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# Condom Use Among Urban African American Adolescent Females

Jaquetta Marie Reeves
*Wayne State University*, jaquetta.reeves@wayne.edu

**CONDOM USE AMONG URBAN AFRICAN AMERICAN ADOLESCENT FEMALES**

by

**JAQUETTA M. REEVES**

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## DEDICATION

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*"One of the most beautiful qualities of true friendship is to understand and to be understood."*

*~Lucius Annaeus Seneca*

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# CHAPTER 1 INTRODUCTION

## Statement of the Problem

Sexually transmitted infections (STIs) are one of the most common global health problems, estimated 357 million STIs are acquired yearly, having a profound impact on sexual and reproductive health among men and women (WHO, 2016). The Centers for Disease Control and Prevention (CDC) estimates that 20 million STIs occur annually nationwide, causing a financial burden of approximately $16 billion each year (Centers for Disease Control and Prevention [CDC], 2017). There has also been a significant increase in the rate of STIs among Americans living in the U.S. today (CDC, 2017a; Satterwhite, 2013; WHO, 2013). Most STIs are spread between two people through intimate physical contact (e.g., vaginal, anal, and oral). Other pathways include blood, intravenous drug use, and mother-to-infant (CDC, 2018b; WHO, 2013). It is possible for an individual to have an STI and be unaware of it due to lack of signs or symptoms of the infection (CDC, 2018a), which means they may go untreated. Consequently, untreated STIs are highly dangerous and can result in severe health and reproductive consequences (e.g., increased risk for other STIs and HIV, pelvic inflammatory disease, ectopic pregnancy, infertility, congenital infections, birth defects, and stillbirth) (Berggren & Patchen, 2011; CDC, 2010; Craft-Blacksheare, Jackson, & Graham, 2014; Eaton et al., 2012). Unfortunately, certain STI viruses are incurable (i.e., HIV, Hepatitis B Virus, Herpes Simplex II virus, Human Papillomavirus, genital warts) and can cause permanent physical harm, organ damage, or death (WHO, 2013; CDC, 2018b). Despite mandatory reporting laws, in many cases, individuals who have acquired an STI are not reported to the CDC (CDC, 2017a). Therefore, reported cases in the national surveillance data only capture a fraction of the high burden of STIs in the U.S. (CDC, 2017).

Youth who are under the age of 24 represent 25% of the sexually experienced population,

yet, they acquire 50 percent of reported STIs in the U.S. (CDC, 2014). The CDC stated that chlamydia trachomatis has been steadily increasing among youth and late adolescent's age 15–24 years. In 2016, of all reported chlamydia infections, youth aged 15–24 years represented 63.1% of the 1,008,403 reported cases and the rate of reported gonorrhea cases increased 15.5% for persons aged 15–19 years and 12.8% for persons aged 20–24 years (CDC, 2017). In addition, African American youth continue to be one of the groups most severely affected by STI/HIV infections in the U.S. Recent reports show African Americans have substantially higher rates of STIs and acquire HIV more frequently than any other ethnic and racial group (CDC, 2018b). Results from a sample study of the Youth Risk Behavior Surveillance System (YRBSS) study that included surveys of $9^{th}$ –$12^{th}$ grade students (n=15,624) from public and private schools in 37 states and 19 large urban school districts indicated minority students have a higher prevalence of sexual-risk and other health-risk behaviors compared with nonminority students (Kann et al., 2016). Previous studies also suggested that high-risk behaviors for STIs are increasing yearly among adolescents' and young adult populations, mainly minorities living in urban environments (CDC, 2012; Fenton, 2001). DiClemente et al. (2007) and other studies have found sexual risk behaviors to be associated with socio-economic factors, such as: depressed economic conditions, low SES, disadvantaged neighborhoods and inequitable healthcare (CDC, 2012; DiClemente, Sales & Crosby, 2007; Manhart et al., 2016; Raiford et al., 2014; Viner, 2012). Furthermore, researchers have found that there is an association between social norms, attitudes and beliefs and high-risk sexual behaviors among urban African American adolescents (Berggren & Patchen, 2011; CDC, 2010; Craft-Blacksheare et al., 2014; Sales et al., 2014). However, the explanation as to why or how these variables are associated with each other as it leads to increase risk for STIs remains unexplained.

Though condom use remains one of the most effective STI prevention strategies, there continues to be low rates of consistent condom use among minority youth, particularly young women (CDC, 2013). Studies revealed that a lack of condom use among minorities is often related to gender differences, females disadvantage to negotiate condom use, poor socio-economic status and racial disparities (Denning & DiNenno, 2010; DiClemente, 2001; Gupta, 2000). Little research has investigated how African American adolescent females respond to different strategies to negotiate condom use in sexual situations, and whether certain strategies tend to be perceived as more or less effective in condom use negotiation. However, some studies show that condom use self-efficacy tends to be more difficult for females in sexual relationships as they must negotiate condom use with their partners (DiClemente, 2001). According to Gupta (2000), gender is not the substitute for sex, but it refers to how a society internalizes the expectations and norms about appropriate male and female behavior, characteristics, and roles and how they should interact with each other (Gupta, 2000). Thus, in past U.S. history, there has been a clear distinction between men's and women's roles. The unequal power balance in heterosexual relationships regrettably tend to favor men more than women, which makes it difficult for women to be proactive in negotiating safer sex (Gupta, 2000). Findings of these studies support the need for STI prevention interventions to focus on gender-specific barriers to condom use and techniques that address condom use negotiation especially among high-risk sexually active African American adolescent females.

**At-risk populations for STIs**

In the U.S., youth aged 13 to 24 years are disproportionately affected by STIs (CDC, 2014; Kann et al., 2014; 2016), and are at highest risk for contracting an STI for a combination of behavioral, biological (e.g., immature cervical cells in females), social and cultural reasons (CDC,

2017; DiClemente, Salazar, & Crosby, 2007). The Kann et al. (2016) YRBSS study of 263,818 high school students grade 9th–12th in public and private schools located in 37 states and 19 large urban school districts found that nationwide 41% of students had engaged in at least one encounter of sexual intercourse, 30.1% were currently sexually active (i.e., had sexual intercourse within the three months prior to the survey), and 11.5% had sexual intercourse with four or more partners in their lifetime (Kann, McManus, Harris et al., 2016). Prior to the Obama administration, for over two-decades "abstinence-only" educational programs had been offered in many the public-school settings (SIECUS, 2010), despite studies that have shown that for many years, abstinence-only programs have been ineffective in delaying sexual intercourse among teens (APHA, 2006; Stanger-Hall, Hall, 2011; Santelli, 2017). Abstinence-only programs suggest the only choice is for teens to abstain from any sexual activity that included vaginal, oral, and anal sex until marriage (SIECUS, 2010). These programs fail to teach teens about STI prevention (i.e. condom use) and other birth control methods (SIECUS, 2010) that could greatly reduce the risk of unintended pregnancy and STI/HIV. As of 2011, twenty-five states enforced abstinence-only in sex education (SIECUS, 2010).

**STIs and HIV Prevalence**

African American youth continue to be one of the groups most severely affected by STIs in the U.S., representing more than half (57%) of all new HIV infections among youth aged 13–24 (CDC, 2014). When comparing race and gender, African American adolescent females reported to have chlamydia rates 4.9 times higher and gonorrhea rates 9.5 times higher than the rate of White adolescent females in the same age group (CDC, 2013; Barton et al., 2016). The rate of new infections among young African American females aged 13–24 was six times as high as that of young Hispanic females, and 20 times that of young White females (CDC, 2014). Despite the

overwhelming disparities of STIs among African American adolescent females, few studies have examined predictors of recurrent STIs among this population (Swartzendruber et al., 2013).

According to a 2016 CDC report, more than 1.1 million people in the U.S. are currently living with HIV today, and only one of seven of them may be unaware of it (CDC, 2017a). By race and ethnicity, African Americans and Hispanics/Latinos are disproportionately affected by the HIV epidemic in the U.S. Though African Americans make up only 12% of the population in the U.S., they accounted for 44% of HIV diagnoses in 2016 (CDC, 2017a). The populations most affected were gay and bisexual African American men who accounted for the largest number of HIV diagnoses (10,223 infected), followed by Hispanic/Latino men (7,425 infected) and White men (7,390 infected) who were gay and bisexual (CDC, 2017a). Among all women who made up 19% (7,529) of the 39,782 new HIV diagnoses, heterosexual contact accounted for 87% (6,541) of them (CDC, 2017a). However, the breakdown of new HIV diagnoses among women were: 61% (4,560) African American, 19% (1,450) White, and 16% (1,168) Hispanic/Latina (CDC, 2017a). The Hispanic/Latino population manifests higher rates of primary and secondary syphilis and HIV; however, African Americans are overrepresented in recently reported HIV cases in the U.S. (CDC 2017; 2017a; 2018b).

Research studies have shown evidence that inequitable societal factors disproportionately influence high-risk sexual behaviors among African American youth living in urban environments (Bauermeister, Zimmerman, & Caldwell, 2011; Baugh & Davis, 2016; DiClemente, Salazar, & Crosby, 2007; Viner, 2012). Households where parents had lower educational achievement and lower incomes were linked to higher sexual behaviors, including unprotected sex (Bauermeister et al., 2011; Baugh & Davis, 2016; DiClemente, Salazar, & Crosby, 2007; Viner, 2012). Other factors associated with risky sexual behaviors among adolescents of lower income families were parents

who worked multiple jobs, spent less time with their teen and left them home alone unmonitored for long periods of time, which could lead to their child's irresponsible decision-making (Han, Miller, & Waldfogel, 2010). Adolescents face a significant challenge in preventing risk-taking behaviors due to their sensitivity to reward-seeking, impulsivity and an immature cognitive control system (Kar et al., 2015; Leshem, 2016; Steinberg, 2004, 2005). It has been found in multiple studies that during the adolescent stage, youth have poor cognitive functioning which affects their perception of the consequences of engaging in unprotected sex. They are therefore less apt to enact protective behaviors such as condom use to avoid STIs (Hutchison, 2010; Kar et al., 2015; Leshem, 2016; Pedlow & Carey, 2004; Steinberg, 2005, 2008). Furthermore, the 2015 YRBSS study indicated other influential risk factors for sexual risk behaviors such as: poverty, neighborhood deprivation, family conflict and poor communication with parent, lack of parental involvement, association with peers of negative influence, and lack of school connectedness or school drop-out (Kann, 2016). Many different causal factors influence adolescents' risky sexual behaviors and increased risk for STIs. It is also apparent that these variables differ by gender, race, ethnic backgrounds, familial structures, and socioenvironmental factors. Further research is needed to explore critical factors of various motivators for risky sexual behaviors among adolescent populations, particularly African Americans living in urban areas.

**Adolescents and Condom Use**

In 2017, just 20% of all ninth-graders had ever had sex, compared with a majority of 12th-graders (57%), reflecting the fact that as students age, they are more likely to become sexually active. The occurrence of having had sexual intercourse with four or more persons was higher among male than female students and higher among black male and Hispanic male students than any other students (Kann, McManus, Harris, et al., 2016). Due to adolescents' high-risk sexual

behavior and lack of condom-use, they are faced with unplanned sexual encounters, exposure to STIs, and unwanted pregnancies that often led to having unsafe abortions with potentially serious complications (Baku, 2012; Craft-Blacksheare et al., 2014). Epidemiologic studies demonstrated that consistent and correct use of male latex condoms reduces the risk of many transmitted STIs and HIV infection (CDC, 2013). However, condom use cannot guarantee 100% effectiveness against transmission of any STI (CDC, 2013). Also, inconsistent or nonuse of condoms can lead to STI acquisition because transmission can occur in a single sex act with an infected partner; and, incorrect use diminishes the protective effect of condoms by leading to condom breakage, slippage, or leakage (CDC, 2013). The results of the 2015 YRBSS study indicated that among all high school students who were sexually active and used a condom during last intercourse, 63.4% were African American adolescents compared to 56.8% Whites and 55.6% Hispanics (Kann, McManus, Harris, et al., 2016). Though this study shows that nationwide, African American adolescents are more likely to use a condom in general, the African American adolescent population has a higher prevalence of STIs compared with other races of the same age group (CDC, 2012). However, little research has investigated how African American adolescent females respond to different strategies to negotiate condom use in sexual situations. Studies have found that inconsistent condom use among impoverished adolescent women may stem from economical disadvantages situational constraints (i.e., coercion, partner mistrust or abandonment) or fear of condom use negotiation or lower perception of power in their relationships (Kalichman, Williams, Cherry, Belcher, & Nachimson, 1998; Kogan, Simons, Chen, Burwell, & Brody, 2013; Manning, Flanigan, Giordano, & Longmore, 2009; Rosenbuam et al., 2012).

Across multiple studies, it has been noted that parenting style, influence on contraceptive use, family functioning and communication, the media, neighborhood features and peers are

contributing factors related to adolescent high-risk sexual behaviors and decision-making toward condom use (Baugh & Davis, 2016; Deptula et al., 2010; Harris, 2011; Malcolm et al., 2013; Viner, 2012). The sexual risk behaviors of African American adolescents living in urban environments differ from other adolescent populations on an array of factors with varying causes. Several studies provided evidence suggest certain environmental factors have an equal or even more significant effect on adolescents' sexual risk behaviors (DiClemente et al., 2007; Viner, 2012). For example, across multiple studies, investigators suggested that neighborhood disadvantages could be a factor in helping shape adolescents' norms and attitude regarding sexual behavior leading to earlier sexual practices, increased sexual activity and inconsistency of condom use (Bauermiester et al., 2011; DiClemente et al., 2007; Viner, 2012).

**STI Prevention Interventions**

STI behavioral interventions were designed to prevent acquisition of STIs by modifying individual behavior with a focus on 1) knowledge, 2) attitudes, 3) perceived vulnerability, 4) skills, 5) self-efficacy and 5) reinforcement of safe sex practices (CDC, 2014; DiClemente, Salazar, & Crosby, 2007). Behavioral interventions are highly instrumental in helping individuals develop good decision-making, communication skills and increasing knowledge about disease transmission and prevention (Aral, 2011; DiClemente, Salazar, & Crosby, 2007; Piper, 2008). Evidence of the effectiveness of a behavioral prevention intervention is based on self-report behavior, increased safe sex practices, i.e., abstinence, consistent condom use, mutually monogamous relationships, and decreased acquisition of STIs (CDC, 2014). Theory-guided behavioral interventions are designed for increasing knowledge regarding STIs and HIV transmission, condom use, barriers to condom use, attitudes towards condom use, intentions to use condoms, condom use skills, social norms, and self-efficacy (DiClemente, Salazar, & Crosby,

2007; Jemmott, Jemmott & Fong, 2010; Sales et al, 2012). Research demonstrated that behavioral interventions based on theoretical frameworks were most effective with positive behavioral outcomes at least up to 12 months post-intervention (DiClemente, Salazar, & Crosby, 2007; Jemmott, Jemmott & Fong, 2010; Sales et al., 2012).

There is substantial evidence that effective STI prevention interventions can help control the transmission and the spread of STIs. However, irrespective of the many years of implementation of effective prevention intervention programs among minority adolescent females, the long-term (>18months) behavioral changes are not sustained (Brown et al., 2011; Coyle et al., 2006; DiClemente, Salazar, & Crosby, 2007). Researchers have identified individual and contextual factors affecting condom use among African American adolescent females. However, these findings have not been translated well into STI prevention interventions (CDC, 2017; WHO, 2013). Therefore, there is an urgent need for researchers to continue to develop culturally-tailored HIV/STI prevention interventions for African American females to reduce their high-risk sexual behaviors that lead to potential STIs or reinfection of STIs.

**Clinical Imperative for STI Treatment**

The CDC reported that during 1991–2015 a significant linear increase occurred overall in the prevalence condom use during the last incident of sexual intercourse among high school adolescents (Kann, McManus, Harris, et al., 2016). Confoundingly, recent studies show the climbing STI rates among African American adolescent females are closely linked to inconsistent condom-use (Bauermeister et al., 2011; Craft-Blacksheare et al., 2014). Thus, with this high prevalence of STIs and recurrent STIs among African American adolescent females (CDC, 2017), it is imperative for healthcare providers offering sexual health services to understand the underlying factors that influence the decision-making of condom use among this population (Craft-

Blacksheare, 2014). Although research continues to explore the phenomena of attitudes and beliefs regarding high-risk sexual behaviors and their impact on the intentions of condom use among African American adolescent females, there is a dearth in the literature explaining the root cause of this problematic issue.

**Purpose Statement and Specific Aims**

The purpose of this research was to explore the relationship between internal factors (i.e., attitudes towards condoms, subjective norms and perceived behavioral control), condom use and intention to use condoms among urban African American adolescent females. The primary aims of this study are:

**Specific Aim 1.** To explore attitudes towards condoms, subjective norms and perceived behavioral control regarding condom use and intention to use condoms among African American adolescent females who do and do not have a history of STIs.

$H_{1a}$: African American adolescent females with a history of STIs will have different attitudes, subjective norms and perceived behavioral control regarding condom use and intention to use condoms those who do not have a history of STIs.

$H_{1b}$: African American adolescent females without a history of STIs will have *greater* intentions to use condoms during sexual activity than those with a history of an STI.

**Specific Aim 2.** To determine the relationship between attitudes and perception of masculine norms and intentions to use condoms among African American adolescent females.

$H_2$: Intentions to use condoms will be moderated by perception of masculine norms among African American adolescent females.

## Summary

Despite the extensive research studies on condom use and implementation of STI prevention intervention programs among African American adolescent females, results from the 2017 CDC National Morbidity and Mortality Weekly Report database demonstrated that there are knowledge gaps in the literature regarding why this population is disproportionately at higher risk for STIs compared to all other racial groups (CDC, 2010, 2012, 2013, 2017). Across multiple studies investigators found that internal and external factors, such as circumstances of daily life from quality of peer relationships, family norms, parental involvement, and neighborhood environments were found to influence adolescents' risky sexual behavior and affect their decision-making on condom-use (Baugh & Davis, 2016; Derefinko et al., 2014; Deptula, Henry & Schoeny, 2010; Dillard, 2003; Forhan, Gottlieb, Sternberg, Xu, Datta, Berman & Markowitz, 2008; Kogan et al., 2008; Pringle et al., 2017; Redding et al., 2011). However, other factors such as exposure to STIs and adolescent females' perception of masculine norms in a sexual relationship have not been assessed. Future research studies must continue to critically explore various internal and external factors that significantly impact high-risk sexual behaviors and decision-making toward condom use among minority populations, particularly African American adolescent females living in urban areas. Therefore, the relationship between "STI exposure" and "masculine norms" must be examined among this population to help identify the best predictors for condom use and intentions to use condoms during sexual activity.

# CHAPTER II LITERATURE REVIEW AND THEORETICAL FRAMEWORK

## Introduction

The high rate of sexually transmitted infections (STIs) among adolescent females remains a growing public health issue. Between the ages of 13–19 years, there have been approximately 3.2 million adolescent females infected with at least one STI (CDC, 2015). Overall, adolescent females aged 15–19 years have the highest rates of chlamydia and gonorrhea infection among all age and gender groups, with a rate of nearly 46% of the 1.6 million reported cases in 2016 (CDC, 2017). Adolescent females are also at greater risk than males for severe health consequences (e.g., increased risk for other STIs and HIV, pelvic inflammatory disease, ectopic pregnancy, infertility, congenital infections, birth defects, and stillbirth) secondary to recurrent STIs (Berggren & Patchen, 2011; CDC, 2010; Craft-Blacksheare, Jackson, & Graham, 2014). There are several factors that may contribute to higher risk for STIs among adolescent females (e.g., developmental physiology, family and peer relationships, romantic relationships, community, social determinants, and STI prevalence in the community).

## Literature Review

This literature review will focus on current literature about the association between attitudes, subjective norms, perceived behavioral control and their influence on intentions to use condoms among African American adolescent females who live in urban environments.

### Adolescent Development

**Developmental Factors.** During adolescence (early adolescence [ages 11–14], middle adolescence [ages 15–17], late adolescence [ages 18–22]), rapid change occurs physically, emotionally, cognitively and socially (Feldman & Matjasko 2005; Hutchison, 2010). Studies have shown that adolescents' high-risk sexual behaviors are influenced by developmental transitions,

such as biological, physiological, cognitive, emotional and psychosocial maturation (Leshem, 2016; Patton & Viner, 2007; Pedlow & Carey, 2004). Although sexuality is a normal aspect of adolescent development and a vital stage in life (Hutchison, 2010; Tolman & McClelland, 2011), this period is also marked by heightened vulnerability which increases their risk for undesirable health outcomes, such as STIs (Patton & Viner, 2007; Suleiman, Galván, Harden & Dahl, 2017).

Adolescents encounter a variety of pressures exerted by family, peers, school, society and socioeconomic domains that influence their behavior (Feldman, 2005; Hutchinson, 2010; Viner, 2012). Numerous studies have shown that during the adolescence period there is an association between high-risk sexual behaviors and developmental factors (e.g., *cognitive, puberty, sensation-seeking*), physiological factors (e.g., *hormonal, chemical, neurological*), behavioral factors (*substance use, alcohol use, sexual history*) and environmental factors (*family, SES, peers and sexual partner*) (CDC, 2010, 2012, 2013, 2017; Craft-Blacksheare, 2014; Derefinko et al., 2014; Deptula, Henry & Schoeny, 2010; Dillard, 2003; Eaton et al., 2008, Forhan et al., 2008; Kogan et al., 2008; Pringle et al., 2017; Redding et al., 2011; Swartzendruber et al, 2013; Viner, 2012). To effectively enhance protective factors and reduce high-risk sexual behaviors among sexually active adolescents, the biophysiological stages of development within adolescence are important to explore, particularly as they relate to the design and implementation of STI prevention intervention programs.

Adolescence is a time of tremendous growth and development of the brain and cognitive systems. During the developmental phase of sexual maturity is when adolescents are prone to show high-risk behaviors while exploring their sexuality (Hutchison, 2010; Kar, Choudhury & Singh, 2015; Tolman & McClelland, 2011). Also, adolescents face a greater challenge in preventing high-risk sexual behaviors due to their sensitivity to reward-seeking, impulsivity and immature

cognitive control system (Kar et al., 2015; Leshem, 2016; Steinberg, 2004, 2005). Piaget's cognitive-developmental theory is a major theory for understanding adolescent behavior. According to Piaget's theory, adolescents are egocentric with feelings of invincibility and often demonstrate risky behaviors (Piaget, 1972; Greene, Krcmar, Walters, Rubin & Hale, 2000). Piaget defines egocentricism as a "lack of differentiation in some area of subject-object interaction," meaning adolescents are centered to or concerned only about their point of view and cannot consider another individual's perspective (Piaget, 1972). This concept was also used by David Elkind's (1967) theory of "personal fable" which derives from cognitive immaturity during the adolescence phase. Personal fable is a thought process where an adolescent feels special, superior, powerful and more capable of doing things than others (Elkind, 1967; Albert, Elkind & Ginsberg, 2007). During this phase, adolescents do not think of long-term consequences, nor have expectations to suffer from any negative experiences due to their risky behaviors (Arnett, 1995). The concept of personal fable provides a theoretical link between egocentrism as it relates to adolescents engaging in sexually risky behaviors (e.g. unprotected sex), and many other risky behaviors such as: alcohol or drug abuse, drunk driving, and criminal activities (Arnett, 1995; Serovich & Greene, 1997). Thus, it is assumed that high-risk sexual behaviors are the result of cognitive immaturity and adolescents are not sufficiently able to assess the risks, the costs and benefits, of engaging in high-risk sexual behavior (Alberts, Elkind, & Gingsberg, 2006; Arnett, 1995; Serovich & Greene, 1997).

The cognitive-control system (e.g., abilities of abstract thinking, delay gratification, or appraise risk for STIs) slowly develops overtime, not reaching maturity until the mid-20's (Leshem, 2016; Pedlow & Carey, 2004; Steinberg, 2005, 2008). Multiple studies show poor cognitive functioning affects adolescent's perception of the consequences of risky sexual

behaviors and ability to enact protective behaviors to avoid STIs (Hutchison, 2010; Kar et al., 2015; Leshem, 2016; Pedlow & Carey, 2004; Steinberg, 2005, 2008).

**Biological and Physiological Factors.** Risky sexual behaviors are also influenced by physiological factors, such as onset of puberty, hormonal changes and sexual arousal reactions due to chemical and neurological changes in the brain (Derefinko et al., 2014; Hadley, et al., 2013; Suleiman et al., 2017). Puberty is a signal of the onset of adolescence. It is a biological process that starts in the brain involving radical hormonal changes and physiological transformations that lead to the ability for adolescents to reproduce (Blakemore, Burnett & Dahl, 2010). Hormonal changes induce puberty, and the onset of puberty can often lead to early sexual debut (Fortenberry, 2013; Pedlow & Carey, 2004). Sex hormones and neurotransmitters like dopamine and serotonin play an important role in sexual development, especially in sexual behavior, sexual arousal and satisfaction (Arain et al., 2013). Dopamine has been associated with motivation and reward-related behaviors, with high levels increasing sexual motivation and sexual behavior (Arain, et al., 2013; Hull, Muschamp & Sato, 2004). The release of serotonin has been reported to have an inhibitory influence on sexual behavior and libido (Arain et al., 2013; Hull et al., 2004). Pringle et al. (2017) conducted a systematic review of 13 studies from 2015 to 2016, to examine the physiological factors that influence adolescent sexual behavior. The review aimed to capture an extensive range of studies with different methodological approaches (Pringle et al., 2017). Results of this review indicated that adolescents who were more physiologically advanced (e.g., looked older, well developed physique), drank alcohol more frequently, were more involved with dating in early to mid-adolescence (13–16 years of age) and accumulated a higher number of sexual partners by age 16 years old (Pringle et al., 2017). Also, higher testosterone levels (increases in libido physiologically) were associated with more frequent sexual intercourse among adolescent boys

and timing of their first coitus (Pringle et al., 2017). Alongside testosterone, other hormonal changes accounted for gender variations. For example, the reviewers found that sexual behavior of adolescent females was positively affected by increasing levels of sex hormones, testosterone and estrogen (Pringle et al., 2017). Physiological arousal such as erotic fantasies, wet-dreams, masturbation and "making out" (kissing, rubbing bodies, touching genitals) are natural phases during adolescence (Austrian, 2002; Feldmann & Middleman, 2002; Fortenberry, 2014; Hutchison, 2010; O'Sullivan, Cheng, Harris & Brooks-Gunn, 2007). During adolescence, certain body parts are especially sensitive to sexual stimulation (i.e., erotogenic), and adolescents' attempt to explore or stimulate these erotogenic zones to get gratification (Austrian, 2002; Fortenberry, 2014; Hutchison, 2010). Though physiological arousal may be a natural reflection of adolescents' physical growth and development (Hall, Holmqvist & Sherry, 2004), non-coital sexual behaviors (e.g., oral, kissing, rubbing bodies, touching genitals) have been linked to increased sexual risk behaviors and often precede sexual intercourse (Fortenberry, 2014; Hadley, 2013; Lindberg, Jones & Santelli, 2008; O'Sullivan, Cheng, Harris & Brooks-Gunn, 2007). Furthermore, STIs can be transmitted during noncoital sexual activity. Research studies demonstrated evidence regarding adolescent's involvement in non-coital activities, which are potential routes of transmission of STIs including HIV infection (Halpern-Felsher, Cornell, Kropp & Tschann, 2005; Leichliter et al., 2007; Lindberg et al., 2008). Bacterial and viral infections spread through saliva, blood, vaginal secretions, semen, fecal material, and in some cases by skin-to-skin contact (CDC, 2017b; Edwards & Carne, 1998). Adolescent females are biologically susceptible to infections due to having an immature cervix, also known as "cervical ectopy." Cervical ectopy is a common physiological process when the columnar epithelium cells on the outer surface of the cervix are not protected by cervical mucus that is inside of the cervix, thus making the cells highly sensitive

to sexually transmitted organisms (Lee, Foley & Tobin, 2006). Exploring the nature of these physiological processes and the associated consequences, is essential for designing more effective tailored STI prevention interventions that meet the sexual and reproductive health needs of adolescents (Cherry, 2014; WHO, 2011).

**Behavioral Factors.** Regardless of the various levels of adolescent developmental factors having a role in their risky sexual behaviors, the use of drugs and alcohol has been shown to have a positive association with risky sexual behaviors, such as early sexual debut, and having multiple sex-partners or spontaneous sexual encounters ("hooking up") with unknown partners (Ritchwood et al., 2015). Other studies conducted among sexually active adolescents also identified an association between drug and substance use (e.g., binge drinking) and sexual risk behaviors such as: ever having sex, having multiple sex partners, unprotected sex, and pregnancy before the age of 15 years of age (Cavazos-Rehg et al., 2011, 2012; Ritchwood et al., 2015). Researchers suggested that increased frequency of substance use, increases the likelihood of unprotected sexual activities and the number of sex partners (Cavazos-Rehg et al., 2011). National studies have shown sexual risk behaviors increase among adolescents who use alcohol, and were highest among students who used marijuana, cocaine, prescription drugs (such as sedatives, opioids, and stimulants), and other illicit street drugs (Kann, 2016). Also, youth who reported no substance use were the least likely to engage in sexual risk-taking behaviors (Kann, 2016). The 2016 YRBSS study indicated other influential risk factors for substance use and sexual risk behaviors, such as: poverty, neighborhood deprivation, family conflict, parent/child poor communication, lack of parental involvement or positive engagement, association with peers that are substance users and lack of school connectedness or school drop-out (Kann, 2016). Another risky behavioral factor identified in the literature was adolescent engagement in appropriate media use. Researchers found

a growing prevalence of youths' exposure to sexual content through television and other electronic media (e.g., internet, "sexting" via cellphone) to be associated with and have potential effects on adolescents' sexual risk behaviors (Gruber & Grube, 2000; Harris, 2011; Springate & Omar, 2013).

The results of these studies provide a foundation for understanding how modifiable behavioral factors significantly influence adolescents' sexual risk-taking behaviors during the developmental period of adolescence. Evidence suggested the asynchrony of developmental stages of puberty, hormonal changes, and cognitive control maturation and juxtaposition of emotional arousal and susceptibility to peer and environmental influence lead to increased vulnerability and high-risk sexual behaviors during adolescence (Leshem, 2014; Steinberg, 2004, 2008; vanDuijvenvoorde et al., 2016; Willoughby et al., 2014). It is imperative for researchers to understand the developmental stages of adolescence as it relates to their sexuality, vulnerability and high-risk sexual behaviors. Once researchers gain a better understanding of the relationship between these factors, they can develop more effective multi-component STI prevention interventions that will promote steps to consistent use of condoms, prevent acquisition of STIs, the spread of infection and negative health complications.

**Social Media Influence.** Although sexual content in the media can affect any age group, adolescents are particularly vulnerable during the adolescence developmental period when gender roles, sexual attitudes, and sexual behaviors are being shaped (Harris, 2011). Television and the internet have become an arena for all kinds of sexual activity and are becoming more explicit (Harris, 2011; Gruber & Grube, 2000), which may be misguiding and can have a significant negative impact on adolescents' sexual behaviors (Gruber & Grube, 2000; Springate & Omar, 2013). Several researchers reported that adolescents exposed to sexually explicit social media,

including pornographic media were more likely to have sexually permissive attitudes, and were more likely to engage in risky sexual behaviors (Harris, 2011; Gruber & Grube, 2000). Gruber and Grube (2000) conducted an analysis of the media and its effect on adolescents' sexuality indicating that 80% of all movies shown on network or cable television stations have sexual content. In addition, 60% of music videos portray individuals making sensual body movements dressed in provocative clothing, thus creating sexual feelings and impulses. Also, prime time television shows made light of sexual innuendos between unmarried couples, with little dialog of potential risks of having unprotected sex (Gruber & Grube, 2000). In this review, they found adolescent girls chose network television programs with sexual content more often than did adolescent boys, and adolescent boys were more interested in hardcore sexual content found in explicit music lyrics and X-rated films (Gruber & Grube, 2000). Few studies have assessed the associations between the degree and nature of adolescent exposure to sexual content and their sexual attitudes and behaviors. Yet, studies have shown there is an increasing number of adolescents exploring their sexuality at younger and younger ages related to the constant exposure of sexual messages through the media (Ross, 2012). In another example, Collins et al. (2015) conducted a qualitative study among sexually active African American adolescent girls ages 15 to 19 years, living in an urban environment. The majority of the participants felt that social networking, music with explicit lyrics, ads, and television reality programs were *not only* important influences in their lives, but also important venues for learning about sexuality and socially acceptable behaviors.

According to a recent study from the Pew Research Center, 88% of American teens ages 13 to 17 years have or have access to a mobile phone of some kind, 87% have or have access to a desktop or laptop computer, and 58% have or have access to a tablet computer (Duggan, 2015). This study also reported that teens ages 13 to 17 frequently access some form of media (e.g.,

internet, chat rooms, blogs, webpages and social networking sites) estimating 26% send and receive instant messages on a daily basis (Duggan, 2015). The Kaiser Family Foundation reported that adolescents (age 13–17) spend an average of 33 minutes talking on their cell phones each day, but an average of 1.5 hours sending and receiving texts, totaling about 1,742 text messages per month (Rideout, Foehr & Roberts, 2010). Another form of explicit media that has been shown to be associated with sexual activities is sending sexual messages ("sexting") via cellular phone in a text. Sexting involves the transmission of a sexual text of nude or sexual photographs via cellphones (Weiss & Samenow, 2010). Some studies have found sexting to be associated with risky sexual behaviors, damage to reputation and psychological distress; and other risk-taking behaviors such as substance use and cyberbullying (Barrense-Dias et al., 2017; Rice et al., 2012, 2014). Rice and colleagues (2014) conducted a study to examine sexting among a sample of 1285 adolescent middle schoolers in Los Angeles, California, and found that middle school students who text excessively and send and receive sext messages are more likely to report being sexually active. A logistic regression was used to assess the correlates of sexting behavior and associations between sexting and unprotected sexual activity. The results of this study revealed students who texted at least 100 times per day were more likely to report both receiving (OR: 2.4) and sending (OR: 4.5) sexts and being sexually active (OR: 4.1). Students who sent sexts (OR: 3.2) and students who received sexts (OR: 7.0) were more likely to report sexual activity (Rice et al., 2014). Compared with not being sexually active, excessive texting and receiving sexts were associated with both unprotected sex (OR: 4.7 and 12.1) and with condom use (OR: 3.7 and 5.5) (Rice et al., 2014). Unfortunately, it appears that sexting among adolescent populations enhances rapid progression to early sexual debut and high-risk sexual behavior, which leads to STIs and other health consequences. This study provided an in-depth understanding of other possible causalities

and predictive factors of high-risk sexual behaviors among adolescents. The findings are relevant and beneficial for educational purposes and targeted STI prevention intervention programs regarding sexting risks associated with lack of condom use and increased risk for STIs.

## Attitudes and Subjective Norms

### Family, Peer and Sexual Partner

**Familial Factors.** Parenting style, parent-child relationships and communication, and family functioning were identified as key factors that impacted sexual behavior in adolescents' (Baugh & Davis, 2016; Deptula et al., 2010; Malcolm et al., 2013). Baugh & Davis (2016) conducted a study among a diverse group of 270 undergraduate college students aged 18 to 24 to examine the relationships between perceived parenting style, contraceptive (i.e., condoms) attitudes, contraceptive self-efficacy, and contraceptive use (Baugh & Davis, 2016). Correlational analyses revealed that the strongest relationship observed was between contraceptive attitudes (M =13.42, SD =4.23, n =263) and parenting style (M =2.54, SD =0.87, n =261); thus, an ANOVA determined a significant difference between the two variables, $F (3, 221) = 6.03$, $p < .01$ (Baugh & Davis, 2016). Also, the results of a regression analyses suggested that parenting style and contraceptive self-efficacy were moderate predictors for contraceptive use by explaining 38% of the variance ($R^2 =0.382$, $F (2, 228) = 69.81$. $p < .000$). Findings suggested that for college students, both internal and external influences on beliefs contributed to contraceptive use and the parent–child relationship remained influential. The adolescent's perception of parenting style was also found to have a strong influence on adolescents' subsequent contraceptive use (Baugh & Davis, 2016). Other studies found the effect of family functioning, parental norms, close family relationships and positive communication about sex have an indirect effect on sexual behaviors and condom use among sexually active adolescents (Deptula et al., 2010; Malcolm et al., 2013).

Higher levels of parent–adolescent communication about sex and family functioning such as positive communication within the family and between the parent and child, and parental involvement can indirectly reduce high-risk sexual behavior and increase condom use among teens (Deptula et al., 2010; Malcolm et al., 2013).

Alternatively, parents who demonstrate negative communication, controlling and contentious behaviors towards their child have been be associated with increased high-risk sexual behavior among adolescents (Deptula et al., 2010). It has been shown that parents who demonstrate negative attitudes or controlling behaviors towards their child regarding sexual activity felt uncomfortable or inexperienced in how to effectively communicate with their adolescent regarding sexual behavior and contraceptive use (Deptula et al., 2010; Malcolm et al., 2013). Strengthening parenting skills, building parent-child relationships and improving family communication skills may contribute to increasing condom use and promoting healthy sexual behavior among adolescents (Baugh & Davis, 2016; Deptula et al., 2010; Harris, Sutherland, & Hutchinson, 2013; Malcolm et al., 2013). Malcolm et al., (2013) conducted a cross-sectional study of 171 Hispanic adolescents (mean age =14.88) the majority of whom were male (73%) with problematic behaviors. Although this study targeted Hispanic adolescent teens with behavioral problems, its relevance is attributable to the investigators' focus on how family functioning and open parent–adolescent communication about sex, and condom use attitudes, norms, and control beliefs influenced condom use behaviors (Malcolm et al., 2013). In this study, family functioning was identified by a combination of four familial factors*: parent–adolescent communication, family communication, parental involvement, and positive parenting*. Also, data for this study were taken from baseline assessments of two randomized clinical trials conducted between 2004 – 2011. Both clinical trials aimed to test the efficacy of a Hispanic-specific culturally sensitive intervention

found to be efficacious in preventing and reducing HIV risk behaviors among adolescents (Malcolm et al., 2013). The results of this study suggested that higher levels of family functioning had an indirect effect on condom use intention and behavior through communication about sex ($\beta = .53$, $p < .0010$); higher levels of parent–adolescent communication about sex was positively associated with condom use attitudes ($\beta = .33$, $p < .001$); and control beliefs ($\beta = .41$, $p < .001$). Lastly, the results revealed that participants who showed an increase in intentions to use condoms, also increased condom use during last sexual intercourse, $\beta = -.57$, $p < .001$ (Malcolm et al., 2013). However, the study did not include family structure variables such as single-parent homes, which limits the ability to generalize study findings to all adolescent populations. Despite this limitation, the findings revealed that key factors of parenting and family functioning, parent-child relationships and positive communication styles have a direct impact on adolescents' high-risk sexual behaviors and decision-making on condom use (Baugh & Davis, 2016; Deptula et al., 2010; Malcolm et al., 2013; Viner, 2012).

Using data from the National Longitudinal Study of Adolescent Health (Add Health), Deptula et al. (2010) explored key parenting factors that were associated with adolescents' risky sexual behaviors and found the quality of the parent-adolescent relationships, communication and family functioning were key influential factors that impacted sexual behavior in adolescents' (Deptula et al., 2010; Malcolm et al., 2013). Studies found higher levels of parent–adolescent communication about sex and family functioning such as positive family communication, parental involvement, and neutral parent-adolescent communication indirectly reduced high-risk sexual behavior and promoted greater condom use (Deptula et al., 2010; Malcolm et al., 2013). Some studies indicated that communication was also shaped by families' racial and ethnic backgrounds, and some parents may have difficulty communicating about sex and condom use with their child

(Grossman, Jenkins & Richer, 2018). Other family factors that have been found to positively (parental involvement and close monitoring) or negatively (divorced parents and single parent households) influence adolescent sexual behaviors (Bersamin et al., 2008). Pearson, Muller & Frisco (2006), used data from the Add Health database to determine what aspects of parental involvement were related to initiation of sexual debut, and whether parental involvement explained the association between family structure and sexual debut. The data analysis from Add Health included students who completed Wave I and Wave II in-home interviews totaling (n=14,736) respondents. Parent involvement included: 1) *family structure* (based on who lived in the household), 2) *shared dinnertime* (based on parent available during dinner), 3) *parent-child relationship quality* (based on closeness to either parent(s), how much they feel their parent(s) care, satisfaction with parent(s), how much is the parent warm and loving towards child, and satisfaction of how they communicate with parent(s), 4) *shared activities with parents* (based on what parent and teen have done together in the past 4 weeks), and 5) *communication about sex* (based on how much the parent(s) talked to their adolescent about sex (Pearson et al., 2006). Findings for the total sample indicated that *shared dinnertime*, *parent–teen relationship quality*, and *communication about sex* all had independent and significant associations with sexual initiation (Pearson et al., 2006). Among the total sample, each additional day of the week in which an adolescent's parent was available during dinner was associated with an approximately 6.3% decrease in their odds of sexual initiation (Pearson et al., 2006). Results also indicated there was a positive relationship between sexual initiation and living in any family structure *other* than with both parents (Pearson et al., 2006). However, family structure and shared activities varied among gender and racial/ethnic groups. Girls were less likely than boys to live with a single father or a father and stepmother, and they were more likely than boys to live with a single mother (though

teens of both genders were more likely to live with their biological mother). More non-Latino/a Caucasian adolescents reported living with two biological parents than did African American or Latino/a teens (Pearson et al., 2006). More African American and Latino/a adolescents lived with single mothers as compared to non-Latino/a Caucasian teens, and fewer African American adolescents lived with step-parents than did non-Latino/a Caucasian or Latino/a adolescents. Pearson and colleagues found that non-Latino/a Caucasian adolescents who lived in step-parent families had a significant, positive relationship to sexual initiation, but this was not true for African American adolescents. In addition to family structure, they found that adolescents who experienced change in family structure (e.g., divorce, separation or remarriage) between survey Waves I and II, were significantly more likely to have had first sex than were those whose household structure remained the stable (Pearson et al., 2006). Findings from this study supported the premise that parent-adolescent relationships, communication and family functioning were key influential factors that impacted sexual behavior in adolescents. However, family structures were not uniform across all groups of adolescents' and their experiences were not mutually exclusive.

DiClemente et al. (2001) conducted a study examining the associations between parent-adolescent communication about sex-related topics and practices of African American adolescent females with their partners, and perceived ability to negotiate condom use. A multivariate analysis revealed adolescents who communicated less frequently about sex-related issues with their parents were 1.6 times more likely to never use condoms in the past month and during their last five sexual encounters and were 1.7 times more likely to have not used a condom at last intercourse (DiClemente et al., 2001). Adolescents who communicated less frequently with their parents about sex-related topics reported fewer discussions with their sex partners about pregnancy and STI/HIV prevention, and their partners' sexual history and were almost twice as likely to report lower self-

efficacy of condom use negotiation (DiClemente et al., 2001). The results of this study demonstrated that there is a unique correlation between parental-communication and involvement and adolescent sexual risk behaviors. Hence, there is value in parent–adolescent communication regarding sexual health. However, there are gaps in the literature that warrant further investigation for evaluating the effects of parent-adolescent communication and other family factors on condom use among targeted populations (i.e., African American adolescent females living in urban environments) where the epidemic of STIs is becoming worse. Future studies that aim to broaden the identification of family factors and their impact on high-risk sexual behaviors among at-risk populations must target "specific groups" who have similar family structures and ethnic backgrounds and are experiencing the same environmental surroundings.

**Peer Factors.** Adolescents are faced with considerable challenges as they transition from childhood to adulthood. Among those challenges are decisions about whether to engage in sexual behaviors (Sieving, Eisenberg, Pettingell & Skay, 2006). During adolescence, youth begin to be influenced by their peers (Gardner & Steinberg, 2005; Padilla-Walker & Bean, 2009; Salazar, Head, Crosby, DiClemente, Sales, Wingood & Rose, 2011; Sieving, Eisenberg, Pettingell & Skay, 2006). Numerous studies have identified peer pressure and peer norms that directly affect risky sexual behaviors, including initiation of sexual debut (first time having sex) among adolescents, which can ultimately lead to higher risk of acquiring STIs (Brady, Dolcini, Harper & Pollack, 2009; Gardner & Steinberg, 2005; Padilla-Walker & Bean, 2009; Salazar, Head, Crosby, DiClemente, Sales, Wingood & Rose, 2011; Sieving, Eisenberg, Pettingell & Skay, 2006).

Sieving et al. (2006) used a sample of the Add Health data from Wave I and Wave II to examine whether the effects of peer relationships predicted sexual debut among sexually inexperienced adolescents. At the start of Wave I, investigators randomly selected 2,436

participants ($9^{th}$–$11^{th}$ grade) who were sexually inexperienced and completed Wave I and Wave II in-home surveys. Participants reported on the Wave I survey that they had never engaged in vaginal intercourse, and by the Wave II survey they had initiated of sexual intercourse (Sieving et al., 2006). Data also included participants' selection of their best male and female friends who were listed on their school roster and had completed the Wave I in-home survey. The purpose of the participants selecting their close friend(s) who had completed Wave I was for investigators to identify friend-related variables that had a significant relationship with sexual initiation (Sieving et al., 2006). Results indicated that during the nine to18-month interval between Wave I (1994-95) and Wave II (1996), 18% of the participants initiated sexual intercourse (Sieving et al., 2006).

The results of an odds ratio by logistic analysis revealed that the higher the proportion of an adolescents' friends who were sexually active, the greater the odds of early sexual debut (OR: 1.01). The odds were higher among participants who believed they would gain their friends' respect by having sex (1.2), which suggested that the timing of sexual debut can be determined by the norms of sexual behaviors and perceived value of friendships among adolescents (Sieving et al., 2006). One limitation is that the investigators had to rely on self-reported data which may be biased due to social acceptability. For example, Sieving et al., (2006) had to dismiss some of the participants due to inconsistent data reported from the Wave I in-home survey where some participants reported they had never been sexually active, but reported on the Wave II in-home survey they had sexual intercourse prior to the Wave I survey. Also, the study only examined the relationships between the participants' close friends they went to school with but did not include close peers of the same age-group living in their neighborhood. Also, the data did not include pertinent indicators such as emotional attachment, closeness or bonding of friendship (Sieving et al., 2006). These other indicators may have contributed to better understanding the dynamics of

the relationships between participants who initiated sexual intercourse between Wave I and II and their friends who were sexually experienced. Lastly, findings were not generalizable to younger adolescents in the 7th and 8th who may have also initiated sexual intercourse between Wave I and Wave II, as well. Overall, the findings of this study demonstrated that there is a positive correlation between peer influence and sexual behaviors including initiation of sexual debut among adolescents.

Other studies indicated that adolescents who have a strong connection with positive peer influence (i.e., non-risk-taking behaviors) promoted healthy protective sexual behaviors that resulted in less risky sexual behaviors, decreased STIs and unwanted pregnancies (Brady et al., 2009; Hurd, Zimmerman, & Xue, 2009; Viner, 2012). Future studies are needed to examine the power of peer influence and its effects on high-risk sexual behaviors among adolescent populations, especially among at-risk populations where the STIs rates are disproportionately higher (e.g., minority adolescents). There is a critical need to obtain current data from "Generation Z" youth age 14–19 years. Gen Z is the newest generation to be named and were born between 1995 and 2015. They are currently between 4-24 years old. Collecting recent data from sexually active adolescents of the "Generation Z" population could help deepen the understanding of peer influence and its impact on high-risk sexual behaviors. New findings from our Generation Z population will contribute to the development of effective multi-component STI prevention intervention programs and implementation of robust strategies to strengthen self-efficacy, resistance to peer influence, while promoting safer sex methods.

**Romantic Relationships**

**Sexual Partner.** Romantic relationships are another major developmental milestone during adolescence **(**Roisman et al., 2009), and it is not unusual behavior for adolescents to explore

physical intimacy and sexual feelings in a relationship **(**Roisman et al., 2009). Studies showed that adolescents who have a boyfriend of girlfriend are at greater risk for engaging in noncoital (e.g., oral, kissing, rubbing bodies, touching genitals) behaviors (Marín, Kirby, Hudes, Coyle & Gómez, 2006). Although physiological arousal may be a natural reflection of adolescents' physical growth and development (Hall, Holmqvist & Sherry, 2004), non-coital sexual behaviors have been linked to increased sexual risk behaviors and often precede sexual intercourse (Fortenberry, 2014; Hadley, 2013; Lindberg, Jones & Santelli, 2008; O'Sullivan, Cheng, Harris & Brooks-Gunn, 2007). Furthermore, STIs may be transmitted during noncoital sexual activity (CDC, 2017). Empirical evidence showed that noncoital involvement are potential routes of transmission of infection, such as saliva, blood, vaginal secretions, semen, fecal material and skin-to-skin contact (Edwards & Carne, 1998; Halpern-Felsher, Cornell, Kropp & Tschann, 2005; Leichliter et al., 2007; Lindberg et al., 2008).

Limited research has examined relationship roles between adolescent couples and decision-making on condom use. Though there are some research studies that found relationship factors to be influential in sexual behavior and lack of condom use among youth (Ewing & Bryan, 2015; Manlove, Ikramullah & Terry-Humen, 2008; Nelson, Morrison-Beedy, Kearney & Dozier, 2011; Staras et al., 2013). The following key factors were identified as barriers to condom use among adolescents in relationships: 1) being in a long-term relationship where they felt "in love" and trusted their partner, 2) having a partner that is three or more years older, 3) substance use or alcohol consumption leading to inebriated sex, 4) having spontaneous sexual activity with someone they just met, i.e. "hooking up", 5) increased frequency of intercourse, and 6) having multiple sexual partners (Ewing & Bryan, 2015; Manlove, Ikramullah & Terry-Humen, 2008; Nelson, Morrison-Beedy, Kearney & Dozier, 2011; Staras et al., 2013).

Ewing and Bryan (2015) conducted a mixed-method study among a diverse population of 1,920 sexually active high school students (12–19 years old). They identified relationship factors such as length of relationship, love and trust to have influence on sexual behavior and condom use among adolescents indicating participants who were least likely to use a condom were the ones that stated they had high trust or love in their partner and had sexual intercourse frequently (Ewing & Bryan, 2015). Other studies have indicated relationship factors such as: gender roles, power in relationship, having strong a desire to express trust, love and commitment interfered with consistent condom use among adolescents (Sales et al., 2012; Brown et al., 2011; Thorburn, Harvey & Ryan, 2005). Another study concurred that particularly among young women in long-term intimate relationships tend to not use condoms with their partners (El-Bassel et al, 2009). Age discordance (e.g., a partners age is five years or older) in adolescent girls has been correlated to high-risk sexual behaviors, early sexual debut, decreased condom use, frequent sexual intercourse, having multiple sexual partners and increased STIs (Gowen, Feldman, Diaz & Yisrael, 2004; Morrison-Beedy, Xia, & Passmore, 2013; Senn & Carey, 2011; Staras et al., 2013). An analysis of data from the Add Health study (sample size 10,413 adolescents; N=5,297 females; N=4,505 males) revealed that participants with a sexual partner who was two years or older had early sexual debut and a reduced likelihood of using condoms (Ryan, Franzetta, Manlove & Schelar, 2008). Consequently, early sexual debut (initiating sex before age 15) increased the risk for STIs, repeated STIs, unwanted pregnancies and reproductive health issues (Kaestle, Halpern, Miller & Ford, 2005; Resnick et al., 1997; Richey, Macaluso, & Hook III, 1999; Upchurch et al., 2004). Other partner factors that were directly linked to increase STIs among youth were: having multiple sex-partners or spontaneous sexual encounters (“hooking up”) with an unknown partner (Ritchwood et al., 2015).

Currently there is a gap in the literature about the associations between relationship factors and condom use among adolescents. Therefore, more research studies are needed to address the context of relationship dynamics, such as; gender roles, relationship power and decision-making on condom use among adolescent populations (DePadilla et al., 2011; El-Bassel et al, 2003; Hotton et al., 2015; Montgomery et al., 2008; Nelson, Beedy, Kearney & Dozier, 2011).

## Perceived Behavioral Control

### Adolescence and High-Risk Sexual Behavior

High-risk sexual behaviors, which include early sexual debut (younger than 15 years), lack of consistent condom use and ineffective contraceptive methods during adolescence have been an ongoing public health concern in the U.S. (Abma, Martinez & Copen, 2010; Kann et al., 2014; Zimmer-Gembeck & Helfand, 2008). Multiple studies conducted among sexually active adolescents identified an association between having multiple sex partners and spontaneous sex with alcohol and substance use (Cavazos-Rehg et al., 2011, 2012; Kann, 2016; Ritchwood et al., 2015; Staras et al., 2013). Researchers suggested increased frequency of substance use, increases the likelihood of unprotected sexual activities and the number of sex partners (Cavazos-Rehg et al., 2011; Kann, 2016). National studies in the U.S. have shown sexual risk behaviors increase among adolescents who use alcohol, and were highest among students who used marijuana, cocaine, prescription drugs (such as sedatives, opioids, and stimulants), and other illicit street drugs (Kann, 2016).

Adolescents are more likely than adults or children to engage in risky behaviors (i.e., drunk driving, carrying weapons, using illegal drugs, and engaging in unprotected sex). Such risky behaviors can subsequently lead to acquisition and transmission of STIs and unwanted pregnancies,

long-term illness or death (Kann et al., 2014; Spitalnick, DiClemente, Wingood et al., 2007). Therefore, STI prevention intervention programs for adolescents may be improved by adding components for sexual hookups and substance abuse counseling which place youth at an increase the risk for STIs and other undesirable health consequences.

**ighborhood/Community Influence.** The environment where an individual grows up and the community they belong to comprise an important social context that affects family functioning, developmental functioning and individual functioning (Boardman & Saint Onge, 2005; Minh, Muhajarine, Janus, Brownell & Guhn, 2017). Studies have shown that adolescent risk-taking sexual behaviors extend beyond the individual and family factors into the neighborhoods and communities where they reside. Evidence demonstrated an association between poor run-down neighborhoods, higher levels of crime and violence, and increased sexual high-risk behaviors and STI rates among adolescent populations (DiClemente et al., 2007; Viner, 2012). DiClemente et al., (2007) reviewed a vast body of empirical research studies highlighting antecedents and their associations with sexual behaviors that lead to STI and HIV risks in adolescents. Among some of the antecedents identified were: family support, family structure, parent monitoring, parental communication, community violence, media and poverty. Across multiple studies, investigators implied that poor run-down neighborhoods could potentially shape adolescents' norms and attitudes regarding sexual behavior leading to earlier sexual practices, increased sexual activity and inconsistency of condom use (Bachanas et al., 2002; DiClemente et al., 2007; Viner, 2012). Neighborhood deprivation in urbanized areas is described as unsafe environments with poor quality homes with increased violence, exposure to air pollutants, lack of transportation and access to quality grocery stores (Bauermeister et al., 2011; Viner, 2012). Previous studies have shown that there is an association between neighborhood deprivation, higher

levels of crime and violence, and increased sexual high-risk behaviors and STI rates among the adolescent population (Bachanas et al., 2002; Brahmbhatt et al., 2014). Adolescents who are exposed to this type of environment are at greater risk for negative influences on their behavior that affects their health (Bachanas et al., 2002; Bauermeister et al., 2011; DiClemente et al., 2007; Viner, 2012).

The sequence of influence on risky sexual decision-making among adolescents surpasses the individual and family system. Thus, patterns of risky sexual behaviors that begin in early adolescence may significantly impact the health and well-being of the adolescent throughout a lifetime (Freudenberg & Ruglis, 2007). There is strong evidence that the health of minority adolescents living in urban environments is affected by social factors at community, society, and national levels (DiClemente et al., 2007; Freudenberg & Ruglis, 2007; Viner, 2012). Therefore, the use of Bronfenbrenner's (1979) Ecological Systems theory would allow researchers to take a multiple-level approach (i.e., micro-, meso-, macro-) when addressing risky sexual behaviors particularly among urban African American adolescents which are impacted by a myriad of internal and external factors leading to increased risk for STIs (Bronfenbrenner, 2005; DiClemente et al., 2007). Although there is not a scientific measurement that can determine causality between neighborhood disadvantages and high-risk sexual behavior among adolescents, the correlation between the two remains highly significant (Bauermiester et al., 2011; Lang, Salazar, Crosby, DiClemente, Brown & Donenberg, 2010; Montgomery, 2009; Salazar et al., 2011; Viner, 2012).

**At-Risk Urban African American Adolescents**

The CDC indicated that one in four sexually active adolescent females has an STI, such as chlamydia or human papillomavirus (Forhan et al., 2008). It is more alarmingly that the prevalence of STIs is disproportionately higher among African American adolescent females, and this group

of young women also have a higher occurrence of acquiring repeated STIs (CDC, 2015). In general, African Americans only make up 12% of the population in the U.S., yet they account for higher rates of HIV, gonorrhea, chlamydia, and syphilis compared to Whites or any other racial group (CDC, 2016). According to the CDC (2017), there are a number of challenges that contribute to the epidemic of STIs among the African American population such as: low socioeconomic status, living in small social networks where sexual partners are often limited by the smaller ratio of men to women, higher STI rates and lack of access to healthcare (CDC, 2017; 2012).

Among all students in the 2015 YRBSS study, minority students were reported to have a higher prevalence of sexual-risk and other health-risk behaviors compared with nonminority students (Kann et al., 2016). Reported cases of HIV showed African Americans representing more than half (57%) of all new HIV infections among young people aged 13–24 (CDC, 2014). Young African American men, as well as African American females are severely impacted by STIs, including HIV infections, each year (CDC, 2014). Overall, African American youth continue to be one of the groups most severely affected by STI/HIV infections in the U.S. In addition, African American adolescent females aged 15–19 years are disproportionately at a higher risk for contracting an STI compared to any other racial group (CDC, 2017), accounting for the highest rates of chlamydia and gonorrhea infections (CDC, 2017). The rate of new HIV infections among African-American females was 20-fold higher than that of white women and almost five-fold higher than that of Hispanic/Latino women (CDC, 2012a).

**African American Youth in Urban Areas.** Several studies have reported that STI racial disparities are caused by various internal and external factors (Bird, Solis, & Mbonu, 2016; Bauermeister et al., 2011; CDC, 2016; Viner, 2012; WHO, 2013). Socio-economic, cultural and structural factors such as poverty, limited access to health care, racism and unemployment

contribute to high rates of STIs among vulnerable and at-risk populations, such as African Americans females, men who have sex with men (MSM), and other racial adolescent minorities (Viner et al., 2012; WHO, 2013). Much of the burden is believed to be attributed to the impact of neighborhood disadvantages and social environmental characteristics that leave minorities vulnerable to negative influences, lack of community cohesion, and scarce resources (Bauermiester et al., 2011; DiClemente, Salazar, & Crosby, 2007; Viner, 2012). In addition, other factors such as stigmas and homophobia that impact MSM, may hinder them from seeking HIV/STI prevention (CDC, 2010; 2016; Herbst, 2005). Viner (2012) and other studies also described how structural and proximal determinants (i.e., peer relationships, family norms, parental involvement, and deteriorating neighborhoods) are highly influential in adolescents' high-risk sexual behaviors and have an impact on their decision-making on safe-sex practices (Bauermeister et al., 2011; Baugh & Davis, 2016; DiClemente, Salazar, & Crosby, 2007). Thus, DiClemente and colleagues (2007) suggested implementing STI prevention interventions that evaluate a myriad of influences that affect adolescents' risk for acquiring STIs.

**Exogenous Factors**

**Social Inequalities.** Other studies have shown that culture and sexual behavior are not solely the reasons for the growing health disparity of STIs among African Americans, but the spread of infectious diseases has been linked to social and economic inequities (Hogben & Leichliter, 2008; Adimora & Schoenbach, 2006; Pflieger, Cook, Niccolai, & Connell, 2013; Viner, 2012). Studies have found that there are geographic and racial differences with regards to STI prevalence among African American adolescent populations compared with other races (Adimora & Schoenbach, 2006; CDC, 2012; CDC, 2016; Hogben & Leichliter, 2008). A substantial body of research indicates there is a strong relationship between racial and ethnic disparities and

differences in health status. Numerous studies have shown that minority populations may experience burdens of disease and health risk at disproportionate rates because of complex and poorly understood interactions among socioeconomic, psychosocial, behavioral, and health care-related factors (Adimora & Schoenbach, 2006; CDC, 2012; CDC, 2016; Hogben & Leichliter, 2008).

Across multiple studies, investigators found that social determinants, which are identified as the circumstances of daily life, from quality of peer relationships, family norms, parental involvement, and neighborhood environments, were found to influence adolescents' sexual behavior and affect their decision-making on condom-use (Baugh & Davis, 2016; DiClemente, 2007; Viner, 2012). The World Health Organization (2008), defined social determinants of health as the conditions that individuals are born into, how they grow and age, and where they work and live. These conditions are shaped by how money, power, and resources are divided among the country at global, national and local levels (WHO, 2008). Viner (2012) describes how social determinants function on two levels: *structural and proximal*.

Structural determinants are identified as institutional, environmental, political, economic and social. Structural factors such as national wealth, income inequality, and access to education have a direct impact on individuals' health and well-being. The adolescent population is especially affected by these factors because they may be aware of these issues but are not in a position to impact change (Viner, 2012).

Proximal determinants develop from the varying levels of structural determinants and are identified as different circumstances people come across in everyday life from family dynamics, home environment, community, relationships among peers and access to school, food, and shelter (Viner, 2012). The proximal determinants of sexual health are extremely important to further

exploration. They have a major impact on African American adolescent females' sexual risk–taking behaviors such as personal norms, peers, families, and environmental factors (Bauermeister et al., 2011; Brahmbhatt et al., 2014; Brown, Sales, DiClemente, Davis & Rose, 2012; DiClemente et al., 2007; Forhan et al., 2008; Viner et al., 2012). Exposure to these key factors of proximal determinants has been linked to influencing and helping shape individuals' attitude towards particular behaviors (i.e., risk-taking behaviors), personal norms, intention, decision-making, health and well-being (Bauermeister et al., 2011; Brahmbhatt et al., 2014; Brown, Sales, DiClemente, Davis & Rose, 2012; DiClemente et al., 2007; Viner, 2012). The current study aimed to examine how factors of proximal determinants have an impact on the attitudes toward risky sexual behavior, intentions, and decision-making regarding condom use and safer sex practices among urban African American adolescent females.

**Poverty and Racial Inequities.** Issues on equality of education, wealth and health among urban African Americans and Whites living in the U.S. are worlds apart. For decades, economics has played a major role in America's racial divide (Bishaw & Posey, 2016). According to the 2014 U.S. Census Bureau, 27% of all African American men, women and children live below the poverty level compared to just 11% of all Americans, with an even higher percentage (38%) of African American children living in poverty compared to 22% of all children in America (U.S. Census Bureau, 2014). Analysis of federal government data by the Pew Research Center (2015) estimated that African Americans are twice as likely as Whites to be poor, uneducated and unemployed. Thus, in comparison to their median net worth, White households are about 13 times as wealthy as African American households (Pew Research Center, 2015). For example, every extra dollar of income earned by Whites generates $5.19 in new wealth over 25 years, while another dollar of income for a black family adds about .69 cents to its bottom line (Oliver & Shapiro, 2013).

It is apparent that wealth inequality among African Americans and Whites in the U.S. is still a current and ongoing issue (Bobo, 2011; Ratcliffe, 2015; Starkman, 2014; Viner, 2012). The inequality of wealth and health-related behaviors are highly correlated with education and employment opportunities, or the lack thereof (Jiang, Ekono, & Skinner, 2015). African American children are disproportionately poorer, have many unmet needs, attend low-quality schools, and often get caught up in their parents' economic struggles and unstable circumstances (Ratcliffe, 2015). Several studies suggested there is an association between social determinants and sexual risk behaviors among adolescents living in urban areas (Bauermeister et al., 2011; Baugh & Davis, 2016; DiClemente, Salazar, & Crosby, 2007; Viner, 2012).

In the U.S., the CDC found that there were geographic, racial and ethnic differences with regards to STI prevalence (CDC, 2012). It has been shown in past YRBSS studies that African American high school students are more likely to have had intercourse (60%) compared to White (44%) and Hispanic students (49%). A higher share of African American high school students (14%) and Hispanic students (6%) initiated sex before age 13 compared to White students (3%) (CDC, 2013). Moreover, African American adolescents living in urban areas have been found to have different sexual risk behaviors than other races in their age group due to various environmental factors (DiClemente et al., 2007; Viner, 2012). Across multiple studies, investigators indicated that neighborhood disadvantages could be a factor in helping shape adolescents' norms and attitudes regarding sexual behavior leading to earlier sexual practices, increased sexual activity and inconsistency of condom use (Bauermiester et al., 2011; DiClemente et al., 2007; Viner, 2012). Other studies indicated that economically disadvantaged African American youth, particularly females, self-reported structural determinants of health were directly linked with SES and numerous sexual risk behaviors and STI acquisition or reinfection (Manhart

et al., 2016; Thurman, Holden, Shain, Perdue, & Piper, 2008; Raiford et al., 2014; Sales et al., 2014).

The difference among urban African American adolescents compared to other adolescent populations in the U.S. is the unfairness of social injustice that places them at a higher risk for more than just STIs, but many other physical and mental ailments. Multiple research studies have shown that urban African American youth lacked health insurance, access of quality of care (e.g., STI counseling, support of test and retesting and partner notification), experienced poor-quality education, social exclusion and cultural racism (Buchsbaum et al., 2014; Craft-Blacksheare et al, 2014; Fenton, 2001; Hosenfeld et al., 2009). Furthermore, if researchers, scientists, practitioners and other healthcare providers continue to conduct studies that seek to explain health-risk behavioral factors among at-risk populations, more attention will to be given to eliminating structural inequalities and racism. Finally, more consideration should be devoted to understanding this phenomenon from the perspective of adolescents who are of the Generation Z population.

## Current Intervention Studies

### STI Prevention Interventions

Due to the overwhelming STI epidemic, multiple prevention intervention strategies have been attempted to reduce the incidence, prevalence and health risks of STIs (CDC, 2012b; Piper, 2008; WHO, 2013; HP2020). STI prevention interventions have a *specific activity or set of related activities* to reduce risky behaviors, with an intent to *change* the knowledge, attitudes, beliefs, behavior, or practices of individuals, groups, and populations (CDC, 2003; Sales & DiClemente et al., 2012; Washington Department of Health [WDH], 2009, WHO, 2013). These interventions could have been implemented at multiple levels: individuals, partners/couples, families, communities, and societal (i.e., technology, policy, laws, built environment) (CDC2018b; WDH,

2009; WHO, 2013). Behavioral change interventions have been shown to be effective among diverse adoelscent populations (Bauman & Hamilton 2007; Coyle et al., 2006; ETR, 2017; Markham et al., 2012; Sales et al., 2012). Behavioral change refers to the following: abstinence, consistent condom use, mutual monogamy, decrease number of sexual partners, increased self-efficacy (e.g., refuse sex without a condom, negotiate condom use with partner), and/or getting STI testing (CDC, 2018b; WDH, 2009; WHO, 2013).

STI behavioral interventions were designed to prevent acquisition of STIs by changing individual behavior with a focus on: 1) knowledge, 2) attitudes, 3) perceived vulnerability, 4) skills, 5) self-efficacy, and 6) reinforcement of safe sex practices (CDC, 2014; DiClemente, Salazar, & Crosby, 2007). Behavioral interventions are highly instrumental in helping individuals develop good decision-making, communication skills and increased knowledge about disease transmission and prevention (Aral, 2011; DiClemente, Salazar, & Crosby, 2007; Piper, 2008). Evidence of the effectiveness of a behavioral prevention intervention relies on self-report behavior, changed behavior in self-report, and increased safe sex practices (i.e., abstinence, consistent condom use, mutual monogamous relationships, and decreased acquisition of STIs) (CDC, 2014). There is strong evidence showing how cognitive theories (e.g., SCT, TRA, TPB) have been of great value in understanding a wide range of health-related risk behaviors, as well as promoting safer sexual behaviors (Bauman & Hamilton 2007; Coyle et al., 2006; ETR, 2017; Markham et al., 2012; Sales et al., 2012). Research shows that behavioral interventions based on theoretical frameworks were most effective with positive behavioral outcomes at least up to 12 months post-intervention (DiClemente, Salazar, & Crosby, 2007; Jemmott, Jemmott & Fong, 2010; Sales et al, 2012).

Individual-level interventions approach one person at a time, with a focus on individual

behavioral change via education, counseling, and one-on-one services to an individual (CDC, 2015). Motivational interviewing (MI) is a type of individual-level intervention tool to elicit behavioral change in a patient that identifies as having high-risk behaviors (Leontieva et al, 2009). Several studies demonstrated how the use of motivational interviewing-based interventions have been effective in decreasing sexual risk behaviors among individuals who are at-risk for STIs, including HIV (Morrison-Beedy, Crean, Passmore, & Carey, 2013; Outlaw et al., 2010; Weir et al., 2009). MI has also been proven to be a successful intervention among risky sexually active adolescents' in various clinical and school-based health settings (CDC, 2015; Leontieva et al, 2009; Miller et al., 2016; Petersen et al., 2007). However, some studies that have examined racial and ethnic differences in STI sexual risk behaviors using individual factors found that individual factors did not explain the continued health disparities of STI/HIV rates among at-risk minority populations (Bingham, Harawa, Johnson, Secura, MacKellar, & Valleroy, 2003; Crosby, Holtgrave, Stall, Peterson, & Shouse, 2007; Harawa, Greenland, Bingham, Johnson, Cochran, Cunningham & McFarland, 2004).

Factors such as a desire to express trust, love and commitment have been shown to interfere with consistent condom use (Sales et al., 2012; Thorburn, Harvey & Ryan, 2005). Studies have identified that particularly among young women in long-term intimate relationships, individual intervention efforts often fail to demonstrate increased condom use (El-Bassel et al, 2009). New methods that recognize the context of relationship dynamics (gender roles, relationship power, decision making dynamics) and focus on couple communication patterns may enable women to initiate and sustain condom use with long-term intimate partners (DePadilla et al., 2011; El-Bassel et al, 2003; Hotton et al., 2015; Montgomery et al., 2008).

Among women living with HIV in the U.S. in 2015, African-American women represented 61% of the diagnoses that year (CDC, 2016). The high rates of HIV infection are disproportionately higher among young women of color, particularly those who are economically disadvantaged, lack healthcare and resources, and live in urban environments with poor infrastructure (Denning & DiNenno, 2010). According to Rosenbuam et al. (2012) the lack of condom use among African American young women may not be attributable to just their ethnicity or race, but it may be the result of their need for economic benefits. In this study researchers indicated that African American adolescent women's lack of power in heterosexual relationships is possibly a causative factor of constraints on their sexual behavior and decision-making on condom use. There is growing evidence that suggests gender and power have the potential to improve the outcomes of curriculum-based STI prevention intervention educational programs for young people (DePidilla et al., 2011; Haberland, 2015). Therefore, future researchers should include gender and power key factors to promoting safer sex practices among African American adolescent girls. The Theory of Gender and Power (TGP), developed by Connell (1987), describes social structural theory based on existing philosophical writings of sexual inequality, gender, and power imbalance (Connell, 1987). There are three main constructs to the TGP that characterize gendered relationships between men and women: 1) the social division of labor, 2) the sexual division of power and 3) the structure of cathexis (e.g., social norms and affective attachments) which address affective components of the relationship (Connell, 1987; Wingood & DiClemente, 2000). This theory may be used to examine relationship roles, gender norms and other high-risk sexual behavioral risk factors that increase urban African American adolescent females' vulnerability for acquisition of STIs.

Group-level interventions approach small groups of people with similar life experiences and circumstances (CDC, 2015). HORIZONS is a group-level, theoretically-based, gender and culturally tailored STI/HIV intervention for African American adolescent females seeking sexual health services (Wright, 1994). This intervention is listed as one of the CDCs evidence-based "best practice" prevention interventions for STI/HIV infections (CDC, 2015). The intervention consists of two 4-hour STI/HIV prevention sessions, on two consecutive Saturdays, followed by 4 (15-minute) telephone contacts approximately every 2.5 months over approximately nine months (CDC, 2015). Sales et al. (2012) used the HORIZONS prevention intervention in an RCT of African American adolescent females (N=715), aged 15–21years (mean 7.8 years), to examine the mediating role of partner communication and frequency on condom use. HORIZONS intervention participants had higher communication frequency scores (p=0.04), higher proportion of condom-protected sexual activities in the past 60 days (p=0.034), and more consistent condom use in the 60 days before assessments (p=0.20) over the 12-month follow-up period relative to comparison group participants. The results of this study demonstrated the efficacy of theoretically-based, multicomponent tailored interventions for target populations (i.e., African American females).

The U.S. Department of Health and Human Services (DHHS) have identified several STI/HIV prevention intervention programs as high-quality evidence-based models. For example, *All4You!* is a theoretically evidence-based STI-, HIV-, and pregnancy prevention program designed for students ages 14–18 attending alternative schools (HHS, 2017). Coyle et al. (2006) evaluated the *All4You!* STI intervention in an RCT involving 24 alternative community schools, with a cohort of 988 students. The intervention was delivered by 14 sessions (approx. 90 minutes each) and conducted over 6 to 8 weeks. Participants were assessed four times over 18 months using a self-report questionnaire . The results for two of the outcomes among the intervention group

were statistically significant at 3-, and 6- month follow up; the group reported fewer non-steady partners with whom they had sexual intercourse without a condom, and increased condom use with last intercourse (Coyle et al., 2006). However, these behavioral effects diminished over time and were no longer statistically significant at the 12-, 18- month follow-up (Coyle et al., 2006).

The *Be Proud! Be Responsible!* Program (BPBR) is an evidence-based HIV-prevention curriculum initially designed for urban, African American males aged 13–18 (Alford, Huberman, Moss, & Hauser, 2003). This program empowers young people to change their behaviors and lower their risks by abstaining from sex or by using a latex condom during sexual activity, and equipped youth with negotiation, refusal, and condom use skills (HHS, 2017). The curriculum is intended to be used with small groups ranging from 6 to 12 participants and consisted of six 50-minute sessions, which could be presented over one to six days. The evaluation of the intervention indicated that three months following the intervention the students in *Be Proud! Be Responsible!* reported less risky sexual behavior than did students in the control condition. They also reported having sexual intercourse on fewer occasions and with fewer women (Alford et al., 2003). Those who had sexual intercourse used condoms more consistently, and a smaller percentage of them reported engaging in anal intercourse (Alford et al., 2003; HHS, 2017).

One other successful intervention program "*Sister to Sister*," included an individual session between the client and a nurse facilitator, showed brief videos that included condom use demonstration, and role-play to support behavioral change. The results of this intervention among high-risk sexually active African American adolescent girls showed a decrease in sexual risk behaviors during the study period, an increased condom use 12 months post-intervention and decreased acquisition of STIs (Jemmott, Jemmott, Hutchinson, Cederbaum, & O'Leary, 2008; Jemmott, Jemmott & O'Leary, 2007).

Based on rigorous scientific research, the DHHS reported more than twenty evidence-based STI/HIV prevention interventions (including the interventions mentioned above) to be highly effective in changing sexual high-risk behavior, delaying sexual activity, increasing condom use, reducing the number of sexual partners and frequency of sexual intercourse, and/or decreasing the incidence of unwanted pregnancies (DHHS, 2017). Little is known about the long-term impact of sustainability of behavioral change beyond 12 to 18 months (Brown et al., 2011; Coyle et al., 2006; DiClemente, Salazar, & Crosby, 2007).

**Successful STI prevention interventions.** The behavioral interventions with the greatest likelihood of success in decreasing high-risk sexual behavior were theoretically-based, culturally-tailor interventions designed to target a particular subgroup of individuals (e.g., adolescents, African American females, Latino/Hispanic women or men, MSM) (CDC 2014, 2015; Coates, 2008; DiClemente, Salazar, & Crosby, 2007; Lyles et al., 2007; Salazar, & Crosby, 2007; Herbst et al., 2015; Sales et al, 2012). In addition, theory-based studies that focused on behaviors to increase condom use during vaginal or anal sex, and condom use during the latest intercourse were highly successful in risk-reduction among diverse populations (DiClemente et al., 2007; DePadilla et al., 2011; ETR, 2017; Thorburn et al., 2005).

The literature indicated studies that went beyond STI preventive education and included psychosocial determinants (i.e., knowledge, attitudes, perceived norms, and self-efficacy) were most effective in STI/HIV risk-reduction behaviors among diverse populations (DiClemente, Salazar, & Crosby, 2007; Darbes et al., 2008; ETR, 2017; Ritchwood et al., 2016; Sales et al., 2012). Furthermore, several findings in the literature outlined key strategies that specifically targeted risky sexually active adolescent populations. Interventions found statistically significant for reducing sexual behaviors included 1) cognitive-behavioral theories (e.g., Social Cognitive

Theory or Cognitive Behavioral Theory); 2) individual/group activities (e.g. avatar/animated computer activities, role playing, open discussions, video watching, journaling); 3) had four or more sessions over a duration of 8 weeks or greater; and 4) had nonjudgmental and friendly facilitators who participants developed a connection with (Brown et al., 2011; Coyle et al., 2006; DePadilla, 2011; Jemmott, Jemmott & Fong, 2010; Markham et al., 2011; Morrison-Beedy, Crean, Passmore, & Carey, 2013; Ritchwood et al., 2016).

Despite the positive outcomes and effectiveness of these STI prevention interventions, studies revealed the impact of these programs were not sustained longer than 18 months (Coyle et al, 2006; Sales et al, 2012; Jemmott, Jemmott & Fong, 2010), and the majority of reported effects diminished within 3 to 6 months post-intervention (Brown et al., 2011; DePadilla, 2011; ETR, 2017; HHS, 2017). Therefore, researchers suggested including booster activities (post-intervention) to reinforce sexual behavior content for more sustained effects (Brown et al., 2011; Coyle et al., 2006; Gaydos et al., 2008; Sales et al., 2011).

What is evident from this comprehensive body of work is that adolescent sexual behavior is complex, and that sexual behavior has multiple constructs that influence the behaviors engaged in. What is clear from this literature is that a theoretical framework that examines thoughts, feelings and behaviors of adolescents' decisions to engage in safer-sex through the use of condoms is best explored through a theory that looks at internalized cultural norms, as well as the psychological constructs that explain human behavior through and interaction of cognitions and social behavior.

## Theoretical Framework

The Theory of Planned Behavior (TPB) was used to guide this study. The main constructs of the TPB are: *behavioral beliefs* (beliefs about the likely consequences of the behavior), *normative beliefs* (expectations of others), and *control beliefs* (beliefs about the presence of factors

that positively or negatively impact performance of behavior). Behavioral beliefs produce *favorable or unfavorable attitudes toward behavior;* normative beliefs are the perceived social pressure or *subjective norms;* and control beliefs led to *self-efficacy (Ajzen, 2019).* Perception of behavioral control of using condoms are moderated by the adolescent's attitude and subjective norm toward condom use. Thus, TPB theorizes that the more favorable the attitudes and subjective norms toward using condoms the better the perceived control over the use of condoms, suggesting a stronger intention for the adolescent to use condoms when an opportunity presents. An important concept is that *intention* is assumed to be an immediate antecedent of behavior. Perceived behavioral control serve as a proxy for actual control and contributes to the prediction of condom behavior in question. In addition, background factors that are individual (i.e., age, gender, education) or social influence (i.e., race, economic, geography). TPB has been used widely in the literature to explore health behaviors and is one of the most commonly used in adolescent research. For the purposes of this study, the TPB will be used to test the specific behavior of condom use during sexual activity.

The TPB is one of the most commonly used theoretical frameworks to help explain adolescents' high-risk sexual behaviors, attitudes and beliefs towards condom use and self-efficacy (Baugh & Davis, 2016; Jemmott, Jemmott & Fong, 2010; Malcolm et al., 2013; Morrison-Beedy, Crean, Passmore, & Carey, 2013; Ritchwood et al, 2016; Tortolero et al, 2010). The TPB implies that intention precedes behavior but is also a result of the attitudes towards the behavior; beliefs about behavioral consequences; and subjective norms (normative beliefs) of significant others that may influence outcomes (Azjen, 2002). The TPB was developed by Ajzen and Fishbein in 1988 and is an extension of the Theory of Reasoned Action (TRA), a theory developed by Fishbein and Ajzen in 1975. The TRA proposed that intention to perform a behavior was based on an

individual's attitude towards the behavior, and the subjective norms (e.g. personal norms) associated with the behavior. The difference between TPB and TRA is

TRA assumes people have voluntary control of their behavior, TPB adds the determinant of intentions and behaviors that are important when behavioral control is poor (i.e., an individual feels they are unable to refuse sexual intercourse or use a condom during every sexual activity). For the purposes of this research TPB is the theory of preference. The key component to TPB is behavioral intent (Ajzen, 1991). This theory seeks to explain the connection between individuals' attitudes and beliefs, and the effect these have on their intention to perform a specific behavior. The TPB links beliefs, attitudes, and behaviors which help in explaining human behavior (Ajzen, 1991). Multiple studies have applied this theory in various fields, such as marketing, public relations, consumers, and healthcare (Cheon, Lee, Crooks & Song, 2012; Han, Hsu & Sheu, 2010; Quan & Nam, 2017; Rutherford & Devaney, 2009; Xiao, Tang, Serido & Shim, 2011). The TPB assumes that people tend to perform behaviors that are evaluated favorably and are popular with their significant others, such as a sexual partner, peers, family, etc. (Ajzen, 1991).

According to Ajzen and Fishbein (1991; 2002), the antecedents of behavior influencing the formation of behavioral intention are three main indicators: attitudes toward the behavior, subjective norms, and perceived behavioral control. The TPB assumes that attitudes, subjective norms and perceived behavioral control predict behavioral intentions and thus, play a role in shaping these three indicators (Ajzen & Fisbein, 1991; 2002).

Strengths of the TPB include the following: (1) the theory applies to conscious decisions to engage in specific behaviors to achieve a precise outcome (Buhi & Goodson, 2011); (2) TPB has been investigated via meta-analysis where the authors found robust general support for the validity of the TPB and TRA (Buhi & Goodson, 2011; Rivis & Sheeran, 2003); (3) The TPB model

provides a theoretical basis for assessing high-risk sexually active adolescents' attitudes towards STI (behavioral beliefs), subjective norms (normative beliefs of significant others) and perceived behavioral control (Baugh & Davis, 2016; Bennett & Bozionelos, 2000; Doswell, Braxter, Cha & Kim, 2011); and (4) The TPB model provides insight into how to design a culturally-tailored STI prevention intervention program so it is successful (Bennett & Bozionelos, 2000).

The TPB has been a dominant theoretical approach in many studies guiding research on health-related behaviors such as: smoking, alcohol abuse, dietary adherence, sedentary lifestyle, and so forth (Aikman, Doyle-Portillo, Verhaeghen & Simmons, 2017; Cooke, Dahdah, Norman & French, 2016; De Wilde, Maes, Boudrez, Tency, Temmerman & Clays, 2017; Prapavessis, Gaston & DeJesus, 2015; Wu, Lennie, Dunbar, Pressler & Moser, 2017). In addition, results of successful and effective STI prevention intervention programs for urban African American adolescent populations have used the TPB model as the theoretical framework (Bennett & Bozionelos, 2000; Berggren & Patchen, 2011; CDC, 2010; Craft-Blacksheare et al., 2014; Robbins, Chatterjee & Canda, 2011; Sales et al., 2014). The TPB has become one of the most significant theoretical models used to predict human social behavior (Doswell et al., 2011; Jemmott, Jemmott & Fong, 2010; Morrison-Beedy et al., 2013; Roye, Perlmutter, Silverman & Krauss, 2007; Tortolero et al., 2010; Zhang, Jemmott III & Jemmott, 2015). Historically the model has been utilized in studies seeking to explore sexual risk behaviors (Doswell et al., 2011; Jemmott, Jemmott & Fong, 2010; Morrison-Beedy, Crean, Passmore, & Carey, 2013; Roye, Perlmutter, Silverman & Krauss, 2007; Tortolero et al., 2010; Zhang, Jemmott III & Jemmott, 2015). The TPB model has also been used as a guide to explain adolescent's sexual risk behaviors, condom-use self-efficacy, and attitudes and beliefs towards condom-use to avoid STIs and re-exposure (Bennett & Bozionelos, 2000). In addition, Bennett & Bozionelos (2000) conducted a narrative review on 20 research studies

focusing on the TPB as a predictor of behavior and condom use. Eight of the studies were consistent with the TPB measuring behavior, and 7 out of 8 of the studies identified "intention" as a predictor for condom use during sexual intercourse (Bennett & Bozionelos, 2000). Furthermore, 14 out of 20 studies showed there was a significant relationship between subjective norms and intent to use condoms (Bennett & Bozionelos, 2000). However, in these studies, the TPB was not used specifically among African American adolescent females living in urban environments. Applying the theory to this population may be useful in identifying factors that are proximally associated with condom use and lack of condom use. Thus, in an effort to advance knowledge in research and develop more effective culturally-tailored STI prevention interventions for African American adolescent females living in urban areas, the TPB will be used to guide this current study aimed explicitly towards this specific population.

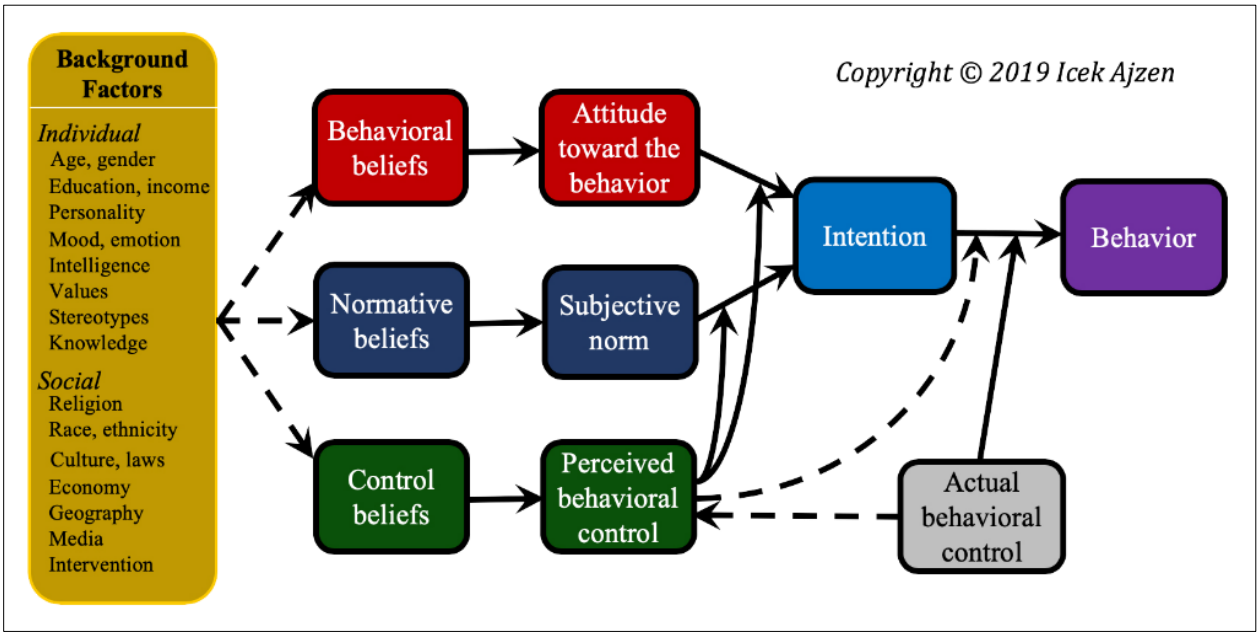
Limitations identified in the TPB model include: (1) although TPB considers the influence of subjective norms, environmental and economic factors that may also influence intent to perform a behavior, these are antecedents or background concepts that cannot be changed (Ajzen, 1991); (2) the use of this model does not allow the researcher to address the timeframe between "intent" and "behavioral action" (Sniehotta, Presseau & Araújo-Soares (2014); and (3) the concept perceived behavioral control refers to the person's perception of ease or difficulty of performing a behavior (e.g., condom use); this concept varies across situations and is susceptible to fluctuate depending on the situation (Ajzen, 1991).

Unfortunately, the TPB limits the ability to explore environmental and economical influences among socio-economically disadvantaged individuals. This posits that the TPB framework could use added components to make it more of an integrated model for assessing health-related behavioral issues among various populations. For the purpose of this study, the TPB

theoretical framework will include the original concepts identified in the model: attitudes, subjective norms, perceived behavioral control, intentions, and behavior. The TPB model (Figure 1) provides a theoretical basis for assessing high-risk sexually active adolescents' attitudes towards condom use. Therefore, this theoretical framework is appropriate for identifying specific contexts of the underlying factors directly impacting sexual risk-taking behaviors (e.g., consistent condom use) among urban African American adolescent females (see Figure 1 below).

Figure 1

*Theory of Planned Behavior Model*




**Definition of constructs in terms of safer-sex**

**Attitudes**. Attitudes toward the behavior is the individuals' positive or negative feeling about performing the behavior (Ajzen, 1991). Attitudes toward condom use and sexual behavior are key factors in adolescents' intentions to use condoms or engage in unprotected sex (Ajzen, 2002; Bird, Solis, & Mbonu, 2016). Attitudes refer to the degree to which a person has a favorable

or unfavorable evaluation of their behavior of interest (Montanaro & Bryan, 2014). Attitude towards condom use will be measured by the Attitude Toward Condoms Scale (Parcel, 1975).

**Subjective norms.** Subjective norm is a social pressure to perform or not to perform a given behavior and are determined by the individuals' normative beliefs (Ajzen, 2002). Normative beliefs are what the individual believes is important to their significant others who want them to perform a behavior (e.g., "My boyfriend thinks that condoms are for cheaters" or "My friends think I don't need a condom"). Significant others are people who the adolescents like, respect and value which could be family members, peers, significant others, religious figures or role models (Ajzen, 2002). Subject norms regarding condom use, partner communication and safer sex negotiation will be measured by the Self-Efficacy to Negotiate Safer Sex Scale.

**Perceived behavioral control.** The TPB identifies perceived behavioral control as "the degree to which one believes they have control at will over the behavior." Perceived behavioral control represents the level of difficulty of performing the behavior (Azjen, 2002; Azjen & Fishbein, 1980). The individual's perception of behavioral control could help or hinder the performance of a behavior (Ajzen, 2002). The Condom Use Self-Efficacy Scale (Brien et al., 1994; Brafford & Beck, 1991) is an assessment tool that will be used to measure perceived behavioral control of condom use.

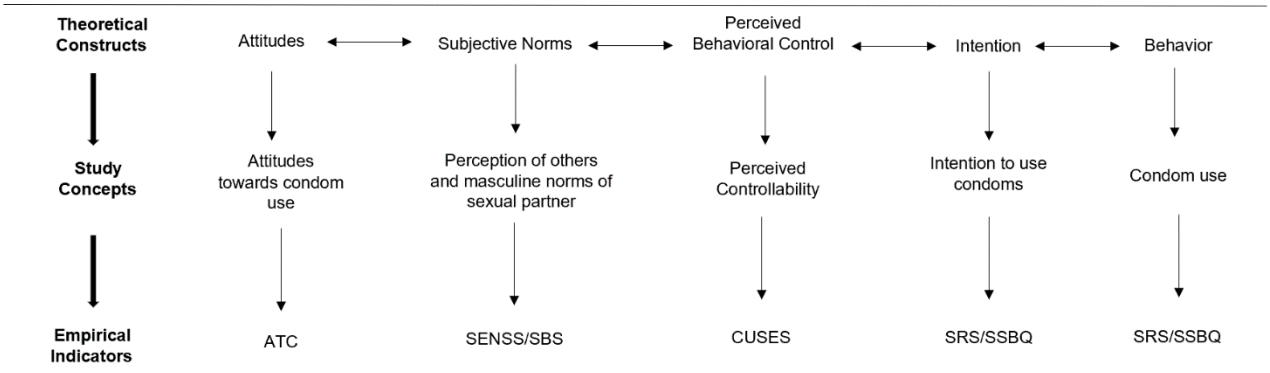
**Intention.** Intentions are assumed to capture the motivational factors that influence a behavior. They are indicators of how hard an effort someone is willing to make to exert a specific behavior (i.e., use a condom during sexual activity). A general rule posits that the stronger the intention to engage in a behavior, the more likely the individual would perform the behavior (Azjen, 1991). Intention to practice safer sex will be measured by the Sexual Risk Survey (SRS) tool.

**Condom use.** Condom use is defined as an individual correctly using a sheath-shaped latex barrier (a male or female condom and other barriers such as, dental dams) every time they engage in oral, anal or vaginal sexual intercourse to reduce their risk of acquiring an STI (CDC, 2016). Consistent condom use of participants will be measured by the Sexual Risk Survey tool (Turchik & Garske, 2009).

The TPB can be instrumental in advancing the understanding of sexual risk-taking behaviors among African American adolescent female populations as it relates to addressing proximal determinants of health. The outcome of disproportionate high rates of STIs among African American adolescent females are destined to change with the implementation of more culturally-tailored HIV/STI prevention intervention programs that focus on these critical elements: promoting positive attitudes toward condom use, increasing condom use self-efficacy, reducing barriers to condom use, improving condom use skills, and enhancing condom use intentions (see Figure 2 below).

Figure 2

*Theoretical Framework Substruction*




**ATC:** Attitude Towards Condoms Survey Scale; **SENSS:** Self-Efficacy to Negotiate Safer Sex Scale; **SBS:** Sexual Beliefs Scale; **CUSES:** Condom Use Self-Efficacy Scale; **SRS**: Sexual Risk Behavior Surveys; **SSBQ:** Safer Sex Behavior Questionnaire

## Summary

In summary, the review of the literature revealed there are multiple factors that impact high-risk sexual behaviors (i.e., early sexual debut, lack of condoms during sexual activity, multiple sex partners, etc.) of adolescents. Identifying which factors have the most influence on their decision-making is problematic. Numerous studies have emphasized the importance of developmental stages and how they affect risk-taking behaviors during adolescence. It may be beneficial for STI prevention intervention programs to include counseling components that will address adolescents' psychosocial needs specific to their developmental stage (Craft-Blacksheare et al., 2014).

National statistics have reported for nearly two decades substantial evidence indicating that African American young women (aged 13–24) have the highest rates of STIs and HIV compared to any other female race in the same age group (CDC, 2000; 2003; 2008; 2010; 2014; 2017a; 2018b; UNAIDS, 2004). It is critical to understand how the many layers of internal and external factors impact African American adolescent females' perceptions of sexual health, risk-taking sexual behaviors and gender empowerment in heterosexual relationships. Gaining a more in-depth understanding of their sexual behaviors will help to develop more effective cultural and gender-specific STI prevention intervention programs. These programs should aim to empower young African American women by addressing self-efficacy for condom use, negotiation and power imbalance in their relationships.

The influence of family structure, peer and partner influence and environmental factors including social media (e.g., texting, sexting, internet, explicit videos and television shows) needs to be considered in behavioral research studies. Numerous studies disclosed how each of these factors impact the way adolescents perceive themselves and the world around them. Continuous

exposure to sexual content on social media, negative family relationships, peer and partner influence, low socioeconomic status and poor neighborhoods help to shape sexual attitudes and risky behaviors which lead to acquisition of STIs and other health consequences (Harris, 2011).

Therefore, the purpose of this study was to examine the relationship between the attitudes and beliefs regarding condom use, and the effect these have on African American adolescent females' intention to use condoms and actual condom use. The findings of this study will provide a deeper understanding as to why this specific population behaves in a certain manner when it comes to risky sexual behaviors.

# CHAPTER III METHODOLOGY

## Methods

This study is a secondary analysis exploring the relationship between internal factors (i.e., attitudes, subjective norms and perceived behavioral control), and condom use and intention to use condoms among African American adolescent females. Secondarily, we compared African American adolescent females' attitudes toward condom use, subjective norms and perceived behavioral control between participants who have a history of contracting an STI and participants who denied ever having an STI.

The dataset of the original study is comprised of pre- and post-questionnaire responses of African American female youth (N=213) who participated in a community-based sexual health primary prevention intervention New HORIZONS. New HORIZONS, an adaptation of the HORIZONS intervention, is a group-level, culturally-tailored, single-session intervention, focusing on sexual health behavioral skills and STIs for African American females aged 12–24 years. The intervention was comprised of a single 5-hour session that was co-facilitated by female peer staff.

Participants were recruited from the Detroit metropolitan area. A self-report pre- and post-questionnaire was administered to participants assessing HIV and STI knowledge, sexual behavior, risk behavior, self-esteem, intentions to use condoms, ethnic pride, and effective interpersonal relationship communication. The time for completion was approximately 15–20 minutes.

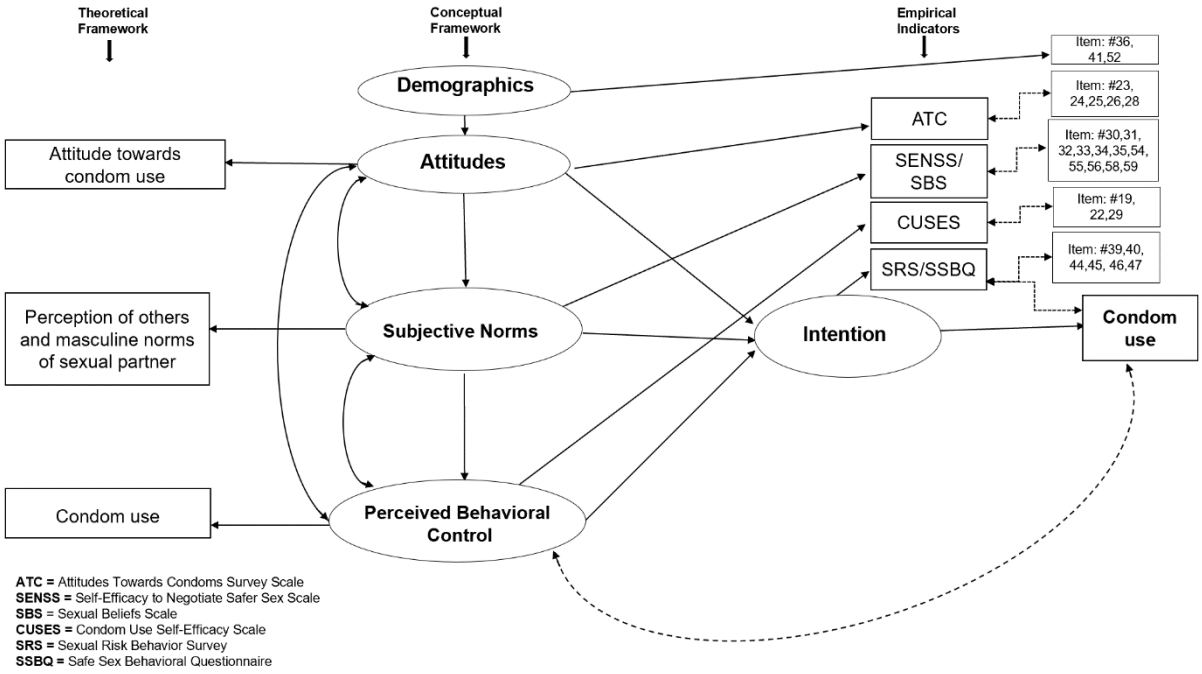
### Design

This is a secondary data analysis using descriptive statistics to examine the effect of attitudes, subjective norms and perceived behavioral control factors on condom use and intention to use condoms among African American adolescent females with a history of having an STI and

those without a history of an STI. The Theory of Planned Behavior was used used as a guide to predict and explain participant's intent to use and condom use during sexual intercourse. A path analysis, using Amos graphics 25 was used to test the hypothesized relationships among the independent variables (attitudes, subjective norms and perceived behavioral control) and dependent variables (intention to use condoms and condom use).

Figure 3

*Conceptual Framework*



## Sample and Setting

**Inclusion and Exclusion criteria.** For this study, inclusion criteria included participants (n=196) who were: 1) 14–19 years old, and 2) lived in an urban environment. Participants who were excluded from this study were: 1) 13-years or younger or 20-years or older.

**Setting.** The New HORIZONS intervention was delivered at a variety of youth-friendly Community Outreach Centers in metro Detroit including the Wayne State University Prevention (W'SUP) offices located on Wayne State University's campus in Detroit, MI.

## Power Analysis and Sample Size

A power analysis using G*power computer software (Version 3) was used to calculate the required sample size needed to detect a positive relationship between variables (Faul et al., 2009). Based on a formulation of .80 power, a critical effect size of 0.15 ($R^2$ = 0.13), at least three predictors, a significance level of 0.05, and a sample of 77 participants were needed to address the research hypotheses. There was a total of 196 participants data included from the New HORIZONS pre- and post-questionnaire dataset.

## Recruitment

Methods of recruitment for New HORIZONS included (1) peer staff members from W'SUP, (2) flyers posted at community health clinics, local health departments, public schools, and other youth-serving agencies in Metropolitan Detroit area; (3) advertisement at community educational events for youth, (4) social media, and (4) previous participant referral. Participants received reminder calls from the project coordinator 48 hours before the planned session. Peer staff discussed the details of the intervention, time, place, location and set up transportation if needed. Participants were compensated with a $50 store gift card and a gift bag at the completion of the post-questionnaire.

## Variables and Instruments

The following table below illustrates the proposed study variables and the instruments that was used to measure each variable (see Table 1). The instruments are as described:

Table 1

*Proposed Study Variable and Instruments*

| **Variable** | **Instrument** |
|---|---|
| Attitudes | Attitudes Towards Condom Use (ATC) |
| Subjective Norms | Self-Efficacy to Negotiate Safer Sex (SENSS)<br>Sexual Beliefs Scale (SBS) |
| Perceived Behavioral Control | Self-Efficacy to Use Condoms (CUSE) |
| Intention and Condom Use | Sexual Risk Behavior Surveys (SRS)<br>Safer Sex Behavior Questionnaire (SSBQ) |

**Attitudes towards condoms.** Attitudes towards condom use was measured by the Attitudes Toward Condoms Scale (ATC; Parcel, 1975). ATC is a 40-item self-report, Likert-type scale instrument that was initially developed to measure the degree of favorableness and unfavorableness toward the personal use of contraception (i.e., condom use) during premarital sexual intercourse (Parcel, 1975). This instrument has also been used to promote barrier methods for contraception (Brown, 1984). Each item measures the respondent's attitudes towards the use of condoms as a contraceptive or STI preventative method (Brown, 1984; Parcel, 1975).

There were seven-items used from the ATC instrument measuring attitudes towards condoms. The seven-items included questions about: (1) feelings of embarrassment (e.g., "Buying condoms would be embarrassing"), (2) decreased sexual pleasure (e.g., "Having to stop and put on a condom takes the romance out of sex") and (3) partner mistrust (e.g., "Using a condom every

time I have sex would make my partner think I don't trust him"). Respondents rated each item on a 4-point Likert scale ranging from 4=*strongly agree* to 1=*strongly disagree*. The total score for this seven-item scale ranged from 7 to 28. For strongly disagreeable statements, the scoring was reversed. Higher scores, those greater than 22-28, indicated strongly positive attitudes towards condom use, and, lower scores, those less than 10 meant strongly negative attitudes towards condoms.

In support of the reliability of the ATC scale, Brown (1984) conducted a test of the instrument that included a sample of predominantly white undergraduate students, 80 males and 107 females (N=187). The participants' sexual activity, religion or socioeconomic status were not evaluated (Brown, 1984). Internal consistency was determined by use of the Analysis of Item and Test Homogeneity (ANLITH) procedure which produces a Cronbach's alpha (Brown, 1984). Results for item-total correlations using both sexes ranged from .10 to .76 and a Cronbach's alpha of .93 (Brown, 1984). Brown and Chen (2010) conducted a study to present psychometric findings of the ATC scale for African American females (n=197) age 18 –39 living in rural areas. The development of reliability and validity measures were specific to culture, gender, and region. Data collection took about two weeks, and there was also a three-day period for the test-retest component. Pearson correlation coefficients using total scale scores were computed to assess the test-retest reliability, and an exploratory factor analysis was conducted to find the identifying attributes of the constructs (Brown and Chen, 2010). The reliability as measured by Cronbach's alpha (internal consistency) was 0.64. Construct validity procedures were used to determine how well the instrument measured the participants' attitudes towards condom use. The first component included two items (e.g., attitudes towards condom use and benefits of condom use) accounted for 49.8% of the variance, and the item loadings for these two items were both above 0.90 (Brown

and Chen, 2010). The second component included two-items that represented participant's negative attitudes towards using condoms with their primary partner accounted for 41.1% of the variance, and both items loaded at 0.88 or above (Brown and Chenc, 2010).

The ATC scale demonstrated satisfactory construct validity and internal consistency reliability among rural African American women. This scale also identified positive and negative attitudes towards condom use. Therefore, the findings from both studies support that the ATC scale is a valid and reliable tool to assess attitudes towards condoms use among African American adolescent females living in rural populations (Brown, 1984; Brown & Chen, 2010). Though for this study, the ATC scale was used among African Adolescent young women living in an urban area.

**Subjective Norms.** Subjective norms are described as an individual's opinion about what is important to others (i.e., peers or significant other) and they believe they should do (Ajzen, 1991). The Self-Efficacy to Negotiate Safer Sex Scale (SENSS) was initially developed to assess self-efficacy to disclose HIV/STI status to sex partners and negotiate safer sex practices among individuals living with HIV/AIDS (Kalichman et al., 2001). The SENSS scale was used to measure *subject norms* about condom use, partner communication, and safer sex negotiation. There are five-items with a Likert response (1-strongly agree to 4-strongly disagree) that measured condom use: (1) "I am able to discuss the use of condoms with my sex partner", (2) "I am comfortable asking my partner if he/she has ever had an STI", (3) "I am able to ask my partner if he/she has HIV", (4) "I am able to tell my sex partner(s) how many people I have had sex with before him/her", and (5) "It would be hard to discuss with a partner the need for both of us to get tested for STIs, including HIV before having sex". The total score can range from 6 to 24 with higher scores indicating increased self-efficacy and ability to communicate safe sex and condom

negotiation with sexual partner (Kalichman et al., 2001). The SENSS scale has an internal consistency of $\alpha = 0.87$ (Center for Substance Abuse Prevention, 2012).

The Sexual Beliefs Scale (SBS) is a 40-item scale consisting of five 8-item subscales (Muehenhard & Felts, 2001). Muehlenhard and Felts (1998) conducted a study using the SBS tool among a sample of 337 university students and results showed Cronbach's alpha of .854 and .926 (Muehlenhard & Felts, 1998). For this study, sample items were used from the SBS scale to measure *subject norms* of participants perception of masculine norms in a sexual relationship. There are five-items with a Likert response (4-strongly agree to 1-strongly disagree) that measured perception of masculine norms: (1) “Guys should dominate girls in bed”, (2) “By being dominated girls get sexually aroused”, (3) “Guys should decide what happens in bed”, (4) “Guys should have the power in sexual relationships”, and (5) “Girls get tunred on by guys who let them know whose boss”.

**Perceived Behavioral Control.** PBC will be measured by the Condom Use Self-Efficacy Scale (CUSES). The 15-item CUSES (Brien, Thombs, Mahoney & Wallnau, 1994); Brafford & Beck, 1991) measures condom use self-efficacy using 4-point Likert scales; higher scores indicate stronger perception of condom use efficacy. An example of an item from the CUSES included: “I feel confident in my ability to use a condom correctly." In prior research, investigators examined a four-factor structure of the CUSES in a college population and demonstrated test-retest reliability ($r = .81$, $N = 339$); and alpha coefficients ranging from .71 to .89 (Brien et al., 1994). In another study regarding condom use, Brafford and Beck (1991) tested the reliability of the CUSES with two groups of college students (condom users and noncondom users). The tool had test-retest reliability over a 2-week interval with a Cronbach’s alpha was .91. Findings supported that the CUSES is a valid and reliable tool used to assess respondents’ ability to use condoms (Brafford &

Beck, 1991).

**Intention to use condoms.** Intentions to practice safer sex will be assessed on four sexual behaviors; (1) intent to abstain from sex, (2) intent to have vaginal or anal sex, (3) intent to use condoms and (3) intent to limit sexual partners. The *intention to practice abstinence, intent to have vaginal or anal sex and intention to decrease the number of sexual partners* was assessed by one dichotomous item (0=no, 1=yes). Respondents intent to use condoms during vaginal or anal sex (*e.g., In the next three months how often do you plan on using a condom?"*) was rated on a five-point Likert scale (1=Never, 5=Always). The items such as "intent to have vaginal or anal sex were extracted from the Sexual Risk Survey (SRS; Turchik & Garske, 2009). The SRS is a 23-item open-ended questionnaire developed by Turchik and Garske (2009) that was designed in a mid-western university located in the U.S. with a sample of 613 male and female undergraduate students. This tool was developed to provide a broad and psychometrically sound measure of sexual risk-taking to researchers interested in studying college students. Turchik and Garske (2009) psychometric analyses showed the test-retest reliability over two weeks was r = .93, and Cronbach's Alpha was .88 (Turchik & Garske, 2009). Results of the SRS psychometric analyses demonstrated satisfactory reliability and validity in assessing respondents' intent to engage in anal or vaginal sexual activity. Other variables (i.e., *intent to abstain from sex or use condoms during next sexual activity*) were measured by items from the Safe Sex Behavior Questionnaire (SSBQ; DiIorio et al., 1992) a 27-item questionnaire that measures sexual behaviors, condom usage, high-risk sexual behaviors, and sexual communication and negotiation. The SSBQ was designed to measure the frequency of use of safe sex practices and was assessed for content validity, reliability, and construct validity through a series of tests (DiIorio et al., 1992). Among 89 freshman college students, results showed the content validity index as .98; initial reliability computed for sums of

items of the total scale was .82; and Cronbach's alpha between 0.61–0.93. Using a second sample of 531 subjects, the SSBQ was factor-analyzed separately for males and females, and five similar factors emerged for each gender. Reliability coefficients for sums of salient items for each factor ranged from .52 to .85 (DiIorio et al., 1992).

**Demographic data**

The demographics collected on participants included age, race/ethnicity, education, number of children, and sexual orientation.

**Data collection**

Participants were required to complete pre- and post-questionnaires on paper format at the start and finish of the intervention. This self-report pre- and post-questionnaire consisted of a combination of 64 questions extracted from the survey tools mentioned above (ATC, SENSS, SBS, CUSES, SRS, SSBQ). The project coordinator informed participants that participation in New HORIZONS was voluntary and confidential and failure to complete the questionnaires would result in forfeiture of the gift card incentive. Participants were assigned an alphanumeric code to maintain confidentiality on the pre- and post-questionnaire. The questionnaire contained questions on demographics, sexual history, HIV/STI knowledge, sexual behavior and attitudes and beliefs towards STIs and condom use. Participants were provided privacy in a closed room, encouraged to answer every question honestly, and assured that all questionnaires would be kept confidential. A prevention staff member collected and checked for completion of the surveys before participants left.

**Data Management**

Data from the questionnaires were uniquely coded on a password-protected computer and entered in a project SPSS (Statistical Program for the Social Sciences) shell by the project

coordinator. There was an initial 10% error check after entry of each session's data to ensure the accuracy, and at scheduled intervals (quarterly) to minimize potential errors. All questionnaires were placed in a locked file cabinet and stored in a locked room that had assigned keys for W'SUP personnel only.

**Data analysis**

Data analyses was completed using the latest version of SPSS Version 25. Descriptive statistics were used to determine frequency distributions, percentage distributions, means and standard deviations of the variables in the study.

**Data Analysis Strategy by Aim**. Demographics variables examined included age and sexual history.

**Aim 1**

$H_{1a}$: African American adolescent females with a history of STIs will have different attitudes, subjective norms and perceived behavioral control regarding condom use than those who do not have a history of STIs.

$H_{1b}$: African American adolescent females without a history of STIs will have *greater* intentions to use condoms during sexual activity than those with a history of an STI.

To address Hypotheses 1, Pearson's correlation analysis was used to determine the significance of the relationship among variables. Spearman rank correlation coefficient was considered if the normality assumptions are not met. A independent samples t-test was used to compare attitudes towards condom use between those with and without a history of STIs. A non-parametric alternative Mann-Whitney test was used to determine if African American adolescent females who have a history of STIs will have different attitudes toward condom use than African American adolescent females who have not been diagnosed with an STI.

**Aim 2**

$H_2$: Intentions to use condoms will be moderated by perception of masculine norms among African American Adolescent females.

To address Hypotheses 2, multiple regression was used to determine the moderating and mediating effect of perception of masculine norms influence on use of condoms during sexual activity. In addition, path analysis was used to estimate the conceptual model shown in Figure 3.

## Summary

This study examined internal and external factors that negatively impact African American adolescent females' intentions to use condoms during sexual activity. The TPB theoretical model was used to evaluate predictors (attitudes, subjective norms and perceived behavioral control) of African American adolescent females' decision-making on condom use.

# CHAPTER IV RESULTS

In this chapter, the summary of the findings is presented. The results of the statistical analyses that were used to describe the sample and test the hypotheses for the study are reported. The first section is a description of the sample. Then, the relationships among variables in the proposed model were tested and reported based on the correlation analysis. The study's hypotheses are presented and discussed, and path analysis was used to test "intent to use condoms" and "condom use" during sexual intercourse and the constructs (i.e., attitudes, subjective norms and perceived behavioral control) of the Theory of Planned Behavior.

## Description of the Sample

A subset of participants from the New HORIZONS parent dataset were used for this study. Baseline data from 196 African American adolescent females age 14 to 19 were analyzed for this study. These participants provided their demographic information, including age, school grade, sexual experience and STI history. Participants' responses are summarized in Table 2.

The participants' age ranged from 14 to 19 ($M$ = 16.14, $SD$ = 1.525). Among the participants 0.5% (n=1) were not in school; 3.1% were in the 8$^{th}$ grade (n=6); 20.8% were in the 9$^{th}$ grade (n=40); 17.2% were in the 10$^{th}$ grade (n=33); 19.3% were in the 11$^{th}$ grade (n=37); 20.8 were in the 12$^{th}$ grade (n=40); 4.2% had graduated (n=8); and, 14.1% were in college (n=27). The grade level ranged from 8$^{th}$ grade to college with a mean of 11$^{th}$ grade ($M$ = 11.03, $SD$ = 1.762). The majority of the participants denied ever having vaginal sexual intercourse 63.8% (n=125). Those that had not had sex had an age mean of age 15 and were in the 10$^{th}$ grade. Thirty six percent of participants (n=69) reported having had sexual intercourse. These participants were older, with a mean age 17 and in the 11$^{th}$ grade.

Table 2

*Descriptive Statistics*

| Demographics | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Age: | 196 | 14 | 19 | 16.15 | 1.525 |
| Grade: | 192 | 8 | 13 | 11.03 | 1.762 |

| Education level | N | % |
|---|---|---|
| Not in school: | 1 | 0.5 |
| 8th grade: | 6 | 3.1 |
| 9th grade: | 40 | 20.8 |
| 10th grade: | 33 | 17.2 |
| 11th grade: | 37 | 19.3 |
| 12th grade: | 40 | 20.8 |
| Graduated H.S.: | 8 | 4.2 |
| College: | 27 | 14.1 |

| Sexual History | N | % | Mean Age | Mean Grade |
|---|---|---|---|---|
| Sexually experienced: | 69 | 35.6 | 17.09 | 11.94 |
| Not Sexually experienced: | 125 | 64.4 | 15.62 | 10.47 |

| Children | N | % |
|---|---|---|
| Yes | 12 | 6.1 |
| No | 186 | 93.1 |

## Research Aims and Hypotheses

There were two aims and three hypotheses tested in the study.

### Specific Aim 1

To explore attitudes towards condoms, subjective norms and perceived behavioral control regarding condom use and intention to use condoms among African American adolescent females who do and do not have a history of STIs. A path analysis was used to test the model of fit of the Theory of Planned Behavior (TPB) theoretical framework (Figure 5).

$H_{1.a}$: African American adolescent females with a history of STIs will have different attitudes (ATC), subjective norms (SN) and perceived behavioral control (PBC) regarding

condom use than those who do not have a history of STIs.

$H_{1.b}$: African American adolescent females without a history of STIs will have *greater* intentions to use condoms during sexual activity than those with a history of an STI.

**Specific Aim 2**

To determine the relationship between attitudes (ATC) and perception of masculine norms (MN) and intentions to use condoms among African American adolescent females.

$H_2$: Intentions to use condoms will be moderated by perception of masculine norms and attitudes towards condoms among African American adolescent females.

## Relationship among Variables

**Hypothesis 1**

Given the lack of normality in the data, the non-parametric Mann-Whitney U test was used to examine these data for Hypothesis 1a and 1b. The significance level was set at a *p*-value equal to less than 0.05. All analyses were conducted using SPSS software, version 25.0.

The differences in independent variables (ATC, SN and PCB) regarding intent to use condoms were explored among those who had a history of an STI and those who had not had an STI. The results showed a significant difference in ATC and intent to use condoms as ascertained by the Mann-Whitney U test. However, none of the other independent variables showed significant differences (Table 3). Seventy-five percent (75.0%) of the individuals who had been diagnosed with an STI planned to use a condom in the next three months as opposed to 29.9 percent (29.9%) of those who were not diagnosed with an STI. For hypothesis 1b, the intent to use a condom for those with a previous STI (mean rank = 136.88) was significantly higher than for those who did not previously have an STI (mean rank = 93.40), $U = 778$, $p < .0001$ (Table 4).

Table 3

*Nonparametric Correlation among variables (*N = *196)*

| | MEASURE | | | | |
|---|---|---|---|---|---|
| | Intent to use condoms | | | | |
| Variable | *N* | *%* | *B* | *S.E.* | *p* |
| Attitudes Towards Condoms (ATC) | 192 | 98 | -284 | .094 | .003 |
| Subjective Norms (SN) | 195 | 99.5 | .361 | 4.809 | .028 |
| Perceived Behavioral Control (PBC) | 194 | 99 | -1.06 | .775 | .899 |

Table 4

*Mann-Whitney U test results*

| Variable | N | % | Mean Rank (intent to use condoms) | U | Z | *P* |
|---|---|---|---|---|---|---|
| Positive STI history | 16 | 8.2 | 136.88 | 778.00 | -3.64 | <.0001. |
| Negative STI history | 179 | 91.3 | 93.40 | | | |

**Hypothesis Two**

Using attitudes toward condoms and masculine norms as a moderating variable (interaction), there was no significance indicating that masculine norms and attitudes toward condoms influenced intention to used condoms (Table 5). However, in the regression model using attitudes toward condoms and masculine norms as predictors for intention to use condoms, there was a significant result for the predictor attitudes towards condoms indicating that perception of masculine norms could positively or negatively influence intentions to use condoms. The overall

model was F (2.179) = 6.102, $p$ = .001. The attitudes towards condom use had a coefficient of -.099, a low, negative correlation with p = .030 (See Figure 4).

Table 5

*Regression Analysis Summary for ATC and MN Predicting Intention to Use Condoms*

| *Variable* | *B* | *SE* | *t* | *p* |
|---|---|---|---|---|
| Attitudes Towards Condoms | -.099 | .030 | -3.265 | .001 |
| Masculine Norms | .031 | .025 | 1.223 | .223 |

*Note.* $R^2$ *= .064 (n = 187, p < .001). ATC = Attitudes Towards Condoms; MN = Masculine Norms*

## Testing Model Fit

Path analysis, using Amos graphics 25 was used to test the hypothesized relationships among the independent variables (attitudes, subjective norms and perceived behavioral control) and dependent variables (intention to use condoms and condom use).

TABLE 6

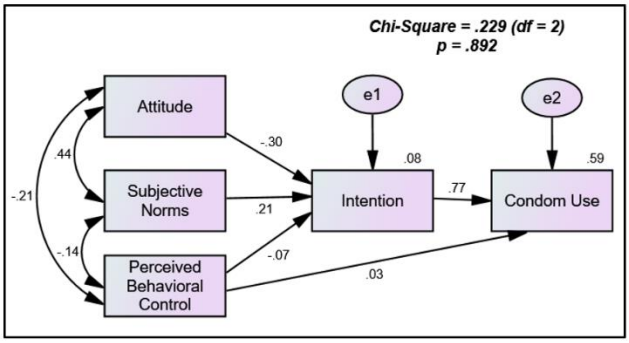
*Correlations for Indicator Variables*

| | *Estimate* | *S.E.* | *C.R.* | *P* |
|---|---|---|---|---|
| Intention ←Attitudes | -.06 | .02 | -3.64 | < .0001 |
| Intention ←SN | .08 | .03 | 2.62 | .01 |
| Intention ←PBC | -.02 | .02 | -.90 | .37 |
| Condom Use ←Intention | .76 | .08 | 9.87 | < .0001 |
| Condom Use ←PBC | .01 | .03 | .32 | .75 |

*Note. Standardized Regression Weights: (Group number 1)*

FIGURE 4

*Test of Model Fit (TPB) Diagram*




The relationships between attitude toward condoms and intentions to use condoms were shown in Figure 4. A non-significant *p*-value for chi-square test (0.892) indicated that the parameters that were estimated for the model fit the data. As shown in Figure 4, subjective norms and intention to use condoms, and intention to use condoms and condom use were all statistically significant. However, there was no significant relationship between perceived behavioral control, intention to use condom and condom use. Since the paths from PBC to intention and condom use were not statistically significant, the reduced model was then estimated (Figure 5). Again, a non-significant p-value for chi-square test (0.914) indicated that the parameters that were estimated for the model fit the data. All the path coefficients in the reduced model were statistically significant.

Figure 5

*Reduced model of predicting condom use mediated by intention*

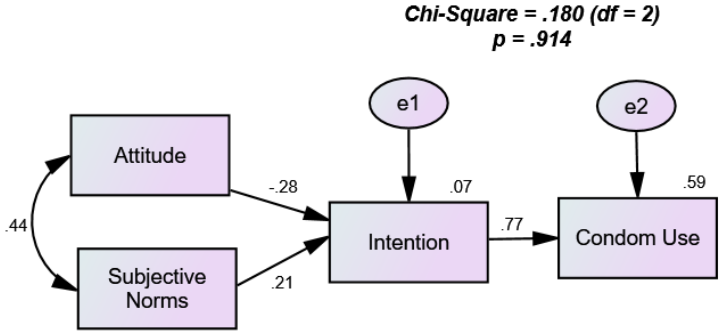



TABLE 7

*Reduced model of predicting condom use mediated by intention*

| | Estimate | S.E. | C.R. | P Label |
|---|---|---|---|---|
| Intentions ←Attitude | -.06 | .02 | -3.50 | <0.0001 |
| Intentions ←Subjective Norms | .08 | .03 | 2.62 | 0.01 |
| Condom Use ←Intentions | .76 | .08 | 9.95 | <0.0001 |

## Summary

The results of the statistical analyses used to describe the sample, test the hypotheses and test the model of fit have been presented in this chapter. As predicted by the TPB, the results showed that attitude and subjective norms towards condoms were significantly associated with intentions to use condoms. Contrary to the TPB, perceived behavioral control was not significantly associated with intentions to use condoms. The moderation effect of masculine norms on intention to use condoms was not significant. A discussion of the findings, limitations, implication for nursing and recommendations for further research is presented in next chapter.

# CHAPTER V DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

## Discussion

This study was conducted to gain a more in-depth understanding of specific predictors that impact the intentions to use condoms during sexual activity among African American adolescent females living in urban areas; and, to expand the literature on which of the constructs in the Theory of Planned Behavior (TPB) model best influenced adolescent's intentions to use condoms. The study examined the associations between attitudes towards condoms, subjective norms and perceived behavioral control and intentions to use condoms as well as the use of condoms. In this chapter, a discussion of the study findings, strengths and limitations, implication for nursing practice and recommendations for future research are presented.

The first aim of this study was to explore whether there was a difference in attitudes towards condoms, subjective norms and perceived behavioral control and their impact on intentions to use condoms among participants with a history of an STI and those who never had an STI. In the study, among the adolescent females who were sexually experienced, subjective norms and attitudes toward condoms were found to be significantly correlated and also a strong predictor of intentions to use condoms. These findings are supported by other studies indicating that there was a strong association between "attitudes and beliefs" and "subjective norms" and the "intention to use condoms" and "condom use" among sexually active urban African American adolescent females (Berggren & Patchen, 2011; Sales et al., 2014). However, there was no correlation between perceived behavioral control and intentions to use condoms. The TPB has been repeatedly shown to successfully predict positive and negative health behaviors among sexually active adolescents. Other studies that have used the TPB to determine condom use behavior among risky sexually active African American young men and college students found

significant correlations between the constructs of perceived behavioral control and intentions to use condoms (Asare, 2015; Andrew, Mullan, de Wit, Monds, Todd & Kothe, 2016). Asare (2015) conducted a study using the TPB to determine condom use behavior among a total of 218 college students (51%, n=112) of the participants were males and 49% (n = 106) were females with mean age of 20.9 years old. The constructs of attitude towards condoms, perceived behavioral control, and subjective norms significantly predicted intention to use condoms ($p<0.001$). A meta-analysis conducted to explore whether the constructs in the TPB explained condom use behavior among men who have sex with men (MSM) found that attitude, subjective norm and perceived behavioral control were all significant correlates with intentions to use condoms. The meta-analytic path analysis revealed the theoretical constructs, attitude, subjective norms and perceived behavioral control were significantly associated with intent to use condom and condom use among MSM (Andrew, Mullan, de Wit, Monds, Todd & Kothe, 2016). Though the significant correlations between perceived behavioral control and intentions to use condoms were found in studies among college students and older MSM who may have more *internal locus of control* in oppose to younger adolescents who have more *external locus of control* (Brincks, Feaster, Burns, & Mitrani, 2010; Leshem, 2016; Pedlow & Carey, 2004; Steinburg, 2005, 2009). Individuals with internal locus of control, which increases with age, perceive themselves as accountable for their own behavior while those with external locus of control perceive their behavior as being controlled by external sources (Brincks, Feaster, Burns, & Mitrani, 2010; Rotter, J., 1954). Considering the many factors that could possibly impact risky sexual behaviors and the decision to use condoms among urban African American adolescent females, it is difficult to know which could have the most influence. Therefore, it is important for researchers to continue to explore how intentions to use condoms are

affected by subjective norms which are based on the participants' subjective expectations of outside sources, such as social pressure to perform or not to perform a given behavior.

The impact of perceived behavioral control which allows an opportunity for participants to express their level of difficulty or confidence in performing a behavior, such as condom use, should also be further investigated. (Azjen, 2002; Azjen & Fishbein, 1980). The rate of new infections among young African American females aged 13–24 was six times as high as that of young Hispanic females, and 20 times that of young white females (CDC, 2014). In addition, adolescent African American girls living in urban environments have higher risk for STIs and HIV infection (CDC, 2012). Evidence shows that ongoing issues of inconsistent condom use among sexually active youth leads to recurrent STIs (Swartzendruber, Sales, Brown, Davis, DiClemente & Rose, 2013; Upchurch et al., 2004). However, little research has been done on urban African American adolescent females with a history of having an STI and associated factors with acquiring repeated STIs. Perceived behavioral control would be an important construct in understanding risky sexual behaviors that lead to repeated STIs among this population after they have been educated on preventative measures and provided with tangible resources (i.e., access to free condoms).

In this study we found hypothesis 1.b to not be proven true. We assumed that adolescent females without a history of having an STI would have greater intentions to use condoms than those who did have a previous STI. However, in this study, those who had a previous STI were shown to have greater intentions to use condoms. Little research has been done among this population exploring condom use behavior *after* diagnosis and treatment of an STI. Due to the lack of normality in the data, and the small percentage (23%; n=16) of participants who had an STI, it would be beneficial to conduct current research exploring relationships between attitudes towards

condoms and intentions to use condoms among a larger sample group of African American adolescent females with and without previous history of an STI.

One of the barriers to condom use that was found in the literature was that young adolescent women were less likely to use a condom with their long-term partner and were more likely to use a condom with a casual partner (American Academy of Pediatrics, 2013). In clinical practice, many adolescent females testing positive for an STI reported being monogamous with a long-term partner. This demonstrates a risk for STIs even for adolescent females who believe they are in a monogamous sexual relationship, if their partner is not. Therefore, the second aim in this study was to identify whether participants' perception of "masculine norms" and their "attitudes towards condoms" had greater influence on their intentions to use condoms. Masculine norms were identified by the participants beliefs about male-dominance and what a heterosexual relationship should be like. The findings showed there was no interaction between masculine norms and attitudes towards condoms regarding intentions to use condoms. In this secondary analysis study, there were a limited amount of questions used to measure the participants "perception of masculine norms". For future studies to overcome limitations of measurement tools for masculine norms, a combination of psychometric tools should be used to measure male dominance, emotional control and gender roles. Though there is little known about whether or not the perception of masculine norms impact condom use behaviors and intentions to use condoms among urban African American adolescent female's, this factor should not be entirely dismissed. Current several studies have indicated that there is a relationship between masculine norms and condom use among heterosexual couples (Schuyler, Masvawure, Smit, Mabude, Ngoloyi & Mantell, 2016; Vincent, Gordon, Campbell, Ward, Albritton & Kershaw, 2016; East, Jackson, O'Brien & Peters, 2011). Within intimate relationships, factors such as a desire to express trust, love, commitment, and in

some cases pro-natal intentions, may all interfere with consistent condom use with their long-term partner (Sales et al., 2012; Thorburn, Harvey & Ryan, 2005). Studies have identified that particularly among African American women in long-term sexual relationships, individual intervention efforts often fail to demonstrate increased condom use (El-Bassel et al, 2009). Interestingly, in this study trust in your partner was found to be a potential explanation as to why adolescent females do not use condoms with their long-term partners. There was a total of 87.2% (n=171) participants who either "strongly agreed" or "agreed" that "*using a condom every time they have sex would make their partner think that they don't trust him."* Therefore, the second aim in this study warrants further investigation to explore the associations between masculine norms, female empowerment and condom use among urban African American adolescent females. Other studies have shown that new research methods that recognize the context of relationship dynamics (e.g., gender roles, relationship power, decision making dynamics) and focus on couple communication patterns may enable young women to initiate and sustain condom use with their long-term intimate partners (DePadilla et al., 2011; El-Bassel et al, 2003; Hotton et al., 2015; Montgomery et al., 2008).

## Limitations

The present study had several limitations that have to be considered. This study was a secondary analysis using baseline data *collected for different purposes.* The original data set was not developed to answer the specific research questions of this study. The research questions, specific aims and hypotheses of this study had to adapt to what could be addressed within the data set. Only 35.6% of the participants reported being sexually experienced at the time of assessment and only 23% reported ever having been told they had an STI. The survey answers may have reflected bias in responses.

The survey that was used did not address oral sexual activities, which are another pathway for transmission of an STI. Studies suggest that as many as 20% of adolescents have had oral sex by the end of their freshman year in high school (Holway & Hernandez, 2018; Copen, Chandra & Martinez, 2012). This would have been an important finding because research has also shown that oral sex has been linked to increased sexual risk behaviors and often precedes sexual intercourse (Fortenberry, 2014; Hadley, 2013; Lindberg, Jones & Santelli, 2008). Also, having oral sex at a young age may be a sign of intention to engage in sexual intercourse (Copen, Chandra & Martinez, 2012). The survey also did not address age at sexual debut (first time of sexual experience) which would have been another important finding since studies show that early sexual debut increases risk for STIs and subsequent STI acquisition (Shrestha, Karki & Copenhaver, 2016; Siebold, 2011; Kaestle, Halpern, Miller & Ford, 2005; Upchurch et al., 2004). Furthermore, there were no associations found between perceived behavioral control and intentions to use condoms. This may be due to a limited number of items that were used to measure this variable, which indicates more items should be used for future testing. Further, more in-depth assessment may be needed with this population such as: 1) asking more detailed questions that identify the important individuals who have the most influence on the participants decision-making and impact on their behavior, and 2) more thorough questionnaire items that highlight how the participants' behavior is influenced by their confidence in their ability to use condoms, which may further explain the variable "perceived behavioral control." Lastly, due to all of the participants in this study being African American and residing in urban areas, the findings of this study cannot be generalized to other adolescent girls of another race or living in other geographical areas.

## Strengths

The results of this study provide important information and guidelines for future research despite the limitations. The majority of the girls who were sexually inexperienced were younger ($M$ = 15.62) suggesting that urban African American adolescent females are not engaging in sexual behaviors at an earlier age compared to other racial groups. Some studies have implied African American adolescent females tend to initiate participation in sexual activity prior to age 13, much earlier than Caucasian adolescent females (Dancy, Crittenden & Ning, 2010; Cavazos-Rehg, Krauss, Spitznagel, Schootman, Bucholz, Peipert & Bierut, 2009). These results are an indication that urban adolescent females are waiting longer to have sexual intercourse, a trend in the right direction for reduction to sexual risk-taking behavior. However, future research with a larger sample size would be needed to confirm what was found in this study. Lastly, this study revealed that the majority of participants (virgins and nonvirgins) either "strongly agreed" or "agreed" that their partner would not trust them if they always wanted to use a condom during sex. This finding may be an indication that urban African American adolescent females' emotional and romantic attachment supersedes the use of condoms to reduce STI risks in their sexual relationships. This would concur with the studies that suggested that some African American young women, even after being infected with an STI by their partner, desire love and trust from their partner above all else including the need to protect their health (Roye & DiCicco-Bloom, 2017; McElwain, Kerpelman & Pittman, 2015; Ewing & Bryan, 2015).

## Recommendations for Future Research

Sexual risk-taking behavior among adolescents in general can be influenced by a range of factors on an individual, interpersonal or environmental level. However, urban African American adolescent sexual risky behaviors differ from other populations in multiple ways. Recent studies

have suggested that environmental factors (e.g., disadvantaged neighborhoods, low socioeconomic status, social injustice, poor-quality of school communities) have greater effects on urban adolescents' sexual risky behaviors (Manhart et al., 2016; Raiford et al., 2014; Sales et al., 2014; Viner, 2012; DiClemente et al., 2007; Thurman, Holden, Shain, Perdue, & Piper, 2008), in addition to social exclusion and cultural racism (Buchsbaum et al., 2014; Craft-Blacksheare et al, 2014; Fenton, 2001; Hosenfeld et al., 2009). Social exclusion and cultural racism are known to be another form of discrimination that marginalize people of color by excluding them from participating socially and politically in the economy based on their social economic status, class, race or gender (Popay, Escorel, Hernández, Johnston, Mathieson, & Rispel, 2008). Most importantly, these findings suggest the need to explore other causal pathways of non-condom use among urban African American adolescent females. The findings of such studies may help support program development of culturally-tailored STI prevention interventions. Likewise, it may be conducive for researchers to target individuals who have similar lived experiences, such as: familial structures, neighborhood and school environments, and comparable socio-economic status. This approach may provide more of a complete picture of the problems that influence decision-making on condom use in this population. This could be done through a qualitative focus group research method or by individual interviews. A qualitative research study could provide new insight on urban African American adolescent girls' risky sexual behaviors and help practitioners to better understand how to interact with, support, and provide an effective comprehensive treatment plan resulting in different outcomes. Little research has been done on gender and power in sexual relationships and the association of condom use among urban African American adolescent females. It is necessary to further examine condom use and the intentions to use condoms as they relate to gender roles and power among urban African American adolescent females in long-term

sexual relationships. These findings could help explain reasons why this population has an increased risk for STIs/HIV and recurrent STIs, as well as other health consequences.

Furthermore, future studies should expand upon the associations between female empowerment and romantic attachment and its impact on condom use negotiation and condom use. The development of new intervention strategies should include targeting *both* urban African American male and female adolescents, and condom use negotiation. Instructions for female condom insertion skills should also be provided. The outcomes of these intervention strategies may result in decreased risky sexual behavior, increased condom use and decreased STI acquisition among this population. To better understand African American adolescent females' risk for STIs in a more meaningful and sustainable way requires identifying the gaps differentiating whether these adolescent girls are truly more sexual risk-takers than other groups or whether their desire for "stable" or consistent relationships with their partners is paramount. Gaining a deeper understanding of the motivations in the moment the sexual health decisions are made need to be understood so that practitioners can make culturally-tailored interventions with their urban African American adolescent clients.

Unfortunately, there is evidence that adolescent females who have been diagnosed and treated for an STI have frequently returned with a repeated STI (CDC, 2012c). Research studies have revealed that urban African American adolescent females who had a prior STI were found to be at a higher risk for acquisition of recurrent STIs (Swartzendruber, Sales, Brown, Davis, DiClemente & Rose, 2013; Upchurch et al., 2004). In addition, studies have also revealed that failure of partner notification and treatment was another underlying factor leading to recurrent STIs among African American young women (Buchsbaum, Gallo, Whiteman, Cwiak, Goedken, Kraft, & Kottke, 2014; Batteiger et al., 2010; Anschuetz et al., 2009; Hosenfeld et al., 2009). Other

risk factors for reinfection of STIs among minority adoelscent females were: early sexual debut, rape or sexual abuse, and binge drinking at least five or more alcoholic beverages (Thurman, Holden, Shain, Perdue, & Piper, 2008). In some cases, practitioners have found African American adolescent females previously treated for an STI were in a monogamous relationship and re-infected by their long-term partner. Despite the overwhelming disparities of STIs and risk for recurrent STIs among urban African American adolescent females, few studies have explored the predictors of repeated STIs exclusively among this population. There is a crucial need to conduct more research among urban African American adolescent females exploring what factors are associated with condom use after reinfection of an STI, especially since these young girls are disproportionately at a higher rate of contracting an STI than any other racial group of the same gender and age.

## Implications for Nursing Practice

The findings of this study have provided additional support for the use of the TPB to understand the association of gender roles, power and romantic attachment with intentions to use condoms and condom use among this patient population. Appropriate sexual health care services are extremely important for educating youth. Therefore, in an effort to reduce the sequela of infections that may result from high-risk sexual behaviors (i.e., lack of condom use) among African American adolescent females in urban areas, practitioners may benefit from learning more about their patients' environmental surroundings, family dynamics and daily living experience. Protocols for STI prevention and patient educational approaches for sexual health care are not a "one size fit all". The findings from this study suggest that one of the barriers to condom use among females who were sexually experienced and were not sexually experienced was that they felt embarrassed by receiving free condoms from community centers. To carry-out achievable outcomes, such as

increasing condom use among this particular population, practitioners could benefit from knowing their patients' level of comfort in discussing condom use with their partner and their opinion and suggestions for receiving free condoms. Another suggestion to benefit practice may be having access to a specifically-developed tool to assess the patient's relationship status, power of gender roles, length of relationship, partner communication and level of attachment. Gathering as much information about the relationship dynamics at the time of visit will help to implement more effective approaches to increasing condom use and reducing high STI rates among urban African American adolescent females. In addition, adolescent females are at increased risk for STI infections and reinfection due to a biological risk factor known as "*cervical ectopy."* Cervical ectopy is a common physiological process in young girls due to an immature cervix. An immature cervix is when the cells located on the outer surface of the cervix are not protected by cervical mucus, making the cells highly sensitive to sexually transmitted organisms (Lee, Foley & Tobin, 2006). In clinical practice, practitioners should be more persistent with STI retesting every three to six months after treatment and follow-up with partner notification via telephone calls, mailed letters and contacting local health departments. Due to the serious health consequences of recurrent STIs (e.g., pelvic inflammatory diseases, ectopic pregnancies, prenatal infections, infertility), it would be useful for practitioners to educate their adolescent patient population about other risk factors, such as, their biological susceptibility to STIs and repeated STIs.

## Conclusion

The association between the constructs attitude towards condoms, subjective norms and perceived behavioral control and intention to use condoms and condom use were examined. The analysis revealed that condom use and intentions to use condoms among urban African American adolescent females were associated with attitude towards condoms and subjective norms. Also,

condom use negotiation may be impacted by a desire for trust from the participants partner. This implies that future STI prevention intervention programs targeting adolescents residing in urban environments should adopt a wide range of educational approaches to increase condom use, including the male partner, female condom use skills, and addressing different views on condom use held by this specific group of adolescent girls. The above recommendations for future research may lead to discovery of new findings to help fill some of the missing gaps in the literature with regard to risky sexual behaviors among this population. These recommendations may also help to develop more creative and effective prevention programs to increase the likelihood of reshaping decision-making about sexual health and condom use among African American adolescent females living in urban environments.

# APPENDIX A

## COMBINED INSTRUMENTS

**Date_____**

**PLEASE DO NOT WRITE YOUR NAME ANYWHERE ON THIS QUESTIONNAIRE!!!**

**Thank you for agreeing to participate in the HORIZONS program. Please take a few moments to complete this questionnaire. Please answer each question honestly. Your responses to the questions will help ensure that the program met your needs.**

**Your responses are anonymous, that is, the staff will not be able to identify the responses of individual participants.**

**Please let us know if you have any questions!!!!**

**Here are some definitions to help you as you complete the questionnaire answer**

- **Abstinence refers choosing to not have sex**
- **Vaginal sex refers to the insertion of the male penis into the vagina.**
- **Oral sex is licking, kissing or sucking your partner's penis or vagina or when your partner does this to you.**
- **Anal sex refers to the insertion of the penis into the anus.**
- **STIs refers to sexually transmitted infections such as herpes, chlamydia, gonorrhea or syphilis.**

1. **Instead of writing your name, we would like you to create a code with your initials plus your birthday. So if your name is Jane Smith and your birthday is March 31st, 1994, then your code is JS03311994.**

   Unique code: |_____|_____|--|_____|_____|-- |_____|_____| --|_____|_____|_____|_____|
   Initials Month Day Year

2. How old are you?

   |_____|_____| Years

3. How do you describe your racial or ethnic background? ***(Check all that apply)***

   ☐ Black/African-American

☐ White

☐ Hispanic/Latina

☐ Asian or Pacific Islander

☐ Native American or Alaskan Native

☐ Other (Please specify:
_____)

4. What grade are you in this year? (Circle One)

8 9 10 11 12 College Not in school Graduated

5. Do you currently have a job?

☐ Yes
☐ No

6. Do you have any children?

☐ Yes
☐ No

7. How do you identify:

☐ Straight
☐ Lesbian

☐ Bisexual

☐ Queer

☐ Questioning

☐ Other (Please specify: _____)

The following section gives statements about the HIV/AIDS and other sexually transmitted infections (STIs). Please read each statement carefully and indicate whether you think the statement is true or false by checking the appropriate box.

| | True | False | Don't Know |
|---|---|---|---|
| 8. HIV/AIDS can be cured | ☐ | ☐ | ☐ |
| 9. Having sex with many different people increases the chances of getting HIV | ☐ | ☐ | ☐ |
| 10. Using condoms can reduce the chances of getting HIV | ☐ | ☐ | ☐ |
| 11. Using Vaseline or oils with a latex condom during sex may cause the condom to break | ☐ | ☐ | ☐ |
| 12. When people get drunk or high, they are less likely to use a condom | ☐ | ☐ | ☐ |
| 13. People can give STIs to someone else only when they have symptoms. | ☐ | ☐ | ☐ |
| 14. Having an STI can increase a person's chance of getting HIV | ☐ | ☐ | ☐ |
| 15. All STIs can be cured by medicine | ☐ | ☐ | ☐ |
| 16. Condoms can protect against most STIs | ☐ | ☐ | ☐ |
| 17. Some STIs can make it difficult for a woman to get pregnant | ☐ | ☐ | ☐ |
| 18. A person can always tell if he/she has a STI | ☐ | ☐ | ☐ |

For the next couple of statements, we are interested in your opinion about abstinence. Please read each statement carefully and indicate how much you agree with each statement by checking the appropriate box.

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| 19. I am comfortable abstaining from sex if I am not ready | ☐ | ☐ | ☐ | ☐ |
| 20. I believe that abstinence is a good choice for me | ☐ | ☐ | ☐ | ☐ |
| 21. I would be embarrassed to tell my friends if I am abstaining from sex | ☐ | | ☐ | ☐ |

| | | | | |
|---|---|---|---|---|
| 22. I have chosen to be abstinent to protect myself from HIV/STIs | ☐ | ☐ | ☐ | ☐ |

For the next couple of statements, we are interested in your opinion and feelings about using condoms when you have vaginal or anal sex. If you are not having sex please answer as if you were**.** Please read each statement carefully and indicate how much you agree with each statement by checking the appropriate box.

| | **Strongly Agree** | **Agree** | **Disagree** | **Strongly Disagree** |
|---|---|---|---|---|
| 23. I would not have a problem if my partner suggested we use a condom | ☐ | ☐ | ☐ | ☐ |
| 24. Buying a condom would be embarrassing | ☐ | ☐ | ☐ | ☐ |
| 25. Having to stop and put a condom on takes the romance out of sex | ☐ | ☐ | ☐ | ☐ |
| 26. Going to a community agency to obtain free condoms would be embarrassing | ☐ | ☐ | ☐ | ☐ |
| 27. Using a condom every time I have sex would make my partner think I don't trust him | ☐ | ☐ | ☐ | ☐ |
| 28. Using a condom would be embarrassing | ☐ | ☐ | ☐ | ☐ |
| 29. I feel confident in my ability to use a condom correctly | ☐ | ☐ | ☐ | ☐ |

The next set of statements ask about your level of comfort talking about sex with your partner. If you don't have a sexual partner please answer as if you have one**.** Please read each statement carefully and indicate how much you agree with each statement by checking the appropriate box.

| | **Strongly Agree** | **Agree** | **Disagree** | **Strongly Disagree** |
|---|---|---|---|---|
| 30. I am comfortable discussing abstinence with my partner if I do not want to have sex | ☐ | ☐ | ☐ | ☐ |
| 31. I am able to discuss the use of condoms with my sex partner | ☐ | ☐ | ☐ | ☐ |
| 32. I am comfortable asking my partner if he/she has ever had a STI | ☐ | ☐ | ☐ | ☐ |
| 33. I am able to ask my partner if he/she has HIV | ☐ | ☐ | ☐ | ☐ |
| 34. I am able to tell my sex partner(s) how many people I have had sex with before him/her | ☐ | ☐ | ☐ | ☐ |

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| 35. It would be hard to discuss with a partner the need for both of us to get tested for STIs, including HIV before having sex | ☐ | ☐ | ☐ | ☐ |

The next set of questions is about vaginal sex. Remember vaginal sex refers to the insertion of the male penis into the vagina.

36. Have you **ever** had vaginal sex?

- ☐ Yes
- ☐ No

37. **In the past 3 months,** have you had vaginal sex?

- ☐ Yes
- ☐ No
- ☐ I have never had vaginal sex

38. **In the past 3 months**, how often did you use a condom when you had vaginal sex? (Check only one)

- ☐ I have not had vaginal sex in the past 3 months
- ☐ Never
- ☐ Less than half the time
- ☐ About half the time
- ☐ More than half the time
- ☐ Always

39. **In the next 3 months,** do you intend to have vaginal sex?

- ☐ Yes
- ☐ No

40. **In the next 3 months**, when you have vaginal sex how often do you plan on using a condom? (Check only one)

- ☐ I do not plan on having vaginal sex in the next 3 months

- ☐ Never
- ☐ Less than half the time
- ☐ About half the time
- ☐ More than half the time
- ☐ Always

The next set of questions is about anal sex. Remember anal sex refers to the insertion of the penis into the anus.

41. Have you **ever** had anal sex?
    - ☐ Yes
    - ☐ No

42. **In the past 3 months,** have you had anal sex?
    - ☐ Yes
    - ☐ No
    - ☐ I have never had anal sex

43. **In the past 3 months**, how often did you use a condom when you had anal sex? (Check only one)
    - ☐ I have not had anal sex in the past 3 months
    - ☐ Never
    - ☐ Less than half the time
    - ☐ About half the time
    - ☐ More than half the time
    - ☐ Always

44. **In the next 3 months,** do you plan to have anal sex?
    - ☐ Yes
    - ☐ No

45. **In the next 3 months**, when you have anal sex how often do you plan on using a condom? (Check only one)

- ☐ I do not plan on having anal sex
- ☐ Never
- ☐ Less than half the time
- ☐ About half the time
- ☐ More than half the time
- ☐ Always

The following questions are about your plans to engage in certain sexual health related behaviors in the future.

46. I plan to decrease the number of people I have **vaginal sex** with **in the next 3 months**.

- ☐ Yes
- ☐ No
- ☐ I do not plan on having vaginal sex

47. The next time I am in the position to have vaginal sex and I am not ready, I will practice abstinence

- ☐ Yes
- ☐ No

These next questions ask about testing for HIV and other sexually transmitted diseases (STIs), such as herpes, syphilis, gonorrhea, and chlamydia. Check one box for each question.

48. As you may know, there is a test that tells whether or not someone has HIV. People get tested for many different reasons. Some people have decided to have this test done and some have decided not to. Have you **ever** been tested for HIV?

- ☐ Yes, more than once
- ☐ Yes, once
- ☐ No

49. What were the results of your **last HIV test**?

- ☐ I have never gotten an HIV test
- ☐ I have HIV
- ☐ I do not have HIV
- ☐ I never went back for my test results

50. How likely are you to get a HIV test **in the next 3 months?**

- ☐ Very Likely
- ☐ Somewhat likely
- ☐ Somewhat unlikely
- ☐ Very unlikely

51. There are also tests that tell whether or not someone has an STI. Some people have decided to have this test done and some people have not. Have you **ever** been tested for any type of STI?

- ☐ Yes
- ☐ No

52. Have you **ever** been told by a nurse, doctor, or other health professionals that you had an STI?

- ☐ Yes
- ☐ No

53. How likely are you to get tested for STIs **in the next 3 months?**

- ☐ Very Likely
- ☐ Somewhat likely
- ☐ Somewhat unlikely
- ☐ Very unlikely

People have different beliefs of what a relationship should be like. The following statements represent some beliefs about relationships. Please indicate how much you agree with the following statements by checking the appropriate box.

| | **Strongly Agree** | **Agree** | **Disagree** | **Strongly Disagree** |
|---|---|---|---|---|
| 54. Guys should dominate girls in bed | ☐ | ☐ | ☐ | ☐ |
| 55. By being dominated girls get sexually aroused | ☐ | ☐ | ☐ | ☐ |

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| 56. Guys should decide what should happen during sex | ☐ | ☐ | ☐ | ☐ |
| 57. Girls think it is exciting when guys use a little force on them | ☐ | ☐ | ☐ | ☐ |
| 58. Guys should have the power in sexual situations | ☐ | ☐ | ☐ | ☐ |
| 59. Girls get really turned on by guys who let them know whose boss | ☐ | ☐ | ☐ | ☐ |

The next set of statements asks about how you feel as an African American or Black female.

Please indicate how much you agree with the following statements.

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| 60. I am happy that I am African American | ☐ | ☐ | ☐ | ☐ |
| 61. I have a strong sense of belonging to the African-American ethnic group | ☐ | ☐ | ☐ | ☐ |
| 62. I have a lot of pride in the African American ethnic group and their accomplishments | ☐ | ☐ | ☐ | ☐ |
| 63. I feel a strong sense of attachment towards the African-American ethnic group | ☐ | ☐ | ☐ | ☐ |
| 64. I feel good about my African American heritage. | ☐ | ☐ | ☐ | ☐ |

The next set of statements asks about how you feel about being a woman. Please indicate how much you agree with the following statements.

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| 65. I believe that women can achieve anything they set their mind to | ☐ | ☐ | ☐ | ☐ |
| 66. On the whole, I am satisfied with being a woman | ☐ | ☐ | ☐ | ☐ |
| 67. I believe that women have a lot of good qualities | ☐ | ☐ | ☐ | ☐ |

# APPENDIX B

## HUMAN INVESTIGATION COMMITTEE APPROVAL

WAYNE STATE UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://irb.wayne.edu

### CONCURRENCE OF EXEMPTION

**To:** Angulique Outlaw
Family Medicine
60 W. Hancock

**From:** For Dr. Deborah Ellis M. Tamer, MD/BC
Chairperson, Behavioral Institutional Review Board (B3)

**Date:** March 05, 2018

**RE:** IRB #: 025618B3X

Protocol Title: New HORIZONS: A Newly Adapted Sexual Health Behavioral Skills Intervention for African American Female Youth

Sponsor:

Protocol #: 1802001255

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The above-referenced protocol has been reviewed and found to qualify for **Exemption** according to paragraph #4 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].The above-referenced protocol has been reviewed and found to qualify for **Exemption** according to paragraph #7 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- Social/Behavioral/Education Exempt Protocol Summary Form (received in IRB Office 02/23/2018)
- Revised Research Protocol (revision received in the IRB Office 03/05/2018)
- Medical records are not being accessed therefore HIPAA does not apply.

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to the potential benefits.

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- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (http://irb.wayne.edu/policies-human-research.php).

**NOTE:** Forms should be downloaded from the IRB Administration Office website http://irb.wayne.edu at each use.

Notify the IRB of any changes to the funding status of the above-referenced protocol.

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# ABSTRACT


**CONDOM USE AMONG URBAN AFRICAN AMERICAN ADOLESCENT FEMALES**

by

**JAQUETTA M. REEVES**

**August 2019**

**Advisor:** Dr. April Hazard Vallerand

**Major:** Nursing

**Degree:** Doctor of Philosophy

Background: Sexually transmitted infections (STIs) are one of the most common global health problems, having a profound impact on sexual and reproductive health worldwide. The CDC estimates that approximately 20 million new infections occur each year in the U.S., and almost half of them are among adolescents age 15–24. Despite government initiatives on STI prevention programs for adolescents, there is dearth of knowledge regarding the lack of condom use among adolescent high school students, especially concerning African American females who live in urban areas.

Purpose: The purpose of this research was to explore attitudes towards condoms, subjective norms and perceived behavioral control and the effect these variables have on urban African American adolescent females' intention to use condoms and condom use. A second aim in this study was to determine the relationship between attitudes towards condoms and perception of masculine norms and the effect on intentions to use condoms among this population.

Methods: This study is a secondary analysis of baseline data from 196 participants ages 14–19 who participated in a community service STI and Safer Sex intervention for African American adolescent females. Descriptive statistics was used to examine the effect of attitudes

towards condoms, subjective norms and perceived behavioral control factors on condom use and intention to use condoms among urban African American adolescent females with a history of having an STI and those without a history of an STI. The Theory of Planned Behavior (TPB) was used used as a guide to predict and explain participant's intent to use and condom use during sexual intercourse. A path analysis, using Amos graphics 25 was used to test the hypothesized relationships among the independent variables (attitudes toward condoms, subjective norms and perceived behavioral control) and dependent variables (intention to use condoms and condom use).

Results: As predicted by the TPB, results showed attitude towards condoms and subjective norms were significantly associated with intentions to use condoms. Contrary to the TPB, perceived behavioral control was not significantly associated with intentions to use condoms. Results showed that *intent to use condoms* for participants with a previous STI history was *significantly* higher than those who reported never having an STI. Perception of masculine norms did not significant effect on the relationship between attitudes towards condoms and intention to used condoms.

Conclusion: The findings of this study have provided additional support for the use of the TPB to understand the association of gender roles, power and romantic attachment with intentions to use condoms and condom use among this patient population. Appropriate sexual health care services are extremely important for educating youth. Therefore, in an effort to reduce the sequela of infections that may result from high-risk sexual behaviors (i.e., lack of condom use) among African American adolescent females in urban areas, practitioners may benefit from learning more about their patients' environmental surroundings, family dynamics and daily living experience. Protocols for STI prevention and patient educational approaches for sexual health care are not a "one size fit all".

Keywords: African American adolescent females, condom use, intentions, attitudes and beliefs, recurrent or repeat sexually transmitted infections, Theory of Planned Behavior

# AUTOBIOGRAPHICAL STATEMENT

## EDUCATION

2019 – Doctor of Philosophy in Nursing, Wayne State University, Detroit, MI
2010 – Master of Science, Community Health Nursing, University of Michigan, Ann Arbor, MI
2010 – Certificate in Nursing Education, University of Michigan, Ann Arbor, MI
2002 – Bachelor of Science in Nursing, Eastern Michigan University, Ypsilanti, MI

## PROFESSIONAL EXPERIENCE

| | | |
|---|---|---|
| 2018 – current | Clinical Nurse Faculty | Wayne State University, Detroit, MI |
| 2006 – current | Nurse Faculty | Washtenaw Community College, Ann Arbor, MI |
| 2014 – 2016 | FNP Site Supervisor | University of Michigan Health System, Ann Arbor, MI |
| 2012 – 2014 | Nurse Practitioner | Center for Family Health, Jackson, MI |
| 2011 – 2012 | Nurse Practitioner | Corizon Prison Health, Jackson, MI |
| 2004 – 2011 | Registered Nurse | UMHS Mott Children's Hospital, Ann Arbor, MI |

## SCHOLARSHIP AND AWARDS

2019 – Michigan Council of Nurse Practitioners Poster People's Choice Award
2018 – Michigan Council of Nurse Practitioners Scholarship Award
2016 – Robert Wood Johnson Foundation Future Nursing Scholar – Wayne State University
2009 – Kings/Chavez/Park (KCP) Scholarship Award – University of Michigan

## PROFESSIONAL POSTER PRESENTATIONS

| | |
|---|---|
| 2019 | MidWest Nursing Research Society Conference – Kansas City, MO |
| 2019 | Michigan Council of Nurse Practitioners Conference – Detroit, MI |
| 2018 | RWJF Future of Nurse Scholar Summer Institute – Minnesota, MN |
| 2018 | WSU College of Nursing Urban Health Conference – Detroit, MI |
| 2017 | C.P. Lee Endowed Graduate Student Research Day, WSU School of Medicine – Detroit, MI |
| 2017 | RWJF Future of Nurse Scholar Summer Institute – Minnesota, MN |
| 2017 | WSU College of Nursing Urban Health Conference – Detroit, MI |

## RESEARCH PROJECTS

Nursing Scholarly Research Project (2009): *HIV/AIDS Among African American Men: The role of spirituality in developing therapeutic relationships in the delivery of care by APN's*
Authors: **Reeves, Jaquetta M.** and Park, Ashley K.