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Erikka J. Woolfolk Date

Perceived Caregiver Support and Sexual Partner Communication Mediators of Condom Use Among African American Female Adolescents

By

Erikka J. Woolfolk

MPH

Behavioral Sciences and Health Education

_____

Ralph DiClemente, PhD

Committee Chair

_____

Andrea Swartzendruber, PhD

Committee Member

_____

Jessica McDermott Sales, PhD

Committee Member

_____

Colleen McBride, PhD

Department Chair

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By

Erikka J. Woolfolk

B.A. Political Science

Spelman College

2011

Thesis Committee Chair: Ralph DiClemente, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2015

## Abstract

Perceived Caregiver Support and Sexual Partner Communication Mediators of Condom Use Among African American Female Adolescents

By Erikka J. Woolfolk

**Background:** Perceptions of caregiver warmth and support are consistently associated with reduced adolescent sexual risk behavior. Although sexual communication and negotiation with partners are well-established mediators of condom use among adolescents, few studies have examined if perceived caregiver support is related to sexual partner communication.
**Objective:** The purpose of this study is to examine associations between perceived caregiver support and sexual partner communication mediators of condom use among African American female adolescents, who are at disproportionate risk for HIV and sexually transmitted infections (STIs).
**Methods:** Baseline data were collected from 701 African American female adolescents aged 14-20 years participating in an HIV/STI prevention trial. Logistic regression models were used to examine associations between perceived caregiver support and sexual partner communication frequency and self-efficacy, fear of condom negotiation and refusal self-efficacy. Adjusted models controlled for participant age.
**Results:** Due to non-normal distributions, all outcomes were dichotomized, with scores above the median categorized as "high" and scores at or below the median categorized as "low." Greater perceived caregiver support was significantly associated with an increased likelihood of being categorized as having high partner communication frequency (AOR=1.04; 95%CI=1.02, 1.06), partner communication self-efficacy (AOR=1.02; 95%CI=1.01, 1.04), and refusal self-efficacy (AOR=1.02; 95%CI=1.00, 1.04) and a reduced likelihood of being categorized as having high fear of condom negotiation (AOR=.95; 95%CI=.94, .97).
**Conclusions:** Greater perceived caregiver support was associated with sexual partner communication mediators of condom use among African American female adolescents. Family interventions aimed at increasing perceived caregiver support may offer benefits for HIV/STI prevention for this vulnerable population.

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**Acknowledgements**

I would like to thank all of the individuals who were instrumental in guiding me through the process of completing this thesis:

To my thesis chair, Dr. Ralph DiClemente, for granting me access to the AFIYA dataset and for being such an encouraging mentor since the beginning of my matriculation here at Emory.

To my committee member Dr. Jessica McDermott Sales, for your guidance and explanations on concepts I was having a difficult time grasping.

Last but certainly not least Dr. Andrea Swartzendruber for being so supportive throughout this entire process. Thank you for your endless patience and your constructive criticism that truly made this a valuable learning experience for me.

I would also like to thank the participants of this study, who gave their time to help us better understand adolescent risk behaviors. Without them our research is not possible.

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# Chapter I: Background and Significance

## Introduction

Each year there are there are approximately 19 million reported cases of sexually transmitted infections (STIs) in the U.S., half of which are among people aged 15 to 24 (Weinstock, Berman, & Cates, 2004). According to the Youth Risk Behavior Surveillance Survey (YRBS) conducted by the Centers for Disease Control and Prevention (CDC) in 2011, 46.8% of U.S. high school students have had sex at least once in their lifetime and 40.9% did not use a condom the last time they had sex (CDC, 2011). Further, according to the National Health and Nutrition Examination Survey (NHANES), one out of four female adolescents in the United States has at least one of the most common STIs (biologically confirmed HPV, chlamydia, trichomoniasis and herpes simplex virus type 2 (HSV-2)) (CDC, 2008). Additionally, African American adolescent females 14 to 19 years old had the highest STI rates, with an overall STI prevalence of 48% in comparison to 20% among both White and Hispanic adolescent females (CDC, 2008). Additionally, African American females are affected by unplanned pregnancy and HIV/AIDs at alarmingly high rates compared to Whites and Hispanics (Hatcher, Burlev & Lee-Ouga, 2008; Lee, Cintron & Kocher, 2014; CDC, 2014). According to CDC, in 2013, the incidence rate of chlamydia for African Americans was six times higher than those of Whites (CDC, 2014). Similarly, in 2013, African Americans incidence rate of gonorrhea was 12.4 times high than those of whites (CDC, 2014). Syphilis 2013 rates for black women aged 15–19 years were 18.2 times and 8.3 times the rate for white and Hispanic women (CDC, 2014).

Moreover, the incidence rate of gonorrhea for African American females was 14 times higher than that of White females (CDC, 2011). African American adolescents, ages 13–19 were responsible for nearly 70% of the total HIV occurrences among youth in the U.S. even though they constitute a much smaller proportion of the adolescent population (OAH, 2012). Several studies have contributed the differences in HIV risk to be due to African American adolescents being more likely to have sex at younger ages, having more sexual partners, and using protection less than their peers (Lee, Cintron & Kocher, 2014).

Although some STIs are treatable, according to the CDC (2010), individuals infected with STIs are two to five times more likely than uninfected individuals to facilitate HIV transmission and acquisition. HIV and other STIs are primarily transmitted through vaginal and anal sex, putting women in heterosexual relationships at high risk (CDC, 2009). Due to the common routes of transmission, using male latex condoms correctly and consistently is one of the most effective ways to protect against HIV and STIs (CDC, 2010).

Understanding condom use among African American adolescents is important, as condoms can be very effective in preventing HIV/AIDS and other STIs (CDC, 2014). According to the National Survey of Family Growth (NSFG), condom and contraceptive use among adolescents has increased over the past few decades, however, many adolescents are not using them consistently; with African American female adolescents having the lowest condom use rates among all ethnicities (NSFG, 2011). Only 31% of sexually active African American females ages 15 to19 reported using a condom during sex within the past month (NSFG, 2011). However, African American female adolescents

have the highest rates of ever having sex, frequency of sex, and casual sex compared to White and Hispanic adolescents (NSFG, 2011; CDC, 2014).

Several research studies have suggested factors that may be associated with greater condom use among African American female adolescents. For example, some interventions designed for adolescent females have found that improved communication with ones sexual partner about sex and condom use is associated with increased condom use (Choi et al., 2008). Further, according to results found by Sales and colleagues, increasing African American female adolescents' partner communication frequency about sex over a 12-month follow-up contributed to increases in condom use with participants' male partners (2012).

Although, increasing partner communication has been established as a predictor of condom use (Sales et al., 2012; Crosby et al., 2003), there are many barriers to communicating with ones sexual partner about sex for adolescent females (El-Bassell et al., 2000; Wingood & DiClemente, 1998). For example, some young women with sexual partners who were at least 5 years older than themselves, suggested they would like to keep their partners happy by not negotiating condom use, thus allowing their partners to have control over themselves was important in maintaining their sexual relationship (DePadilla et al., 2011). According to Heatherington et al. (1996) and Osmond et al. (1993) women can often feel powerless in negotiating condom use during sex with their partners. Further, some researchers believe African American male culture encourages sex and risky behaviors, resulting in young women having a more difficult time negotiating their sexual preferences (Staples & Johnson, 1993).

The ability for African American adolescent couples to negotiate sexual activity

and contraceptive use is an important component to effectively preventing unwanted pregnancy and STIs (Ryan, Franzetta, Manlove & Holcombe, 2007). Previous studies have shown couples who communicate about condom use and safe sexual practices are more likely to reduce HIV risk, regardless of ethnicity (Catania et al., 1992). A qualitative study revealed some African American men do not feel comfortable discussing contraception and will typically leave it up to their female partners to initiate the conversation (Landry & Camelo, 1994; Noar et. al, 2012). Similarly, many young African American female adolescents do not feel comfortable communicating with their male partners about their sexual preferences including condom use (Kennedy & Jenkins, 2011). According to a study conducted by Ryan, Franzetta, Manlove and Holcombe (2007), 50% of teenagers do not discuss contraception including condom use or STDs with their partner before having sex for the first time. One way adolescents might be more encouraged to talk to their sexual partners might start with their primary caregivers.

An important protective factor against adolescent sexual risk behaviors is having a caregiver involved in teen's lives. Greater parental monitoring has demonstrated protective capabilities against sexual risk factors such as sexual initiation, frequency of sexual intercourse, multiple sexual partners, pregnancy, and unprotected sex among African American adolescents (Dittus, Miller, Kotchick & Forehand, 2004; Li, Feigelman, & Stanton, 2000; Romer et al., 1994). Many studies have found parental monitoring and parental communication about sex to be protective against adolescent sexual risk taking (Borawski et al. 2003; DiClemente et al., 2001). According to Donenberg, Paikoff, and Pequegnat (2006), family can influence adolescent sexual behavior in four ways (Donenberg & Pao, 2005): (a) instrumental characteristics

(parental monitoring and control); (b) parent–teen communication; (c) parental attitudes about sex; and the least studied, (d) affective parenting behavior (warmth and support).

Research has shown caregiver support to be an influence in the development of successful romantic relationships in adolescents. Caregiver and adolescent relationships can serve as working models of how relationships with others should work (Chase-Lansdale, Wakschlag et al. 1995). Caregivers also set lasting expectations by example, which can guide the behaviors, beliefs, and norms adolescents have in other relationships later on in life, especially romantic relationships (Feeney, 1999). Caregiver support including communication about sexual health topics may serve as a model for African American female adolescents to be more communicative about sexual health topics with their sexual partners.

**Purpose and Research Question**

Although many previous studies have shown caregiver support to be associated with adolescent's sexual health as indicated by self report sexual behavior (Holtzman & Rubinson, 1995; DiClemente et al., 2001; Donenberg & Pao, 2005; Whitaker, 1999), more research is needed to further understand the mechanisms of caregivers' power of influence as well as additional outcomes of importance. Due to many sexual health disparities among African American adolescent females it is of the utmost importance to uncover more potential protective factors for this population. The primary purpose of this research is to better understand the mechanisms of caregiver support on African American female adolescents' sexual health (or sexual decision making) by examining their perceived caregiver support as it relates to their partner communication self-efficacy

and frequency, refusal self-efficacy, and fear of condom negation.

The objective of this study is to examine associations between perceived caregiver support and sexual partner communication mediators of condom use among African American female adolescents, who are at disproportionate risk for HIV and sexually transmitted infections (STIs). The hypothesis: there will be a significant positive correlation between the caregiver support and partner communication self-efficacy, frequency and refusal self-efficacy and a significant negative correlation between caregiver support and fear of condom negotiation. This would mean when caregiver support is perceived to be higher, partner communication self-efficacy, frequency and refusal self-efficacy will be higher as well while fear of condom negotiation would be lower.

**Theoretical Framework**

The supporting theory for this research is Attachment Theory. Attachment theory, developed by John Bowlby (1979), offers a system of organizing concepts for understanding many aspects of relationships. Attachment Theory explains the basic interpersonal process that highlights the connection between social relationships and health (Berkman et al., 2000). Almost every infant will develop some form of attachment with a caregiver (Weinfield, Sroufe, Egeland & Carlson, 2008). Attachment relationships are not measured by the quantity of attachment behaviors, but the quality of the attachment relationship (Ainsworth, 1972). Further, attachment relationships have been divided into two categories, "secure" and "insecure"(Ainsworth, 1972; Bowlby, 1973). Secure attachment describes a relationship in which children can easily and consistently

access his or her caregiver if a need of comfort or protection arises, especially if there is a present threat (Ainsworth, 1972; Bowlby, 1973). However, in relationships with insecure attachment, a child will not have easy access to their caregiver in times of need, or caregivers will have inconsistent availability to the child (Ainsworth et al., 1978; Bowlby, 1973). Children with secure attachment relationships who have responsive, available caregivers develop a sense of security that their needs will be met and therefore become more comfortable and confident to explore their environments physically, socially and emotionally (Weinfield, Sroufe, Egeland & Carlson, 2008). Securely attached children also gain a sense of worth from their caregivers' availability and attention (Weinfield, Sroufe, Egeland & Carlson, 2008). Contrastingly, children with insecure attachment relationships do not develop the same comfort or sense of security and are less likely to explore (Weinfield, Sroufe, Egeland & Carlson, 2008).

Although, most applications of attachment theory have been focused on children in infancy and early childhood years, there has been a growing body of research on attachment on adolescence as well as adulthood. Armsden and Greenburg (1987) developed the Inventory of Parent and Peer Attachment (IPPA), which assesses the security and perceived quality of the relationships adolescents have with their parents and peers. Armsden and Greenburg (1985) found adolescents with greater attachment to their parents possessed above average self-esteem, enjoyed more frequent communication with their families, and higher quality relationships with their peers. Adolescents with secure attachment also tend to be better problem solvers than adolescents with insecure attachment (Becker-Stoll & Fremmer-Bombik, 1997; Weinfield, Sroufe, Egeland & Carlson, 2008). Insecurely attached teens can have higher levels of disengagement, and

dysfunctional anger (Becker-Stoll & Fremmer-Bombik, 1997; Weinfield, Sroufe, Egeland & Carlson, 2008). According to Bowlby, attachment behavior plays an essential role throughout ones life cycle (Bowlby, 1973) and the characteristics of most infant-caregiver bonds apply to most marital and committed non-marital romantic relationships later on in life (Weiss, 1982). Meaning, expectations are formed about the availability and responsiveness of attachment figures and these expectations translate into how close relationships should operate throughout the child's life (Bowlby, 1973).

Attachment Theory informs the analysis of this thesis due to its constructs support of the research question. This theory encompasses the primary objective of this thesis research.

# Chapter II: Literature Review

## Partner Communication

Communicating with a sexual partner about ones preferences about sex is an important self-protective behavior adolescents should be encouraged to do (Whitaker, 1999). Many adolescents (including African American female adolescents) who communicated about their sexual preferences such as condoms, birth control, STDs, HIV/AIDS, pregnancy, and abstinence with their partners also used condoms more consistently (Crosby et al., 2013; DiClemente et al., 2001; Noar et al., 2006; Ryan, Franzetta, Manlove, & Holcombe, 2007; Sales et al., 2012; Whitaker, 1999; Widman et al., 2014). Sheeran and colleagues (1999) meta-analysis showed sexual communication was more predictive of condom use than over 40 other variables, including sexual refusal self-efficacy, barriers to condom use, and intentions to use condoms. Further, infrequent partner communication was significantly associated lower likelihood of condom use in a sample of African American female adolescents (Crosby et al. 2002).

For the purposes of this thesis "partners" refers to only male sexual partners.

### Fear of Condom Negotiation and Refusal Self-efficacy

Female adolescent's partner communication can be important to their sexual health especially in regards to their ability to negotiate condom use and refuse sexual intercourse. For example, according to Moore and Melkote (2009), if individuals expect using a condom will result in negative outcomes, like resistance from their partner, they are more likely to become non-condom users. Similarly, Nelson and colleagues (2011)

found it common for young African American women to agree to have unprotected sex with her male partner because they feared that their partners might leave the relationship. Moreover, women want to please their partners and due to decreased sensation for men, some men refuse to wear condoms, suggesting that increased sensation is significant in determining condom use (Essien et al., 2005). In addition to decreased sensation, men indicate that feeling close to their partner is important; therefore, they avoid using condoms to be as close as possible (Doyle et al., 2009), using this idea and "love" to convince young women condoms are not needed in their relationship (Van Devanter et al., 2011). Latino and African American female adolescents believed that their partner's refusal to wear a condom was proof that he loved and cared about her; so, they willingly agreed to have unprotected sex with (Van Devanter et al., 2011). Many young African American women believed that they display a great amount of trust for their partner by not using condoms and having unprotected sex (Epperson et al., 2009). Further, African American female adolescents who would otherwise negotiate condom use, believed that asking their partner to use a condom implies that he is unfaithful (Noar et al., 2012; Wingood & DiClemente, 1998). Together, young African American men and women responded, "If couples use condoms, it's because they don't trust each other", "A person only asks their partner to use a condom if they suspect their partner of cheating" and "If a person suggests using a condom with their partner, it's because they've been cheating," which suggests that condoms symbolize infidelity in relationships (Thorburn, 2005). In a qualitative study conducted by Noar et al. (2012) among heterosexual African American men and women, participants were asked about their perceptions towards condom negotiation in main partner relationships, and in casual relationships. Results showed that

men and women alike found it very difficult or impossible to negotiate condom use with a main partner if they had not been already using condoms consistently, without causing an argument with their partner, which often lead to distrust in their relationship (Noar et. al, 2012).

However, in casual relationships, men and women felt it was less difficult to negotiate due to both partners' understanding the relationship was strictly casual. Men felt it was the woman's duty to negotiate in casual relationships more so than theirs (Noar et. al, 2012). One man stated, "I feel like that is a question that a girl poses. Like man, if we want to use a condom, we just put it on, there's no question to be asked...it's a female only question, really. You don't just...if you don't want to use one, then you don't like [ask] 'do you think I should use a condom?' No. That's not our type of question." (Noar et. al, 2012). The perception of this participant suggests the burden and responsibility of condom negotiation falls solely on women (Noar et. al, 2012; Ryan, Franzetta, Manlove & Holcombe, 2007). These findings are consistent with previous work done by Noar, that women are normally the verbal negotiators, while men resort to non-verbal techniques of negotiation (Noar et. al, 2012; Ryan, Franzetta, Manlove & Holcombe, 2007).

In addition, women, at times, are fearful to attempt to negotiate condom use with their partners due to threats of intimate partner violence if their partner refuses to wear a condom (DePadilla et al., 2011). According Epperson et al. (2009), if African American young women attempted to negotiate condom use with a partner and he refused, the partner would possibly choose to rape her to get what he wanted. For other women, partners threatened to hurt them or hurt their families if they refused to have sex without a condom. As it relates to age, when women have older sexual partners, their likelihood

of negotiating condom use decreases because their partners may not want to use condoms or they may be intimidated by their partners (DePadilla et al., 2011). Young African American women with sexual partners 5 years older or more, suggested they would like to keep their partners happy by not negotiating condom use, thus listening to their partners was important in maintaining their sexual relationship (DePadilla, Windle, Wingood, Cooper, & DiClemente, 2011).

On the other hand, the intention to use condoms increases when partners are active in decision-making and engaged in health protective communication in relationships (Harvey & Henderson, 2006). According to Nelson and colleagues (2011), women understood that they put themselves at risk of contracting an STD or HIV/AIDS when they engaged in unprotected sex with their partners, expressing that thoroughly communicating with their partners was important in preventing transmission. Also, women were more likely to discuss the use of condoms with their partners because they expressed that not contracting an STD was important to them (Otto-Salaj et al., 2008). Having a supportive caregiver in young women's lives may provide opportunities for young women to learn more about sex and be able to start having conversations about protecting themselves with their partners earlier in their relationships.

**Caregiver Support**

Caregiver support can serve as a protective factor against several adolescent sexual risk behaviors. There are many ways in which adolescents can perceive caregivers as supportive, such as, through consistent communication, monitoring, or involvement. Studies show that adolescents who had more frequent communication with parents have a higher likelihood of discussing condom use with romantic partners (Crosby et al., 2002;

DiClemente et al., 2001; Hutchinson & Cooney, 1998; Ryan et al., 2007; Whitaker et al., 1999).

For the purposes of this thesis "caregivers" will include parents and any other person or relative who is serving as a primary caregiver or guardian for the adolescent.

Communication

Parent-adolescent communication has been heavily researched, and data suggest it may be a protective factor to several adolescent sexual risk behaviors such as delayed sexual initiation and increased condom use (Holtzman & Rubinson, 1995). According to DiClemente and colleagues (2001), African American female adolescents who had more discussions about sexual topics with their parents felt more confident in their ability to condom negotiate as well as refuse sex. Researchers found adolescents whose parents communicated with them about general sexuality issues were more comfortable with communicating to their partners (Whitaker, 1999). Less frequent communication with parents about STDs, pregnancy prevention and condom use has been associated with infrequent partner communication (Crosby et al. 2002, Depadilla et al., 2011). Further, Whitaker (1999) found parents who skillfully and openly discussed sexual topics with their adolescents was associated with adolescents being more comfortable and more likely to communicate with their sexual partners. *How* parents communicate with their adolescents may be more important than the frequency, or to what degree the issues are discussed (Wilson & Donenberg, 2004; Whitaker, 1999). In a pilot study conducted by Wilson and Donenberg (2004), the researchers found: 1) adolescents whose parents agreed with them and had little input in regard to their teens' sexual behaviors or decisions had the most risky sexual behavior; 2) adolescents whose parents disagreed

with them to some degree during conversations of sex were less likely to engage in risky sexual behavior; 3) adolescents whose parents gave more direction during conversations of sex were least risky. These findings are consistent with past findings, that higher levels of parental control in conversations about sex may protect adolescents from engaging in risky sexual behavior (Donenberg, Wilson, Emerson, & Bryant, (2002). In sum, more guidance from caregivers in conversations with adolescents about sex may be protective for minority adolescents.

Monitoring

Caregiver monitoring includes knowing of adolescent's where-abouts, overseeing of their activities (Kerr &Stattin, 2000) and their friends (Steiner, Swartzendruber, Rose & DiClemente, 2014). Monitoring restricts sexual activity by interfering with adolescent's opportunities to engage in risk behaviors, which oftentimes lead to the adolescents' intention to initiate intercourse (Sieverding, Adler, Witt, & Ellen, 2005). The association between monitoring and decreased levels of adolescent risky behavior is well documented in the literature among various socioeconomic and ethnic groups (Li, Feigelman, & Stanton, 2000; Rai et al., 2003; Steiner, Swartzendruber, Rose & DiClemente, 2014). In a review of 25 empirical studies, Kincaid and colleagues discovered more than half of the studies they reviewed (61%) found higher levels of parental monitoring to be associated with less sexual risk behaviors for both males and females (2012). However, other studies have shown parental monitoring to be more effective in males but less effective in female adolescents (Borawski et al., 2003; Kincaid, Jones, Sterrett & McKee, 2012**).** Rogers (1999) found that parental monitoring can be a protective process independent of parental support. Also, adolescents who

perceive their caregivers' monitoring as caring are less likely to participate in risky behavior due to them not wanting to worry or disappoint their caregivers (Rodgers, 1999). Further, Steiner and colleagues found frequent monitoring to be associated with a 75% and 45% decreased likelihood of gonorrhea and chlamydia and/or gonorrhea infection (2014).

Involvement and Support

Further, healthy and consistent support such as, providing accurate information about sex, risks, consequences, and responsibilities, from a primary caregiver can serve as a protective factor against several sexual risk behaviors including HIV and STD risk as well as unintended pregnancy (Kotchick, Shaffer, & Forehand, 2001; Zimmer-Gembeck & Helfand, 2008). Caregiver warmth and support have been associated with a range of positive outcomes for adolescents (Masten & Coatsworth, 1998), whereas an absence of support has been linked to an array of problematic behaviors, including sexual risk behaviors (Baumrind, 1991b). Positive caregiver relationships characterized by warmth and support may act as a channel through which caregivers can impact adolescent views and help guide them in healthy decision making, therefore affecting their involvement in risky sexual behaviors (Coley, Votruba-Drzal, & Schindler, 2009**;** Sieverding et al., 2005). Moreover, these caregiver-adolescent relationships (whether positive, negative, secure or insecure) and their long-term implications are rooted in Attachment Theory.

Research suggests caregiver support may play a role in reducing risky sexual behavior of adolescents (especially in females), by decreasing the likelihood of adolescent participation in risky behaviors such as early sexual initiation, unprotected

intercourse, and sex with multiple partners through caregiver monitoring and consistent involvement (Rogers, 1999; Borawski et al., 2003; Kincaid, Jones, Sterrett & McKee, 2012). In a study assessing parental monitoring and trust, it was found that African American adolescent females' perceptions of parental trust were more protective against their sexual risk behaviors than parental monitoring (Kincaid, Jones, Sterrett & McKee, 2012). Overall, without sufficient parental counsel and limit-setting, adolescents may be less prepared to negotiate sexual decisions (Wilson & Donenberg, 2004).

# Chapter III: Methods

## Participants

African American adolescent females, aged 14-20 years old, were recruited from the Planned Parenthood of Atlanta Clinic, Fulton County Teen clinics, and Grady Teen Clinic in Atlanta, GA. In order to be eligible for the study individuals had to self-identify as African American, be between the ages of 14 to 20 and have had vaginal sexual intercourse without a condom within the past 6 months. Exclusion criteria included being married, pregnant or attempting to become pregnant. A young African American woman who served as a recruiter for the study approached participants. This recruiter screened potential participants for eligibility, explained the study in detail, and collected preliminary contact information of eligible participants. Eligible participants returned to the clinic to complete a written informed consent, baseline assessment, and to be randomized into one of the two study conditions. Parental consent was waived for those younger than 18 due to the confidentiality of clinic services. Of the eligible participants, 94% (N=701) enrolled in the study, completed baseline assessments, and were randomized into study conditions. Participants received a $75 incentive for their time, travel, and childcare to attend the intervention and complete their assessments. The Emory University Institutional Review Board (IRB) approved all study protocols and granted an IRB exemption for this thesis considering all participant identifiers were removed from the data upon receipt.

## Procedures

### Study Design

The study design for this research was a two-arm randomized supplemental treatment trial. A supplemental treatment trial is a design in which participants first receive an initial treatment and then receive a supplemental treatment to enhance effects of the first treatment (Piantadosi, 2005). The participants who were randomized to the experimental condition were given HORIZONS, a Centers for Disease Control and Prevention (CDC) evidence-based STI/HIV intervention developed by Ralph DiClemente and colleagues (2009), especially for African American female adolescents. The supplemental treatment for the experimental group consisted of a series of brief, tailored phone calls given every 8 weeks over the course of 36 months (18 phone calls total). This form of supplemental treatment was a prevention maintenance intervention (PMI), which followed the HORIZONS intervention and consisted of HIV prevention information. Participants randomized to the control group also received HORIZONS as the initial treatment as well as time- and dose-equivalent phone calls. However, their PMI was only general health care information, not focused in HIV prevention.

Participants were randomized into study conditions subsequent to baseline using concealment of allocation procedures (K. F. Schulz, 1995; K. F. Schulz, Chalmers, Hayes, & Altman, 1995; K. F. Schulz, Grimes, D. A., 2002). Prior to enrollment, the investigators utilized a computer algorithm to produce a random allocation sequence and created opaque envelopes in which to conceal the assignments.

### Data Collection

Data collection occurred at baseline and at the 6, 12, 18, 24, 30, and 36-month

follow-up time-points after completion of the HORIZONS intervention. At each follow up, participants provided self-collected vaginal swab samples for STI testing and completed a computer based survey via audio computer-assisted self- administered interview (ACASI). However, for the purposes of this thesis, only baseline assessment data were analyzed.

Participants completed the ACASI, which evaluated their socio-demographic characteristics and STI/HIV risk behaviors (Turner et al., 1998). In order to ease recall ability and increase validity of self-reported answers, participant behaviors were assessed for 3-and 6-month intervals prior to scheduled assessments (Carey et al., 2001). Further, to increase confidentiality, participants were informed that code numbers would be used on records instead of their names. To minimize potential assessment bias, ACASI monitors were unable to see to participants' condition assignment.

**Measures**

Demographics

The samples basic background information was obtained from questions regarding age, family aid, education, employment status, relationship status and current primary caregiver. To measure age, participants were asked their age in years and to type in the correct age in the blank. Family aid was determined by asking if "in the past 12 months, did you or anyone you live with receive any money or services from any of the following..." answer options included "Welfare including Temporary Assistance to Needy Families," "food stamps," "Women, Infants, & Children," or "Section 8 housing

subsidies." Participants were told to "check all that apply or select no" for the different types of potential aid received. Participants were also asked their most recent grade completed in school ranging from 8th grade or less to 1-2 years of college. Employment status was measured by a "yes/no" response to an item asking if participants had a "current job for which they are paid". Of those who were employed, participants where asked "How many hours per week do you usually work?" to assess the average number of hours worked per week. Relationship status was determined by asking participants, "Do you have a boyfriend?" with "yes/no" answer options. Participants were asked the question, "Who was the one person primarily responsible for caring for you when you were growing up" to determine who their primary caregiver was. Possible answers included "mother," "father," "grandmother," "aunt," "sister," or "other." Participants were also asked about their sexual history in items such as, "The very last time you had sex, did you use a condom to prevent STDs or pregnancy?" to assess condom use; and "Have you ever had a positive STD test result?" to assess their history of STDs. Answer choices consisted of "yes" and "no" for both of these items. To measure participants number of total partners they were asked, "In your entire life, how many guys have you had vaginal sex with?" then asked them to fill in the blank. Further, participants were asked, "In the past 90 days, how many guys have you had vaginal sex with?" then asked them to fill in the blank.

**Hypothesized Predictor Variable**

Caregiver Support

Caregiver support, the primary variable of interest, was measured using a 10-item

scale adapted from The Inventory of Parent and Peer attachment (Armsden, 1987), which measure three dimensions of attachment: trust, communication and alienation. The items of this scale assess the level at which respondents perceive they are supported by their primary caregiver(s). Sample items include, "My primary giver respects my feelings" and "My primary caregiver trusts my judgment". Answer choices for these items ranged from, "Never" (1) to "Always" (5), with possible scores of 10 to 50; higher scores indicating more perceived caregiver support. Cronbach's alpha for this scale was .87, suggesting high internal consistency of scale items.

**Hypothesized Outcome Variables**

Partner Communication Self-Efficacy

Partner communication self-efficacy was measured using a 6-item scale developed by Wingood & DiClemente (1998b). The items of this scale assessed how challenging it would be for the participant to communicate with her boyfriend about sexual issues such as: the amount of previous sex partners he's had, if he is having intercourse with in multiple partners, if he has an STD, if he could use a condom during sex, and her ability to demand he wears a condom as well as refusing to have sex if he says no. Sample items included, "How hard is it for you to ask how many sexual partners he has had?". Answer choices for these items ranged from "Very hard" (1) to "Very easy" (4). Possible score could range from 6 to 24, with higher scores indicating greater self-efficacy to communicate with a partner. Cronbach's alpha for this scale was .82, suggesting high internal consistency of scale items.

Partner Communication Frequency

Partner communication frequency was measured using a 5-item scale developed by Wingood & DiClemente (1998b). The items on this scale assessed how frequently participants communicated with their boyfriend about sexual issues. The items read, "During the past 90 days, how many times have you and your boyfriend or sex partner(s) talked about how to prevent pregnancy?", and "…talked about how to use condoms?" Possible answer choices ranged from "never" (1) to "7 or more times" (4), with possible scores ranging from 5-20 and higher scores indicating a greater frequency of partner communication. Cronbach's alpha for this scale was .85, suggesting high internal consistency of scale items.

Refusal Self-Efficacy

Refusal self-efficacy was measured on a 7-item scale (Ebreo, Feist-Price, Siewe, & Zimmerman, 2002). Items included, "how sure are you that you would be able to say NO to having sex with someone you have known for a few days or less", and "…be able to say NO to having sex with someone who is pressuring you to have sex?". Answer choices ranged from "I definitely can't say no" (1) to "I definitely can say no" (4). Possible scores ranged from 7-28, with higher scores indicating greater perceived refusal self-efficacy. Cronbach's alpha reliability for this scale was .82, suggesting high internal consistency of scale items.

Fear of Condon Negotiation

Fear of condom negotiation was measured on a 7-item scale (DiClemente,

Wingood, Crosby, Sionean, Brown, et al., 2001). Items included, "I have been worried that if I talked about using condoms with my boyfriend or sex partner he would ignore my request" and "…if I talked about using condoms with my boyfriend or sex partner he would threaten to leave me." Answer choices ranged from "never" (1) to "always" (5). Possible scores ranged from 7 – 35 with higher scores indicating greater fear of communicating about condoms with a partner. Cronbach's alpha for this scale was .87, suggesting high internal consistency of scale items.

**Data Analysis Plan**

All data were cleaned and de-identified prior to receipt for all analyses of this thesis. Then, variables and scales were computed, reliability analyses were conducted, and descriptive statistics were run to assess the variables of interest, including demographics. An exploratory data analysis of the baseline data were conducted first to assess the amount of missing data, search for outliers, assess descriptive statistics of variables of interest and gauge if outcomes were normally distributed. Next, unadjusted logistic regression models as well as logistic regression adjusted for participant age were used to assess for a significant relationship between caregiver support and partner communication behaviors. The logistic regression models included caregiver support as the key independent variable and partner communication frequency and self-efficacy, refusal self-efficacy and fear of condom negotiation as outcome variables.

## IV. RESULTS

Demographics

A sample of 701 African American female adolescents were included in this study. No data were missing from this analysis of baseline data. Participant ages ranged from 14-20 years old (mean=17.64 years, SD=1.67). The majority of the sample was in high school (n=368, 52.5%); however, 59 participants (8.4%) reported an education level of 8$^{th}$ grade or less and the remainder of the sample had either graduated from high school (n=130, 18.5%) or were in their first two years of college (n=114, 16.3%). There were also 30 participants who selected "Other" (4.3%).

The majority of participants lived with their mother only (n=298, 42.5%), however, 112 participants, (16%) lived with both a mother and a father, 109 (15.5%) selected "other", 84 (12%) lived with another relative, 51 (7.3%) lived alone, and 47 (6.7%) reported living with a boyfriend. The majority of the sample (n=557, 79.5%) reported they had a current boyfriend and 144 participants (20.5%) reported they were currently single.

Within the past year, all participants, or someone they lived with, received financial support or services from at least one of the following welfare programs including: Temporary Assistance to Needy Families (TANF), food stamps, Women Infants and Children (WIC), and/or Section 8 housing. Participants reported receiving support from one source (n=541, 77.2%), two sources (n=102, 14.6%), three sources (n=54, 7.7%), and four sources (n=4, 0.6%). Most of the sample was unemployed (n=446, 63.6%), of those who were employed (n=255, 36.4%) worked an average of

28.13 hours per week.

Respondents also self reported not using a condom the last time they had sex (N=399, 56.9%) and having at least one positive STD result in their life (N=397, 56.6%) (prior to STI testing during the intervention). Respondents had an average of 8.16 (SD= 12.348) sexual partners in their lifetime and 411 (58.6%) respondents reported having sex with only one partner in the last 90 days.

**Descriptive Statistics of Variables**

Key Independent Variable

Caregiver support is the primary independent variable used for this thesis. The mean caregiver support score was 36.68 (SD=5.08) and the observed ranges of scores were from 11- 50. The mode of participants' responses was a score of 44 (6.7%) and 18 (2.6%) participants received the highest score of 50.

Outcome variables

Outcomes included partner communication self- efficacy, partner communication frequency, refusal self-efficacy and fear of condom negotiation. The mean score for partner communication self-efficacy was 20.56 (SD=3.57), with scores ranging from 6-24. Partner communication frequency had a mean of 11.92 (SD= 4.32), with scores ranging from 5-20. Refusal self-efficacy had a mean of 24.56 (SD=3.40), with scores ranging from 7-28. Lastly, fear of condom negotiation had a mean of 8.25 (SD= 3.22), with scores ranging from 7-35.

**Table 1. Descriptive Statistics of Variables**

| | | Caregiver Support Scale | Partner Communication Self-Efficacy | Partner Communication Frequency | Refusal Self-Efficacy | Fear of Condom Negotiation |
|---|---|---|---|---|---|---|
| N | Valid | 701 | 701 | 701 | 701 | 701 |
| | Missing | 0 | 0 | 0 | 0 | 0 |
| Mean | | 36.6762 | 20.56 | 11.92 | 24.56 | 8.25 |
| Median | | 38.0000 | 22.00 | 12.00 | 25.00 | 7.00 |
| Mode | | 44.00 | 24 | 10 | 28 | 7 |
| Std. Deviation | | 8.52270 | 3.571 | 4.318 | 3.396 | 3.218 |
| Minimum | | 11 | 6 | 5 | 7 | 7 |
| Maximum | | 50 | 24 | 20 | 28 | 35 |
| Skewness | | -.584 | -.993 | .202 | -1.567 | 4.830 |
| Kurtosis | | -.412 | .550 | -.943 | 3.885 | 30.566 |

**Table 2. High/Low Median Split of Outcomes**

| | | N | Percent |
|---|---|---|---|
| Partner Communication Self-Efficacy | Low | 408 | 58.2 |
| | High | 293 | 41.8 |
| Partner Communication Frequency | Low | 392 | 55.9 |
| | High | 309 | 44.1 |
| Refusal Self-Efficacy | Low | 377 | 53.8 |
| | High | 324 | 46.2 |
| Fear of Condom Negotiation | Low | 479 | 68.3 |
| | High | 222 | 31.7 |

Logistic Analyses

When normality was assessed for this research, it was discovered that the outcome scores were not normally distributed, violating linear regression assumptions. Instead, a median split was used to dichotomize each outcome variable into “high” and “low” groups and binary logistic regression models were used. To dichotomize each variable, the medians were determined by running frequencies. Next, scores of all outcome variable which were at or below the median were coded as a 0 and labeled “low”, whereas all score above the median were coded as a 1 and were labeled “high”.

Greater perceived caregiver support scores were significantly associated with a greater likelihood of being categorized as having high partner communication self-efficacy, frequency, and refusal self-efficacy while it displayed a significantly reduced likelihood of being categorized as having high fear of condom negotiation. Each unit increase in the caregiver support score was associated with a 2.3% increased likelihood of being categorized as having high partner communication self-efficacy (AOR=1.023; 95%CI=1.005, 1.042; p=.013). Each unit increase in the caregiver support score was associated with a 3.9% increased likelihood of being categorized as having high partner communication frequency (AOR=1.039; 95%CI=1.020, 1.058; p=<.001). Each unit increase in the caregiver support score was associated with a 2% increased likelihood of being categorized as having high refusal self-efficacy (AOR=1.020; 95%CI=1.002, 1.038; p=.030). Lastly, each unit increase in the caregiver support score was associated with a 4.6% reduced likelihood of being categorized to the high fear of condom negotiation group (AOR=.954; 95%CI=.936, .972; p=<.001).

**Table 3. Baseline Associations Between Perceived Caregiver Support and Partner Communication Mediators of Condom Use**

| Mediators | OR | 95%CI | p | AOR* | 95% CI | p |
|---|---|---|---|---|---|---|
| Partner Communication Self-Efficacy | 1.024 | 1.005-1.042 | .011 | 1.023 | 1.005-1.042 | .013 |
| Partner Communication Frequency | 1.038 | 1.019-1.057 | <.001 | 1.039 | 1.020-1.058 | <.001 |
| Refusal Self-Efficacy | 1.021 | 1.003-1.039 | .024 | 1.020 | 1.002-1.038 | .030 |
| Fear of Condom Negotiation | 0.953 | 0.935-0.971 | <.001 | 0.954 | 0.936-0.972 | <.001 |

* Models adjusted for age

## V. DISCUSSION

The purpose of this study was to test associations between perceived caregiver

support and sexual partner communication mediators of condom use among African American female adolescents. As hypothesized, perceived caregiver support was significantly associated with all measured partner communication outcomes.

Even though sexual communication and negotiation with partners are well-established mediators of condom use among adolescents, to our knowledge, this is the first study to examine the associations between *perceived* caregiver support and sexual partner communication mediators of condom use. Previous works have consistently revealed that improved partner communication can positively influence young women's ability to effectively negotiate condom use (Sales et al., 2012; DiClemente et al., 2001; Wingood and DiClemente, 1998; Otto-Salaj et el. 2010). In addition, many previous works have found parental monitoring and communication to consistently reduce adolescents' likelihood of participating in risky sexual behaviors (Li, Feigelman, & Stanton, 2000; Rai et al., 2003; Steiner, Swartzendruber, Rose & DiClemente, 2014), and even increase adolescents' confidence in negotiating their preferences with their partners (DiClemente et al., 2001). Parental communication usually refers to parental communication about sexual topics; however, perceived caregiver support is not based on sexual topics, only general support provided by the caregiver. Thus, perceived caregiver support may have a unique affect on adolescents' sexual decision-making, as it is not as intrusive of adolescents as some of the other ways in which caregivers can serve as protective.

Further, as demonstrated in the literature, perceptions of caregiver warmth and support have been consistently associated with reduced adolescent sexual risk behaviors such as increased condom use and delayed sexual initiation (DiClemente et al., 2001;

Donenberg, Paikoff & Pequegnat, 2006; Donenberg & Pao, 2005; Holtzman & Rubinson, 1995; Whitaker, 1999). These finding are consistent with the findings of this research.

It is not uncommon for caregivers to struggle in raising adolescents, however, a detached caregiver will not provide a healthy transition for an adolescent to become an adult (Moretti & Peled, 2004). Similar to support, perceived caregiver trust has been associated with adolescent delinquency behaviors including intentions to have sex, alcohol use, tobacco use and marijuana use (Borawski, Ievers-Landis, Lovegreen & Trapl, 2011). Caregivers may need training to understand what methods of support fit their adolescents' specific needs as well as how to deliver these methods of support (Moretti & Peled, 2004). According to attachment theory, securely attached children gain a sense of worth from their caregivers' availability and attention (Weinfield, Sroufe, Egeland & Carlson, 2008), which could translate into support in adolescence. If adolescents perceive they're supported from their caregivers they may be less likely to participate in risky behaviors due to this gained sense of worth and support.

The results of this study suggest that greater perceived caregiver support may be effective in positively influencing sexual partner communication mediators of condom use for African American female adolescents. Higher levels of perceived caregiver support were associated with higher levels of partner communication self-efficacy, partner communication frequency, and refusal self-efficacy while fear of condom negotiation levels decreased as perceived caregiver support increased. These findings imply that adolescents' perceptions of caregiver support may play an important role in their sexual decision-making behaviors involving sexual partner communication.

Strengths and Limitations

Strengths of this study include the relatively large sample size (N=701) as well as the strong internal validity of the variables assessed. However, this study is not without limitations. Due to all survey items being self-report, self-report bias may have led to misclassifications in some findings. Another limitation may have been due to reverse causality; participants with greater partner communication may have reported greater caregiver support. In addition, conducting a secondary data analyses limited the variables and scales available for this research. Further, the results of this study may not be generalizable to other populations, as this young African American female population was recruited from sexual health clinics in Atlanta, GA.

Conclusion

The findings demonstrate greater perceived caregiver support was positively associated with sexual partner communication mediators of condom use among African American female adolescents. Future studies should further investigate the role perceived caregiver support plays on young women's sexual partner communication behaviors as well as other potential protective factors. Family-level interventions focused on enhancing the perceived caregiver support of adolescents may offer protection for HIV/STI and unplanned pregnancy prevention for this vulnerable population. Essentially, a better understanding of the ways in which perceived caregiver support protects against sexual risk may help inform effective prevention interventions to improve the lives of adolescents.

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