to influence behavioral risk factors. For example, sex-based communication with parents has been found to be associated with self-efficacy for communication about sex with a partner among college students [108]. Lower frequency of parental communication about sex has also been found to be associated with reduced partner communication about sex among African American female adolescents [52]. In contrast, open parent-teenage discussions have been associated with refusal of unwanted sex in this population [109]. Finally, in a study of African American and Hispanic female adolescents, mother-daughter communication was found to have an indirect effect on condom use through condom use self-efficacy in a prospective analysis [50].

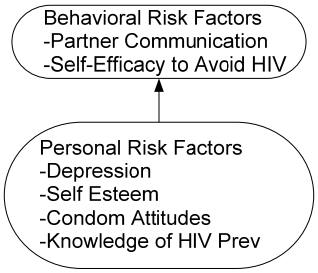
Aspects of religiosity have also demonstrated associations with behavioral risk factors among late adolescents [104]. The negative sanctions of religion have been

shown to be associated with reductions in self-efficacy for using and buying condoms as well as increases in perceived barriers to condom use. In contrast, a study of African American female adolescents found that higher levels of religiosity (defined as frequency of participation in religious activities) were associated with greater self-efficacy for communicating about sex with new and steady partners as well as communicating more about prevention and refusing unsafe encounters [55].

Physical risks acquired through the sexual division of power such as experiences of abuse, partners who disapprove of using condoms, and access to preventive care have also been found to influence behavioral risk factors. For example, in a nationally representative sample of adolescents in the United States, adolescent females who had experienced physical dating violence were 1.5 times more likely to have used substances prior to last intercourse [72]. Similarly, physical abuse has also been shown to be associated with the use of recreational drugs and alcohol before sex as well as reduced self-efficacy to negotiate condom use in a community sample of women [107]. A study of African American women aged 18 to 29 demonstrated that those who had been raped as adults were less likely to negotiate condom use [110]. Experiencing sexual trauma has also been associated with substance use before sex [68-70] and substance abuse [105, 111, 112] among adolescents. Among African American female adolescents, it has been demonstrated that fear of negotiating condom use and a lack of access to condoms have been found to be associated with reduced partner communication about sex [52].

***Personal risk factors may be associated with behavioral risk factors for HIV/STDs.*** Figure 4 displays the associations described in this section.

**Figure 1.4. Personal Risk Factors and Behavioral Risk Factors**




Depression has been associated with lower self-efficacy to negotiate condom use among African American female adolescents [91] and self-esteem has demonstrated significant associations with partner communication in this population [103]. A study which found that higher knowledge of HIV risk was associated with inconsistent condom use also found that the same young women possessed less confidence in using condoms [88] implying that knowledge alone may not predict consistent condom use. Knowledge has also failed to demonstrate an association with condom use among African American young women [57] and it may be important to consider it as a more distal predictor. For example, in a study of detained juveniles it was demonstrated that knowledge of HIV transmission was positively associated with asking a partner about their sexual history, although it was not associated with more direct preventive behaviors such as demanding condom use for themselves [16]. Self-esteem may also be better posited as an antecedent

of more salient direct influences on condom use based on its associations with behaviors more closely linked to condom use such as partner communication [103]. Similarly, attitudes toward condoms have not been consistently associated with condom use, but have been directly associated with the behavioral risk factor of sexual communication with partners [52].

A great contribution of frameworks such as the TGP is that the theoretical constructs provide psychological and behavioral targets to improve the likelihood of behavioral change. Theoretical mediators of the behavior (e. g. condom use negotiation) provider targets for interventionists [113]. It is also important to consider these mediators not only as intervention targets but as potential links in multiple chains of influence in order to explicate how those factors fit into a larger mechanism that predicts condom use. Additionally, analysis of theoretical constructs that may be antecedents to important mediators of behavioral change can elucidate background that highlight areas of variability in the target population, therefore aiding in the refinement of intervention strategies [114]. Understanding the associations between the structures of the TGP is an important area of inquiry.

## Enhancing the Understanding the Structure of Affective Attachments and Social Norms

**Contextualizing the structure of affective attachments and social norms their associations with behavioral risk factors among African American young women can enhance the understanding of the relationship between these two facets of the**

**framework.** As stated previously, affective attachments and social norms are described as social exposures and personal risk factors within the theory of gender and power [115]. Social exposures described in the theory include family influences that do not support HIV prevention. An additional social exposure found in the literature that may be particularly salient for African American adolescents is that of peer norms for sexual behavior.

Wingood and DiClemente [34] argue that family composition, parenting style and drug use within the family represent social exposures for HIV. However, the structure of affective attachments and social norms does not address the process by which these familial social exposures act upon sexual expectations for adolescents. Understanding the nuances of sexual communication may be particularly important among African American mothers and daughters. Meneses and colleagues [116] found that while African American mothers reported a higher frequency of sexual communication than mothers of other races or ethnicities, they were also more likely to incorrectly perceive whether or not their daughter was currently sexually active. Additionally, a recent qualitative study of African American women revealed that two of the most frequently mentioned themes of sexual discussions with their mothers included a mistrust of men because they are only interested in sex and the importance of women's control over sexual impulses [117]. The authors argued that these messages support views of women as sexual objects and can lead to sexualized perceptions of self. A review of twelve years of parent-child communication about sex also concluded that although many studies found an association between parental communication about sexuality and aspects of adolescent sexual behavior, the findings are mixed and there is no clear indication of the

order of events [118]. Additionally, the authors noted that fewer children than parents actually report discussing sex. It may also be important to consider the relationship of mothers and daughters in the context of peer norms as well as the specific context and content of the conversations.

Modeling, measured as the perception of friend's behaviors, has been associated with condom use among African American and ethically diverse adolescents [15, 61, 62, 119]. High rates of peer affiliation may also have implications through social support. For example, in a sample of African American female adolescents, an increase in perceived level of social support was found to be associated with an increase in testing positive for an STD [76]. Additionally, a history of gang membership has demonstrated an association with acquisition of STDs among African American female adolescents [76, 120].

Protective effects of friendships may also be extended through the concept of social support. A study of friendships among Mexican-origin students found that between one half and three-fourths of the sample identified peers as their sole source of emotional support [121]. Similarly, a study of an ethnically diverse sample of college students found that women's friendships significantly differed from men's in that they reported greater rewards including material assistance and ego support as well as higher levels of self-disclosure [122]. Additionally, level of interaction with friends does not always produce negative results with respect to HIV sexual risk behavior. For example, a high level of contact with one's closest friend has been positively associated with seeking STD related health care among African American adolescents [123]. A recent review of HIV/STD preventive interventions from an ecological perspective also reported that

increased social support is associated with less risk behavior and lower STD rates [124]. Specifically, communication with friends about sexuality has been associated with increased frequency of condom use among African American and Hispanic female adolescents in an analysis of sexual communication and condom use [125].

The gender of an adolescent female's friends may also be important. Bearman and Bruckner [126] found that friendships with boys, characterized as low-risk through indices that addressed school orientation such as GPA and non-normative behaviors including getting drunk and skipping school, reduced the probability of sexual debut. Additionally, having a low-risk best male friend was associated with a significantly lower risk of pregnancy compared to having a high-risk best male friend or no best male friend. A qualitative study of Mexican-origin students also highlighted the importance of platonic friendships with males, with the authors suggesting that these relationships lay the groundwork for norms and expectations in future relationships with males [121].

There is additional evidence that the impact of peer norms may be moderated by parental influences. Henrich and colleagues [127] found that while parental connectedness among adolescents who reported supportive friendships was associated with low sexual risk, parental connectedness was not associated with low sexual risk among adolescents who reported low supportive friendships. Among African American adolescents reporting high levels of discussion about sexual topics with friends, higher levels of mother-daughter communication about sexual topics was found to reduce the increased involvement with sexual behaviors associated with talking to friends about sex [128]. For adolescents who were not talking as much with friends, parental conversations about sex were not associated with level of involvement in sexual behaviors. The effect

of adolescent perceptions of low condom use among friends has also been shown to be mitigated through talking with a parent about sex among African American and Hispanic adolescents [129]. In a similar population, a mother's responsiveness, defined as adolescent perceptions of their mothers' reasoning, openness and skill in discussing sex related topics, has also been found to moderate the influence of perceived peer sexual activity on sexual debut where there was no direct effect for maternal responsiveness on sexual debut [130]. This provides evidence that comfort level and the content of communication about sex between mothers and daughters is important in considering the interaction between parental influence and peer influence.

The positive impact that familial influences can have upon sexual decision making, including condom use, and its potential complexity make this construct an important topic to contextualize among African American young women. A review of parental sexual communication with their adolescents called for a greater understanding of the "sexual socialization" of adolescents in order to expand comprehension of the messages caregivers convey [131]. Previous research also indicates that friends might be a part of this socialization process through modeling [15, 119].

**Significance of Proposed Program of Research**

An objective of Healthy People 2010 is to increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active [132]. It is

essential that interventions for adolescent females and young women account for acquired risks and risk factors that are salient to females.

**Extending the utility of the TGP.** The TGP has been used to guide three evidence-based interventions for African American females [35] that will be disseminated nationally [36]. A systematic review of the literature to compare research that has been conducted among African American young women with respect to the association of TGP constructs and condom use will provide an exhaustive assimilation of what has already been established. Including literature that describes the interrelationships between TGP constructs will provide a greater understanding of how the three structures of the theory have been linked in previous studies among African American young women.

Empirically testing how acquired economic, social and physical risks and related individual personal and behavioral risk factors predict condom use in African American young women may represent an important evolution for this gender specific theory of behavior. This application of structural equation modeling can provide insight into how to measure and model the associations among the constructs of the TGP. Together these studies will extend the utility of a theory that has been used extensively to guide the design of HIV prevention interventions and may prove useful in evaluations as those interventions are disseminated.

**Enhancing the understanding of the structure of affective attachments and social norms.** A recent review of qualitative research that explored the sexual behavior of

young people stated that there is a need to capture more detail about social context to understand influences on sexual behavior [133]. Multiple studies of the interactive affect of parental and peer influences have called for a great understanding of these processes [128, 130]. The process through which parental and peer support and beliefs impact beliefs and attitudes about sexual behavior can be explored through the use of qualitative methods. This study will enhance the understanding of the structure of attachments and social norms, a key structure of the TGP.

# CHAPTER 2: A systematic review of observational and experimental literature: Risk factors described by the Theory of Gender and Power tested as correlates of condom use among African American young women

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**Abstract**

The Theory of Gender and Power (TGP) provides a framework for understanding HIV risk among women (sexual division of labor, the sexual division of power, and affective norms and attachments) and has guided construct selection for observational and experimental research. The purpose of this review was to synthesize 10-years of empirical research on HIV constructs as presented in the TGP framework, specifically tests of associations with condom use and between constructs. A systematic review was conducted of articles that were of English language, peer-reviewed, published between 1998 and 2008 and tested the association between a TGP-defined construct (e. g. sexual communication self efficacy, depression, familial support, abuse experiences) and condom use among African American female adolescents. Results suggest there exists variability in the manner in which TGP risk factors are defined and measured as well as in the assessment of condom use. The sexual division of labor was the least explored, perhaps due to difficulties in measuring these constructs, particularly amount young women. Studies have been strengthened by incorporating more than one measure of condom use. Finally, interrelationships between theory constructs exist, and these reveal the potential for the TGP to include meditational pathways of risk. The TGP framework is uniquely suited to exploring risky sexual behavior among African American female adolescents as it acknowledges the importance of power and that condom use is a negotiated behavior. Consistency in measurement and exploration of mediation can further enhance the understanding of mechanisms of risk.

## Introduction

African Americans account for higher rates of sexually transmitted infections (STIs) than persons of other races [10]. African American youth are disproportionately impacted by HIV/AIDS, accounting for 70% of new cases among those aged 13 to 19 and 57% of new cases among those aged 20 to 24 in all states for which data are available [134]. While African American young women report higher rates of condom use at last sex (61%) compared other races (44-46%) [135], the consequences of having unprotected sex are much greater due to multiple determinants. These include structural factors [136] that may account for higher background prevalence of HIV and other STIs. Additionally, African American young women also reported greater than four lifetime sexual partners and earlier initiation of sex more frequently than their White and Hispanic counterparts [135], underscoring the need to further understand the adoption of condom use in this population. The purpose of this study is explore correlates of condom use that are outlined by the Theory of Gender and Power (TGP) [33], a social structural theory that was adapted to explain HIV risk among women [34]. Additionally, the associations between TGP constructs in the context of condom use will be explored.

### *Theoretical Background*

Multiple theoretical frameworks have been employed to analyze preventive health behaviors among youth, including condom use. Frameworks that focus specifically on sexual risk behavior include the AIDS Risk Reduction Model (ARRM) [12] and the Information Motivation Behavioral Skills Model (IMB) [13]. While the ARRM provides a broad conceptual model for organizing psychosocial factors related to HIV risk, the

authors of the theory state that in order to enhance the final stage of enactment, antecedents of sexual communication and attitudes towards condoms need to be examined [18]. In the seminal article describing the theory, the authors note that it would be "of interest to specify the social conditions that facilitate or inhibit continued problem solving efforts" [12]. A key construct of the IMB theorized to be associated with behavior is motivation. In the discussion of a study of urban adolescents in which the theoretical model was empirically tested by gender, Fisher and colleagues [20] hypothesized that male adolescents can express their motivation directly through patterns of behavior, while female adolescents must express the same motivation indirectly through a more complicated skill set to make certain that male partners use condoms.

These discussions highlight that not only are individual factors unable to fully explicate condom use among young women, but such factors may also operate differently across gender. Furthermore, social conditions such as reduced societal power may also influence individual behaviors through gender and race. In an analysis of predictors of relationship power in which the sample of adolescents was partitioned by gender and race, self-efficacy for condom use was positively associated with relationship power among African American young women but not for any other group [30]. Thus, the call for theoretical models that incorporate gender studies [31] may be particularly relevant for African American female young women.

The TGP [33, 34] provides a comprehensive framework for understanding vulnerability to HIV among women that divides the factors related to HIV risk into three structures: the sexual division of labor, the sexual division of power, and the structure of affective attachments and social norms (see Figure 1). Wingood and DiClemente [34]

adapted the theory specifically to conceptualizing HIV risk among women. Each structure addresses a type of gender based inequity. The sexual division of labor corresponds to economic disparity, the sexual division of power incorporates imbalances of control, and affective attachments and social norms addresses the gap in expectations for sexuality between men and women. The sexual division of labor creates economic risks such as poverty and lack of education that are exacerbated by the socioeconomic risk factors of minority status or being under the age of 18. The structure of affective attachments and social norms produces vulnerability to HIV for women through social risks such as having older partners or having a family that is not supportive of HIV prevention. Additionally, this domain includes knowledge of STI prevention and psychological factors that may influence HIV risk. The sexual division of power creates physical risks such as interpersonal violence and exposure to sexually explicit media. Behavioral risk factors stemming from this structure include substance use as well as the lack of skills such as communication use negotiation. The TGP underlies the design of three evidence-based HIV interventions developed for African American females by Wingood and DiClemente [35] that are currently nationally disseminated by the Centers for Disease Control and Prevention [36].

### *The Present Study*

The seminal article describing the TGP details each of the structures of the theory and states that they are intertwined [34], but specific operational mechanisms were not explored. Moreover, the potential of any of the domains or constructs to serve as a

central mediator was not articulated [32]. Although there has been no formal test of the model in its entirety, many of the model constructs have been explored as correlates of condom use in other contexts. Thus, the existing literature provides data for a two-pronged research approach: 1) to systematically explore associations of TGP constructs with condom use among African American young women, and 2) to systematically explore associations between TGP constructs to better explicate how the three structures of the theory are connected.

A literature review of condom use can benefit from implementing existing guidelines in the field of health sciences. Systematically selecting articles according a protocol minimizes bias in article selection [137]. Reviews of observational literature can benefit from examining sources of heterogeneity across studies to enhance comprehension of the relationship between phenomena [138]. If there are inconsistent results among studies with respect to a given relationship between constructs, analyzing features of each can provide insight as to why. Research has also noted that many systematic reviews do not provide a measurement of study quality [139]. Issues of quality of condom use measurement have also been explored [140, 141], and assessing the quality of measurement of condom use will strengthen conclusions drawn from a systematic review of this literature.

A systematic review of articles that examine associations between TGP constructs and condom use may be particularly useful because many TGP constructs that are structural in nature (e. g. socioeconomic status, education) are often included as covariates. Therefore, any associations that arise during tests for confounding in the

existing literature may support or challenge the formal inclusion of these TGP variables in studies of adolescent condom use from a theoretical standpoint.

Examining heterogeneity of associations between condom use and TGP constructs (e. g. direction, magnitude) may indicate potential associations between the structures of the theory. For example many studies examine the direct associations of TGP behavioral risk factors to condom use [48]. It is possible that the strength of direct associations may be diminished in the presence of covariates, creating heterogeneity in results. In the absence of prescribed statistical tests of mediation, [142] the influence of the inclusion of other TGP factors upon the effect sizes of theory variables reveals the potential for indirect effect mechanisms. Additionally, studies might also formally test associations between TGP constructs, and reviewing these associations systematically can provide insight into how TGP domains function as a network of influences.

The TGP was initially adapted to better understand HIV risk among minority women of all ages [34]. TGP constructs may benefit from alternate conceptualizations for adolescent women. For example, family of origin influences not supportive of HIV prevention may be manifested through parental monitoring and household structure in addition to norms or communication [48]. Additionally, the constructs of self-esteem and peer norms may be particularly important for adolescents in context of condom use [48], and reviewing their associations with condom use and TGP constructs can help explore possible elaborations of the TGP for observational and experimental studies involving youth.

The purpose of this systematic review is to describe a decade of empirical research applying the constructs outlined by the TGP to the understanding of condom use among African American female adolescents and young women. The literature was evaluated in terms of measurement quality with respect to condom use. Finally, the investigation expanded the framework to include the constructs of self esteem and peer norms and examined associations between TGP constructs in the context of condom use in this population.

## Methods

### *Search Strategy*

The search was limited to peer-reviewed articles empirically testing the association between TGP constructs and condom use and included three steps. First, seven databases that index articles from the fields of public health, psychology, nursing, sociology and education were employed in the search: PsychInfo, EMBASE, ERIC, PubMed, Web of Science, CINAHL, and SocIndex. The databases inventoried articles published in several disciplines including psychology, education, sociology, public health, medicine, and nursing. The search terms were combinations of expressions describing condom use (e.g. condom, sexually transmitted disease, safe sex) and each TGP construct, resulting in 28 separate searches. The specific searches are listed in Appendix 1. Second, reviews of scientific articles [48, 143-149] that focused on sexual risk behavior were examined for articles that potentially fit the eligibility criteria; any not identified in the database search were added to the articles examined for eligibility. Finally, a database of federally-funded research projects (CRISP) was searched for

proposals funded between 1998 and 2008 that addressed African Americans and condom use. Articles by the principal investigators of these proposals that were not found during the database search were also examined for eligibility. The three methods yielded a combined total of 2321 articles.

To be eligible, articles had to be peer reviewed, published between 1998 and 2008, written in English language and had to describe empirical studies of samples of African American young women between the ages of 13 and 22. The articles also had to have included a test of a bivariate association between a TGP construct, self-esteem or peer norms and self- reported condom use. Experimental studies of interventions that employed theoretical mediators had to test the association between the mediator and condom use. Condom use that was measured as part of an index, at first sex, or ever use were also excluded, a strategy employed in a previous meta-analysis by Sheeran and colleagues [150]. The first author reviewed all abstracts to assess eligibility. Articles for which the abstract did not clearly delineate eligibility were reviewed in their entirety. The second author followed this same procedure for 25% of the articles identified through the database, review, and funded investigator searches. Following eligibility coding, the first and second author compared results and assessed inter-coder reliability for eligibility. The coders compared and discussed inconsistencies, submitting any for which they were undecided to the third author for as a tie-breaker because of her specific expertise with the TGP. Inter-coder was reliability was moderate [151], with a Kappa statistic of .45. A total of 38 articles from ten unique studies were selected for inclusion. Articles stemming from the same data sources were noted as such and this was accounted for in the analysis of results.

### *Article Coding*

Following assessment of eligibility, the first and second author coded the articles independently along the domains of study design and sample, measurement characteristics and analysis of associations between TGP constructs and condom use. Further, they coded any tests in the study articles that assessed relationships between the TGP constructs. Sample characteristics included age, recruitment strategy and geographic location. Measurement characteristics included condom assessment quality measures such as recall period, partner specificity (i.e. general, steady, casual), and data collection method (e.g. face-to-face, computer assisted interview). Following article coding, the first and second authors compared results and assessed inter-coder reliability within study domains. The coders compared and discussed inconsistencies, submitting any for which they were undecided to the fifth author for as a tie-breaker. Inter-coder reliability was fair to high [151] (TGP Construct Coding: Kappa Range =.37 to 1.00, Condom Use Measurement: Kappa Range = .40 to 1.00).

### *Analysis*

Associations were grouped by TGP structure and construct. Condom use measurement quality was also calculated. The condom quality score was developed drawing on the comments of Crosby and colleagues [141], the review by Noar and colleagues [140], and research on the validity of self-reported sexual behaviors and data collection method [152, 153]. The following items were summed to create a quality score that ranged from 0 to 6: recall period (0=more than six months, 1=six months or less), type of measurement (0=dichotomized proportion, last sex, or Likert scale,

1=unprotected vaginal sex acts), partner (0=general, 1=specific), collection method (0=face to face interview, 1=ACASI or phone survey), condom use error (0=no measurement, 1=measurement), and specificity of sex act (0=general, 1=vaginal, anal or oral). Following this step, direct associations with condom use were examined. Relationships between TGP variables were then ordered by structure and analyzed for inter-domain associations. Any identical relationships from a single sample that were duplicated across multiple articles were analyzed to verify that the results were the same. There were no such direct relationships with condom use and only two among the relationships between TGP variables. In the latter cases, only one bivariate association for each relationship was retained. Finally, the potential of peer norms and self esteem as TGP constructions in an elaboration of the theory for adolescents was explored.

## Results

### *Description of Studies*

The most common reason for exclusion was that the article did not include an empirical test of a TGP construct and condom use. There were no experimental studies that assessed the association between theoretical mediators and outcomes. As might be expected in a search defined by very narrow sample parameters (e.g. African American, female, aged 13-22), many of the articles selected for investigation were from the same data sources. The final set of 38 articles was from ten samples, published in 30 different journals. Table 1 displays a description of articles by sample.

*Quality of Condom Use Measurements*

Condom quality index scores ranged from one to four. All of the articles reported the specific sex act (e. g. vaginal). Nearly all of the articles included recall periods of less than six months (95%, N=36) and many reported more than one length of time. Only two studies included a measure of condom use error and for one of those that was the primary variable of interest. The majority of condom use measures involved collapsing unprotected vaginal sex (UVS) or a proportional measure of condom use into a dichotomy. Unfortunately, this failed to produce a weighted measure [140, 141] that represents a more accurate picture of UVS. Moreover, the lowest level of inter-coder reliability was for this item due to a lack of clarity in article methods about the treatment of the UVS variable. Most of the articles reported that the condom use measures were collected during a face to face interview. However, this was the case for the study that provided the data for over half of the articles in this review (60%, N=23) and this may not be an accurate picture of what is common in the field. Finally, slightly less than half the articles included at least one measure of condom use that addressed a specific type of partner, such as steady or casual.

*The Sexual Division of Labor*

Risks created by the sexual division of labor that were found in this review were living at the poverty level, having less than a high school education (defined here as school enrollment) and being younger than age 18. The findings for these constructs were mixed, potentially due to the difficulty that arises when trying to measure the

impact of this structure among adolescents. For example, although receipt of aid [154]E[1], [155]G and socioeconomic status [40]A failed to demonstrate associations with condom use in multivariate analysis, neighborhood quality did reveal an effect in bivariate analyses (-.19) that diminished in multivariate analyses (-.17) that included the personal risk factors of self esteem and locus of control from the structure of affective attachments and social norms [155]G. It is possible that the impact of risk generated by the sexual division of labor acts through risk factors created by other structures; however, it is impossible to ascribe the economic conditions to the gender of the young women as they are actually assigned to the parent, which may or may not have been female. Although five of the samples ranged from as low as 13 to over the age of 18, including two studies with participants ranging to age 21, age did not emerge as a correlate of condom use although its lack of effect as a covariate was reported for three of those samples [30]C, [156, 157]G, [158]H.

*The Structure of Affective Attachments and Social Norms*

Many of the risks produced by the structure of affective attachments and social norms were included in this sample of articles. Age of partner was examined in five of the ten samples. However, it only demonstrated an association with condom use across multiple recall periods in one article describing a sample of young women aged 14 to 18 using a cut off of greater than or equal to two years older [159]B. The same measure was

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[1] Articles included in the sample of articles examined are identified by reference number and sample letter corresponding to the samples in Table 1.

applied to a sample of pregnant young women aged 15 to 21 and while the number of UVS acts in the past 30 days was higher among young women with older partners, the mean difference did not achieve statistical significance (p=.051) [160]E. In an age-adjusted analysis of a sample of young women aged 15 to 21, the authors used a gap of five years but age disparity was only associated with one of the three recall periods tested [161]G. While partner age was a significant predictor of condom use in one analysis of a sample of women aged 14 to 20 in the past 90 days [158]H, partner age failed to demonstrate the association among a sample of women age 14 to 19 over the same recall period C[30]. Both studies controlled for social risk and behavioral risk factors, but the latter also included age at first intercourse and perception of vulnerability to AIDS.

The TGP includes a desire to become pregnant as a social risk created by the structure of affective attachments and social norms [34]. A desire to become pregnant [162]B, current pregnancy [163]B, [158]H, and pregnancy worry [164-166]B were all found to be associated with multiple recall periods of condom use. In one article, pregnancy worry demonstrated an association in bivariate analyses with UVS (r=.16) that was reduced but still significant (β=.10) when relational dynamics including normative beliefs favoring males, peer norms, and perceived invulnerability were included [166]B. A previous pregnancy and hormonal contraception each failed to impact condom use in two different samples [167]D,[154]E,[168]G,[40]A.

Family influences not supportive of HIV prevention are also considered social risks [34]. Parental sexual communication demonstrated associations with condom use across measurement types, recall periods and two different samples [164-166, 169, 170] B, [171]I. One data source was limited to young women aged 14-18 while the other

included young women who were older than age 18. Parental monitoring and family support also demonstrated associations [172-174]B, although family support failed to attain significance in a prospective model of condom use with casual partners [173]B. This may have been an artifact of sample size as few participants reported having casual partners. Finally, not residing with at least one parent was associated with an increase in the odds of reporting in the top third of frequency of UVS in bivariate analysis [154]E, indicating the importance of the presence of parents with respect to safer sex practices in a sample of young women aged 15-21.

The construct of religious affiliations forbidding the use of contraception was not examined among these articles. However, one article did explore the association of religiosity, defined as involvement in religious practices [55]B. Although greater religiosity was found to be associated with an increase in the odds of having ever used condoms in the past six months, the effect was no longer significant when family influences such as parental monitoring and family composition were included.

All the personal risk factors produced by the structure of affective attachments and social norms were identified in these articles. Knowledge failed to demonstrate associations with condom use across the two different samples for which it was tested [30]C, [154]E. Perceived barriers was an inconsistent predictor, demonstrating associations with condom use in a prospective analysis of one sample [63]B but failing to do so in a cross-sectional analysis of another sample [154]E. Beliefs related to condoms interfering with sexual pleasure (e. g. pleasure expectations, condoms taking the fun away) were consistently associated with condom use across two samples [175]F, [161]G. Perceived risk was also a consistent predictor across two samples that controlled for

variables in other TGP domains [166]B, [30]C. Psychological distress as measured by the CES-D was a significant predictor of condom use in one sample [91]B but not another [155]G. The former employed a recall period of six months while the latter was limited to 14 days. Conceptualized as life stress, this risk factor did not demonstrate an association with condom use in a model that also included potentially more proximal behavioral risk factors [30]C.

*The Sexual Division of Power*

The sexual division of power produces physical risks such as a history of sexual or physical abuse or a partner who disapproves of practicing safer sex [34]. Abuse, conceptualized as having experienced dating violence, was associated with a reduction in the odds of consistent condom use [75]B. A separate sample found the same association with having experienced sexual violence across multiple measures of condom use that controlled for age and behavioral risk factors [157]G. However, in a separate sample that tested the association of history of abuse and proportion of condom use in a stepwise regression model that included partner age, length of relationship, and behavioral intentions, abuse did not stay in the model [158]H. Partner disapproval was conceptualized as partner barriers [166]B, perceived partner acceptance [175]F, partner trust [175]F, and fear of condom negotiation [166]B, [157, 161]G. Partner barriers was not found to be associated with UVS [166]B while fear of condom negotiation yielded inconsistent results across samples and was only significantly associated with dichotomous measures of condom use [157, 161]G.

The remaining physical risks that were tested included exposure to sexually explicit media and having high risk partners. Never using a condom was not associated with exposure to rap videos [81]B while some measures of high risk partners did show associations with condom use. Having a partner with concurrent partners failed to demonstrate an association with UVS [154]E but having a partner that is intoxicated during sex was found to be associated with increased odds of less than 100% condom use. Being in a relationship where partner control is normative [161]G, [166]B or where a partner makes decisions about sex and condoms [166]B was an inconsistent predictor of condom use. Normative partner control was generally predictive across two samples (UVS in the past 14 days and UVS with casual partners were exceptions) but the partner as the decision maker was only tested in one sample and was not a consistent correlate in multiple tests of associations with condom use [166]B.

Behavioral risk factors were among the most widely tested predictors. Frequency of partner communication was found to be associated with a variety of conceptualizations of condom use in two samples [52, 63, 176]B, [154]E. However, in a series of analyses that controlled for the social risk of peer norms and the personal risk factor of perceived barriers, associations between infrequent communication and inconsistent condom use did not always persist; it may be that the perception of barriers to condom use or the perception that girlfriends are not using condoms diminish the importance of frequency of communication. Self efficacy for condom use negotiation and confidence in the ability to refuse unsafe sex, however, were consistent predictors of condom use measures across multiple samples [30]C, [157]G, [40]A, [109]B. Among pregnant adolescents, however,

the association did not hold [154]E. When conceptualized as self efficacy to obtain and use condoms the construct also failed to demonstrate an association [158]H.

The remaining behavioral risk factors were alcohol and drug use, condom skills, and perceived control over condom use. Lab-tested marijuana use achieved a significant association with condom use in one sample [177]B while self-reported marijuana use did not in a separate sample [154]E. This could be because of social desirability or because the participants in the second sample were pregnant young women. Intoxication during sex also emerged as a correlate of condom use [178]G. Demonstrated ability to use condoms was not associated with any of the six outcomes it was tested against [99]B, indicating that the ability to negotiate use is a more likely indicator of use than the ability to apply a condom. Perceived control was not a strong predictor of condom use. General locus of control was found to be significant in bivariate but not multivariate analysis adjusting for economic risk and personal risk factors. Measures of relationship power also failed to demonstrate associations [30]C, [158]H.

*Peer Norms and Self Esteem*

Peer norms could be an alternative conceptualization of conservative cultural norms within the structure of affective attachments and social norms for young women while self esteem may represent a personal risk factor from the same domain. The perception that fewer peers used condoms [63, 166]B and peer norms supporting high risk behaviors [156]G demonstrated associations across multiple recall periods and measurement types. Self esteem failed to demonstrate an association with condom use across three samples as measured by the Rosenberg self esteem scale [103, 179]B,

[155]G and conceptualized as personal power [30]C. However, when conceptualized as body image, the construct was significant in two of three definitions of condom use [180]B. It may be that this conceptualization has more relevance for young women and condom use than the more global measure.

*Associations Between TGP Domains*

Many of the TGP constructs were tested as correlates of constructs in other domains. The sexual division of labor was found to be linked to the sexual division of power through school enrollment: non-enrollment was associated with increased odds of partner disapproval or choosing high risk partners [181]G. Similarly, it was associated with the structure of affective attachments and social norms through its impact on the social risk of selecting of much older partners [181]G. Receipt of aid, however, was not associated with the personal risk factor of self esteem [103]B.

Relationships between the sexual division of power and the structure of affective attachments and social norms were the most explored in this literature. Abuse, partner disapproval and high risk partners were all found to be associated with family influences [173], [174]B. Abuse also demonstrated an association with peer norms [75]B and partner disapproval and high risk partners demonstrated associations with having older partners [159]B, [160]E. Physical risks were also related to personal risk factors. Abuse was associated with perceived vulnerability and psychological distress [75, 91]B while partner disapproval and lack of access to HIV prevention were found to be related to self esteem [103, 180]B. High risk partners also increased the odds of reported symptoms of psychological distress [91]B.

Social exposures were also tested as predictors of behavioral risk factors. Choosing older partners did not demonstrate an association with assertive communication or self efficacy to avoid HIV [159, 160]E. Factors related to pregnancy failed to demonstrate associations with multiple behavioral risk factors [167]D, [52, 109, 164]B, raising questions about how this social risk translates to sexual risk taking. Higher levels of religiosity served as a protective factor, showing positive associations with increased communication and self efficacy to avoid HIV [55]B. However, this conceptualization of the construct is very loosely based on its definition in the TGP [34]. Family influences such as communication about sex, support and parental monitoring were shown to impact alcohol and drug use [174]B, assertive communication [169, 172]B and self efficacy to avoid HIV [109, 169, 170]B. These studies were all cross-sectional, however, and it is important to note that the association between family support and assertive communication did not persist in a prospective analysis [173]B.

Personal risk and behavioral risk also revealed a number of relationships. For example, self esteem and beliefs not supportive of safer sex demonstrated associations with partner communication [52, 103]B. Self esteem and depression were also found to be associated with self efficacy to avoid HIV [91, 109]B and perceived control over condom use [91, 180]B.

**Discussion**

The empirical literature of the past ten years includes many tests of associations between TGP constructs and condom use among African American young women. Although the majority of the condom use measures included in this review only achieved

moderate levels of quality, many of the articles did seek to strengthen findings by testing a number of condom related outcomes in keeping with recommendations by Noar and colleagues [140].

There were several constructs from within the sexual division of labor that were not tested as predictors of condom use in this literature. These include employment, having limited or no health insurance, or having no permanent home. Employment was often measured and reported in descriptions of the samples but it was not reported in the analyses. While it has been found to be associated with condom use at first sex among adolescents [37], it might not have been found to confound any of the focal relationships tested. Conceptualizing young women's employment as an indicator of the sexual division of labor is symptomatic of the more general difficulties associated with measuring this structure among youth using adult measures of poverty. For example, to address the concept of labor-related disparities, one would need a measure of the family's economic status. To establish that the disparity stemmed from gender inequity, one would have to establish that the source of income was impacted by forces of patriarchy acting upon the adolescent's female parent. Qualitative research exploring barriers to seeking care among adolescents found that some participants endorsed the beliefs that a lack of health insurance would result in inferior care [44], and this may represent an important area of inquiry among African American young women. However, measurement of this construct would also require that the gender of the participant's parent providing the insurance was female, and that social forces influenced the inequity in insurance for that female. Homelessness was not explored in any of these studies. This may be because only one study recruited from a community (D) as opposed to clinic

or school settings. Finally, age was not a significant predictor in any of the analyses for which it was included and it may be that younger age emerges as a risk factor in samples characterized by wider age ranges.

Constructs from the sexual division of labor were included least often, which may be because these kinds of risks are the hardest to address in intervention research and associations tested may have been part of a screening for covariates and only reported on if confounding was suspected. However, there were a number of associations between school enrollment and social risk, indicating the economic risk among adolescents may still play a more distal role.

Affective attachments and social norms were explored as both social risks and personal risk factors. Having an older partner, a desire to conceive, family influences, negative beliefs, perceived vulnerability and psychological distress demonstrated associations with condom use and religiosity and knowledge did. A previous review has also asserted that knowledge, while necessary, is a weak predictor of condom use [150]. An important aspect of religious influence described by the TGP [34], discouragement of contraception, was not addressed in the article that focused on religiosity, leaving a gap in the understanding of this construct's impact on condom use. The social risk of mistrust of the medical system was not examined as a predictor of condom use among these articles. Other literature has tested this construct conceptualized as greater endorsement of conspiracy beliefs about AIDS and found it significant among African American men but not among African American women [58, 182].

The sexual division of power was well represented in this literature, mostly through partner characteristics and violence. Additionally, behavioral risk factors were those most often explored. These include the construct of communication, which has been previously identified as an important predictor of condom use [95] particularly for women [150]. There were also many links between affective attachments and the sexual division of power that were explored. Family influence in particular represents a multifaceted construct (e. g. communication, support, monitoring) that relates to important behavioral risk factors (e. g. partner communication, self-efficacy, alcohol and drug use).

**Limitations**

This review is limited by several factors. Studies of only African American young women stemmed from relatively few samples and many other articles that analyzed samples that included African American young women were excluded because they did not stratify the sample by race or gender in analyses. The majority of the results described here are from cross-sectional analyses; only seven employed prospective designs. The lack of experimental literature testing meditational mechanisms precludes any causal interpretations. Finally, all but one of the articles reported on convenience samples, limiting the generalizability of the findings.

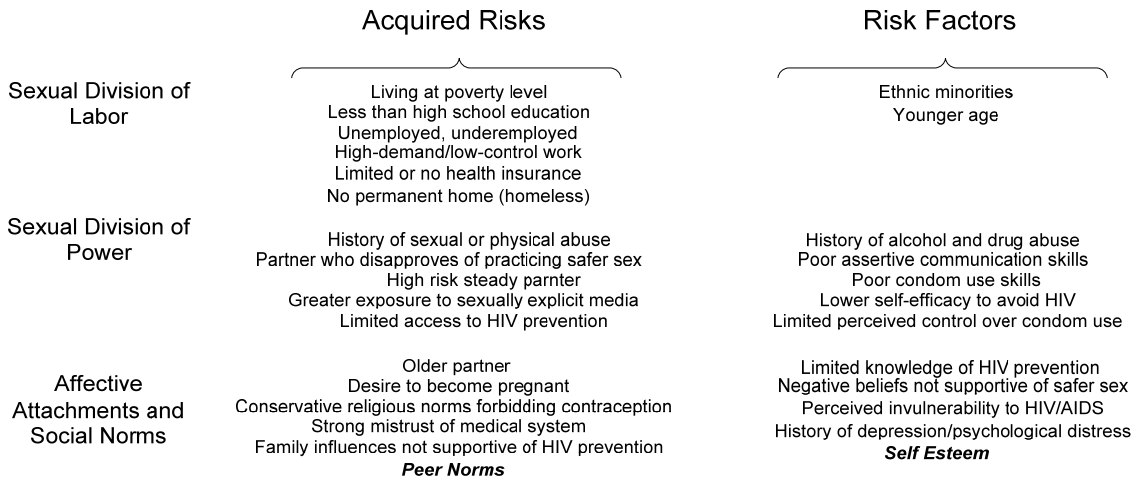
**Future Directions**

There are many avenues of research remaining on the relationships between TGP constructs and condom use among African American female adolescents. The sexual

division of labor can be explored in greater depth; although these factors are structural, identification of salient influences within this structure for adolescents on condom use from and other domains of the TGP can help interventionists tailor approaches and highlight modifiable mediators through which these more distal factors act. Source of income must be indentified with care, acknowledging that for disparity to be gender based, the source of income for the adolescent must be the adolescent's female caregiver. Within the structure of affective attachments and social norms, the impact of religious affiliation needs to be defined beyond the level of religiosity and family influences not supportive of HIV can be elaborated upon to include adolescent-centric measures such as communication about condoms and parental monitoring.

Research to explore potential mediating pathways is needed to further explore mechanisms within the TGP predicting condom use among African American young women. Some work has already begun in this direction. Sales and colleagues [157]G tested partner disapproval and self efficacy to avoid HIV as mediators of the impact of sexual violence on condom use and found the inclusion of these variables significantly reduced the impact of abuse on the outcome. More analyses like these that cross TGP structures can enhance the understanding of how these constructs operate in their effect on condom use to better explicate the impact of the structural and social factors described by the TGP on HIV risk behaviors.

**Figure 2.1. The Theory of Gender and Power [183][2]**




[2] This diagram reflects the elaboration of the TGP described in the research questions. Peer norms and self-esteem are not part of the original model.

**Figure 2.2. Article Selection**

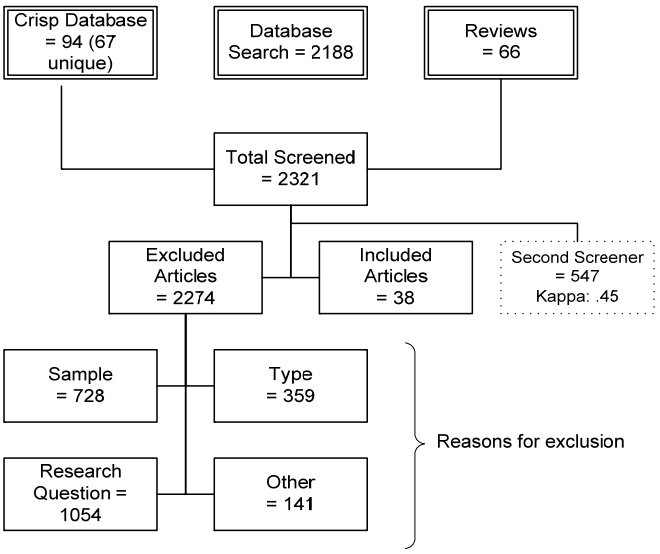


**Table 2.1. Study Descriptions (N=10) and Articles (N=38)**

| Study ID | Count of Articles | Publication Year Range | Age Range | Mean Q[1] Score | Sample Size | Recruitment Location | Geographic Location |
|---|---|---|---|---|---|---|---|
| A | 1 | 1999 | 15-16 | 1 | NG[2] | School | Unclear |
| B | 23 | 2000-2008 | 14-18 | 2.65 | 522 | School, Clinic | Southeast |
| C | 1 | 2000 | 14-19 | 4 | 93 | Clinic, Other | Unclear |
| D | 1 | 2002 | 15-17 | 3 | 279 | Community | Northwest, Northeast |
| E | 2 | 2003 | 14-21 | 3 | 169 | Clinic | Southeast |
| F | 1 | 2006 | 13-19 | 3 | 519 | Clinic | Southeast |
| G | 7 | 2007-2008 | 15-21 | 3.57 | 715 | Clinic | Southeast |
| H | 1 | 2007 | 14-20 | 2 | 126 | Clinic | West |
| I | 1 | 2007 | m=18.13 | 3 | 317 | School | East |

[1] Condom use measurement quality score
[2]Not Given

**Table 2.2. Constructs by Domain, Relationships to Condom Use, Controls by Domain (SDL = Sexual Division of Labor, AASN =Affective Attachments and Social Norms, SDP = Sexual Division of Power) and Quality Scores**

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result[a]** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| **Economic Risk** | | | | | | | |
| *Poverty* | | | | | | | |
| Receipt of TANF/Welfare | [155]G | 14D Proportion | 3 | NS | | | |
| Receipt of TANF/Welfare | [154]E | 30D Proportion | 3 | NS | | | |
| Neighborhood Quality | [155]G | 14D Proportion | 3 | -.17† | | X | X |
| Socioeconomic Status | [40]A | Unclear | 1 | NS | | X | X |
| *High School* | | | | | | | |
| School Enrollment | [166]B | 6M Casual UVS | 4 | NS | | | |
| School Enrollment | [166]B | 6M Steady UVS | 4 | NS | | | |
| School Enrollment | [184]G | 60D <100 % | 3 | 1.34 | X | X | |
| School Enrollment | [154]E | 30D UVS | 3 | NS | | | |
| **Socioeconomic Risk Factor** | | | | | | | |
| Age | [30]C | 90D 5 pt Likert | 4 | β = .01 | | X | X |
| Age | [166]B | 6M Casual UVS | 4 | NS | | | |
| Age | [166]B | 6M Steady UVS | 4 | NS | | | |
| Age | [156]G | 60D Proportion | 4 | -.03 | | | |
| Age | [158]H | 90D Proportion | 2 | NS | | X | X |
| Age | [157]G | Last Sex CU | 4 | .95 | | | X |
| Age | [157]G | Last Sex CU | 4 | .96 | | | X |
| Age | [157]G | 60D 50% CU | 4 | .96 | | | X |
| Age | [157]G | 60D 100% CU | 4 | .96 | | | X |
| Age | [157]G | 60D 50% CU | 4 | .94 | | | X |
| Age | [157]G | 60D 100% CU | 4 | .94 | | | X |

† p < .10, * p < .05, ** p <.01, *** p < .001

[a]All results are odds ratios unless otherwise stated. NS=Not Significant, (S)=Significant, NG=Not Given, () denote a mean difference

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Q Score** | **Result[a]** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| **Social Risk** | | | | | | | |
| *Older Partner* | | | | | | | |
| Partner 2 years older | [159]B | 30D NCU | 3 | 1.62* | X | X | |
| Partner 2 years older | [159]B | 30D <100% | 3 | 1.57* | X | X | |
| Partner 2 years older | [159]B | Last 5 NCU | 3 | 2.49* | X | X | |
| Partner 2 years older | [159]B | Last Sex NCU | 3 | 2.15* | X | X | |
| Partner 2 years older | [159]B | 6M <100% | 3 | 2.20* | X | X | |
| Partner 2 years older | [160]E | 30 D | 3 | (-2.8) | | | |
| Partner 5 years older | [161]G | 60D < 100% | 4 | 1.75* | X | | |
| Partner 5 years older | [161]G | 14D < 100% | 4 | NS | X | | |
| Partner 5 years older | [161]G | Last Sex NCU | 4 | NS | X | | |
| Age difference | [30]C | 90D 5 pt Likert | 4 | NS | X | X | X |
| Partner Age | [158]H | 90D Proportion | 2 | r = -.01* | X | X | X |
| *Desire to Become Pregnant* | | | | | | | |
| Previous Pregnancy | [167]D | Current | 3 | S—NG | | | |
| Previous Pregnancy | [167]D | 60D | 3 | S—NG | | | |
| Previous Pregnancy | [154]E | 30D | 3 | NS | | | |
| Current Pregnancy | [163]B | 6M < 50% CU | 3 | 4.46** | | | |
| Current Pregnancy | [163]B | 6M < 100% | 3 | 4.73** | | | |
| Hormonal Contraception | [168]G | 60D < 100% | 4 | .66 | | | |
| Hormonal Contraception | [40]A | Unclear | 1 | NS | X | X | |
| Hormonal Contraception | [168]G | 60D UVS | 4 | NS | X | | |
| Desire to be Pregnant | [162]B | Last Sex NCU | 3 | 2.01* | | X | |
| Desire to be Pregnant | [162]B | 30D < 100% Steady | 3 | 2.07* | | X | |
| Current Pregnancy | [158]H | 90D Proportion | 2 | β=.43*** | X | X | X |
| Pregnancy Worry | [164]B | 6M NCU | 2 | 2.43*** | | | |
| Pregnancy Worry | [164]B | Last Sex NCU | 2 | 2.23*** | | | |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result[a]** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| Pregnancy Worry | [164]B | 30D NCU | 2 | 1.97* | | | |
| Pregnancy Worry | [165]B | 30D <100% | 3 | 2.12** | | | |
| Pregnancy Worry | [165]B | Last Sex NCU | 3 | 1.69* | | | |
| Pregnancy Worry | [166]B | 6M Casual UVS | 4 | NS | | | |
| Pregnancy Worry | [166]B | 6M Steady UVS | 4 | β=.10 | | X | X |
| *Family Influence* | | | | | | | |
| Parental Sexual Communication | [169]B | 30D NCU | 2 | 1.60* | | X | |
| Parental Sexual Communication | [169]B | Last Sex | 2 | 1.70* | | X | |
| Parental Sexual Communication | [169]B | Last 5 | 2 | 1.60* | | X | |
| Parental Sexual Communication | [170]B | 30D Steady Proportion | 3 | r=14** | | | |
| Parental Sexual Communication | [170]B | Last Sex Steady | 3 | r=.08* | | | |
| Parental Sexual Communication | [170]B | 6M Steady Proportion | 3 | r=.12** | | | |
| Parental Sexual Communication | [171]I | 3M <100% | 3 | r=-.17** | | | |
| Parental Monitoring | [174]B | Last Sex NCU | 2 | 1.7* | X | X | |
| Parental/Family Support/LW | [172]B | 30D Steady <100% | 3 | .52** | X | X | |
| Parental/Family Support/LW | [172]B | 30D <100% | 3 | .55** | X | X | |
| Low Parental/Family Support | [173]B | Last Sex Steady NCU | 3 | 1.92* | X | X | |
| Low Parental/Family Support | [173]B | 30D Steady NCU | 3 | 2.76** | X | X | |
| Low Parental/Family Support | [173]B | 30D Non Steady NCU | 3 | .51 | X | X | |
| Low Parental/Family Support | [173]B | Last Sex Non Steady NCU | 3 | .42 | X | X | |
| Does Not Reside With At Least One Parent | [154]E | 30D UVS Upper ⅓ | 3 | 2.24* | | | |
| *Conservative Religious Norms* | | | | | | | |
| Religiosity | [55]B | 6M Any CU | 2 | 1.6† | | X | |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| Religiosity/Attendance | [55]B | 6M Any CU | 2 | NS | | X | |
| *Peer Norms* | | | | | | | |
| Peer Condom Use | [40]A | Unclear | 1 | (S) NG | X | X | X |
| Fewer Peers Use Contraception | [63]B | Last 5 <100% | 3 | 3.94*** | | X | X |
| Fewer Peers Use Contraception | [63]B | Last Sex NCU | 3 | 2.16* | | X | X |
| Fewer Peers Use Contraception | [63]B | 30D <50% | 3 | 2.14† | | X | X |
| Fewer Peers Use Contraception | [63]B | 30D <100% | 3 | 2.98* | | X | X |
| Fewer Peers Use Contraception | [63]B | 6M <50% | 3 | 2.75** | | X | X |
| Fewer Peers Use Contraception | [63]B | 6M <100% | 3 | 3.69*** | | X | X |
| Fewer Peers Use Contraception | [166]B | 6M Steady UVS | 4 | β=-.10* | | X | X |
| Fewer Peers Use Contraception | [166]B | 6M Casual UVS | 4 | NS | | X | X |
| Peer Norms Supporting High Risk Behavior | [156]G | 60D Proportion | 4 | β=-.10* | X | | |
| **Personal Risk Factor** | | | | | | | |
| *Knowledge* | | | | | | | |
| AIDS/STD Knowledge | [30]C | 90D 5pt Likert | 4 | -.14 | X | X | X |
| AIDS/STD Knowledge | [154]E | 30D UVS | 3 | NS | | | |
| *Beliefs* | | | 3 | | | | |
| Perceived Barriers to Condom Use | [63]B | Last 5 <100% CU | 3 | 2.67* | | X | X |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| Perceived Barriers to Condom Use | [63]B | Last Sex NCU | 3 | 2.39* | | X | X |
| Perceived Barriers to Condom Use | [63]B | 30D <50% CU | 3 | 3.05** | | X | X |
| Perceived Barriers to Condom Use | [63]B | 30D <100% CU | 3 | 3.41** | | X | X |
| Perceived Barriers to Condom Use | [63]B | 6M < 50% CU | 3 | 2.20* | | X | X |
| Perceived Barriers to Condom Use | [63]B | 6M < 100% CU | 3 | 1.94† | | | |
| Less Beliefs in Condoms | [166]B | 6M Steady UVS | 4 | NS | | | |
| Less Beliefs in Condoms | [166]B | 6M Casual UVS | 4 | β=.23 | | | X |
| Pleasure Expectancies | [175]F | 90D Proportion | 3 | β=.26* | | X | |
| Obligation expectancies | [175]F | 90D Proportion | 3 | NS | | X | |
| Condom Attitudes Take Fun Away | [161]G | 60D Any UVS | 4 | 1.76* | X | | |
| Condom Attitudes Take Fun Away | [161]G | 14D Any UVS | 4 | 2.14** | X | | |
| Condom Attitudes Take Fun Away | [161]G | Last Sex | 4 | 2.90*** | X | | |
| Condom Attitudes | [154]E | 30D UVS | 3 | NS | | | |
| Perceived Barriers | [154]E | 30D UVS | 3 | NS | | | |
| *Perceived Vulnerability* | | | | | | | |
| Perceived Invulnerability | [166]B | 6M Steady UVS | 4 | β=.10 | | X | X |
| Perceived Invulnerability | [166]B | 6M Casual UVS | 4 | NS | | | |
| Perceived Risk of AID | [30]C | 90D | 4 | β=.29* | X | X | X |
| *Psychological Distress* | | | | | | | |
| Depression (8 item CES-D) | [91]B | 6M <100% | 2 | 2.1*** | | X | |
| Life Stress | [30]C | 90D 5 pt Likert | 4 | NS | X | X | X |
| Depression (8 item CES-D) | [155]G | 14D Proportion | 3 | NS | | | |
| *Self Esteem* | | | | | | | X |
| Rosenberg Self Esteem | [103]B | 30D UVS | 4 | NS | X | X | X |
| Rosenberg Self Esteem | [155]G | 14D Proportion | 3 | .01 | | | |
| Personal Power | [30]C | 90D 5pt Likert | 4 | -.05 | | | |
| Body Image | [180]B | 30D NCU | 2 | 1.6* | | | |
| Body Image | [180]B | 6M NCU | 2 | 1.4† | | | |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| Body Image | [180]B | 6M Any UVS | 2 | 1.6* | | | |
| **Physical Risk** | | | | | | | |
| *History of Abuse* | | | | | | | |
| Dating Violence | [75]B | 6M 100% | 2 | .5* | X | | |
| History of Abuse | [158]H | 90D Proportion | 2 | NS | | | |
| History of Abuse | [158]H | 90D Proportion | 2 | NS | | X | |
| Sexual Abuse/Sexual Violence | [157]G | 60D 100% | 4 | (S) .44 | X | | X |
| Sexual Abuse/Sexual Violence | [157]G | 60D 50% | 4 | (S).51 | X | | X |
| Sexual Abuse/Sexual Violence | [157]G | Last Sex | 4 | (S).56 | X | | X |
| Sexual Abuse/Sexual Violence | [157]G | 60D 100% | 4 | (S).44 | X | | X |
| Sexual Abuse/Sexual Violence | [157]G | 60D 50% | 4 | (S).52 | X | | X |
| Sexual Abuse/Sexual Violence | [157]G | Last Sex | 4 | (S).56 | X | | X |
| *Partner Disapproves of Safer* | | | | | | | |
| Partner Barriers | [166]B | 6M UVS <100% | 4 | NS | | | |
| Partner Barriers | [166]B | 6M UVS <100% | 4 | NS | | | |
| Perceived Partner Acceptance | [175]F | 90D Proportion | 3 | β=.26* | | | X |
| Partner Trust | [175]F | 90D Proportion | 3 | NS | | | |
| Fear of Condom Negotiation | [161]G | 14D UVS | 4 | 1.96*** | X | | |
| Fear of Condom Negotiation | [161]G | 60D UVS | 4 | 2.42*** | X | | |
| Fear of Condom Negotiation | [161]G | Last Sex | 4 | 1.68*** | X | | |
| Fear of Condom Negotiation | [157]G | Last Sex | 4 | (S) .95 | X | | X |
| Fear of Condom Negotiation | [157]G | 60 50% | 4 | (S) .92 | X | | X |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| Fear of Condom Negotiation | [157]G | 60 Cons | 4 | (S) .88 | X | | X |
| Fear of Condom Negotiation | [166]B | 6M Casual | 4 | NS | | | |
| Fear of Condom Negotiation | [166]B | 6M Steady | 4 | NS | | | |
| *Sexually Explicit Media* | | | | | | | |
| Exposure to Rap Videos | [81]B | NCU | 1 | 1.1 | X | X | |
| *High Risk Partners* | | | | | | | |
| Concurrent Partners | [154]E | 30D UVS | 3 | NS | | | |
| Partner Intoxicated During Sex | [178]G | 60D UVS <100% | 3 | 1.89** | X | | X |
| Partner Decides Sex | [166]B | 6M UVS Steady | 4 | NS | | | |
| Partner Decided Condoms | [166]B | 6M UVS Steady | 4 | NS | | | |
| Partner Decides Sex | [166]B | 6M UVS Casual | 4 | β=.23* | | X | |
| Partner Decided Condoms | [166]B | 6M UVS Casual | 4 | NS | | | |
| Power Favors Male | [161]G | 60D <100% | 4 | 1.54* | X | | |
| Power Favors Male | [161]G | 14D <100% | 4 | NS | X | | |
| Power Favors Male | [161]G | Last Sex UVS | 4 | 1.45* | X | | |
| Partner Control Normative | [166]B | 6M Steady UVS | 4 | .11* | | X | X |
| Partner Control Normative | [166]B | 6M Casual UVS | 4 | NS | | | |
| **Behavioral Risk Factors** | | | | | | | |
| *Alcohol and Drug Use* | | | | | | | |
| Drug or Alcohol Use Last 3 Mo | [158]H | 90D Proportion | 2 | -.14* | | X | X |
| Drug or Alcohol Use Last 3 Mo | [158]H | 90D Proportion | 2 | NS | | | |
| Marijuana Use Last 30 D | [154]E | 30D UVS | 3 | NS | | | |
| Lab Tested Marijuana Use | [177]B | 6M < 100% | 2 | 3.6* | | X | |
| Lab Tested Marijuana Use | [177]B | 30D NCU | 2 | 2.9* | | X | |
| Intoxicated During Sex | [178]G | 60D <100% | 3 | 1.92*** | X | | X |
| *Communication* | | | | | | | |
| Frequency of Sexual Communication | [52]B | Last Sex NCU Steady partner | 3 | 1.57* | | | |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| Frequency of Sexual Communication | [52]B | Last Sex NCU Any Partner | 3 | 1.53* | | | |
| Frequency of Sexual Communication | [52]B | Last 5 Steady 50% | 3 | 1.60* | | | |
| Frequency of Sexual Communication | [52]B | Last 5 Casual 50% | 3 | 1.55* | | | |
| Frequency of Sexual Communication | [63]B | Last Sex NCU <100% | 3 | 2.24* | | X | |
| Frequency of Sexual Communication | [176]B | Last Sex Casual CU | 3 | r=.22* | | | |
| Frequency of Sexual Communication | [176]B | Last Sex Steady CU | 3 | r=..14* | | | |
| Frequency of Sexual Communication | [176]B | 30D, Steady Proportion CU | 3 | r=..16* | | | |
| Frequency of Sexual Communication | [176]B | 6M Casual Proportion CU | 3 | r=.20† | | | |
| Frequency of Sexual Communication | [176]B | 30D Casual Proportion CU | 3 | r=.33* | | | |
| Frequency of Sexual Communication | [176]B | 6M Steady Proportion CU | 3 | r=.15* | | | |
| Frequency of Sexual Communication | [154]E | 30D UVS Upper ⅓ | 3 | 2.88 | X | X | X |
| Frequency of Sexual Communication | [63]B | 6M <100% | 3 | 1.89† | | X | |
| Frequency of Sexual Communication | [63]B | 6M <50% | 3 | 1.15 | | X | |
| Frequency of Sexual Communication | [63]B | 30D <100% | 3 | 1.84 | | X | |
| Frequency of Sexual Communication | [63]B | 30D <50% | 3 | 1.47 | | X | |
| Frequency of Sexual Communication | [63]B | Last 5, <100% | 3 | 1.74 | | X | |
| Frequency of Sexual Communication | [166]B | 6M, Casual UVS | 4 | NS | | | |
| Frequency of Sexual Communication | [166] | 6M, Steady UVS | 4 | NS | | | |
| Frequency of Sexual Communication | [176]B | 6M, Casual UVS | 3 | NS | | | |
| Assertion Skills | [30]C | 90D 5 pt Likert | 4 | r=.-.10 | X | X | X |

| **Domain**<br>***Construct Definition*** | **ID** | **Condom Definition** | **Quality Score** | **Result** | **SDL** | **AASN** | **SDP** |
|---|---|---|---|---|---|---|---|
| *Skill* | | | | | | | |
| High Demonstrated Ability | [99]B | 6M Any UVS | 4 | .95 | X | | |
| High Demonstrated Ability | [99]B | 30D Any UVS | 4 | 1.11 | X | | |
| High Demonstrated Ability | [99]B | Last 5, < 50% Casual | 4 | 1.76 | X | | |
| High Demonstrated Ability | [99]B | Last 5, < 50% Steady | 4 | .87 | X | | |
| High Demonstrated Ability | [99]B | Last Sex Casual NCU | 4 | 1.13 | X | | |
| High Demonstrated Ability | [99]B | Last Sex Steady NCU | 4 | 1.44 | X | | |
| Application SE | [155]G | 14D Proportion | 3 | NS | | | |
| *Self Efficacy* | | | | | | | |
| Self Efficacy to Negotiate Condom Use | [30]C | 90D 5pt Likert | 4 | β=.28* | X | X | X |
| Self Efficacy to Negotiate Condom Use | [157]G | 60D <50% | 4 | (S) 1.07 | X | | |
| Self Efficacy to Negotiate Condom Use | [157]G | 60D <100% | 4 | (S) 1.11 | X | | |
| Self Efficacy to Negotiate Condom Use | [157]G | Last Sex CU | 4 | (S) 1.05 | X | | |
| Self Efficacy to Negotiate Condom Use | [154]E | 30D UVS | 3 | NS | | | |
| Self Efficacy to Obtain and Use Condoms | [158]H | 90D Proportion | 2 | NS | | | |
| Self Efficacy to Obtain and Use Condoms | [158]H | 90D Proportion | 2 | NS | | | |
| Condom Self Efficacy | [40]A | Unclear | 1 | (S) NG | X | X | X |
| Refusal Self Efficacy | [40]A | Unclear | 1 | (S) NG | X | X | X |
| Refusal of Unsafe Sex | [109]B | 6M Typical | 2 | 1.26* | | | |
| *Perceived Control* | | | | | | | |
| Relationship Power | [30]C | 90D 5pt Likert | 4 | β=.21 | X | X | X |
| Interpersonal Power | [30]C | 90D 5pt Likert | 4 | NS | X | X | X |
| Generalized Locus of Control | [155]G | 14D Proportion | 3 | β=.21 | X | X | |
| Sexual Relationship Power | [158]H | 90D Proportion | | NS | | | |

# CHAPTER 3: Condom use among African American female adolescents and young women: Modeling the Theory of Gender and Power

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**Abstract**

The Theory of Gender and Power (TGP) has been used to guide three evidence-based interventions to reduce HIV risk among African American females, but the indirect relationships between each construct and sexual behaviors have not been articulated. This study empirically tested how TGP constructs predicted condom use in African-American female adolescents. The data were collected pre-intervention during a randomized controlled HIV Prevention trial (N=701). The participants were sexually active, unmarried African-American females aged 14-21 who were not pregnant, recruited from health clinics in a southeastern U.S. city. The questionnaire included demographic, psychosocial, and sexual history measures. Structural equation modeling was used to model relationships between TGP constructs and condom use. The sample was randomly split in order to develop and validate the model. Theoretical associations, confirmed empirically by the measurement model, yielded a well-fitting model across both samples. The model explained a significant amount of variance for the latent variables of condom use ($R^2$=.31,.18), partner communication ($R^2$=.30,.26), substance use before sex ($R^2$=.32,.51), and negative personal affect ($R^2$=.36,.48). Partner communication (.35, .38), negative personal affect (-.41, -.37), and physical risk (.54, .54) were the strongest predictors of condom use, partner communication, and negative personal affect, respectively. This model provides evidence to support both direct and indirect associations between condom use and associated social and behavioral risk factors. Understanding the interrelationships between TGP constructs as well as direct and indirect associations with condom use can help guide future analyses of interventions guided by this important theory.

## Introduction

Adolescents who are sexually active are at higher risk for sexually transmitted infections (STIs) compared to adults, and African American adolescents and young adults are overrepresented in rates of STI incidence [8]. In 2007 in the 13-19 age group, African American adolescents accounted for nearly three quarters of HIV/AIDS infections diagnosed in 34 states [9]. The same year, the CDC called for a heightened response to the disease among African Americans and noted that African Americans are at greater risk for HIV/AIDS due to structural and environmental factors [1]. Wingood and DiClemente [34] have outlined how multiple social and structural factors have powerful repercussions for women in their application of Connell's [33] sociological theory of gender and power (TGP) to HIV risk. The authors describe being an ethnic minority and being younger than 18 as specific risk factors that increase vulnerability to HIV, and the theory provides a unique framework for understanding HIV risk among African American young women.

The TGP is one of the major underlying theoretical frameworks guiding the design of three evidence-based HIV interventions developed for African American women by Wingood and DiClemente [35], and the CDC is preparing to disseminate these interventions nationally [36]. While the theory partitions myriad influences into three domains of HIV risk for women, a smaller set of potentially more proximal influences have not been formally articulated as central to explaining risk behavior [32]. Additionally, the potential for the remaining factors to impact risk behavior indirectly has not been formally tested in the context of the entire theory. This study sought to test a comprehensive model of direct and indirect effects of constructs defined by the TGP on

condom use among African American young women. An empirical test of all three domains of the TGP in a predictive model of condom use can provide insight into how to measure and model the associations among the constructs, and extend its utility through illuminating pathways and potential mediators as targets for intervention development. First, the framework and associations with condom use are described. Second, the literature that has explored associations between domains in bivariate contexts that provided the basis for the model that was tested is presented.

### *The TGP: Three Domains of Acquired Risks and Risk Factors*

The adaptation of the TGP from Connell [33] defined three domains of risk: the sexual division of labor, the structure of affective attachments and social norms, and the sexual division of power [34]. Previous research has related social and economic constraints as opposed to ethnicity to sexual risk taking activity [136], and the TGP calls these forces "acquired risks" and classifies them by domain. Acquired risks generated by the sexual division of labor (economic risks) encompass economic inequities such as low socioeconomic status and lack of a high school education which have been associated with lower rates of contraception at first intercourse among adolescents [37]. Acquired risks produced by the structure of affective attachments and social norms (social risks) demarcate social inequities that enforce gender roles. Risks in this domain that have been tested as correlates of condom use among African American young women include older partners [46, 160] and family influences [52]. Although not included in the TGP, peer norms not supportive of condom use have also been associated with unprotected sex [63]. Acquired risks created by the sexual division of power (physical risks) delimit social risks that are characterized by power imbalances. In this domain, interpersonal violence

and partner disapproval of practicing safe sex have been associated with condom use among African American young women [46, 75]. These acquired risks increase the importance of assessing "risk factors" which are those psychosocial constructs that are associated with engaging in risk-taking behaviors [34].

Risk factors within the TGP are also classified by domain [34]. Risk factors within the sexual division of labor that relate to HIV risk behavior are considered to be socioeconomic and consist of being a minority or being under the age of 18 [34] and these are borne out by the HIV and STI statistics described earlier [8, 134]. Personal risk factors described as part of the structure of affective attachments and social norms associated with HIV risk among African American young women include knowledge of HIV prevention [62] and a history of psychological distress [91]. Self esteem might also be important to consider in this domain based on associations with risk behavior among adolescents [185]. Behavioral risk factors included in the sexual division of power that have been associated with inconsistent condom use or unprotected sex in this population include substance use [62], poor assertive communication skills [60], infrequent sexual communication [52], lower self efficacy to avoid HIV [57], and limited perceived control over condom use [57]. The three domains of the TGP are theorized to operate in concert with one another to increase the risk of HIV among females [34].

### *The Conceptual Model: Relationships Among Acquired Risks and Risk Factors*

The hypothesized model for the TGP used in this article is provided in Figure 1 and is used now to articulate relationships among domains and factors. Acquired

economic, social and physical risks have demonstrated associations with personal risk factors. The economic risk of socioeconomic status has been found to be associated with the affective personal risks of depression [100] and self-esteem [101]. Parental communication about sex has also demonstrated significant association with self-esteem [103]. Multiple studies of adolescents have demonstrated a positive association between the physical risks of child sexual abuse, forced intercourse or physical abuse and the personal risk factors of depression [70, 100, 105, 106] and self-esteem [105, 107].

Acquired social and physical risks have also been shown to influence behavioral risk factors among youth. Frequency of parental communication about sex has been found to be associated with partner communication [52] and self-efficacy for communication about sex with a partner [108]. Experiencing violence has been shown to be negatively associated with condom use negotiation [107, 110]. Substance use before sex [68, 70] and substance use more generally [105, 112] have also been correlated with experiencing sexual trauma among adolescents.

Personal risk factors may impact behavioral risk factors. Depression has been associated with lower self-efficacy to negotiate condom use [91] and self-esteem has demonstrated significant association with partner communication in this population [103]. A study which found that higher knowledge of HIV risk was paradoxically associated with inconsistent condom use also found that the same young women possessed less confidence in using condoms [88], implying that relationships between personal risk, behavioral risk and condom use are interrelated.

***The Present Study***

A great advantage to designing interventions based on frameworks such as the TGP is that the theoretical constructs provide psychological and behavioral targets to improve the likelihood of behavioral change. Interventions aimed at changing behaviors (e.g. condom use) often do so by enhancing theoretical mediators of the behavior (e. g. condom use negotiation) [113]. It is also of value to explore these mediators not only as intervention targets but as potential links in multiple chains that begin with other theoretical constructs in order to explicate how those factors fit into a larger mechanism that predicts condom use. Additionally, analysis of theoretical constructs that may be antecedents to important mediators of behavioral change can illuminate whether background variables indicate important areas of diversity in the target population and can aid in the refinement of intervention strategies [114].

Developing statistical models in the social sciences can lead to conclusions that are dependent upon validation in other samples. Indeed, "models are best regarded as approximations to reality rather than as exact statements of truth" [186]. A practice that allows researchers to develop a model through exploratory methods in one sample and test the best fitting model as a legitimate hypothesis in another is that of cross validation [187]. When two samples are not available, a single sample may be randomly split into a calibration and validation sample. In structural equation modeling, hypotheses regarding measurement of constructs and associations between constructs can be confirmed in this manner.

This study empirically tested how acquired economic, social and physical risks and personal and behavioral risk factors directly and indirectly predicted condom use among African American young women. No studies have tested communication as a

central mediator of acquired risks of all three domains of the TGP. Furthermore, conservative religious beliefs have not been previously measured in a manner consistent with the TGP among a sample of African American young women. The study goals were to randomly split a sample of African American young women into calibration and validation samples and (1) test a measurement model of observed variables and latent constructs described by the TGP, (2) test a structural equation model of the latent variables and (3) validate the model through multi-group analysis with equality constraints using structural equation modeling.

## Methods

### *Procedure*

This study is a secondary analysis of data collected at the baseline time point of a randomized controlled trial. Participants were recruited at health clinics in a southeastern metropolitan city. To be eligible, African American females, aged 15-21, must have been sexually active in the past six months and could not be married or pregnant. Following determination of eligibility, informed consent was obtained and the questionnaire was administered using Audio Computer-Assisted Self-Interviewing. Baseline data were collected from July 2005 to June 2007. The questionnaire, guided by the TGP and social cognitive theory, included demographics as well psychosocial and behavioral measures. The study was approved by the Emory University Institutional Review Board.

### ***Measures***

The measures below are organized according to Figure 1. Internal consistency as measured by Cronbach's alpha is included for each scaled used in the model analysis.

## Acquired Risks

### *Sexual Division of Labor*

*Assistance Received* was measured using the question "In the past 12 months, did you or anyone you live with receive any money or services from any of the following?" and a list was provided that included sources such as welfare and food stamps. Responses were coded as 0 = no assistance, 1 = any assistance. *Employment* was measured using the questions "Do you have a job for which you are paid?" Responses were coded as 0=employed, 1=unemployed. *Education* was measured using the question "What is the last grade you completed in school?" Responses were coded as 0=high school graduate, 1= less than high school. The three items were summed to create an index representing acquired risk stemming from the sexual division of labor, with greater levels indicating greater acquired risk (Calibration $\alpha$=.44, Validation $\alpha$=.55). .

### *Structure of Affective Attachments and Social Norms*

*Older partners* was measured using the question "In general how old are the people you have sex with, are they…" The 5-point response ranged from "Much younger than you (4 or more years)" to "Much older than you (4 or more years). Higher levels indicated older partners.

*Frequency of parental sexual communication* was measured using a validated five item scale [170]. Questions included the stem "In the last six months, how often have you and your parent(s) talked about ". Examples of items were "sex" and "how to use a condom".

The responses were a four item Likert scale anchored by "Never" and "Often". Higher scores indicated greater frequency of parental communication (Calibration α=.92, Validation α=.91).

*Peer norms* was measured using 7 items from the perceived peer norms scale. Items began with the stem "How many of your friends think that:" and a sample question was "It's okay to have vaginal or anal sex without a condom". Items were 4-point Likert scales anchored by "None" and "Most". Higher levels indicated higher perceptions of unsafe sexual norms among peers (Calibration α=.76, Validation α=.76).

*Conservative religious beliefs* was measured using a three item scale that included questions such as "Because of my religious beliefs I feel bad when I use condoms during sex". Responses were 4-point Likert scales that range from "Strongly Disagree" to "Strongly Agree". Items were summed to indicate higher levels of conservative religious beliefs (Calibration α=.68, Validation α=.71).

*Sexual Division of Power*

*Coerced sex* was measured using the question "Has anyone ever forced you to have vaginal sex when you didn't want to? Responses were coded as 0=No, 1=Yes.

*Physical abuse* was measured using the question "Have you ever been physically abused?" Responses were coded as 0=No, 1=Yes.

*Emotional abuse* measured using the questions "Have you ever been emotionally abused? (threatened, called names, etc.)" Responses were coded as 0=No, 1=Yes.

*Fear of condom negotiation* was measured by a seven item scale [188]. Items began with the stem "I have been worried that:" and included items such as "if I talked about using

condoms with my boyfriend or sex partner he would ignore my request". Responses were 5-point Likert scales ranging from "Never" to "Always". Higher scores indicated greater fear of condom negotiation (Calibration α=.80, Validation α=.83).

Risk Factors

*Sexual Division of Labor*

*Age* was measured using the respondent's age at baseline.

*Affective Attachments and Social Norms*

*Self esteem* was measured using the Rosenberg Self Esteem scale [189]. This is well-validated scale that includes items such as "I feel that I am a person of worth". Responses were 4-point Likert scales anchored by "Strongly Disagree" to "Strongly Agree". Items were coded such that higher levels indicated lower self- esteem (Calibration α=.86, Validation α=.86).

*STD Knowledge* was measured using the STD Knowledge scale [190]. The scale included 11 true/false items such as "Birth control pills protect women against the AIDS virus. Higher scores indicated greater knowledge (Calibration α=.76, Validation α=.70).

*Depression* was measured using the eight-item shortened version of the Center for Epidemiologic Studies (CES-D) [191]. Questions included "I felt depressed". The item responses had four levels ranging from "Less than 1 day" to "5-7 days". Higher scores indicated greater levels of depression (Calibration α=.90, Validation α=.91).

*Sexual Division of Power*

*Use of substances during sex* was measured using three items that asked if the participant had used marijuana, alcohol or ecstasy and/or GHB to enhance sexual pleasure. Responses included four levels ranging from (0) "Never" to (3) "Often (5 or more times)".

*Refusal Self-Efficacy* was measured using the seven item refusal self-efficacy scale [192]. Items began with the stem "How sure are you that you would be able to say NO to having sex with someone:" and included items such as "after you have been drinking alcohol". Responses were 4 point Likert scales anchored by "I Definitely Can't Say No" to "I Definitely Can Say No." Higher levels indicated higher levels of refusal self efficacy (Calibration $\alpha$=.87, Validation $\alpha$=.87).

*Frequency of partner communication about sex* was measured using three items from the validated Partner Communication Scale [176]. Items began with the stem "During the last 90 days, how many times have you and your boyfriend or sex partner(s) talked about …" An example item was "how to use condoms?" Items were 4-point Likert scales anchored by "Never" and "7 or more times". Higher levels indicating greater partner communication about sex (Calibration $\alpha$=.85, Validation $\alpha$=.87).

*Partner communication self efficacy* was measured using a three item scale with questions that began with the stem "How hard is it for you to …" A sample item was "Ask if he would use a condom?" Item responses were 4-point Likert scales anchored by "Very hard" to "Very easy". Higher levels indicated higher self-efficacy. (Calibration $\alpha$=.78, Validation $\alpha$=.84).

*Behavioral Outcomes*

Outcome variables included whether the participant used a condom at last sex and the number of times the participant engaged in unprotected sex during the last six months. The latter was computed by subtracting the number of times the participant had used a condom during sex in the last six months from the number of times the participant had had sex in the last six months. The number of unprotected vaginal sex acts (UVS) at last six months was highly skewed, precluding its use as a ratio level indicator of condom use. UVS and proportion of condom use often create distributional problems that result in dichotomizing the proportion using various methods including always using versus never or sometimes (consistent condom use), never using versus always or sometimes (any condom use), or splitting at less than 50% and 50% or greater. Researchers have argued that UVS or a measure that "weights" condom use by number of sex acts is superior to proportions [140, 141]. As UVS presented distributional problems, it was instead used to derive the most appropriate proportional split. Analysis of the association of aforementioned dichotomization options with UVS showed that the <50%/ ≥50% split resulted in a nonparametric correlation of -.62 which was higher than that of consistent condom use (-.51) and any condom use (.16) and therefore was selected as the second indicator of condom use.

*Data Analysis*

The model was tested using structural equation modeling. The sample was randomly split into two groups (n=300, n=400) in order to employ a cross-validation strategy [193]. Using this method, a calibration sample was used to test a hypothesized model and conduct post-hoc analyses in order to attain a well-fitting model [186]. The best-fitting model was the hypothesized model applied to the remainder of the sample

which served as the validation sample. The sample size allowed for a complex model to be tested. Although Bentler and Chou [194] assert that the ratio of sample size to parameters to be estimated may only go as low as 5:1 if assumptions of normality are met, other research has demonstrated that this ratio may not be as important as absolute sample size and the reliability of latent variable indicators, particularly in samples greater than 200 [195].

***Model Development***

Prior to analysis, variable distributions were evaluated and outliers reviewed. Bivariate statistics were used to assess the suitability of observed variables as indicators. For the domain of the sexual division of labor, a composite scale [196] was used to represent acquired risk as an observed independent variable by summing its proposed indicators. The low internal consistency indicated that the residual error variance should be fixed at zero so as not to inflate associations with the variable by accounting for a disproportionate amount of measurement error. Taking into account the suitability of variable distributions and associations with the outcome variables and other independent variables, fear of condom negotiation and refusal self efficacy were removed from the model. Fear of condom negotiation was markedly skewed and failed to demonstrate any hypothesized associations. Refusal self efficacy did not demonstrate an association with either measure of condom use and was therefore considered to be inappropriate as an indicator of behavioral risk. For other scales such as partner communication and conservative religious beliefs, theoretical considerations, item to total analysis and hypothesized associations were used to select subscales that were best suited to capture the theoretical construct (e.g. questions specifically pertaining to condom use). Finally, if

measured indicators of latent variables representing the acquired risks and risk factors were not associated with one another, the latent variable was separated into multiple factors in order to capture TGP constructs as one dimensional. For example, variables indicating substance use before sex were not associated with the partner communication self-efficacy or partner communication frequency scales. Therefore, behavioral risk was divided into the latent factors of substance use before sex and communication. Similarly, the four indicators of acquired social risk did not demonstrate associations that would warrant inclusion as indicators of a one dimensional phenomenon. These scales were retained as single indicators of separate of latent variables.

Using confirmatory factor analysis (CFA) procedures [193] in Mplus Version 5.0 [197], the latent variables were analyzed as correlated factors. For latent variables with single indicators, the reliabilities for the observed indicators described in the measures were computed and the residual variances of the observed variable were fixed [198]. All ordinal and categorical variables were indicated as such within Mplus and models were estimated using, a robust weighted least squares estimator (WLSMV) that adjusts the chi-square for non-normality using a scaling factor [199]. The measurement model was assessed for fit using the Comparative Fit Index (CFI) [200] and the RMSEA [201]. A CFI that is very close to .95 or greater and an RMSEA that is very close to .06 or less are considered to be indicative of good fit [202]. Following the confirmation of a valid measurement model, a structural model based on the one described in Figure 1 was tested. The structural paths between latent factors included in the model were those that aligned with the theoretical associations indicated by the literature in Figure 1 that also demonstrated corresponding significant bivariate associations in the measurement model

for the calibration sample displayed in the bottom half of the correlation matrix in Table 1. Adjustments to the model were made in an iterative fashion, based on the significance of path coefficients and theoretical justifications.

### *Model Validation*

Observed variables for the validation sample were computed based on the observed variables in the calibration sample. The data were merged with the calibration sample and tested for multi-group invariance across intercepts, thresholds, factor loadings, and path coefficients using Mplus [197]. Parameters for the validation sample were first estimated separately to establish that the model developed using the calibration sample was appropriate for the validation sample [193]. Following this, the model was tested with the data from both groups simultaneously with the aforementioned parameters constrained to be equal across groups. The significance of releasing an equality constraint was estimated using a chi-square difference test.

## Results

### *Model Development*

Descriptive statistics were analyzed for outliers and the final model was run with and without cases identified as outliers. Although the removal of outliers produced no changes to the interpretation, an extreme outlier based on UVS was removed (the participant reported 100 more sex acts than the next highest participant). There was minimal missing data (N=13) for the economic index variable and all cases were retained

in the analysis. The descriptive statistics for the calibration sample are available by request.

The measurement model provided a good fit to the data (CFI=.94 and RMSEA=.05). Paths described by the hypothesized model that demonstrated significant bivariate associations in the measurement model were retained in model testing. The structural model demonstrated a good fit, with a CFI of .94 and an RMSEA of .05. However, it was noted that the latent variable of knowledge did not demonstrate a hypothesized association at the level of $p < .10$ and it was dropped from the model in the interest of parsimony. The final, more parsimonious model afforded slightly better fit statistics (CFI = .95, RMSEA = .05).

***Model Validation***

As in the calibration sample, missing data were minimal; a single case was missing one of the indicators of condom use and 17 cases were missing the economic index variable. Descriptive statistics for the validation sample are available by request. The measurement model fit statistics were very similar to those of the calibration sample (CFI = .94, RMSEA=.05). Due to a non- positive definite matrix, the indicators of the latent variable condom use were fixed to be equal, and the variance of condom use was fixed to one. This more restrictive and parsimonious model allowed for successful estimation with the validation sample and the equality was retained in subsequent models across both samples. In the structural model for the validation sample , the fit deteriorated slightly (CFI=.93, RMSEA=.05) but was considered good enough to use for multiple group testing.

The multiple group model with intercepts, thresholds, factor loadings, and path coefficients constrained to be equal across groups demonstrated a good fit for the data (CFI=.95, RMSEA=.04). Based on the modification indices for the multiple group model and the latent variable correlations matrices displayed in Table 1, the equality constraint across samples for the path from physical exposure to condom use was removed. This resulted in a significant improvement to the model based on the chi-square ($\chi^2$ difference test = 10.65, *df*=1, p=001; CFI=.96, RMSEA=.04) . The final multi-group model is displayed in Figure 2.

The model explained a significant amount of variance across samples for the latent variables of condom use, partner communication, substance use before sex, and negative personal affect. In addition to direct effects, a number of indirect effects were found. The direct, indirect, and total effects are displayed in Table 2. The total effects of partner communication and parental communication indicated that these constructs were significant and positive predictors of condom use. The total effects of negative personal affect, older partners, and conservative religious beliefs were significant and negative predictors of condom use across both samples. The total effect of physical risk on condom use was negative and significant in the calibration sample. Partner communication and physical risk demonstrated direct effects on condom use, although the latter association was only true for the calibration sample. Negative personal affect, older partners, and parental communication demonstrated indirect effects on condom use through partner communication while physical risk and conservative religious beliefs demonstrated indirect effects on condom use through negative personal affect. Partner communication was directly predicted by negative personal affect, older partners, and

parental communication and indirectly predicted by economic risk, physical risk, and conservative religious beliefs. Substance use before sex failed to demonstrate a direct association with condom use but was significantly predicted by age, physical risk, peer norms not supportive of condom use, and older partners. There was also a significant association between the two behavioral risk latent variables of partner communication and substance use before sex.

**Discussion**

The purpose of this study was to test a predictive model of condom use based on the TGP. Structural equation modeling was used to model both direct and indirect effects and the sample was split to validate the model. Nearly all of the direct effects hypothesized in Figure 1 held across samples. Condom use was directly predicted by the behavioral risk of partner communication for both samples and acquired physical risk in the calibration sample. Behavioral risk (partner communication) was predicted by acquired social risk (parental communication, older partners) and personal risk defined as negative personal affect. Personal risk was predicted by economic risk, physical risk, and social risk (conservative religious beliefs). The only path not evidenced by any association between latent variables was the path from physical exposure to behavioral risk. However, this may have been because the indirect effect of physical risk on condom use and partner communication was mediated by negative personal affect. These findings have implications tailoring in future intervention research that applies the TGP among African American young women as well the measurement of TGP constructs.

Acquired risk from the sexual division of power and the sexual division of labor revealed numerous paths to condom use and its proximal predictors. The effect of economic risk on condom use through negative affect demonstrated a trend toward significance while its indirect effect on partner communication through negative affect was significant. These findings help explicate how socioeconomic factors, often included as control variables, may indirectly influence condom use. Physical risk only demonstrated a direct association with condom use in one sample. In both samples, it also failed to demonstrate an indirect association with condom use through communication that was included in the hypothesized model and has been demonstrated in a previous study [157]. However, it was found to indirectly impact condom use and communication through negative personal affect. The inclusion of personal affect in the hypothesized chain of effects represents a departure from the previous study [157] and may be important to consider in future intervention research. For example, it may be that some adolescents who have experienced violence need specialized treatment addressing the impact to their mental health prior to being ready to receive skills training for condom negotiation.

Acquired risks from the structure of affective attachments and social norms also demonstrated novel pathways of risk. Social risk, represented by older partners and parental communication about sex, indirectly predicted condom use through partner communication. In prior analyses, older partners have been associated with risk behaviors in models that did not control for partner communication related constructs [45, 46], providing evidence of the opportunity for this indirect association. Older partners also demonstrated an association with the behavioral risk of substance abuse

before sex. Parental communication was indirectly predictive of condom use through partner communication. Frequency of parental communication has been included as a covariate of partner communication in tests of associations between communication and condom use because of its potential as a confounder [52] implying it is possible for one variable to mediate the other. These results also confirm previous research on the association between parental communication about sex and communication with a partner about sex [52]. Peer norms not supportive of condom use only demonstrated significant associations with substance use before sex, but as that latent variable did not further demonstrate an association with condom use, it was impossible for peer norms to indirectly impact the behavior. However, the positive associations of physical risk, peer norms and older partners with substance use before sex are still of note as substance use before sex is considered to be a risk behavior. Finally, conservative religious beliefs were also indirectly associated with both condom use and partner communication via negative personal affect. Although greater religiosity has been found to be associated with increased odds of partner communication and demonstrated a trend toward increased odds of condom use [55], this study was testing the distinctly different construct of conservation religious beliefs that may impede condom use. Its impact was mediated through negative personal affect, suggesting that these beliefs may be associated with guilt about practicing safe sex.

The findings regarding risk factors were mixed. Personal risk, conceptualized as negative personal affect, indirectly predicted condom use through partner communication. These findings are consistent with previous associations between depression and condom use negotiation [91] and self esteem and partner communication

[103]. Substance use before sex did not achieve expected results. It was posited as representing behavioral risk and failed to demonstrate associations with condom use. A previous study that examined the participants' intoxication as well as the intoxication of the partners found that both types of intoxication were associated with UVS while controlling for partner communication self efficacy, but the intoxication measures were time sensitive (in the past 60 days) [178]. Therefore, a time sensitive measure of the use of alcohol or drugs during sex may have been a better conceptualization of the construct. The latent construct of substance use before sex did demonstrate associations with partner communication and this may suggest avenues for future research to help establish whether the former is an appropriate antecedent of the latter.

This study also reveals a number of important findings about the measurement of TGP constructs. The latent variable of partner communication was indicated by two three item subscales specific to condom use: partner condom communication self efficacy and frequency of partner communication about condoms. The reliability for these items was high and each was associated with both measures of condom use in both samples, suggesting that researchers interested in condom use outcomes may be able to utilize these shorter scales. Separating partner condom communication self efficacy into casual and steady partner scales, however, may increase the stability of the latent construct.

Negative personal affect was directly associated with partner communication as well as an indirect predictor of condom use, but this latent construct had only two indicators. Body image has been found to be associated with both self-esteem and depression in previous research as well as with sexual risk behaviors [180]. Ethnic pride has also been found to co-vary with self-esteem as part of the latent construct of self-

concept [203]. It is unknown as to whether it would fit as an indicator of overall affect. Additional research exploring whether body image or ethnic pride would be acceptable indicators of personal affect may be needed to strengthen this latent construct.

This study also found that dimensions of social exposure described by the TGP cannot be captured with a single latent variable. The literature indicates that parental communication about sex may be one of multiple indicators of parental influence on sexual risk behaviors in adolescence. For example, parental monitoring and family support have also been found to be predictive of condom use behaviors [173, 174] and family influence may warrant its own latent construct within the domain of affective attachments and social norms.

The results of this study also provide implications for tailoring interventions. For example, economic risk emerged as an indirect predictor of communication. Although the young women in this study were all African American and between the ages of 15 and 21, this distal predictor provides evidence that heterogeneity exists in important ways that can affect psychosocial mediators [204] that have been targets of HIV/STI risk reduction interventions. Adolescents who come from families who are economically disadvantaged (e. g. receiving government assistance, have less than a high school education, are unemployed) may have different or increased needs for various intervention components.

**Limitations**

Structural equation modeling, though powerful, is not without limitations. A well-fitting, validated structural model does not mean that alternative models do not exist.

The nature of secondary data analysis precludes the addition of instruments that measure additional or alternative constructs indicated by the TGP, and as a result the conceptualization of the theory is incomplete. The measures of economic and physical risk may have been less than adequate as evidenced by low reliability in the former and a lack of consistent association with the outcome in the latter and additional research is needed to enhance these measurements among adolescents. Economic risk as conceptualized by the TGP is particularly difficult to measure among young women as it is actually indicated by the young women's families in many cases. The size of the sample also limits the number of indicators of the TGP that can be included, requiring the selection of only the most salient constructs in order to test the theoretical relationships between the domains of the TGP. Additionally, the data is cross-sectional, and therefore causal inferences cannot be drawn based on the model. Finally, the nonrandom selection of participants means that generalizations must be made with caution.

**Conclusion**

This study also has a number of strengths. The cross validation strategy revealed that all but one of the paths tested in the calibration sample held in the validation sample, increasing the likelihood that these findings could be replicated. Many of the measures for this study were designed based on the TGP and created an opportunity to test associations among a number of theory constructs. Previously unexplored indirect effects for economic, social and physical risks were identified. A new measure of conservative religious beliefs that is more in line with the TGP description of religious influence was introduced and demonstrated hypothesized associations. Consistent with extant literature

[95], partner communication was a direct predictor of condom use. Additionally, partner communication and negative affect emerged as an important mediator of constructs within other domains of the TGP. As interventions guided by the TGP [35] are disseminated [36], this model may help to further sharpen theory measures and the findings related to associations between theory constructs may prove to be a helpful evolution for the TGP with respect to future evaluations of effectiveness.

**Figure 3.1. Conceptual model for the Theory of Gender and Power**

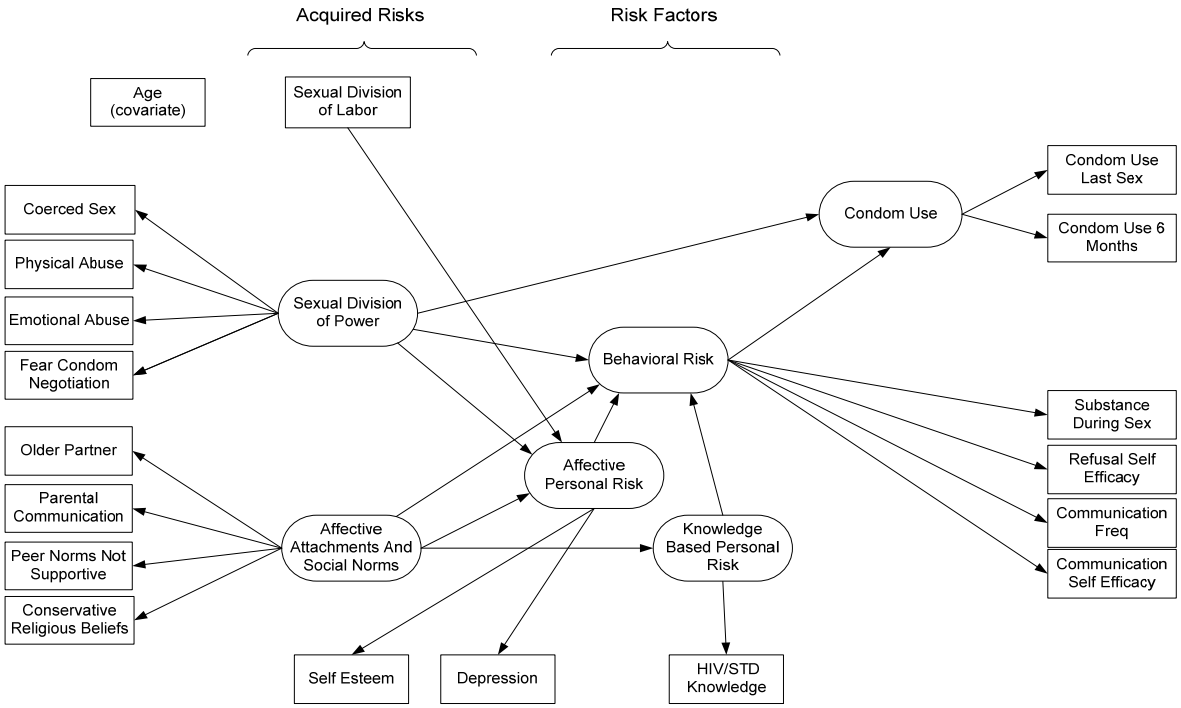
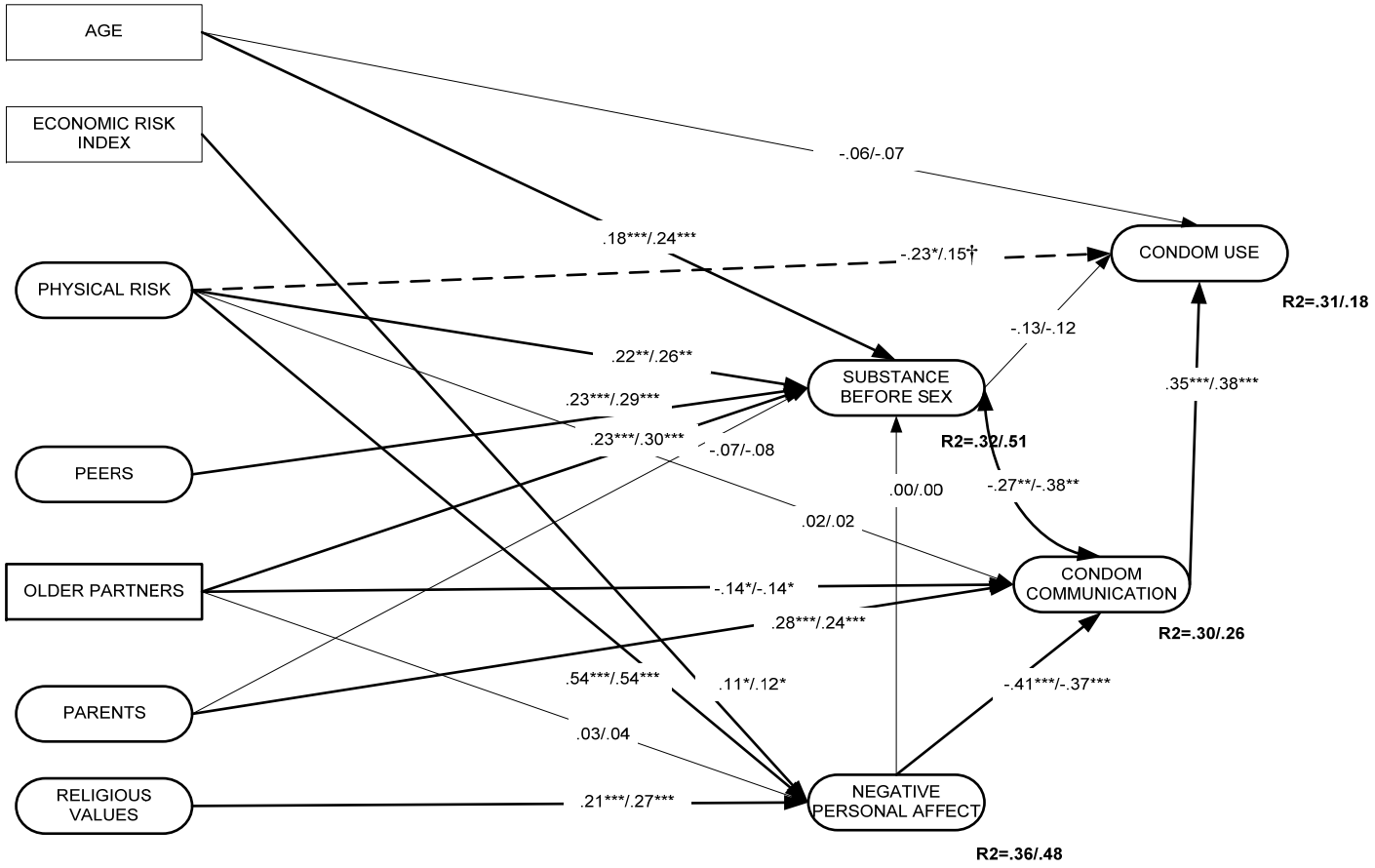


**Table 3.1. Latent Variable Correlations (Based on Independent Measurement Models)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Communication | | -.53*** | -.32*** | .17* | -.21* | -.24** | -.19* | .24** | -.36*** | -.08 | .44*** |
| 2. Sex After Substance Use | -.34** | | .24** | -.20* | .49*** | .44*** | .42*** | -.16† | .25** | .39*** | -.13 |
| 3. Negative Affect | -.72*** | .23* | | .07 | .58*** | .16* | .20** | -.14* | .36*** | .02 | -.04 |
| 4. Economic Exposure | .00 | -.10 | .20*** | | .04 | -.14* | -.11* | .25*** | -.12* | -.53*** | .01 |
| 5. Physical Risk | -.36** | .35*** | .62*** | .04 | | .37*** | .30*** | -.22*** | .31*** | .09 | -.08 |
| 6. Peer Norms | -.15 | .43*** | .09 | -.15* | .35*** | | .12* | -.14* | .23*** | .22*** | -.09 |
| 7. Older Partner | -.36*** | .39*** | .22** | -.03 | .31*** | .20*** | | -.09† | .09 | .06 | -.13* |
| 8. Parental Communication | .32*** | -.30*** | -.10 | .24*** | -.15* | -.18** | -.15** | | -.07 | -.21*** | .12† |
| 9. Conservative Religion | -.09 | -.05 | .27** | .06 | -.07 | -.13 | .03 | -.08 | | .03 | .06 |
| 10.Age | -.07 | .28*** | -.09 | -.56*** | .04 | .20*** | .09† | -.22*** | -.01 | | -.11 |
| 11.Condom Use | .63*** | -.42*** | -.34** | .04 | -.37*** | -.24* | -.15* | .27** | .09 | -.17* | |

Note: Calibration sample is under the diagonal, validation sample is over the diagonal

**Figure 3.2. Multi-Group Structural Equation Model (Standardized Coefficients) for the Theory of Gender and Power**




Note: Bold arrows denote statistically significant paths and the broken arrows denote a path not constrained to be equal across samples. For all other paths, inequality across samples is due to differential variability for the factor by sample.

**Table 3.2. Direct and Indirect Effects of Structural Equation Model**

| *Outcome* | Indirect Via Communication | | Indirect Via Substance Use | | Indirect Via Negative Affect | | Direct Effect | | Total Effect | |
|---|---|---|---|---|---|---|---|---|---|---|
| Independent Variable | Cal | Val | Cal | Val | Cal | Val | Cal | Val | Cal | Val |
| *Condom Use* | | | | | | | | | | |
| Age | | | -.03 | -.03 | | | -.06 | -.07 | -.08† | -.10† |
| Partner Communication | | | | | | | .35*** | .38*** | .35*** | .38*** |
| Substance Use Before Sex | | | | | | | -.13 | -.12 | -.13 | -.12 |
| Negative Personal Affect | -.14** | -.14** | .00 | .00 | | | | | -.14** | -.14** |
| Economic Risk | | | | | -.02† | -.02† | | | -.02† | -.02† |
| Physical Risk | .01 | .01 | -.03 | -.03 | -.08** | -.08** | -.23* | .15† | -.33*** | .05 |
| Peer Norms | | | -.03 | -.03 | | | | | -.03 | -.03 |
| Older Partners | -.05* | -.06* | -.03 | -.03 | -.01 | -.01 | | | -.08** | -.10** |
| Parental Communication | .10** | .09** | .01 | .01 | | | | | .11** | .10** |
| Conservative Religious Beliefs | | | | | -.03** | -.04** | | | -.03* | -.04* |
| *Partner Communication* | | | | | | | | | | |
| Negative Personal Affect | | | | | | | -.41*** | -.37*** | -.41*** | -.37*** |
| Economic Risk | | | | | -.05* | -.05* | | | -.05* | -.05* |
| Physical Risk | | | | | -.22*** | -.20*** | .02 | .02 | -.20** | -.18** |
| Older Partners | | | | | -.01 | -.01 | -.14* | -.14* | -.15** | -.16** |
| Parental Communication | | | | | | | .28*** | .24*** | .28*** | .24*** |
| Conservative Religious Beliefs | | | | | -.08** | -.10** | | | -.08** | -.10** |
| *Substance Use Before Sex* | | | | | | | | | | |
| Age | | | | | | | .18*** | .24*** | .18*** | .24*** |
| Negative Personal Affect | | | | | | | .00 | .00 | .00 | .00 |
| Economic Risk | | | | | .00 | .00 | | | .00 | .00 |
| Physical Risk | | | | | .00 | .00 | .22** | .26*** | .22** | .26*** |
| Peer Norms | | | | | | | .23** | .29*** | .23*** | .29*** |
| Older Partners | | | | | .00 | .00 | .23*** | .30*** | .23*** | .30*** |
| Parental Communication | | | | | | | -.07 | -.08 | -.07 | -.08 |
| Conservative Religious Beliefs | | | | | .00 | .00 | | | .00 | .00 |

†p < .10, * p < .05, ** p < .01, *** p < .001

# CHAPTER 4: Relational expectations and sexual risk reduction strategies among African American young women: A qualitative study of the impact of parents and peers

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Abstract

Many quantitative studies have explored the association of familial and peer influences on sexual decision making. However, the processes by which parent and peer support and communication influence these decisions have not been fully explored. This study sought to better understand how the quality of adolescent relationships with caregivers and close friends and the content of sexual communication impact African American young women's emotional and sexual expectations for their dyadic relationships, and how those expectations might relate to sexual risk reduction strategies with an emphasis on condom use. Using qualitative methods, a sample (N=20) of African American young women aged 18-22 were interviewed in depth to elicit the descriptions of relationships with family and friends, their opinions and beliefs about sex, and narratives of sexual decision making. The interview guide was developed using the Theory of Gender and Power and existing literature; however, the authors were open to questioning the framework and previous research as well as searching for contradicting evidence. The core category was control/decision. Key themes with respect to parents were sharing, support and parental role. Expectations of relationships varied based on the nature of parental relationships and sexual decision making was related to these expectations. Pregnancy emerged as having different meanings for sexual decision making. It was difficult discern a pattern between relational expectations and peer relationships. Findings are discussed in the context of attachment theory, contributing to the theoretical understanding of sexual decision making among African American young women.

## Introduction

Sexual risk reduction strategies such as condom use have important implications for African American young women. Epidemiological indicators reveal these young women to be disproportionately impacted by sexually transmitted infections (STIs) including AIDS [9, 10]. Surveillance data in 2007 indicated that African Americans of both genders made up 72% of AIDS cases among youth aged 13-19, while comprising only 17% of the U.S. adolescent population [9]. African American young women are reported as having higher rates of gonorrhea and chlamydia than persons from any other race, age and gender [10].

Typically, sexual activity involves more than one individual, with sex between two people—a dyad—being the most common. Hence, when aiming to understand sexual strategies including condom use, it is important to consider interpersonal factors in the relationship. Dating violence [73], infrequent communication with partners [52] and fear of a negative reaction to condom negotiation [46] have all been associated with lower levels of condom use among young women. However, research suggests that dyadic relationships might be influenced by other relationships, specifically those with parents and peers [48]. The purpose of this qualitative study was to explore how sexual communication with caregivers and peers may influence the decision to use condoms during sexual intercourse among African American young women. The social structural theory of gender and power (TGP) [34] was drawn upon to develop the research questions and to place the study in a larger theoretical context.

*Social Context, Dyadic Relationships and HIV Risk Among Females: The Theory of Gender and Power*

The field of HIV/STI risk has acknowledged the importance of gender to understanding the enactment of preventive behaviors such as condom use [27, 31]. The TGP, adapted from the sociological theory by Connell [33] to understand HIV risk among women by Wingood and DiClemente [34], is the only such theory to focus exclusively on women [14]. The theory describes three structures of influence characterized by exposures and risk factors: the sexual division of labor, the sexual division of power, and the structure of affective attachments and social norms [34]. Exposures are factors that increase the likelihood of becoming infected with a disease, and risk factors are constructs associated with risk behaviors for a disease. Although these three structures are interwoven, affective attachments and social norms address the emotional and sexual attachments at the dyadic level and sexual expectations for women communicated by forces outside the dyad. The foci of this study are relationships and communication with family and peers. Thus, the structure of affective attachments and social norms, within the TGP, provides a unique framework for understanding social context and sexual behavior among young women.

The structure of affective attachments and social norms encompasses the cultural norms and biases with regard to female sexuality (e. g. women should have sex only for procreation) [34]. Wingood and DiClemente [34] argue that family composition, parenting style and drug use within the family represent social exposures for HIV. However, the structure of affective attachments and social norms does not address the process by which these familial social exposures act upon sexual expectations for

adolescents. The empirical literature on parent-child communication about sexuality has reached mixed findings [131], although frequency of communication [52], content [205], and responsiveness [130] have emerged as important components of protective family strategies. Additionally, the structure of affective attachments and social norms does not incorporate peer influence, a construct that has been associated with an increased risk of testing positive for an STI among African American young women [76]. Previous research indicates that parental influences may also moderate the influence of friends [128, 130]. For example, parental discussions about sex have been found to moderate the influence of peer discussions about sex with regard to initiating sexual activity [128, 130]. The nature of this moderated relationship has not been contextualized.

*The Present Study*

Researchers acknowledge that more qualitative research is needed to gain an in-depth understanding of the multiple social factors that shape adolescent sexual behaviors [130]. A review of parental sexual communication with their adolescents called for a greater understanding of the "sexual socialization" of adolescents in order to expand comprehension of the messages caregivers convey [131]. Previous research also indicates that friends might be a part of this socialization process through modeling [15, 119].

The aim of this qualitative study was to better understand how the quality of adolescent relationships with caregivers and close friends and the content of sexual communication impact African American young women's emotional and sexual expectations for their dyadic relationships, and how those expectations might relate to

sexual risk reduction strategies with an emphasis on condom use. Male friends were considered as distinct from female friends based on research suggesting that platonic friendships with males may provide important positive normative expectations of relationships for young women [121]. Additionally, the possibility that sexual debut alters these relationships was explored. The study focused on women between the ages of 18 and 22 because women in this age group were considered to be at an age where they could reflect on influences during their adolescence as well as share experiences that would reveal their current expectations for dyadic relationships. Finally, the findings were also interpreted using a theory that was deemed appropriate after the data had been collected and analyzed: attachment style among adolescents [206]. This theory is discussed in greater detail in the methods section.

## Methods

### *Sample*

A purposive sample of 20 sexually active young African American women was recruited through network-based sampling in one of two ways. Participants of an ongoing HIV/STI prevention intervention were invited during their follow up assessments to provide their friends with an invitation to participate in a study about sexual decision making. In addition, the first author personally invited friends who accompanied participants of the HIV prevention study to participate in the current study.

Women were eligible if they were of African American descent, between the ages of 18 and 22, unmarried, heterosexual and had been sexually active in the last six months. Participants also had to be English speaking and have the ability to get to the study site.

Respondents were excluded from the study if they had ever participated in the ongoing HIV/STI prevention intervention in which the referring friends were participants. In keeping with theoretical sampling methods, after more than half of the sample had been interviewed, it became clear that having a child potentially created different meanings for sexual behavior, and the remaining respondents were screened for parity in order to ensure that there were equal numbers of participants who had and had not had children.

The median age of the participants was 20, and the median age of sexual debut was 16 (Table 1). Eleven participants considered their mother to be their primary caregiver. Two young women identified their grandmother as their primary caregiver although their mothers were also present. Only two young women reported their mother and father as primary caregivers although fathers or father figures were present for at least two other participants. Four participants were cared for by other relatives and one participant regarded her foster mother as her primary caregiver. Through introducing the criterion of pregnancy into the sampling process, half of the sample had carried at least one pregnancy to term. Almost all of the participants reported having male friends.

*Procedures*

The first author conducted individual face-to-face interviews in a private office between April 2008 and May 2009. Following verification of eligibility, informed consent was sought. Interviews were audio-recorded and a research assistant or the investigator took notes during the interviews. The interview guide was designed specifically for this study in order to enhance the understanding of affective attachments and social norms as delineated by the theory of gender and power among African

American young women. The guide was organized to capture four major domains: family, friends, opinions about risk behavior, and narratives of sexual decision making. Participants were asked to describe relationships and sexual conversations with family and friends. They were asked in detail about their opinions and their friends' opinions about condom use. Finally, they were asked to describe events and thoughts leading up to the last time they had sex without a condom, the last time they had sex with a condom, and the last time they chose not to have sex. These narratives were open ended and the participants provided contextual information about the events (e. g. why they did or did not use a condom) which led to greater understanding of the broad range of safer sexual strategies employed.

Interviews lasted up to 90 minutes. A clinical psychologist was on-call during interviews in case of participant distress. Initially, a twenty-five dollar incentive was provided. This was increased to forty dollars in order to provide a similar compensation structure to what the referring friends were receiving for similar time and travel to participate in the HIV prevention intervention. Enrollment increased following this change, but it was unclear if it did so because the HIV intervention participants were more likely to invite their friends, or if potential respondents deemed $40 to be a more appropriate level of compensation. All interviews were transcribed verbatim. After the interview, the first author selected participants based on their interest level in the study and future availability to return to review study findings in a second interview to increase the validity of the interpretation of the data [207]. Study procedures were approved by the Emory University Institutional Review Board prior to beginning data collection.

*Data Analysis*

The research questions and the interview guide were developed using the TGP and existing literature; however, the authors were open to questioning the framework and previous research as well as searching for contradicting evidence. Data analysis employed grounded theory [207]. The first and the second author developed the initial study codebook through independent open coding of 20% of the interviews. The team met after the first two interviews to agree upon an initial draft of codes. The codebook was expanded through independent open coding of the third and fourth interviews. Following this, codes were collapsed into categories during axial coding. Categories included Sharing, Feelings, Trust, Judgment, Relationship Changes, Roles, Norms, Decisions and Control. A total of 50% of the interviews were coded independently and the remaining interviews were coded by the investigator and reviewed by the second author. Data was managed using NVIVO software [208].

During the process of integrating the categories, the final set of concepts were linked to applicable theoretical and empirical literature [209]. In that phase of analysis, it became clear that the data were indicating a process related to parental influence that could be described as adolescent attachment. Attachment theory provides an explanation of how "healthy and unhealthy forms of love originate as reasonable adaptations to specific social circumstances" [210]. Allen and Land [206] have stated that attachment styles might impact how adolescents cope with emotional contexts. It became clear from the analysis that decisions about risk reduction strategies among the young women were made in the emotional context of the dyad, and that those decisions were also influenced by emotional contexts with caregivers. The theory of attachment provided a framework that allowed for integration of study categories in a manner that was consistent with an

existing area of inquiry but uniquely defined through the young women's perceptions of caregivers support and communication about sex. Based on attachment theory, "secure" and "insecure" attachment relationships describe an infant's perception of a caregiver's availability [211]. For adolescents, this delineation corresponds to more than their memories of their attachment figures; it is manifested as a distinctive strategy for dealing with attachment-related feelings as well as through current relationships with attachment figures [206]. This conceptualization of attachment was then explored as a backdrop for the young women's perceptions of their sexual selves. This tailoring of attachment theory is consistent with the TGP assertion that societal influences, conceived of here as familial influences, shape women's sexual perceptions of themselves [34]. Incorporating attachment here provides a link a to an adolescent's overall emotional history. An adolescent's attachment strategy may be able to provide a means of predicting their behavior in future relationships [206] as well as provide insight into their ongoing relationship with their caregiver.

Hazan and Shaver [210] tested qualities of parental relationships as correlates of previously developed attachment styles: secure, avoidant, and ambivalent, with avoidant and ambivalent being insecure styles. In that study, those who were secure were defined as finding it easy to become close to another person and were comfortable with depending on others without fear of abandonment. Those who were avoidant were described as being less then comfortable getting close to others and having difficulty trusting and depending on others. Those who were ambivalent were defined as feeling that others did not get as close as they would like them to and that they worried their partner didn't really love them. Attachment theory was later extended to a four category

model of styles among young adults [212]. This revision incorporated the construct "self-concept" and the current study used the original formulation because the interviews did not yield the data necessary to understand self-concept among these participants. Therefore, this analysis compared the current study's code categories of Sharing, Feelings, and Roles as they pertained to caregivers to the parental qualities that Hazan and Shaver [210] described as discriminating characteristics between the three attachment styles: respect, acceptance, responsibility, intrusiveness, intensity of demand, rejection, humor and likability. The descriptions of Sharing, Feelings, and Roles provide rich information about the adolescents' ongoing relationships with their caregivers and offer insight how their dyadic process corresponded to these parental characteristics.

Throughout the data analysis process, the first author made use of storyline memos and visual diagrams to relate study categories [207]. The core category that emerged was Decision/Control, and, following the incorporation of attachment theory into the analysis, this core category was examined in relation to the process of adolescent attachment as defined by the data.

## Results

### *Summary: The Development of Relational Expectations and Sexual Selves*

The majority of the young women in this study were knowledgeable about the risks posed by sexual behavior and how to prevent it. However, their expectations of relationships and their view of themselves from a sexual vantage varied, and this seemed to be related to other relationships in their lives, specifically to their relationships with their caregivers. These processes were interpreted as a means of identifying adolescent

attachment style: their conceptualization of their caregiver's support, communication about sex, and role in their sexual development. The effects of these relationships were sometimes amplified following sexual debut as the tone of a relationship with a caregiver seemed to predict how a caregiver would respond to sexual initiation. The effects of explicit expectations and behaviors of caregivers and friends were also noted, but due to a lack of pattern between these concepts and sexual decision making, the core category of Decision/Control was analyzed as it related to adolescent attachment and the young women's view of themselves as sexual beings.

### *Relationships and Sexual Conversations with Family and Friends*

#### Family

The majority of the sample reported supportive relationships with their primary caregiver during adolescence, both before and after engaging in sexual behavior. Supportive relationships were imbued with a sense of love, reliability and trust. Some young women spoke of relationship with their caregiver as a "very close bond". Others referred to their caregivers in terms of resources: "If I need anything, I talk to my mom." One participant whose family had been fractured through her mother's infidelity was very clear on how much her father cared for her:

> "He's like, 'I love you so much, and if given the choice again I'd do it all over again just to see your face.'"

The majority of the young women reporting supportive relationships had not had children.

The remainder of the sample reported less supportive relationships with their caregivers during adolescence. Although some young women reported serious disturbances within their family history, including foster care and group homes, others also spoke painfully of inattentiveness. One young woman shared that her mother was unavailable and this drove her to seek out her older sibling for support:

> "And I've never really had much respect for [my mother]. 'Cause she wasn't around, so I just go to my sister and talk to her about stuff."

The majority of the young women reporting less supportive relationships with their caregivers had at least one child.

Communication about relationships, dating and sex seemed to indicate an increased level of comfort and closeness between young women and their caregivers. Most of the women who reported open sexual conversations with their caregiver also reported having a supportive relationship with this person. Caregivers that communicated openly in a supportive relationship were willing to impart information about how to have safe sex despite having reservations about their daughters having sex:

> "She told me 'condoms or just don't do it'. That was her main thing – 'don't do it'… But she told me condoms [are] more effective if I am going to do it so make sure I use something every time."

The majority of these young women also reported that their caregiver took them to the doctor to be prescribed hormonal birth control.

While most women who had open sexual conversations with a caregiver had a supportive relationship with that person the reverse was not true; that is, not all women

who described supportive relationships with caregivers also reported open communication. For young women with less open communication, conversations were characterized by a lack of openness or inadequate explanations even thought the young woman may have wanted to discuss sex. Some of these young women kept silent because they did not want to disappoint or discomfort their caregiver: "Like she asked me [if I'd had sex] but she would probably be devastated if I would have said yes". During an interaction that a participant thought signaled discomfort with sexual communication, one mother visited her daughter at college and threw condoms on her bed without explanation, telling her to "just use them".

A lack of openness did not preclude the possibility of conversations about relationships more generally: "She was like, you know, 'You're too young to be so set on one person'." For some caregivers, silence about sex itself might have suggested an aversion explicitly to premarital sex. For example, a young woman who was cared for by her grandmother said specifically that her grandmother's conservative views limited their conversations:

> "Um, as far as STDs and everything, they – there wasn't really any conversation about STDs at all. Um, I guess because it was just assumed that you're not having sex so there's no need to have a conversation about it. (Laughter)"

While young women in supportive relationships experienced varying levels of openness and levels of sharing, young women with unsupportive relationships with their caregivers during their adolescence often described sexual conversations with the caregiver that exemplified the negative tone of their relationship. These relationships

were characterized by a lack of trust in caregivers and a fear of judgment by caregivers. Another of these young woman expressed hurt stemming from her mother's comments regarding her decision to have sex:

> "She was just like I should had more respect for myself … my first … shoulda been special and ... stuff like that… she was like 'I well I hope you used a condom'[and] 'you better use one'. She didn't say directly like 'Use a condom when you have sex', she just said it in a sarcastic kind of way."

It is also of note that all but two of the young women who described unsupportive relationships with their mothers as younger adolescents later had children themselves. The two young women who had not had children reported their grandmother as their primary caregiver and as a supportive relationship despite their mother's negative presence and lack of support. The others all gave statements indicative of a lack of trust in their primary caregiver, particularly when they were younger. Additionally, only one of the seven young women whose relationships with caregivers were unsupportive described being taken to the doctor by her caregiver for hormonal birth control.

Female Friends

The majority of the sample reported having at least one supportive female friendship when asked to describe their closest female friend. When asked specifically to describe close friends and what made them consider friends to be close, participants spoke of common interests, trust and understanding, and some described their friends as "sisters". One young woman who had lived in a group home during her teens became choked up when discussing her best friend saying, "That's my ace." Only one young

woman reported that she had no close female friends and another seemed to feel betrayed by most of her friends. Both of these young women had children, but that experience only seemed related to a lack of friends for one of them.

For most of the young women, supportive friendships created the opportunity for open and frequent conversations about sex. Although there was a small minority of young women who reported not sharing very much with friends about their sex lives, at least in high school, most were quite open about their experiences in these relationships. In contrast to the relationship between trust and sexual communication with caregivers, even the young woman who reported no close friends still sought information about sex from a peer she did not entirely trust:

> "We shared a lot with each other. Like, boys and who she had sex with, and stuff like that. Who I had sex with. And that – I asked her 'Did you use a condom girl?'"

Another notable finding was that one young woman stated that although she would share everything with her closest friend, she would not tell if she contracted an STI, suggesting that there was an implied fear of judgment. Other young women considered sharing that they had an STI off limits for certain friends for the same reason or for fear that other people would find out.

Some young women who described supportive friendships might not have confided in their friends about sex because they feared judgment or betrayal, or simply felt those things were private. One young woman described herself as being quiet, saying "I didn't want anybody to know about me and who I was with, what I was doing".

Similarly, participants who described unsupportive friendships seemed to feel that way due to a lack of trust. One young woman stated:

> "Well. I don't really have close female friends, you know. There's a friend that I thought I had she is a uh, she was a liar and a back stabbing and all the stuff."

Male Friends

The young women were asked if they had any close male friends with whom they had platonic friendships (i.e. males friends with whom they not had sex and had no desire to have sex. The majority of the sample had experienced such friendships, although one young woman indicated that although she was able to have male friends when she was younger, attending college had made her distrustful of male friendships. Some young women described their male friends as protective. One of these young women also reported that she had no female friends, further indicating the importance of male friends. One young woman spoke of her male friend as her closest friend:

> "Edward[3] and I we are best friends. Um, we – he's perfect. He's really perfect. Um, I can talk to him about anything. We can – well, we can be ok in any type of scenario. He's – he's just Edward I don't know, he's great.

Many young women spoke of these friends as offering another point of view, or a man's point of view. Sometimes this involved describing how they might try to manipulate other young women: "He would like tell me stuff about his relationships like … 'if I tell

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[3] All names were changed to protect privacy

em this they believe it'". The majority of young women with male friends spoke about relationships or how to prevent STIs but not necessarily the act of sex the way they might with a female friend. Despite this inhibition, one young woman spoke of the male's point of view as "unbiased" and she and others found it useful to know more about how guys think or what it was like to be a boy.

*Attachment Styles*

As no formal assessment of attachment was included in these interviews, attachment style can only be inferred from the nature of the relationship between the participant and their caregiver, particularly as evidenced by how they communicated about sex. Allen and Land [206] state that aspects of attachment in adolescence may be manifested through distinct interactions with parents. Bearing this in mind, it is possible to loosely categorize these participants by comparing the descriptions they provided of their relationships with their caregivers (support, communication, role of caregiver) and the parental characteristics that have been reported previously as discriminating between secure and insecure attachment styles [210].

The perception that one is comfortable in close relationships and does not fear abandonment is characteristic of a secure attachment style [210]. That style has been associated with having respectful, accepting and responsible caregivers. Examples in this sample of caregivers that matched this depiction were described as responding to the adolescents' sexual needs whether it was dealing with an unwanted pregnancy or a desire for hormonal birth control. All of the young women identified as "secure" described

supportive relationships with their caregivers although there was a minority that did not additionally describe open and highly communicative relationships. The majority of these young women were also taken to the doctor by their caregivers for hormonal birth control.

The perception that one is not comfortable in close relationships and has difficulty trusting others is indicative of an avoidant attachment style [210]. Based on discriminating characteristics, parents of insecurely attached young women were more likely to be less respectful, less accepting, more intrusive, and more rejecting. Examples in the sample were caregivers who were physically or emotionally absent from their daughters lives. One young woman, despite professing positive feelings for her mother, stated:

> "I think at the time she kinda had a lot going on like my parents got divorced when I was seven so she started us on her own and then she had issues finding a job, and she was working a lot so I think, and she used to come home, she kinda not put a wall up but she I kinda got this feeling like she didn't want to be bothered."

Most of the "avoidant" participants described unsupportive relationships with their caregivers and many of them described less open communication and lower levels of communication compared to the securely attached participants. Only one of them was taken to the doctor by their caregiver to get on hormonal birth control.

The perception that one would like relationships to be closer than their partners would prefer and the fear that others will leave them is characteristic of an ambivalent

attachment style [210]. Similar to avoidant participants, the discriminating characteristics indicated that parents of these young women were more likely to be less respectful, less accepting, and intrusive. In contrast with avoidant participants, these caregivers were less likely to be rejecting and more likely to be likable. Examples in this sample included caregivers that were perceived as supportive but also viewed as irresponsible and untrustworthy. None of these participants reported sharing a great deal of information with their caregivers and only one was open about sexual activity. However, all of them reported supportive relationships and two of these caregivers took their daughters to the doctor for hormonal birth control.

### *Initiation of Sex and Changing Relationships*

#### Family

In most cases there was not a change in the relationship between the caregiver and the participant after the participant initiated sex. In some instances this may have been because the participant did not explicitly share that she had starting having sex. Two young women who described themselves as *never* speaking about it had gone away to college after high school and this separation may have enabled them to keep avoiding the subject. In other cases, sex was a part of growing up and handled with the varying levels of communication described earlier.

If there was a change in the relationship between caregiver and adolescent following sexual debut, this change tended amplify characteristics of the existing relationship. When the relationship became less supportive, it was under stress before the young woman began to have sex. For example, if trust was already a problem within a

less supportive relationship, admission of sexual activity further diminished trust. One young woman shared how her mother viewed her differently after she became sexually active. When asked to describe what had changed she stated: " Oh..everything I did like if I came home too late, or everything that happened she was always '[you were] out havin sex.'". Similarly, a young woman who described a very close relationship with her mother shared:

> "We got closer 'cause she wanted me to understand what was going on and make sure I wasn't going to be hurt or get in any trouble."

Friends

Most friendships were unchanged after sexual debut, or friends became closer because there was more to share:

> "It got better…Really, because we could just talk about everything and we're talking about stuff like [if] we have no experience … it sounds stupid talkin about it so it just gave us more things to talk about."

A minority of the young women spoke of less supportive changes in their friendships due to sexual relationships. One withdrew from her friends after losing her virginity because she feared the spread of rumors about her behavior. Other young women who had become sexually active before their friends said that this seemed to create discomfort and teasing:

> "Like I kinda felt like a outcast like. No one really understood cause they didn't know so I couldn't really talk to nobody like that. I think that was how me and [a sexually active young woman] became friends."

This tension did not always surface. For example, one young woman's best friend was from a background that discouraged premarital sexual activity and lost her virginity long after the participant. They maintained their closeness following the participant's debut.

*Pregnancy and Changing Relationships*

Family

Half of the young women who had children also described having supportive relationships with their caregivers in adolescence, and these relationships remained supportive after they had a child. Interestingly, some of the young women who described unsupportive relationships also described how their relationships with their mothers improved following the birth of their child, even if the relationship became increasingly strained following sexual debut. One young woman spoke of how even if they did not discuss many things, they still spoke of the baby:

> "But I have a baby, so it's like she mostly talks about him. She want him to come over, stuff like that."

One participant expressed how having had a child meant that she had reached a level of maturity that enabled them to relate better to her caregiver. It also seemed that some caregivers that had been previously unsupportive found it to be an opportunity to provide practical support:

> "She gave me some money to buy her some Pampers, stuff like that. She gave me a lot … to get what I need for my baby."

Friends

Most young women that had children did not describe changes in their friendships related to the birth of the child. Some discussed practical matters with friends that were also expecting. Only one young woman described how her friendships became unsupportive after she'd had a child and her friends went to college. Another shared a sense of regret about her own life when discussing one of her childless friends:

> "She can go out, she's in school again, she can go out every weekend, every day if she want to. But me, I gotta sit with – and stay with my kids."

Several of the young women expressed the importance of understanding the level of time and commitment required to raise a child.

### *The Expectations and Behaviors of Family and Friends*

#### Family

The majority of participants expressed that their caregivers would expect them to use condoms if they had sex, even if the caregiver believed them to be on hormonal birth control. A notable exception to this was a case where the participant's caregiver knew that the participant was living with her partner. Even in that case, however, the caregiver expressed disapproval of the relationship more broadly. No clear pattern emerged between familial expectations and familial support or attachment style.

Caregivers' own sexual behaviors were not commented on to a large extent. One participant shared that her mother had admitted to having an STI, but this participant's

relationship with her mother was so estranged that her mother's admission did not seem to make much of an impression. She ascribed concerns about her condom use to her grandmother, whom she also described as her primary caretaker. Another young woman spoke about how her mother had cheated on her father and how much she disliked her mother on behalf of her father and herself. Only one young woman described her mother's behavior related to condoms:

> But my mom, I listen to her 'cause she, she actually go out buy condoms and stuff. Like, she'll make sure they have them so she safe.

Friends

Friends were not as consistent as caregivers about condom expectations although most of the friends described were aware of why condoms were important. Many friends believed it was appropriate to have sex without a condom in long term relationships if the participant was on hormonal birth control or simply because it was a common occurrence. In imagining a friend's reaction if she shared that she did not use a condom, a participant stated, "She would be like it's okay, it's like it's a lotta people do it." Similar to expectations from parents, there was no clear relationship to attachment style or perceptions of support from family and friends.

The behavior of female friends varied. Nearly half of the sample reported that some of their friends did use condoms and some of them did not. Many of the young women's friends did not use condoms in relationships and some did not use condoms at all. Again, there was no clear pattern relating to attachment style or perceptions of support from family and friends. Some spoke of inconsistent use, even with casual partners and in some cases there was hesitancy by the participants to judge others for not

using a condom. One young woman, when discussing reasons her friends have shared for not using condoms expressed her own reluctance to judge even as she verbalized her opinion about unprotected sex:

> "They get caught up in the moment. Stupid. We just be saying a lot of stuff. But at the same time, who is me, I, who am I to talk, you know. Because I done slipped up. That's how I got my baby. But, I would just say use protection because raising a baby ain't easy."

The most powerful conversations may have been those that included sharing how a friend's experiences affected their lives. For example, a participant's college roommate shared with her that she had contracted an STI while in a monogamous relationship for four years. The participant described this conversation later to her partner, saying, "…that's the reason why regardless of you know I'm sorry regardless of how long you guys have been together you have to use condoms." Sharing directly about the difficulties of having a child also seemed to resonate with young women. A 20 year old woman shared:

> "She would be mad [if I told her I didn't use a condom] because she, um, she's not depend – no, I'm not gonna say dependent, but um, she has high hopes for me, because I'm in school and she was in school also, but she had to take a break because she got pregnant. So she has to take care of her – uh, her son for at least a year until she gets back into school."

Male Friends

Among young women who described male friends, expectations and behaviors were consistent. Of those participants who reported that they discussed

STIs with their male friends, all but one expressed that their male friends expected the participant to use condoms and that they used condoms themselves:

> "... like after that situation [where I thought I was pregnant] he was like I'm gonna just ship you a box of condoms…"

> "And he, he'd tell me that … he said he can count on his hand how many people he's had sex with, you know, and didn't use a [condom]."

*Affective Attachments and Behavior*

The context of family support, communication and the role the caregiver played in initial reproductive decisions were combined to produce a loose assessment of adolescent attachment. These young women's attachment styles might have provided a backdrop for their expectations of relationships and dating as well as sexual decision making. For this study, classifying the participants as securely or insecurely attached also provided a means of summarizing whether caregivers were more or less helpful for the participants in their sexual socialization. For the exploration of attachment and the young women's relationships, the two insecure styles of "avoidant" and "ambivalent" were collapsed as insecure attachment.

Romantic Relationships

All of the young women who appeared to demonstrate secure attachment styles had certain standards that they applied to their romantic relationships that implied they saw themselves as someone of value. These standards included the unacceptability of cheating, developing romantic relationships from friendships, not having sex on the first

night they met or went out with a man and the expectation that sexual decisions be mutual. It is important to note that many of the young women who appeared to have insecure attachment styles also seemed to uphold these standards.

There were also young women who accepted relationships that did not adhere to these standards that were classified as having insecure attachment styles based on their relationship with their caregivers. One participant was subject to the suspicion of her partner every time her phone rang: "I don't know. He be-- he already think that every time I'm on the phone with somebody he gotta [be] another boy." She tolerated this although it caused strain with her best friend. Another young woman who had experienced a breach of trust with her parents spoke of sleeping with another person's boyfriend. One of these young women was put down by the young man that she was sleeping with and she tolerated his abuse and his infidelity. Their perceptions were sometimes characterized by approval seeking from other people in their lives. For example, one young woman relied heavily on her friends for advice and doubted her own ability to cope:

> "Like I'll always ask [my friend] like what I am supposed to do here … after this because I know I'm end up sayin somethin that's gonna mess somethin up you know? Cause I'll be tryin to get the ball in my court all the time. And he just always steals it. So."

Sexual Decision Making

Multiple sexual risk reduction strategies were applied by the young women defined as securely attached. The majority of them demanded some level of protection or

assurance from their partners with respect to STIs, although this measure did not always include condoms. For example, one participant invited her partner to go to the doctor with her prior to consenting to unprotected sex. One young woman with a child stated that "we give each other papers", referring to STI screening results. Another young woman with a child did not want to become pregnant again and demanded condoms after the birth. It was also possible for young women to perceive condoms as part of a hierarchy of risk reduction strategies:

> "Um, if I don't know you, I don't know where you've been, I don't know where you've stuck your penis in, um, and I don't want to catch whatever you've got…So, until we either, A, go get tested together, or we have a very, very serious conversation, um, sex without condoms is not going to happen."

Two were with a long term partners and decided to have sex without a condom after obtaining hormonal birth control but without STI testing. One had discussed sexual history with her partner and the other lived with her partner. There was only one young woman who seemed securely attached that did not use condoms consistently or employ other strategies to protect against STIs although she did use hormonal birth control. All of these young women seemed to view their sexual selves as worthy of respect and the majority saw themselves as in control of sexual situations.

The young women who appeared to be insecurely attached also employed strategies that ranged along a continuum of safe to unsafe although the processes by which insecure women arrived at the situation of having sex without a condom seemed to

be different. Similar to securely attached young women, there was one insecurely attached young woman who used condoms early on in a long term relationship and then stopped without going through the process of testing for STIs. Some of them, however, used condoms consistently. In that subset of insecurely attached young women, two had children and one of them explicitly stated she used condoms because she did not wish to have another child. Another young woman had an uncle who died of AIDs. Two believed a condom was always necessary. One stated "I say I just mm mmm [to sex without condoms], I'm too scared about anything, getting pregnant, STDs". The other went so far as to defend her choices about condoms to a friend:

> "I was telling [my friend] I had to go to the store and buy some condoms and he was like what do you using those for? And I told … I was like it doesn't matter, I don't know what [my boyfriend's] doing when I'm at home or when he's wherever he is so you know [my friend] thought it was weird."

Both of the young women that believed a condom was always necessary had also referenced experiences their friends had shared about pregnancy or STIs.

Finally, nearly half of these young women described sexual situations in which they attempted to negotiate condom use and failed. Three of these women had children. Two of them had experienced failed negotiations repeatedly with the same partner, knowing that that partner was having sex other people and fully understanding the dangers of their actions: "…sometimes you just, I mess my own self up." Their images of their sexual selves seemed to reflect a lack of power and a certain resignation:

> "I just don't – I just bypass all that [getting to know someone] 'cause if I see you and I don't feel like – because me, I don't feel like – because my baby daddy always tell me that I'm not girlfriend material, that's why nobody likes him, because he always puts me down."

As alluded to in the discussion of failed negotiation, the decision to insist on the use of a condom occurs in the context of intimacy and it may be the young women's choice to use or not use a condom. If the sample was divided based on perceived control at the time of the sexual encounter, a greater proportion of insecurely attached young women described situations in which they were not the decision maker.

Pregnancy emerged in the analysis as an experience that was instilled with different meanings, particularly among adolescents who seemed to be characterized by insecure attachment styles. There were more insecurely attached young women who had children making less safe choices with respect to sex than were making safer sexual decisions. Two of them trusted their partners without any clear evidence, with one of them saying "He didn't have a condom, so at first I was like no, but then I don't know I guess his words kinda persuaded me to. It was like oh I'm good…so I kinda trusted him." Another seemed to feel that by having children so young her future was very limited and this compelled her to continue to have unprotected sex with the father of her child: "I tell him I'm stupid for having sex with you and I know you out there having sex with no condoms." However, other young women seemed inspired by their children to care more for themselves. One young woman described how she always used condoms and shared how her perspective had changed after she had a child:

"So I stay in the house with her most of the time. Cause I gotta be a good example for her. So."

**Discussion**

This study explored how relationships with caregivers and friends related to sexual decision making by examining the quality of relationships and the conversations that took place and applying them as the backdrop for sexual narratives. It is evident that caregivers play an important part in shaping African American young women's feelings about themselves as well as expectations for emotional and sexual attachments at the dyadic level. Peers seemed to only influence young women's expectations through sharing personal experiences, though it was difficult to discern a pattern. Pregnancy also emerged as having multiple meanings, especially among adolescents with insecure attachment styles.

This application of attachment theory to the young women's descriptions of their relationships to their caregivers and their view of their sexual selves goes farther than previous research on parental sexual communication [117, 205], suggesting that these specific interactions could be indicative of attachment style during this period in a young woman's life. Furthermore, the attachment style can translate to how a young woman asserts herself in sexual relationships. As one young woman remarked during a validation interview, "Your parents teach you how to love." In some cases, young women who were not nurtured in the areas of sex and love approached romantic and sexual relationships in a manner that devalued their roles. This might explain why, in quantitative research, the construct of family support has been found to be associated

with less unprotected sex [173]. It can also help with understanding why reviews of findings related to parental communication have found that in some cases it emerged as a protective factor, others as an antecedent of mediators of adolescent sexual behaviors, and at times there no association was demonstrated [131]. Allen and Land [206] point to how acknowledging adolescent attachment helps explain why maternal control does not work to prevent problem behavior when adolescents do not view others as available or trustworthy. The finding that sexual conversations with unsupportive caregivers exemplified the tone of their relationship with their daughters implies that training in sexual communication may not be enough to enhance the influence of parents. It may be that more broadly designed family counseling is required to improve the overall relationship in order for safer sexual messages to be heard.

Although previous research has found that African American young women reported feeling safe in relationships even if the relationships were not permanent [213], these findings indicate that some young women might be willing to accept lower levels of assurance of safety or feel that they don't deserve safety at all in romantic and sexual relationships because of the low level of closeness and trust established by their primary caregiver relationship. The results of this study indicate that although a supportive relationship with a caregiver is important for young women to develop healthy expectations for their own relationships, some young women need more communication, more openness on certain topics, and more attention in general. Caregivers must negotiate a fine line between steadfastness and judgment, as judgment can potentially cut off future conversation and impact adolescent self worth. This link between attachment theory [210] and emotional and sexual expectations for young women captures important

aspects of sexual socialization. This provides support for the inclusion of adolescent attachment style as a social exposure in an elaboration of the structure of affective attachment and social norms among adolescents [34].

Although no clear pattern emerged between expectations of friends and sexual decision making, there were notable findings. The only impact that friendships had on sexual decision making in this study seemed to stem from sharing experiences such as contracting STIs and the impact of pregnancy. The fact that young women also reported inhibitions about sharing experiences with STIs may blunt the potential positive impact of this process. The finding that some young women experienced distancing from friends after beginning to have sex is important for caregivers and interventionists to understand. It could drive young women to seek more sexually experienced young women as friends to avoid judgment or it could create a void that might encourage young women to seek increased amounts of approval from their sexual partners. The finding that male friends of the young women in this study endorsed the use of condoms provides a potential target for enhancement.

The nature of the protective strategies employed by these women did not always include condom use. This has implications for intervention research in that some young women may have incorporated AIDS prevention messages into their behavior but would be quantitatively assessed as practicing inconsistent condom use. This suggests that interventionists should acknowledge that these young women do feel they are leveraging their knowledge and emotional understanding and the decision might not be based on inaccurate information. Therefore, interventions for young women in long term relationships must be tailored to incorporate the fact that the strategies of having partners

tested and then using hormonal birth control in a monogamous relationship are being employed.

Finally, more research is needed to understand the impact that having a child before the age of 22 has on young women's sexual behaviors. For young women who found the experience of having a child to be motivating toward a better life, these beliefs must be enhanced and opportunities created to nurture young women who are already seeking to protect themselves. For young women who are more fatalistic after having a child or experience lower self esteem, additional counseling might be needed, particularly if the young woman also experienced less supportive caregiver relationships.

These findings must be interpreted in light of a number of limitations. The sample was a small, purposive sample of young women. Additionally, the participants were the only source of information as opposed to collecting data from caregivers or peers. However, the focus of this study on young women facilitated the collection of rich, detailed information on their perceptions of these relationships. Additionally, describing study findings and soliciting opinions from participants helps to ground interpretation of participant perspectives within the community of study. This step improved the interpretative validity of the findings [214]. Additionally, theoretical validity was sought through considering the findings in light of other theories. Finally, transcribing the interviews verbatim provided descriptive validity.

**Conclusion**

Singer and colleagues [215] described the high levels of risk among impoverished adolescents as a "rational response to social disparity" (p 2019). High levels of risk

might also be a response to developmental processes among African American young women, conceptualized as an aspect of how young women are socialized sexually. Peers may also impact how a young woman views herself in a dyadic relationship, but caregiver influence seems to be more salient to sexual decision making. Through the enhancement of adolescent attachment, the social risk of families not supportive of HIV within the structure of affective attachments and social norms becomes more nuanced theoretically and can provide more guidance as to how caregivers can support protective behaviors among young women.

**Table 4.1. Description of Sample**

| Characteristic | Median/Count | Range/% |
|---|---|---|
| Age | 20 | 18-22 |
| Age at Debut | 16 | 13-18 |
| Primary Caregiver | | |
| Mother | 11 | 55% |
| Father and Mother | 2 | 10% |
| Grandmother and Mother | 2 | 10% |
| Other | 5 | 25% |
| Had a Child | 10 | 50% |
| Had Male Friends | 14 | 70% |

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# Appendices

## Appendix 1. Search Terms

**Table A1.1. Condom Keywords**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Aids prevention/ or condoms/ or safe sex/ or sexual risk taking/ | Condom/ or condom* | Contraception/ or condom* |
| Contraceptive device/ | Sexually transmitted disease/ or sexually transmitted disease* | Sexually transmitted diseases/ or sexually transmitted disease |
| Condom* | Risk reduction/ or High Risk Behavior/ | Safe* sex* or disease control/ |
| Sexual intercourse (human)/ | Safe* sex* or Safe sex/ | Barrier method* |
| HIV/ | Risk taking behavior* | AIDS* prevention |
| AIDS/ | Contraception/ or barrier contraception/ or barrier contraception | HIV* prevention |
| Safe* sex* | AIDS* prevention | |
| Sexually transmitted diseases | HIV* prevention | |

**Table A1.2. Alcohol and Drug Keywords**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Alcohol abuse/ or alcoholism/ or alcohol use* | Alcoholism/ | Alcoholism/ |
| Drinking behavior/ | Alcohol Consumption/ | Drinking/ |
| Alcohol intoxication/ | Alcohol Abuse/ | Alcohol *use* |
| Drug Abuse/ or Drug Usage/ | Drinking behavior/ | Alcohol abuse/ |
| Drug use* | Alcohol use* | Drug addiction/ or substance abuse/ |
| Substance *use* | Drug Use/ or drug *use* | Drug abuse/ |
| Drug Dependency/ | Drug Dependence/ | Drug *use* |
| | Drug Abuse | Drug Use/ |

("1998"[Publication Date] : "3000"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (((((((("alcohol *use*") OR ("*drinking behavior")) OR ("drug *use*")) OR ("substance *use*")) OR ("alcohol drinking*")) OR ("drug dependency*")) OR (“alcoholism”)) OR (“alcohol abuse”)) AND (("african american*") OR ("blacks")))

**Table A1.3. Communication Keywords**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Communication or Communication/ | Communication/ | Communication skills/ or communication* or communication strategies/ |
| Communication barriers/ or communication skills/ | Communication Skill/ | negotiation* |
| Negotiation/ | Interpersonal communication/ | Assertiveness* |
| Assertiveness/ | Negotiation* | Assertiveness/ |

("1998"[Publication Date] : "3000"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((((("communication*") OR ("communication skill*")) OR ("negotiation*")) OR ("assertiveness*")) AND (("african american*") OR ("blacks")))

**Table A1.4. Condom Skills**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Condom* application* skill* | Condom* Application* Skill* or skill/ | Condom* application* skill* |
| Condom* use* skill* | Condom* use* skill* | Condom* use* skill* |
| Condom* skill* | Condom* skill* | Condom* skill* |

("1998"[Publication Date] : "3000"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((("condom* application* skill*") OR ("condom* use* skill*")) OR ("condom* skill*")) AND (("african american*") OR ("blacks"))  )

**Table A1.5. Self Efficacy**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Condom* self efficacy | Condom* self efficacy* | Self efficacy/ |
| Self efficacy | Self efficacy* | Condom* self-efficacy* |

("1998"[Publication Date] : "3000"[Publication Date]) AND (((((((("condom*") OR ("sexually transmitted disease*")) OR ("safe* sex*")) OR ("unsafe sex*")) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("self* efficacy*") OR ("condom* self* efficacy*")) AND (("african american*") OR ("blacks"))  )

**Table A1.6. Perceived Control**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Power/ | Control/ | "Locus of control"/ |
| Internal external locus of control/ | Perceived* control* | Perceived* control* |
| Perceived control* | | |

("1998"[Publication Date] : "3000"[Publication Date]) AND (((((((("condom*") OR ("sexually transmitted disease*")) OR ("safe* sex*")) OR ("unsafe sex*")) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((((("perceived* control*") OR ("empowerment")) OR ("power")) OR ("locus of control")) AND (("african american*") OR ("blacks")))

**Table A1.7. Limited Knowledge of HIV prevention**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Knowledge or Health Knowledge/ | Knowledge | Knowledge Level/ or Knowledge |
| HIV knowledge | AIDS Knowledge and Attitudes Survey/ | HIV knowledge |
| STD knowledge | Knowledge | STD knowledge |
| STI knowledge | HIV knowledge | STI knowledge |
| | STD knowledge | |
| | STI knowledge | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (((((("knowledge") OR ("health knowledge")) OR ("HIV knowledge")) OR ("knowledge level")) AND (("african american*") OR ("blacks")))

**Table A1.8. Negative Beliefs Not Supportive of Safer Sex**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Attitude* | Attitude/ or attitude* | Attitude* |
| Belief* | Belief* or Health Belief/ | Beliefs/ or belief* |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("Attitude*") OR ("Belief*")) AND (("african american*") OR ("blacks")))

**Table A1.9. Perceived Invulnerability to HIV/AIDS**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Risk Perception/ or perceived risk | Risk Assessment/ or perceived risk | Decision Making/ or Risk/ or perceived risk |
| Perceived vulnerability | Perceived vulnerability | Perceived vulnerability or Fear/ |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("risk perception") OR ("risk") OR ("risk assessment") OR ("perceived vulnerability") OR ("perceived risk")) AND (("african american*") OR ("blacks"))  )

**Table A1.10. History of Depression/psychological distress**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Major depression/ | Depression Inventory/ or depression | “Depression (Psychology)” or depression |
| Depression | Self-Rating Depression Scale | distress |
| Depression (Emotion)/ | Depression/ | |
| Distress/ or distress | Major Depression | |
| | Distress | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((("major depression") OR ("depression")) OR ("distress")) AND (("african american*") OR ("blacks"))  )

**Table A1.11. Self-Esteem**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Self esteem or self esteem/ | self esteem or Self Esteem/ | Self esteem or Self Esteem/ |
| Self concept or self concept/ | Self concept or Self Concept/ | Self concept or Self Concept/ |
| Sexual self esteem | Sexual self esteem | Sexual self esteem |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((("self esteem") OR ("self concept")) OR ("sexual self esteem")) AND (("african american*") OR ("blacks"))  )

**Table A1.12. Older Partners**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Sexual partners/ or Age Differences/ | Older partner* | Older partner* |
| Older partner* | | Age differences/ or partner age |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("Age difference*") OR ("Older partner")) OR AND (("african american*") OR ("blacks")))

**Table A1.13. Desire to conceive**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Pregnancy/ or conceive* | Prenancy/ or Conception/ | Conceive* |
| Desire to conceive | Conceive* | Desire to conceive |
| Pregnancy desire | Desire to conceive | Pregnancy/ or pregnancy desire or pregnant students |
| | Adolescent Pregnancy/ or | |
| | Pregnancy desire | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("Desire to conceive") OR ("adolescent pregnancy") OR ("pregnancy") OR ("conceive*")) AND (("african american*") OR ("blacks")))

**Table A1.14. Religious affiliation forbids the use of contraception**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Religion/ | Religion or Religion/ | Religion or religion |
| Religiosity/ | Religiousity | Religious factors/ or religiosity |
| Religious Beliefs/ | Religiosity | |
| Religious Practices/ | Church attendance | |
| Church attendance | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("religion") OR ("risk") OR ("religiosity") OR ("church attendance") OR ("perceived risk")) AND (("african american*") OR ("blacks"))  )

**Table A1.15. Strong mistrust of medical system**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Physicians/ or Family Physicians/ or doctor patient communication | Doctor Patient Relation/ or doctor patient communication | Physician patient relationship/ or doctor patient communication |
| Medical mistrust | Physician/ or Physician Attitude/ or physician* | Physicians/ or physician* |
| Conspiracy | Medical mistrust | Medical mistrust |
| Health care services/ or medical conspiracy | Conspiracy | conspiracy |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (((((("physicians") OR ("medical mistrust")) OR ("doctor patient relation")) OR ("conspiracy")) OR ("physician patient relationship")) AND (("african american*") OR ("blacks"))  )

**Table A1.16. Family Influences not supportive of HIV prevention**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Parent child relations/ or parental role/ or parenting style/ or parental attitudes/ or parents or parental characteristics/ or parental support | Parental Behavior/ or Child Parent Relation/ or parental support | Parent attitudes/ or parent child relationship/ or parental support or parent participation/ |
| Parent child communication/ | Parent* communication | Family influence/ or parent* communication |
| Parent* communication | Monitoring/ or parent* monitoring | Parent role/ or parent* monitoring |
| Mother child relations/ or parent* monitoring | Family Attitude/ or Family Planning/ or Family/ or family* or Family Stress/ or Family functioning/ | Family involvement/ or family attitudes/ or African American Family/ or family* or Family Characteristics/ |
| Family Structure/ or Family or family* | Sibling Relation/ or Sibling/ or sibling* | Siblings/ or Sibling Relationship/ or sibling* |
| Family Relations/ or Family Conflict or Family Planning Attitudes | | |
| Siblings | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((((((("parent child relation*") OR ("parental role")) OR ("family attitude")) OR ("parent child communication")) OR ("sibling*")) OR ("monitoring")) OR ("family relation*")) OR ("parental attitude*")) AND (("african american*") OR ("blacks"))  )

**Table A1.17. Peer Norms not supportive of safer sex**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Social norms/ or Peer relations/ or peers/ or peer norms | Peer norms | Peer influence/ or peer norms |
| Social Support/ or peer support | Peer support or Peer Group/ | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((((("social norms") OR ("peer relations")) OR ("peer support")) OR ("peer group")) OR ("peer norms")) OR ("peer influence")) AND (("african american*") OR ("blacks"))  )

**Table A1.18 History of Sexual or Physical Abuse**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Sexual abuse or sexual abuse/ | Sexual abuse or sexual abuse/ | Sexual abuse or sexual abuse/ |
| Physical abuse or physical abuse/ | Victim/ or child abuse/ or physical abuse or family violence/ | Violence/ or Child abuse/ or Family Violence/ or physical abuse |
| Emotional abuse or emotional abuse/ | Abuse/ or emotional abuse or emotional abuse/ | Emotional abuse |
| Verbal abuse or Verbal abuse/ | Verbal abuse or verbal hostility | Sexual violence or sexual harassment/ |
| Victimization/ or violence/ or rape or child abuse/ or sexual violence | Sexual crime/ or rape/ or sexual violence | |
| Intimate partner violence/ or dating violence | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("sexual abuse") OR ("emotional abuse") OR ("verbal abuse") OR ("violence") OR ("rape") OR ("child abuse") OR ("physical abuse")) AND (("african american*") OR ("blacks")))

**Table A1.19 Partner Disapproves of Safer Sex**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Social Dating/ | Partner approval or partner barriers | “Dating (Social)”/ or partner approval |
| Partner approval | | Partner barriers |
| Partner barriers | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("social dating") OR ("partner approval") OR ("partner barriers") OR ("dating*")) AND (("african american*") OR ("blacks")))

**Table A1.20 Exposure to Sexually Explicit Media**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Sexually explict media | Sexually explicit media | Sexually explicit media or mass media/ |
| Pornography/ | Pornography | Pornography or pornography/ |
| Mass media/ | Music/ or rap music | Music/ or popular culture/ or rap music |
| Music/ or Rock Music/ or videotapes/ or rap music | Sexually explicit | Sexually explicit |
| Sexually explicit | Videotape/ or x rated | Films or x rated |
| X rated | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("sexually explicit media") OR ("pornography") OR ("mass media") OR ("music") OR ("sexually explicit")) AND (("african american*") OR ("blacks"))  )

**Table A1.21 High Risk Sexual Partners**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Sexual partners/ or High risk partner* | High risk partner* | High risk partner* |
| Incarceration/ or incarcerated partner* | Incarcerated partner* | Incarcerated partner* or At Risk Persons/ |
| Intravenous drug usage/ partner* drug* | Incarceration | Partner* drug* |
| Concurrent partner* | Partner* drug* | Concurrent partner* |
| concurrency | Concurrent partner* | Concurrency |
| | Concurrency | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((((("sexual partner*") OR ("incarceration")) OR ("concurrent partner*")) OR ("high risk partner*")) OR ("at risk person*")) AND (("african american*") OR ("blacks"))  )

**Table A1.22. Limited Access to Prevention (eg Drug Treatment, School Based HIV Prevention; does not include female controlled methods**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Drug rehabilitation/ or drug treatment | Drug treatment* | Drug treatment* or Drug Rehabilitation/ |
| Educational programs/ or School Based Intervention/ or school based HIV prevention* | School Health Service/ or Health Program/ or school based prevention or Health Promotion/ or Health Education/ | School based prevention |
| Alcohol Rehabilitation/ or Sobriety/ or alcohol treatment* | Alcohol treatment* or drug dependence treatment/ | Alcohol treatment* |
| Health Promotion/ or HIV Testing/ or access to prevention | Access to prevention or health care access/ | Access to prevention |
| Sex education/ or sexual health education | Sexual education/ or sexual health education | Sex education/ or sexual health education or Health education/ |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (((((((("drug rehabilitation") OR ("educational program*")) OR ("alcohol rehabilitation")) OR ("health promotion")) OR ("hiv testing")) OR ("sex education")) OR ("health care access")) AND (("african american*") OR ("blacks"))  )

**Table A1.23. No Employment or Underemployed**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Personnel Termination/ or Labor Market/ or Unemployment or Employment Status/ or unemployment | Unemployment/ or unemployment | Unemployment/ or unemployment* |
| Underemployment | Underemployment | Underemployment |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((("employment status") OR ("underemployment")) OR ("unemployment")) AND (("african american*") OR ("blacks"))  )

**Table A1.24. Live at Poverty Level**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Poverty Areas/ or Poverty/ or poverty* | Socioeconomics/ or poverty/ or poverty* | Socioeconomics/ or poverty/ or poverty* |
| Lower Income Level/ or Socioeconomic Status/ or low income* or Middle Income Level/ | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("poverty") OR ("lower income level") OR ("socioeconomic status")) AND (("african american*") OR ("blacks")))

**Table A1.25. Less Than a High School Education**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Secondary education/ or education* or Higher Education/ or Education/ or High School Education/ | Education/ or education* | Education/ or education* |
| School enrollment or School Enrollment/ | High school or high school/ | High school or high school/ |
| | School/ or school enrollment or academic achievement/ | School/ or school enrollment or academic achievement/ |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("high school") OR ("education") OR ("school") OR ("academic achievement")) AND (("african american*") OR ("blacks")))

**Table A1.26. High Demand Low Control Work Environment**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Job Satisfaction/ or Working Conditions/ or Occupational Stress/ or work environment* | Work environment/ or workplace/ or work environment* or workload/ or job satisfaction/ | Work Environment/ or Workplace/ or work environment* or Workload/ or Job Satisfaction/ |
| Occupations/ or Occupational Choice/ or occupation* or Occupational Status/ or Occupational Success/ | | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("job satisfaction")) OR ("work environment")) AND (("african american*") OR ("blacks"))  )

**Table A1.27.  Limited or No Health Insurance**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Health Insurance/ or Health Care Services/ or health insurance* | Private Health Insurance/ or Health Care Policy/ or Health Insurance/ or health insurance* | Private health insurance/ or Health care policy/ or Health insurance/ or health insurance* |
| Access to service* | Health Care Access/ or access to service | Health care access/ or access to service |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((("health insurance") OR ("private health insurance")) OR ("health care policy")) OR ("health care access")) AND (("african american*") OR ("blacks"))  )

**Table A1.28. No Permanent Home**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Homeless/ homeless* | Homelessness/ homeless* | Homelessness/ or homeless* |
| No permanent home* or Foster care/ | Housing/ or no permanent home* | Housing/ or no permanent home* |
| | Temporary home | Temporary home |
| | Foster care or foster care/ | |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND ((("homeless") OR ("foster care")) OR ("homelessness")) OR AND (("african american*") OR ("blacks"))  )

**Table A1.29. Age**

| PsycInfo | Embase | ERIC |
|---|---|---|
| Youth*<br><br>Development Age Groups/ | Juvenile/ or youth* | Youth/ or Urban Youth/ or youth* |

("1998"[Publication Date] : "2008"[Publication Date]) AND (((((((("condom*") OR (“sexually transmitted disease*”)) OR ("safe* sex*")) OR (“unsafe sex*”)) OR ("contraception*")) OR ("barrier method*")) OR ("AIDS* prevention*")) OR ("HIV* prevention*")) AND (("juvenile")) OR ("youth")) AND (("african american*") OR ("blacks"))  )

**Appendix 2. Theory of Gender and Power Bivariate Associations**

**Table A2.1. TGP Bivariate Construct Interrelationships (non-unique associations from the same sample have been eliminated)**

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| **Economic Exposure** | | **Physical Exposure** | | | |
| High School | Non-Enrollment | Partner Disapproval | Greater fear of condom negotiation | 1.22* | 18G |
| High School | Non-Enrollment | High Risk Partner | Partner has other sexual relationships | 2.17** | 18G |
| High School | Non-Enrollment | High Risk Partner | Recent incarceration | 1.50** | 18G |
| High School | Non-Enrollment | High Risk Partner | Partner high or drunk during sex | 1.69** | 18G |
| **Economic Exposure** | | **Social Exposure** | | | |
| High School | Non-Enrollment | Older Partner | > 5 years | 2.22** | 18G |
| **Economic Exposure** | | **Personal Risk Factor** | | | |
| Poverty | Receipt of TANF | Self Esteem | Self esteem | r=-.08 | 37B |
| **Economic Exposure** | | **Behavioral Risk Factor** | | | |
| High School | Non-Enrollment | History of Alcohol and Drug Use | Sex while high or drunk | 1.87** | 18G |
| High School | Non-Enrollment | Communication | Less frequent partner communication | 1.22* | 18G |
| High School | Non-Enrollment | Perceived Control | Less perceived power | 1.26** | 18G |

| Construct<br>**Physical Exposure** | | Construct<br>**Physical Exposure** | | Association | Sample |
|---|---|---|---|---|---|
| Abuse | Dating Violence | Partner Disapproval | Greater fear of condom negotiation | 2.50** | 47B |
| Abuse | Dating Violence | Partner Disapproval | Greater fear of discussing pregnancy | 2.80** | 47B |
| Abuse | Dating violence | High Risk Partner | Healthy norms for relationships | 1.40** | 47B |
| Abuse | Dating violence | High Risk Partner | Partner has other sexual relationships | 1.90*** | 47B |
| **Physical Exposure** | | **Social Exposure** | | | |
| Abuse | Emotional Abuse | Family Influences Not Supportive of HIV Prevention | Low perceived support | 3.78*** | 13B[1] |
| Abuse | History of Physical Abuse | Family Influences Not Supportive of HIV Prevention | Low perceived support | 1.21 | 13B[1] |
| Abuse | Dating violence | Peer Norms | Peer norms | 1.20** | 47B |
| Partner Disapproval | High partner barriers related to safe sex | Family Influences Not Supportive of HIV Prevention | Perceived support | 2.21*** | 13B[1] |
| Partner Disapproval | Fear of negative reaction to condoms | Family Influences Not Supportive of HIV Prevention | Perceived support | 1.85** | 13B[1] |
| Partner Disapproval | Greater partner related barriers | Older Partners | Greater than 2 years older | 1.30** | 27B |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Partner Disapproval | Fear of negative reaction to condoms | Older Partners | Greater than 2 years older | 1.44** | 27B |
| High Risk Partners | Partner has other sexual relationships | Family Influences Not Supportive of HIV Prevention | Less parental monitoring | 1.40* | 25B |
| High Risk Partners | Partner has other sexual relationships | Older Partners | Greater than two years older | 1.79* | 2E |
| **Physical Exposure** | | **Personal Risk Factor** | | | |
| Abuse | Dating violence | Perceived Vulnerability | Worry about STD | 1.4** | 26B |
| Abuse | Dating violence | Psychological Distress | Depression | 2.3* | 26B |
| Partner Disapproval | Greater fear of condom negotiation | Self Esteem | Self esteem | $\eta 2$=.04*** | 37B[2] |
| Partner Disapproval | High partner barriers related to safe sex | Self Esteem | Self esteem | $\eta 2$=.07*** | 37B[2] |
| Partner Disapproval | Fear of abandonment | Self Esteem | Body image | 4.40*** | 46B |
| High Risk Partners | Greater fear of condom negotiation | Psychological Distress | Depression | 1.6* | 26B |
| High Risk Partners | Partner has other sexual relationships | Psychological Distress | Depression | 1.5* | 26B |
| High Risk Partners | Norms not supportive of a health relationship | Psychological Distress | Depression | 1.30** | 26B |
| Lack of Access to HIV Prevention | Accessibility barriers to condoms | Self Esteem | Self esteem | $\eta 2$=.08*** | 37B[2] |
| **Physical Exposure** | | **Behavioral Risk Factor** | | | |
| Abuse | Dating violence | Perceived Control Over Condoms | Less control over sexuality | 1.50** | 47B |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Abuse | Dating violence | Limited Perceived Control Over Condom Use | Perceived less control over sexuality | 1.50 | 47B |
| High Risk Partners | Low motivation to use | Poor Assertive Communication Skills | Infrequent communication about condoms | 1.40*** | B10[5] |
| Partner Disapproval | Greater fear of condom negotiation | Poor Assertive Communication Skills | Infrequent communication about condoms | 1.51** | B10 |
| Partner Disapproval | Greater partner barriers | Poor Assertive Communication Skills | Infrequent communication about condoms | 1.36** | B10 |
| Partner Disapproval | Greater fear of condom negotiation | Lower Self-Efficacy to Avoid HIV | Refusal of unwanted sex | 1.36** | 41B |
| Partner Disapproval | Greater partner barriers | Lower Self-Efficacy to Avoid HIV | Refusal of unwanted sex | 1.41** | 41B |
| Explicit Media | Viewing rap videos | History of Alcohol and Drug Use | Current alcohol use | 1.20* | 44B |
| Explicit Media | Viewing rap videos | History of Alcohol and Drug Use | Current drug use | 1.40* | 44B |
| Limited Access to HIV Prevention | Lack of access to condoms | Poor Assertive Communication Skills | Infrequent communication about condoms | 1.21** | B10 |
| **Social Exposure** | | **Social Exposure** | | | |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Family Influences Not Supportive of HIV Prevention | Family support | .37*** | 39B[3] |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Family Influences Not Supportive of HIV Prevention | Parental monitoring | .11* | 39B[3] |
| Partner Desire to Conceive | Partner desires pregnancy | Desire to Conceive | Pregnancy worry | 2.36** | B20 |
| **Social Exposure** | | **Personal Risk Factor** | | | |
| Desire to Conceive Partner Desire to Conceive | No contraceptive use | Psychological Distress | Depression | 1.30† | 26B |
| Religious Affiliation that Forbids the Use of Contraception | Religiosity | Negative Beliefs Not Supportive of Safer Sex | Positive attitude toward condoms | 1.20* | 35B |
| Family Influences Not Supportive of HIV Prevention | Family support, live with mother | Negative Beliefs Not Supportive of Safer Sex | Positive attitude toward condoms | 1.35 | 11B[4] |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Self Esteem | Self esteem | $\eta 2$=.02** | 37B[2] |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Psychological Distress | Depression | -.10* | 39B |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex (father) | Negative Beliefs Not Supportive of Safer Sex | Positive attitudes toward condoms | .13** | 31J |
| Family Influences Not Supportive of HIV Prevention | Family support, live with mother | Negative Beliefs Not Supportive of Safer Sex | Positive attitude toward condoms | 1.35 | 11B[4] |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Peer Norms | Perception that friends have had sex | Self Esteem | Self esteem | η2=.006† | 37B[2] |
| Limited Access to HIV Prevention | Barriers to access to condoms | Self Esteem | Self esteem | η2=.08*** | 37B[2] |
| **Social Exposure** | | **Behavioral Risk Factors** | | | |
| Older Partners | Partner at least two years older | Poor Assertive Communication Skills | Infrequent communication | 1.17 | 2E |
| Older Partners | Partner at least two years older | Lower Self-Efficacy to Avoid HIV | Low self efficacy | .97 | 2E |
| Older Partners | Partner at least two years older | Lower Self-Efficacy to Avoid HIV | Perceived ability to negotiate condom use | .92 | 27B |
| Desire to Conceive | Ever pregnant | History of Alcohol and Drug Use | Drug use last six months | NS | D3 |
| Desire to Conceive | Ever pregnant | History of Alcohol and Drug Use | Marijuana use last 30 days | NS | D3 |
| Desire to Conceive | Ever pregnant | History of Alcohol and Drug Use | Binge drinking last 30 days | NS | D3 |
| Desire to Conceive | Ever pregnant | History of Alcohol and Drug Use | Alcohol use before sex last six months | NS | D3 |
| Desire to Conceive | Ever pregnant | History of Alcohol and Drug Use | Drug use before sex last six months | NS | D3 |
| Desire to Conceive | Ever pregnant | Poor Assertive Communication Skills | Infrequent communication | 1.04 | B10 |
| Desire to Conceive | Pregnancy worry | Poor Assertive Communication Skills | No communication about pregnancy | 1.53 | B20 |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Desire to Conceive | Pregnancy worry | Lower Self-Efficacy to Avoid HIV | Refuse unwanted sex | .84 | B41 |
| Religious Affiliation that Forbids the Use of Contraception | Religiosity | Poor Assertive Communication Skills | Communication with new partner | 1.40*** | 35B |
| Religious Affiliation that Forbids the Use of Contraception | Religiosity | Poor Assertive Communication Skills | Communication with steady partner | 1.50*** | 35B |
| Religious Affiliation that Forbids the Use of Contraception | Religiosity | Poor Assertive Communication Skills | Communication about STD, HIV, and pregnancy | 1.60*** | 35B |
| Religious Affiliation that Forbids the Use of Contraception | Religiosity | Lower Self-Efficacy to Avoid HIV | Refuse unsafe sexual encounter | 1.40*** | 35B |
| Family Influences Not Supportive of HIV Prevention | Parental monitoring | History of Alcohol and Drug Use | History of marijuana use | 1.60*** | 25B |
| Family Influences Not Supportive of HIV Prevention | Parental monitoring | History of Alcohol and Drug Use | More frequent use of marijuana 30D | 2.20* | 25B |
| Family Influences Not Supportive of HIV Prevention | Parental monitoring | History of Alcohol and Drug Use | History of alcohol use | 1.20† | 25B |
| Family Influences Not Supportive of HIV Prevention | Parental monitoring | History of Alcohol and Drug Use | Consumed alcohol use 30D | 1.60* | 25B |
| Family Influences Not Supportive of HIV Prevention | Family support, live with mother | Poor Assertive Communication Skills | More frequent partner communication | 1.53* | 11B[4] |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Family Influences Not Supportive of HIV Prevention | Family support, live with mother | Lower Self-Efficacy to Avoid HIV | High condom negotiation self-efficacy | 1.43† | 11B[4] |
| Family Influences Not Supportive of HIV Prevention | Low perceived support | Poor Assertive Communication Skills | Infrequent communication | 1.21 | 13B[1] |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Poor Assertive Communication Skills | More frequent partner communication | 1.70*** | 24B |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Lower Self-Efficacy to Avoid HIV | Refuse unsafe sexual encounter | 1.20* | 41B |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Lower Self-Efficacy to Avoid HIV | Sexual communication self efficacy for new partners | .11** | 39B[4] |
| Family Influences Not Supportive of HIV Prevention | Communication with parent about sex | Lower Self-Efficacy to Avoid HIV | Sexual communication for steady partners | .08* | 39B[3] |
| Family Influences Not Supportive of HIV Prevention | High perceived support | Lower Self-Efficacy to Avoid HIV | Refuse unsafe sexual encounter | 1.17* | 41B |
| Family Influences Not Supportive of HIV Prevention | Low perceived support | Lower Self-Efficacy to Avoid HIV | Low condom negotiation self-efficacy | 1.88** | 13B[1] |
| **Socioeconomic Risk Factor** | | **Personal Risk Factor** | | | |
| Age | Age | Self Esteem | Self esteem | r=.07 | 37B |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| **Personal Risk Factor** | | **Behavioral Risk Factor** | | | |
| Psychological Distress | Depression | Lower Self-Efficacy to Avoid HIV | Less self-efficacy to negotiate | 1.3* | 26B |
| Psychological Distress | Depression | Limited Perceived Control Over Condom Use | Less perceived control in relationships | 1.4*** | 26B |
| Self Esteem | Self esteem | Lower Self-Efficacy to Avoid HIV | Refusal of unwanted sex | 1.24** | 41B |
| Self Esteem | Body image | Lower Self-Efficacy to Avoid HIV | Less confidence to refuse unwanted sex | 1.40** | 41B |
| Self Esteem | Self esteem | Poor Assertive Communication Skills | More frequent partner communication | $\eta 2$=.05*** | 37B[2] |
| Self Esteem | Self esteem | Poor Assertive Communication Skills | More frequent partner communication | .21* | 36B |
| Self Esteem | Poor body image | Limited Perceived Control Over Condom Use | Less control in relationships | 1.6*** | 46B |
| Self Esteem | Self esteem | Poor Assertive Communication Skills | Infrequent communication | -1.7** | B10[5] |
| Self Esteem | Satisfaction with body image | Poor Assertive Communication Skills | Infrequent communication | -1.0* | B10[5] |
| Negative Beliefs Not Supportive of Safer Sex | Unfavorable attitudes toward condoms | Poor Assertive Communication Skills | Infrequent communication | 1.27* | B10[5] |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Lower Self-Efficacy to Avoid HIV | Self Efficacy of condom use with steady partner | Limited Perceived Control Over Condom Use | Personal power | .15 | 28C[6] |
| Negative Beliefs Not Supportive of Safer Sex | Perception that condoms ruin pleasure | Poor Assertive Communication Skills | Infrequent communication | -0.8† | B10[5] |
| **Personal Risk Factor** | | **Personal Risk Factor** | | | |
| Psychological Distress | Depression | Negative Beliefs Not Supportive of Safer Sex | Greater perceived barriers to condom use | 1.5*** | 26B |
| Self Esteem | Self esteem | Negative Beliefs Not Supportive of Safer Sex | Sexual experience barriers | $\eta 2$=.035*** | 37B[2] |
| Self Esteem | Self esteem | Negative Beliefs Not Supportive of Safer Sex | Condom attitudes | $\eta 2$=.10*** | 37B[2] |
| Self Esteem | Body image | Limited Perceived Control Over Condom Use | Less control in relationship | 1.62*** | 41B |
| Perceived Invulnerability to HIV/AIDS | Motivational barriers | Self Esteem | Self esteem | $\eta 2$=.05*** | 37B[2] |
| Perceived Invulnerability to HIV/AIDS | Greater HIV/AIDS anxiety | Self Esteem | Body image | 1.3** | 41B |
| **Behavioral Risk Factor** | | **Behavioral Risk Factor** | | | |
| Lower Self-Efficacy to Avoid HIV | Safer sex self-efficacy | Lower Self-Efficacy to Avoid HIV | Refusal of unwanted sex | 1.53*** | 41B |
| Lower Self-Efficacy to Avoid HIV | Partner communication self efficacy | Lower Self-Efficacy to Avoid HIV | Refusal of unwanted sex | 1.33*** | 41B |

| Construct | | Construct | | Association | Sample |
|---|---|---|---|---|---|
| Poor Assertive Communication Skills | Frequent communication | Lower Self-Efficacy to Avoid HIV | Sexual communication new partner | .35** | 36B |
| Poor Assertive Communication Skills | Frequent communication | Lower Self-Efficacy to Avoid HIV | Sexual communication boyfriend | .27** | 36B |
| Lower Self-Efficacy to Avoid HIV | Perceived self efficacy | Limited Perceived Control Over Condom Use | Sexual relationship power | .39** | 4H |
| Lower Self-Efficacy to Avoid HIV | Self Efficacy of condom use with steady partner | Limited Perceived Control Over Condom Use | Interpersonal power | .13 | 28C[6] |
| Lower Self-Efficacy to Avoid HIV | Self Efficacy of condom use with steady partner | Limited Perceived Control Over Condom Use | Relationship power | .29* | 28C[6] |

[1]Adjusted for intervention effects, parent-adolescent communication about sex-related issues, parental monitoring and age
[2]Adjusted for depression and history of pregnancy
[3]One tailed test of significance
[4]Adjusted for parent-adolescent communication about sex-related issues, parental monitoring and age
[5]Mean differences are presented
[6]Adjusted for age at first intercourse, knowledge, personal risk of AIDS, self-efficacy of condom use with steady partner, life stresses, assertion skills, age difference, and relationship importance.