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The Impact of Ethnic Identity and Group Support on HIV Intervention Outcomes

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THE IMPACT OF ETHNIC IDENTITY AND GROUP SUPPORT ON HIV INTERVENTION OUTCOMES

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

by

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Abstract

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By Kristina B. Hood, M.S.

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

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The current study investigated if condom outcomes vary as a function of perceived group support (from members of the group) and ethnic identity among participants in an HIV prevention intervention. The peer-led intervention consisted of an empirically supported curriculum, Sisters Informing Sisters on Topics about AIDS (SISTA) with an additional component that addressed the role of alcohol/drugs in risky sexual behavior. Participants included 263 unmarried, heterosexual, African American women who were

recruited from three universities. At post-test, perception of a supportive group environment was associated with positive attitudes towards condom use. In addition, ethnic identity was associated with positive attitudes toward condom use and with higher condom negotiation efficacy. However, the study hypotheses were not supported because after controlling for pre-test scores, partner status, and relationship length these associations were no longer significant. The findings also indicated that participants reported more consistent condom use and condom protective attitudes at post- than at pre-test. Findings suggest that further research is needed to understand the role that support and ethnic identity plays in interventions for African American women.

CHAPTER 1 Statement of Problem

The HIV/AIDS epidemic signifies a persistent health risk, particularly for African American women in the United States. African Americans make up approximately 13% of the US population, and comprise of 49% of new HIV/AIDS diagnoses in 2005 (CDC, 2008). Although the rate among African Americans is higher than any other ethnic group (68 per 100,000) the number of diagnosed cases of HIV/AIDS has remained stable from 2003-2006. Among women, African Americans comprise 64% of those living with the disease (CDC, 2008). In addition, African American women account for 83% of new transmissions among females (CDC, 2008). African American women are eighteen times more likely to be infected than Caucasian women and four times more likely to be infected than Latina (CDC, 2008). Of the estimated 141 infants infected perinatally with HIV, 91 (65%) were African American (CDC, HIV/AIDS Reporting System, unpublished data, December 2006).

Between 2003 and 2006 there was an increased in the number of HIV/AIDS cases reported for individuals between the ages of 15-29. In 2004, HIV/AIDS was the leading cause of death for African American women between the ages of 25-34. African American youth aged 13-24 comprised of 61% of new HIV diagnosis (CDC, 2007). Faryna and Morales (2000) reported that ethnicity predicted sexual risk behaviors, independently of gender, condom use self-efficacy, attitudes, and beliefs. They found that condom use self-efficacy was negatively correlated with increased lifetime sexual activity; however,

ethnicity consistently explained the most variance in sexual risk behaviors. Specifically, being African American accounted for the most variance in HIV risk. Asian and Pacific Islander ethnicities had the least sexual risk (Faryna & Morales, 2000). There are numerous social, economic, environmental, cultural, and personal factors that place African American women at risk for HIV (Bazargan, 2000; Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; Faryna & Morales, 2000; Fuller et al., 2007; and Roberts and Kennedy, 2006); however, the current study will focus on factors that promote consistent condom use (Fuller et al., 2007).

The purpose of this study is to determine if condom outcomes vary as a function of perceived group support and ethnic identity among college participants in an HIV prevention intervention. This study will determine if ethnic identity moderates the relationship between perceived group support and condom behaviors (condom use, condom negotiation efficacy, and condom attitudes) for college-age African American women. Specifically, the study investigated if perceived group support mattered more for women with higher than lower ethnic identity with respect to condom behaviors following an intervention.

CHAPTER 2 Review of Literature

African American College Students

More and more African American women are becoming infected while in college. However, few studies of HIV/AIDS and African American women have focused on the college student population (Foreman, 2003; Jemmott & Jemmott, 1991; Lewis, et al., 2000; Mays & Cochran, 1988). The majority of the research in HIV prevention among African American women has focused on lower-income, urban, or substance abusing populations (Jemmott & Brown, 2003; Mays & Cochran, 1988; Quinn, 1993; Sterk et al., 2003; Wechsberg et al., 2003). Although college students were not designated as an 'at risk' population in the early years of the HIV/AIDS epidemic (Sepkowitz, 2001), the sexual behaviors of college students (Lewis et al., 1997) put them at risk for HIV infection. Gayle et al. (1990) reported that 1 in 500 college students in their sample of 19 universities tested positive for HIV, with approximately 3 in 1000 HIV positive test results among African American college students. In addition, Johnson et al. (1994) found that approximately 13 of the 408 African American college students at a southern university stated in a self-report survey that they tested positive for HIV. In North Carolina, researchers reported a major increase in HIV infections on college campuses (Yee, 2004). A review of men aged 18 to 30 years with HIV diagnosed during January 2000 to May 2003 revealed that 88% of the 56 HIV cases were African American college males who had sex with men and women (Leone et al., 2004). Further research is needed to illuminate the factors that put this

population at risk as well as to find effective ways to address the spread of HIV among the African American community.

College students engage in risky behaviors that put them at risk for HIV. Researchers have explored the behaviors of people in this age group and have determined that many of the behaviors exhibited are due to a stage in development (Arnett, 2000 & Erickson, 1968). This age period (which is referred to as emerging adulthood) constitutes a distinct period of the life course for young people in predominantly Western, industrialized societies, and is different in important ways from both adolescence and adulthood (Arnett, 2000). One of the most notable features of emerging adulthood is the opportunity it provides for identity exploration, particularly in the areas of love, work, and worldviews (Arnett, 2000). As a result many individuals in their late teens through the early twenties, particularly those who are able to attend college instead of beginning full-time employment and delay marriage and/or parenthood, have few responsibilities compared to later in the lifespan. This allows ample time for continued experimentation and exploration that typically begins in adolescence (Erikson, 1968). The literature has associated emerging adulthood with risky behaviors, (e.g., binge drinking, unprotected sex, illegal drug use (Schulenberg, O'Malley, Bachman, & Johnston, 2005), when compared to other adult populations. In fact, one of the criteria of achieving adulthood is less exploration, more commitment, and engagement in fewer risk behaviors (Nelson & Barry, 2005).

Condom Use and HIV Risk

Studies that have focused on sexual risk behavior among college student samples have identified the college environment as a conduit for sexual risk behavior (Cooper,

2002 & Wayment and Aronson, 2002). The lack of consistent condom use is one of the most important factors contributing to the rise in HIV infections in young adults (Roberts and Kennedy, 2006). During the college years, engagement in risky sexual behavior, include sex with multiple sexual partners, sex with casual partners, and unprotected intercourse (Cooper 2002). Among sexually active college students, 11.5% of females and 17.3% of males have had sexual intercourse with three or more partners within the past 12 months (ACHA 2007). More importantly, consistent condom use is not normative among college students (Centers for Disease Control and Prevention 2003; Civic 1999; Scholly et al. 2005). The National College Health Assessment (ACHA, 2007) found in a national sample of college students that only 50.3% of sexually active students used condoms during their most recent intercourse. High rates of sexual experimentation among college students (Chernoff and Davison 2005) and lack of condom use may contribute to the fact that approximately half of all new sexually transmitted infections (STIs) occur among college age students (15– 24-year-olds) (Weinstock et al. 2004).

Other factors may also influence risky sexual behavior among African American college students that are unique to their college environment. One such factor is the gender imbalance on college campuses. The U.S. student body is increasingly becoming more feminine. This is especially true among African Americans. On average, there are twice as many African American females on college campuses than African American males (Ferguson, Quinn, Eng, and Sandelowski, 2006). This imbalance in the number of African American women and men results in fewer available male partners; therefore, women have

less interpersonal power in relationships because men may have more sexual options available to them (McNair and Prather, 2004).

In a study investigating dating environments among African American students on college campuses, students identified the gender ratio imbalance of more women to men on campus as a key element of the campus dating environment and described how it places women at an increased risk for HIV infection (Ferguson et al., 2006). African Americans are more likely than any other ethnic group to be in concurrent relationships, which could factor into higher rates of HIV and STDs (UCSF, 2008). Concurrent relationships involve having more than one sexual partner in a given period increasing the probability for transmission, because earlier partners can be infected by later partners (UCSF, 2008). Concurrent partnerships were seen in the Ferguson et al., (2006) study of HBCU's. One of the themes that emerged through the focus groups was that college-educated African American would knowingly date a male that is involved with other women. The authors also reported that students' comments were synonymous with a Newsweek cover story entitled, 'The Black Gender Gap.' In this article, Cose & Samuels (2003) reported that the consequences of the under-representation of African American men on college campuses resulted in African American women either being dateless throughout their college career, or knowing that they were dating a man who was also dating other women.

Condom Negotiation and HIV Risk

The sex-ratio imbalance in African American communities can give rise to women's difficulties in discussing and negotiating condom use with male sexual partners. Lower levels of interpersonal power interfere with women's ability to initiate discussions

about condom use, because of concerns that the topic can lead to conflict and threaten the future of the relationship (McNair and Prather, 2004). The challenge of sexual communication and intimate relationships plays a critical role in the effective use of condoms as a prevention method. Studies of African American female college students have shown that most did not communicate with their male partners about condom use (Albarracin et al, 2006; Crosby et al, 2003; & DiClemente et al, 2004). Communication about condoms depended on various factors including: (a) the anticipated reaction from the male partner; (b) whether the sexual relationship was casual or committed; (c) their attitude toward condom use; and (d) normative condom use behavior among female friends (Foreman, 2003; Jemmott & Jemmott, 1991; Lewis, et al., 2000; Mays & Cochran, 1988).

Bazargan (2000) found that condom attitudes and partner communication skills were significant predictors of consistent condom use among 253 African American college women. The findings from the study by Bazargan suggest that communication skills, negotiating safer sex, and training in the proper use of condoms are key elements in reducing high-risk behaviors (Bazargan, 2000). To effectively negotiate consistent condom use, women must have a sense of control over the sexual encounter and favorable attitudes towards condoms (Bryan, Aiken, & West, 1997). Women who report low condom negotiation efficacy and condom resistance from sexual partners are unlikely to use condoms consistently (Bazargan, 2000). These components are part of the HIV prevention intervention that will be later discussed. In another study, Flaskerud, Nyamathi, & Uman (1997) found that partner resistance to condom use was often reported as one of the main

reasons for inconsistent condom use among young women (Flaskerud, Nyamathi, & Uman, 1997).

Condom Attitudes and HIV Risk

Attitude toward condom use has been a critical variable in understanding HIV/AIDS prevention research. Many young adults have a negative attitude toward using condoms although some view their use as essential in certain situations. Most measures of condom attitudes include a measure of the perceived attitude of partner and/or peer group toward condom use. Focus groups and research in HIV prevention have revealed that for young women and teens, perceived partner attitudes toward condom use influence her attitudes towards condom use which subsequently influences behavior (Corneille; Tademy; Reid; Belgrave; and Nasim, 2008 and Corneille; Zyzniewski; and Belgrave; 2008). The connection between attitudes and behaviors has been the focus on much of the research surrounding condom attitudes (Albarracin et al, 2006; Crosby et al, 2003; & DiClemente et al, 2004). While there is an association between condom attitudes and behavior, several other factors correlate with condom use. Sheeran, Abraham, and Orbell (1999) conducted a meta-analysis of 121 studies and found numerous variables to be related to condom use. Condom attitudes (r = .32), descriptive norms (r = .37), self-efficacy (r = .25), behavioral intentions (r = .43), partner's attitudes (r =.30), preparatory behaviors such as carrying condoms (r = .31) and communicating about condoms (r = .46) were most highly correlated with heterosexual condom use.

Duncan, Miller, Doreen & Borskey (2002) examined barriers to and successful strategies used by African American college students regarding safer sex behaviors

including condom use. Thirty African American college students participated in-group discussions and completed questionnaires concerning factors influencing safer sex practices. Results showed that negative attitudes towards condoms were the most important barrier, followed by lack of self-respect among women. Duncan et al. findings suggest that HIV prevention programs that focus on self-pride in women and changing condom attitudes are needed. In particular, the findings suggested that programs that focus on ethnic identity (one component of self-pride for African Americans) as a protective factor could influence safer sex practices.

Overview of Ethnic Identity and Group Support and HIV Protective Behaviors

Ethnic Identity (EI) is defined by involvement in the cultural practices and activities of a particular ethnic group and by positive attitudes toward, attachment to, and feelings of belonging to that group (Phinney, 1995). Research has shown a relationship between ethnic identity and sexual risk behaviors. Beadnell, Stielstra, Baker, Morrison, Knox, & Gutierrez (2003) found that higher levels of ethnic identity were associated with less sexual risk-taking among adult African American women. Studies have also found that that peer group sexual norms (Fang et al, 1998), social support (Hall & Bowie, 2007), and social networks (Ellen et al. 2004) influence sexual behavior in college samples. Interventions that focus on these factors have been successful in promoting consistent condom use among participants.

The Sisters Informing Sisters on Topics about AIDS (SISTA) intervention, one of the most widely used HIV prevention interventions for AA women was developed under the premise that ethnic identity would be a protective factor in reducing HIV risk

(Wingood & DiClemente, 1995). Ethnic identity is expected to not only increase positive feelings about the self and the broader African American community but also should help promote feelings of cohesion, openness, comfort and support among intervention group members. The SISTA curriculum is described in more detail in the procedure section.

Social networks are also developed within SISTA groups and these networks provide an invaluable conduit for information sharing, learning and exchange among women (Fuller et al., 2007). Shared ethnic and gender identity is a base of commonality among group members. The social similarity facilitates a bond that enhances feelings of group belongingness. To my knowledge, the combined effects of ethnic identity and group support on sexual outcome behaviors have not been studied extensively. The purpose of this study is to determine if condom outcome behaviors vary as a function of perceived group support and ethnic identity among participants in an HIV prevention intervention. Specifically, this study will determine if ethnic identity moderates the relationship between perceived group support and condom outcomes (condom use, condom negotiation efficacy, and condom attitudes).

Ethnic Identity

There are two chief components of the Ethnic Identity process: exploration and commitment. Exploration involves individual efforts to learn about or gain understanding of the history, practices, and beliefs of their group and to learning about the implications of ethnic group membership (Phinney, 1989). Commitment, the second component of ethnic identity, involves clear feelings of belonging to one's ethnic group, coupled with positive attitudes and pride in the group. According to Phinney (1992) ethnic identity, develops

along a continuum of high to low ethnic identity. This conceptualization of ethnic identity differs from that posited by the earlier stage theories of racial identity (Cross, 1991 Helms, 1990 Marcia, 1966). The stage models of ethnic identity propose that ethnic identity develops in steps or stages. For example, Cross' stage model of racial identity (Cross, 1991) proposes a progression from low racial salience to an internalized identity marked by clarity regarding one's racial identity (Phinney, 2007). A developmental model of ethnic identity focuses on increasingly complex levels of cognitive functioning with age and development (Phinney, 2007). While Phinney, Cross, and Marcia all believe that this occurs within the individual they differ on the timing and the critical components involved in each stage. Additionally, these theorists disagree on the importance and utility of ethnic identity across all ethnic groups.

According to Phinney, ethnic identity is a general phenomenon that is pertinent across all ethnic groups. Furthermore, Phinney suggested that although each group has its own unique history, values, and traditions, a sense of identification with or belonging to one's own group is common to all human beings. Ethnic identity, therefore, can be examined by focusing on the components that are common to all groups; these include self-identification as a group member, a sense of belonging, and attitudes toward one's own ethnic group (Phinney, 1991).

Research has shown that ethnic identity is a protective factor for adolescents of diverse ethnic groups as it is positively related to psychological well-being and lower levels of depression (Roberts et al., 1999); academic achievement (Cole et al., 2007); less substance abuse (Wills et al., 2007); and fewer sexual risk behaviors (Farmer & Meston,

2006). Ethnic identity among college students have also being positively linked to academic achievement (Smith, 2005) less substance use (McCabe et al., 2007) and fewer sexually risky behaviors (Beadnell et al., 2003).

Ethnic identity may also be linked to group support. Cole et al. (2007) found that a strong group identity could provide better access to social support from members of the group. In a study of 168 first year university students, Cole and colleagues found that ethnic identity was an important factor in academic success for ethnic minority students (n=65) in the study. Furthermore, social support from friends and other group members was a greater predictor of success than academic support for ethnic minority students (Cole et al., 2007).

Beadnell et al, (2003) investigated whether ethnic identity served as a protective factor against risky sexual behaviors in African American adult women. Seventy-eight women between the ages of 18 and 40 (the majority of the sample was under 30 years of age) participated in the study. Women with higher ethnic identity reported fewer instances of sexual risk-taking than women with lower ethnic identity. Although this study was exploratory in nature, these findings raises the possibility that ethnic identity plays a protective role in the realm of sexual behavior similar to that found with other risk behaviors (Beadnell et al, 2003). This study also provides preliminary support for the notion that protective factors can be present in adulthood. The bulk of research on protective factors has involved adolescent samples (Beadnell et al, 2003).

As noted, only a few studies have been conducted on the protective role of ethnic identity among adults, particularly when dealing with sexual behaviors (Beadnell et al,

2003 & Farmer Meston, 2006). However, several studies have been conducted on the role ethnic identity plays in adolescent sexual decision-making. Belgrave, Van Oss & Chambers (2000) found that higher levels of ethnic identity were associated with lower levels of risky sexual attitudes in a sample of African American adolescent females. In a sample of 435 adolescent girls, Salazar, Di Clemente, and Wingood (2004) found that self-concept operationalized as self-esteem, ethnic identity, and body image was associated with refusal of unprotected sex. Girls with a more positive self-concept were better able to communicate with their partner about sex as well as to negotiate condom use.

Group Support

Building social networks to help promote and sustain behavioral change has its empirical and theoretical foundations in the social support literature. Group support, a component of social support, is defined as the existence or availability of people or a group who let an individual know that they care about, value, respect and support them (Lee, Detels, Rotheram-Borus, and Duan, 2007).

One important aspect of group support that is akin to ethnic identity is feelings of belongingness, that is members feel as if they fit in with the group, and is accepted, and valued by the group. Being a member of and actively participating in a group intervention may be beneficial to all members but particularly women given women's relational and communal orientations and needs (Miller, 1991).

Although research specific to group support in HIV prevention interventions for women could not be identified, research on other preventive behaviors suggest that group support is important. In a study of sober participants in Alcoholics Anonymous, Mary

Rush (2002) found that perceived social support was a crucial component in the sobriety of women. Ait-Daoud et al (2006) found similar results when treating smoking dependence among depressed alcoholics. They found that when group cohesion and social support are emphasized, success rates increase among depressed smokers undergoing treatment.

Others have reported advantages of group support in other interventions with ethnic minority populations. In an intervention designed to increase fruit and vegetable intake among low-income adults, Devine et al, (2005) found that social interaction and group cohesion increased fruit and vegetable consumption. Those in the intervention group were 0.44 times more likely than those in the control group to eat five or more fruits and vegetables a day. In another group intervention focused on nutrition, Shankar et al, (2007) designed an intervention to increase fruit and vegetable intake among urban African American women. They found that those who attended five to seven session consumed fewer calories and made the greatest dietary improvements. They attributed these results to the building of support networks between group members that encouraged them and helped them apply the techniques learned.

Group support has also been found to be advantageous when used in preventive interventions for persons living with HIV. In a study of 393 HIV-infected youth, Rotheram-Borus et al, (2001) found that males and females in the intervention condition had a significant increase in social support coping and significant decrease in risky sexual behaviors. Specifically, 82% reported fewer unprotected sexual encounters, 45% reported fewer sexual partners, and 31% reported less substance abuse. In a qualitative study of group level interventions for persons living with HIV, Hyde et al, (2005) found that group

level interventions are beneficial to participants because they provide the opportunity to build supportive relationships, experiential learning, and a safe place to develop and hone a variety of risk reduction and HIV disclosure skills. Participants spoke favorably of the group intervention, suggesting that group interactions should be an essential prevention strategy for people living with HIV (Hyde et al, 2005).

Research on sexual risk behaviors and peer and/or group support has yielded convincing results. St. Lawrence, Eldridge, Reitman, Little, Shelby, and Brasfield (1998) found that adolescents who were inconsistent condom users did not have a supportive network. Peer and group interventions enhance condom acceptability in addition to providing support for adopting preventative behaviors (St Lawrence et al, 1998). In a study of African American college students, Mancoske, Rountree, Donovan, and Neighbors (2006) found that those who reported consistent condom use also reported that their friends encouraged them to use condoms. In addition, those who reported consistent condom use also reported talking with their friends about safer sex practices and regularly carrying a condom. Lastly, in a review of HIV intervention programs Wingood and DiClemente (2006) reported that group-level interventions with a social support component tend to have more successful outcomes at follow-up than those without the group component. Group support may be a key factor in long-term behavioral change.

There is, however, considerable variation in how both social support and group support are conceptualized and measured. Some studies restrict the definition of group support to only include those in the intervention group (Allgower, Wardle, Steptoe, 2001). Others are more inclusive and define group support as support from the reference group,

which includes both the intervention group and others within similar context (i.e., other peers, other HIV infected persons, other college students) (Albarracin et al., 2004). The current study will restrict the meaning of group support to include only those in the intervention group. The intervention is discussed next.

Sisters Informing Sisters on Topics about AIDS

SISTA stands for Sisters Informing Sisters on Topic about AIDS. The goal of the SISTA intervention is to increase knowledge of HIV and risk reduction methods, enhance communication with partners around condom use, and increase support of consistent condom use. The SISTA curriculum is grounded in Social Cognitive Theory and the Theory of Gender and Power. Social Cognitive Theory posits that providing information alone is not sufficient to change behavior; rather, behavior change requires not only the skills to engage in the behavior but also the ability to use these skills consistently and under difficult circumstances. The Theory of Gender and Power posits that there is a gender-based power differential in male-female relationships. This theory suggests that systematic gender inequality impacts women's willingness to adopt and maintain sexual risk-reduction strategies within their relationships. Specifically, this theory pertains to her perceived lack of power, her commitment to the relationship and her social role within the relationship (Fuller et al, 2007). These theories will be described in more detail later.

DiClemente and Wingood (1995) developed the SISTA curriculum for heterosexually active African American women residing in low-income communities because of their heightened risk of infection. It is a group level intervention that incorporates cultural and gender relevant activities in five weekly sessions lasting two

hours. In the pilot study of the SISTA intervention, DiClemente and Wingood (1995) found that African American women who participated in the program demonstrated an increase in consistent condom use and greater sexual communication at 3-, 6-, and 9-month follow-up. This program has been recognized by the Centers for Disease Control and Prevention (CDC) as effective in reducing the risk of HIV infection in younger African American women ages 18-34 (CDC Division of HIV/AIDS Prevention, 2001). It is one of the most widely used programs for HIV prevention among African American women (CDC Division of HIV/AIDS Prevention, 2001).

SISTA is designed to give women the social and behavioral skills they need to adopt HIV risk-reduction strategies. The SISTA intervention incorporates culturally relevant materials and up-to-date statistics about how HIV and AIDS affect the African American heterosexual community. The curriculum has five weekly sessions, two hours each, delivered by peer facilitators. The SISTA curriculum includes poetry by African American women as well as discussions and role-playing scenarios that are relevant to the African American experience. There are specific objectives for each of the five sessions. The five sessions of the SISTA intervention include Ethnic and Gender Pride, HIV/AIDS Education, Self–Assertiveness Skills Training, Behavioral Self–Management, and Coping.

The goal of the first session, ethnic and gender pride, is to discuss what it means to be an African American, a woman, having pride in oneself, and valuing oneself. Some of the activities include sharing culturally appropriate poems, discussing positive qualities of Black womanhood and personal values while empowering women to express ideas and

opinions. Similar activities are integrated in each of the other sessions in order to empower participants as women of African descent.

The second session, HIV/AIDS education, provides factual and statistical information about HIV transmission and other STI's, addresses myths and misconceptions about AIDS, and attempts to raise women's HIV risk awareness. The third session, self–assertiveness training, teaches women how to be assertive without being aggressive. The techniques taught allow women to still feel feminine when negotiating condom use with their male partner, while addressing the difficulties in dealing with partner pressure to engage in unsafe sex. This session also teaches women communication and negotiation skills required to initiate and employ safer sex practices. Role–play situations requiring the initiation of safer sex practices are carried out during this session. The goal of the fourth session, behavioral self–management, is to decrease participants' anxiety about condom use through demonstration and role–play activities. The fifth session on coping examines coping in relation to real–life situations that women may encounter. Issues raised during this session include the link between alcohol, drugs, and HIV, as well as how to cope with negative responses from partners regarding safer sex practices. In addition to these five sessions, there is also a booster session 2-3 months after the final session.

In the implementation of SISTA by our staff, fidelity was undertaken to ensure that the program was implemented as intended. Fidelity activities included direct observation and review of sessions by program and evaluation staff. The review focused on the quality of the sessions, how well staff members adhered to content, and the responsiveness and

openness of the women to the facilitator. In addition, the participants also rate facilitators after each session.

CHAPTER 3 Theoretical Frameworks for the SISTA Intervention

Social Cognitive Theory

Social Cognitive Theory (SCT) provides one of the theoretical frameworks for the SISTA intervention. SCT assumes that providing information alone is not sufficient to change behavior; rather, sustained behavior change requires the skills to engage in the behavior and the ability to use these skills consistently and under difficult circumstances. Bandura (1997) proposes that behavior change is affected by environmental influences, personal factors, and attributes of the behavior itself. SCT can help to account for how people acquire and maintain certain behavioral patterns (Bandura, 1997). Individuals are more likely to adopt a behavior when given the opportunity to learn about the behavior through observation and modeling. Behavior change is dependent upon a belief by the individual that she can successfully perform the skill, has confidence to use skills and apply knowledge, and anticipates that the outcomes will be beneficial (Bandura, 1977; Bandura, 1986). SCT asserts that there are four components to behaviors change: observational learning, practice, self-efficacy, and emotional coping.

The first component of SCT is observational learning. Observational learning can be used as an informational component to increase awareness and knowledge of health risk and to encourage women that they can change their behavior. Learning is expedited when individuals are able to observe the behaviors of others who are similar to them. Peer facilitators for the SISTA curriculum are carefully selected to reflect the commonalities of

the group. They also have an intimate knowledge of the group members' lifestyles. Facilitators, who are typically past participants, teach others about HIV and AIDS and how to incorporate the skills taught during the intervention in daily lives.

The second component of SCT is practice. This involves a skills component in which women develop risk-reduction skills. Facilitating practice involves providing individuals with readily available means to put their newly acquired knowledge into practice. The culturally sensitive and socially relevant materials make the learning experience more effective and increase the probability of the knowledge being put into practice. This component is directly linked to the third component of SCT, self-efficacy. In particular, practice is one of the ways of gaining self-efficacy. Self-efficacy is defined as a person's beliefs about her capacity to produce a certain level of performance that will have influence over events that affect her life (Bandura, 1994). This component is designed to increase an individual's self-efficacy in implementing these behaviors (specific activities to show people how to use condoms, how to negotiate safer sex, how to say "no"). Learning is a function of the extent to which individuals are able to reflect upon and internalize their own successes and failures. Through the application of learned skills (practice), women learn how to apply knowledge accurately and reliably and therefore increase their confidence. In the SISTA sessions, women practice communicating with sexual partners and in using assertive behaviors and coping strategies. They also practice putting condoms on anatomically correct models in a variety of different scenarios. Through role playing activities in various scenarios, women build confidence in negotiating condom use in

situations they may encounter in their personal relationships. Achieving practice success simultaneously encourages self-efficacy.

The last component of SCT is emotional coping. Emotional coping can be defined as strategies or tactics that are used by a person to deal with emotional stimuli. Training in problem solving and stress management can improve positive emotional coping (Glanz et al, 2002). This component helps to build social support for the individual as she engages in the new behaviors. Coping mechanisms such as assertiveness skills and effective communication skills are learned in a supportive environment. In SISTA, emotional coping can be facilitated by group members' demonstrations of appropriate methods of coping such as relaxation, exercise, and listening to music. The feedback and encouragement from the group also provides emotional support and a foundation for engaging in the new behaviors.

Theory of Gender and Power

In 1987, Connell developed a social structural theory of gender and power by identifying critical components of existing theories that explain power imbalances between men and women. According to Connell, there are three major structures that characterize relationships between males and females: the sexual division of labor, the sexual division of power, and the structure of cathexis (Connell, 1987). The first two structures, sexual division of labor and the sexual division of power, have been identified as critical to explaining gender relations (Connell, 1987 and Wingood & DiClemente, 2000). The third structure, the structure of cathexis, was proposed by Connell to address the affective component of relationships (Connell, 1987 and Wingood & DiClemente, 2000). These

three structures work in concert to explain culturally specific gender roles assumed by men and women.

Each of these three structures (the structure of labor, the structure of power, and the structure of cathexis) exist at two different levels: the societal and the institutional. The higher of the two levels in which the three structures are embedded is the societal level. The societal level is composed of historical and sociopolitical forces that consistently segregate power and ascribe social norms based on gender-determined roles. The structure of labor, the structure of power, and the structure of cathexis are also evident at the institutional level. Some examples of social institutions include schools, places of employment, families, relationships, religious institutions, the medical system, and the media (Wingood & DiClemente, 2000). These three structures are maintained within institutions through social mechanisms such as unequal pay for comparable work, discriminatory practices at school and work, the imbalance of control within working and personal relationships, and the stereotypical and/or degrading images of women in the media (Wingood & DiClemente, 2000). These three structures account for how society perpetuates gender inequality and how these inequalities and power imbalances impact relationships.

The first social structure of this theory is the sexual division of labor. Sexual division of labor refers to the separation of work based upon gender. At the societal level, the sexual division of labor refers to the designation of women and men to certain occupations. Typically, women are designated by lower status positions relative to men. The assignment of these types of positions constrains women because the nature and

organization of the work limits their economic potential and limits their career prospects (Wingood & DiClemente, 2000). At the institutional level, the sexual division of labor is maintained by social mechanisms that put the burden and primary responsibility of unpaid labor such as childcare, caring for the sick and elderly, and housework squarely on women. Because this work is uncompensated and expected to be fulfilled by women, an economic imbalance occurs when women are forced to balance obligations of paid and unpaid labor while simultaneously being discriminated against due to this societal obligation ("mommy tracks").

The second structure of this theory, sexual division of power, represents inequalities in power between the sexes formed by cultural norms and practices (Wingood & DiClemente, 2000). At the societal level, this structure not only determines appropriate sexual behavior for women but also the emotional and sexual attachments that women have with men (Wingood & DiClemente, 2000). This structure outlines the expectations that society has about women's sexuality and our perceptions of ourselves and others based upon these expectations (Wingood & DiClemente, 2000). Lastly, the structure of sexual division of power is maintained by social mechanisms such as the abuse of authority and control in relationships (Wingood & DiClemente, 2000). Women in power imbalanced relationships tend to depend on their male partner for status, financial stability, and security.

The structure of cathexis is maintained through social mechanisms within society. A primary source inequality through cathexis is biases people hold with regard to how women and men should express their sexuality (Wingood & DiClemente, 2000). These

biases construct cultural norms and the enforcement of strict gender roles. Stereotypical beliefs about women's sexuality such as believing that women should have sex only for procreation, restrict women's expression of and control over her sexuality (Wingood & DiClemente, 2000). The presence social mechanisms constrains women's daily practices by producing gender-based inequities in women's economic potential, women's control of resources, and gender-based expectations of women's role in society (Wingood & DiClemente, 2000).

The theory of gender and power were also used to frame the five sessions of SISTA. The division of power presents challenges to safer sex for women that may arise from attempts to control her sexuality through the use/abuse of control in relationships, and from attempts at devaluing her esteem by the media and by society (Wingood & DiClemente, 2000). These challenges are addressed in the Ethnic and Gender Pride and Self–Assertiveness sessions where women examine the positive qualities of Black womanhood and learn to assert themselves in situations without being aggressive or passive (Wingood & DiClemente, 2000). The structure of cathexis suggests that challenges to safer sex may arise from emotional bonds from long–term relationships and gender norms that rationalize multiple partners for men as well as other cultural stereotypes (Wingood & DiClemente, 2000). These challenges are addressed in Self–Assertiveness, Behavioral Self–Management, and Coping sessions. In these sessions, women learn how to assert themselves through role–play; learn to effectively communicate with their partners, and learn the proper way to negotiate condom use with partners (Wingood & DiClemente, 2000). Lastly, the division of labor assumes that challenges to safer sex for women arise

from the unequal allocation of economic resources (Wingood & DiClemente, 2000). Limited condom availability and the fiscal constraints to treatment and testing are addressed in all sessions of SISTA by providing information about lower cost treatment and testing centers. Through group support and the content of SISTA, women gain the necessary knowledge and skills to face challenges due to gender inequality and power imbalances so that they are then able to decrease their risk to HIV. The importance of group support, particularly group cohesion in interventions will be discussed next.

Group Cohesion

Group cohesion is an important component of the SISTA curriculum. In his classic text on group psychotherapy, Irvin Yalom (1985) maintained that group cohesion is fundamental to what makes group therapy a powerful agent of change (Milsom, Perri, & Rejeski, 2007). Throughout his decades of work on groups, Yalom provided evidence that cohesion is a strong determinant of positive group outcome (Yalom, 1995). Groups that are highly cohesive tend to be characterized with above average attendance and less attrition. Research on group cohesion indicates that stability increases cohesiveness, which also increases self-disclosure, risk-taking, and effective conflict resolution (Corey & Corey, 2006). Cohesion enhances group support and acceptance and later plays a crucial role in interpersonal learning (Corey & Corey, 2006 and Yalom, 1995). Yalom (1995) contends that members of cohesive groups are more interested in influencing others and are open to the influence of others; are more willing to listen to others and are more accepting of others; participate more actively and freely in sessions and will self-disclose at a greater extent (Yalom, 1995). Lastly, members of cohesive groups protect group norms and exert

pressure on members who are not supporting these norms (Corey & Corey, 2006 & Yalom, 1995).

Members of cohesive groups show greater acceptance, intimacy, and understanding. Members feel a sense of commitment to the group and they perceive the group as a safe place (Milsom, Perri, & Rejeski, 2007 and Yalom, 1995). There are two major components to group cohesion, social integration and social attraction. Social integration refers to the cohesiveness of the group as a total unit, a sense of solidarity or "weness" (Yalom, 1995). Social integration encompasses components such as voluntary attendance, participation, mutual help, defense of group standard, and external and internal threats (Yalom, 1995). Social attraction, the second component of group cohesion, refers to the individual initial reasons for joining and maintaining participation in the group. Once a person is part of the group, participants feel attracted to the group because the group is an integral part of the intervention experience.

Group cohesiveness has been widely studied in health related interventions such as weight loss (Devine et al, 2005, Shankar et al, 2007 &Wing and Jeffrey, 1999). Wing and Jeffrey (1999) conducted a study on how social attraction and group cohesion effected weight loss and management. They found that participants in the social support treatment group, which was defined as combing standard treatment with a support group that focused on intragroup activities, decreased in the number of dropouts and increased in the percentage of maintained weight-loss. Social attraction is evidenced in the SISTA curriculum. Setting and achieving individual goals that are facilitated by group interaction is one of the unique features of the intervention.

Social support is a component of the SISTA intervention. Women learn about life, and how to cope with life's challenges by having relationships with other women (Fuller et al, 2007). The first session of SISTA discusses ethnic and gender pride of African American women and addresses cultural issues facing African American women today (Fuller et al, 2007). These activities serve as a basis of commonality between group members in which they can begin to form bonds and a group identity. The interactions, connections, and friendships that are developed during the sessions are significant sources of cohesion that provides an invaluable conduit for information sharing, learning and exchange among women (Fuller et al, 2007). Activities included sharing culturally appropriate poems, discussing positive qualities of black womanhood and personal values were integrated within each of the SISTA sessions (Fuller et al, 2007).

The first session focused on building a socially integrated unit. Group members discuss and develop group norms, rules, and regulations with the help of the facilitator. This activity as well as others focuses on the group rather than the individual to promote unified identity and a safe place for interaction. Support from the group allowed women to feel more confident about their newly acquired skills and increased the likelihood of practicing these skills within their relationships. For example, support from the group may validate the importance of condom use and may increase the likelihood that women will practice consistent condom use. Women in the group also offer encouragement and alternative ways to negotiate condom use with partners. Group interactions and support for members is the catalyst that moves the intervention from gaining knowledge to behavior change.

Integration of Three Theories

SISTA utilizes the core components of social cognitive theory, theory of gender and power, and group support to make a comprehensive curriculum, which has been successful in the prevention of HIV. The content and structure of the sessions address and incorporates the four components of SCT. Specifically SISTA provides the knowledge of HIV prevention, teaches women the skills needed for prevention, and provides an avenue to practice and build confidence for their newly learned skills. This is achieved in a safe, cohesive environment that is conducive for learning. The SISTA intervention plays particular attention to the importance of group cohesion and support for successful outcomes. The intervention is based upon building a cohesive group by making salient the joys and challenges of being an African American woman. Framed by the Theory of Gender and Power, SISTA addresses many of the structural challenges African American face and ways to overcome them. Women learn and grow as a group and provide support for each other as they learn and practice their newly formed skills for HIV prevention.

Hypotheses

The overall purpose of this study was to determine if condom outcomes vary as a function of perceived group support and ethnic identity among participants in a HIV prevention intervention. Specifically, this study determined if ethnic identity moderated the relationship between perceived group support and three condom outcomes (condom use, condom negotiation efficacy, and condom attitudes).

There were three primary hypotheses. Hypothesis 1 predicted that higher perceived support will be associated with higher condom negotiation efficacy, more positive attitudes

towards condoms, and greater condom use at post-test after accounting for the effects of pre-test scores on condom attitudes, negotiation, and use and partner status.

Darbes and Lewis (2005) found that HIV specific group support significantly reduces sexual risk behaviors in homosexual men and women. In addition, a study by Crosby et al., (2005) indicated that among African American adolescents, having a network of support after an intervention significantly increases the likelihood of maintaining behaviors at follow-up. Research has not directly tied condom negotiation and group support; however, Dancy and Berbaum's (2005) research suggest that group support is associated with African American women's ability to effectively communicate with her partner on issues surrounding sex. Lastly, Kaichman, Rompa, & Cage (2005) found that the social support from the HIV intervention aided in more positive attitudes towards condom use and more reported condom use among HIV-infected women.

Hypothesis 2 predicted that higher levels of ethnic identity will be associated with higher condom negotiation efficacy, more positive attitudes towards condoms, and greater condom use at post-test after accounting for the effects of pre-test scores on condom attitudes, negotiation, and use and partner status.

Although most of the work conducted on ethnic identity and sexual risk behaviors has focused on adolescents, Beadnell, Stielstra, and Johnson (2003) found that higher ethnic identity was associated with higher rates of sexual communication and condom use in adult African American women. Research has shown that in young adult samples, African American who report consistent condom use also report higher levels of ethnic identity (Gilbert & Goddard, 2007 and Salazar et al., 2004). In addition, Stokes (2005)

concluded that lower racial identity and lower relationship power predicted lower condom negotiation efficacy in a sample of African American college women. Generally, African American women with higher ethnic identity tend to also have higher self-esteem, self-confidence, and self-worth (Salazar, DiClemente, and Wingood, 2004). Women possessing these traits also demonstrated better partner communication, refusal and condom negotiation efficacy, and have more positive attitudes towards protective health behaviors (Crosby, Yarner, and Meyerson, 1999; Farmer & Meston, 2006; and Salazar et al., 2004). Finally, Farmer & Meston (2006) found that women with higher ethnic identity were more persistent in requiring their partner to use a condom and showed higher rates of refusal of intercourse when condoms were not being used.

The last hypothesis deals with the moderating effects of ethnic identity on the relationship between perceived group support and all three condom outcomes. Hypothesis 3 predicted that ethnic identity would moderate the relationship between perceived support and condom negotiation efficacy, attitudes towards condoms, and condom use at post-test. Specifically, perceived group support will matter more for those with higher levels of ethnic identity than those with lower levels of ethnic identity.

These hypotheses are based upon the theoretical frameworks of the intervention. Social Cognitive Theory of behavioral change posits that in order to effectively engage in behavioral change a network of social support must be available for the women as she engages in the new behaviors. In the SISTA intervention, this network of support is based upon a shared ethnic and gender identity. For women with high ethnic identity, group

support may be especially important but not for women whose ethnic identity is not so central to them.

Women learn about life through their relationships with other women. The interactions, connections, and friendships that develop during the sessions are significant sources of inspiration and often evolve into a sense of sisterhood (Fuller et al., 2007). Social networks are developed within these groups, which provide an invaluable conduit for information sharing, learning and exchange among women (Fuller et al., 2007). Therefore, ethnic identity will change the relationship between group support and each sexual outcome behavior. Particularly, perceived group support will matter more for those with higher levels of ethnic identity than those with lower ethnic identity.

CHAPTER 4 Methods

The data used in this study was collected as part an evaluation of the larger SISTA/GUMBOYAYA Project. The data was collected between 2005 and2008 at three universities in the Southeastern United States. This project involves the implementation and evaluation of an intervention to promote safer sex practices among African American women with the larger goal of decreasing the incidence of HIV/AIDS within the population. Pre-test, post-test, and follow-up data were collected from those who participated in the program. Pre-test data was collected prior to the first session, post-test data was collected after the 5th session, and follow-up data was collected two-three months following the last session. The current study utilizes a pretest-posttest design. Measures include those obtained by the SISTA curriculum to assess the effectiveness of the program.

Participants

The larger GUMBOYAYA project included participants who were recruited from churches, community groups, and other settings as well as universities. Participants in this study included African American women attending colleges and universities in Virginia who agreed to participate in the SISTA project. Participants were recruited from two predominantly Black Universities and one predominately-White University.

Inclusion Criteria

Participants meeting the following criteria were included in this sample: identifying as African American, identifying as heterosexual, a participant in the SISTA project at a college or university, unmarried, and being under the age of 25 years. Participants must have also attended at least three of the five SISTA sessions to be considered a participant.

The current study limited participants based upon either intervention design or the literature. The first session of the invention brings to the forefront the common experiences of the group based upon ethnicity and gender. The goal of making the ethnic and gender identities salient, is to create a bond and enhance group cohesion. Those who do not identify as African American may not benefit from the activities, discussions, and shared experiences of others. In addition, the intervention program is based upon Africentric values, which may not be shared by those in other ethnic groups. Those who identified with any sexual orientation other than heterosexual were excluded from the current study due to the fact that the intervention was designed for heterosexual women. To date, the effectiveness of this intervention has not been validated in bisexual and homosexual populations.

The current study also excluded those who participated in the SISTA program in settings other than colleges and universities because college students were the target population of interest in the current study. Lastly, those above the age of 25 were excluded from the study based upon reports that those above this age and/or married individuals have different experiences and face different challenges than the traditional college student. Those who did not meet the criteria for this study still had the opportunity to participate in the intervention and data collection but were just not included in these analyses.

Sample size

According to Tabachnick and Fidell (2007), the standard equation for sample size for the overall test is 50 + 8*P (the number of predictors). In addition, Cohen (1992)

suggests that 84 participants are needed to detect a medium effect when testing at the .05 alpha level. This study used data collected from two hundred and sixty three participants.

Measures

All of the measures were obtained from the SISTA program curriculum, and were designed to evaluate the effectiveness of the curriculum. The measures used to assess program impact were adapted from existing measures by the program developers (Drs. DiClemente and Wingood) (DiClemente & Wingood, 1995). Only measures used in the current study are described. See Appendix for measures.

Participant Characteristics. These included items on age, race/ethnicity, sexual orientation, partner status, and relationship length. Partner status was measured by asking participants to respond to a dichotomous question, "Do you currently have a main partner?" Response options were "*yes*" or "*no*". Relationship length was measured by asking participants, "How long have you and your main partner been together?" Response options were a) "*I do not have a main partner"* or b) "*We have been together for"* space was provided for the participant to indicate the length of the relationship.

Ethnic Identity. Ethnic identity was measured using the 7-item commitment sub-scale of the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). The MEIM is designed to measure ethnic identity across all ethnic groups. The MEIM assesses ethnic identity exploration and commitment through questions such as ("I have a clear sense of my ethnic background and what it means for me"). Response options are on a 4-point scale, from *"strongly disagree"* (1) to *"strongly agree"* (4). Higher scores indicate more ethnic identity commitment. In a study of the psychometric properties of the MEIM,

Ponterotto, Gretchen, Utsey, Stracuzzi, and Saya (2003) found the measure to have moderate degrees of construct and criterion validity. Cronbach's reliability for the MEIM in the current sample was .97.

Group Support. The 4-item group support scale measured women's attitudes towards group member and being a part of the group. Items from the group support scale include: (1) The other members of the group cared about my feelings; (2) The other members of the group respected my opinion; (3) The other members of the group listened to me; and 4) The other members of the group made me feel like an important part of the group. The response options are (1) "*never*" to (6) "*all of the time*". The Cronbach's reliability coefficient for the group support scale was 0.86.

Condom Attitudes. The 7-item condom attitudes scale measured women's attitudes towards condom use as well as perceptions of their partner's attitudes towards condom use. Sample items from the condom attitudes scale are "My main partner would get mad if I said we had to use a male condom" and "Sex doesn't feel as good when you use a condom". The response options ranged from (1) *strongly disagree* to (4) *strongly agree*. One of the items from this scale was reverse coded so that lower values reflect more positive attitudes towards condom use. In a previous study of African American females, the Cronbach's reliability coefficient for the condom attitudes scale was 0.79 (Fitzgerald, 2007). In the current study, the Cronbach's reliability coefficient was .0.74.

Condom Negotiation Efficacy. The 7-item condom negotiation efficacy scale assessed women's ability to negotiate condom use with a primary partner. Sample items from the condom negotiation efficacy scale include "Can you discuss condom use with

your main partner" and "Can you insist on condom use if your main partner does not want to use one." The response options ranged from (1) *definitely no* to (4) *definitely yes*. Higher condom negotiation efficacy total scores indicate a greater ability to negotiate condom use. In a previous study using a similar sample, the Cronbach's reliability coefficient for the condom negotiation efficacy scale was 0.74 (Fitzgerald, 2007). In the current study, the Cronbach's reliability coefficient for this scale was 0.84.

Condom Use. Condom use was measured through women's report of (1) the number of times she had engaged in sex during the past three months and (2) the number of times condoms were used when she engaged in sex in the past 3 months. A ratio was calculated to determine the amount of time condoms were used. This ratio measure of condom use was used as a measure of condom use consistency. In addition, condom use was measured by asking participants whether they had used a condom the last time they had sex. Response options were "yes" or "no".

Procedure

This study was reviewed and approved by the university's Institutional Review Board (IRB). Flyers containing information about the intervention were posted on campuses at the three participating colleges/universities. The flyers were posted in dorms, academic buildings, and other common student areas. The flyers contained information about who to contact and where the sessions would take place. The contact person and/or the project coordinator answered questions and informed prospective participants of the time and place for the first session.

After participants arrived, trained peer facilitators introduced themselves and gave a brief description of the program. Informed consent and confidentiality were explained and questions were answered. Participants were reminded that participation was voluntary and that they could leave at any time, without consequences. After the consent and participant contact forms were collected, a research assistant administered surveys.

During the first session (the Ethnic and Gender Pride Session), ground rules were established for the group. These were put in place to ensure that confidentiality was maintained for all participants. Participants were asked to sign a confidentiality agreement at the end of the ground rules activity. This helped members feel comfortable with each other and to discourage members from sharing personal information about others in the group.

Facilitators

Facilitators were selected based upon their ability to identify with the participants in terms of gender, race, ethnicity, and age. In addition, at least one facilitators (for every group) were students at the universities so were familiar with lifestyles, norms, and values of the group. The preparation of the facilitators included a three-day training, which included experiential activities related to: curriculum content; facilitation strategies that foster a supportive environment; information about HIV/AIDS; and confidentiality. Trainees had to successfully complete a "simulated facilitation" in order to serve as peer facilitators.

One of the main tasks of the facilitators is to create an environment conducive to learning and sharing. Specifically, the ambience is one in which participants feel valued

and at ease in sharing their thoughts, beliefs, and experiences. In addition, the facilitators must be active listeners and observers. She prevents or manages conflict and guides group members in making quality decisions and reaching their session goals. Two peer co-facilitators lead all group sessions. Peer facilitators were certified in the SISTA curriculum.

SISTA Sessions

SISTA provides women with the social and behavioral skills they need to adopt HIV risk-reduction strategies. Sessions are conducted in small-groups of 8 to 12 women. Sessions are usually held in meeting areas within dorms or academic buildings, as opposed to a formal classroom setting. To enhance participation, SISTA sessions are held in the evening and dinner is provided at each session.

Every session has a specific goal and objectives. Session activities include behavioral skills practice, group discussions, lectures, role-playing, a prevention video, and take-home exercise. One session is held per week for five weeks to allow participants time to discuss take-home exercises with their partner, friends, or family. Participants are not graded on the take-home exercises; it serves as a mechanism to begin discussions about safer sex. Women were given a gift incentive, a $10 Wal-Mart gift card, following each SISTA session.

Data Analysis Plan

SPSS 17.0 was used for all analyses. Preliminary analyses were conducted to screen data for outliers and violations of the assumptions of multiple regression including linearity, normality, and homogeneity of variance. Descriptive analyses (mean, standard

deviations) were computed to describe the sample and correlational analyses were computed to examine associations among variables. An additional correlational analysis was computed to ensure that group support did not covary with attendance.

Three separate multiple regression models was computed, one for each dependent measure. Hierarchical multiple regressions is a technique that can be used to explore the relationship between a continuous dependent variable and a number of independent variables. Hierarchical multiple regression allows for variables to be entered into the equation in an order specified by the researcher based on theory or prior research. Entering the variables in blocks allows the researcher to assess what each variable adds to the prediction of the dependent variable (Tabachnick and Fidell, 2007). A logistic regression analysis was also performed on the dichotomous condom use outcome variable.

The purpose of this study was to investigate whether ethnic identity and group support are significant predictors of condom negotiation efficacy, condom use, and condom attitudes among a sample of African American women participating in a HIV prevention program. In addition, it was expected that ethnic identity would moderate the relationship between group support and all three condom behaviors. In each regression model, condom pre-test scores (i.e., condom attitudes, condom negotiation, or condom use) partner status, and relationship length; were entered in the first step. Perception of support at post-test and pre-test ethnic identity scores were entered in the second step. An interaction term was created by multiplying ethnic identity by perception of support and this term was entered in the third step.

A moderator is a variable that influences the strength or direction of the relationship between two other variables (Baron and Kenny, 1986). Moderator variables may also be conceptualized as protective variables that buffer the effect of an outcome. In this study, ethnic identity was expected to moderate the relationship between group support and each condom outcome (condom use, condom attitudes, and condom negotiation efficacy). Specifically, the expectation was that high levels of group support would be related to more favorable condom outcomes under conditions of high (rather than low) ethnic identity.

CHAPTER 5 Results

Preliminary Analysis

Transformation of the independent variables were conducted to reduce skewness, kurtosis, and improve normality and homoscedascity of residuals. A square root transformation was performed on the measure of ethnic identity and a logarithmic transformation was used on the measure of perceived group support. Transformations did not change the results and therefore the raw values are reported.

There were missing data on all study variables. However, the two independent variables had less than 5% missing data, (ethnic identity n=2 and group support n=3) so additional analysis to account for missing data were not necessary. The dependent measures, condom negotiation efficacy, condom attitudes, and condom use had missing data values of (n=19 or 7.2%, n=26 or 9.9%, n=18 or 6.8%, n=18 or 6.8%) respectfully. T-tests and SPSSMVA (missing values analysis) were performed to determine if the data was missing completely at random. There were no significant difference between the missing and non missing groups among the dependent measures of condom negotiation, condom attitudes, and condom use measures Little's MCAR test, p = .283.

Descriptive statistics, including means, standard deviations, and ranges, were calculated for all variables. Correlations among all dependent measures were also calculated. Logistic regression and hierarchical regression were used to test the relation between the predictor (group support and ethnic identity) and outcome (condom negotiation efficacy, condom attitudes and condom use) variables, while controlling for

pretest condom negotiation efficacy, attitude, and use scores, partner status and relationship length.

Descriptive Statistics

Demographics

The sample consisted of women attending two public and one private southeastern university. The mean participant age was 19.21 (SD = 1.21), with ages ranging from 18 - 23 years. Less than half of the participants reported having a main partner (44%), and the average length of relationships was 0.82 years (SD = 1.42). None of the women were married. Means, standard deviations and observed ranges for variables of interest can be found in Table 1 below. Condom Attitudes and Condom Negotiation Efficacy & Condom Use

The majority of women (87%) reported condom use the last time they had sex. Analysis of the condom attitudes scale revealed that women, on average, reported positive attitudes towards condoms. The mean on the condom attitudes scale was 1.53 out of a possible low score of 1 with lower scores indicating more positive attitudes towards condom use. Additionally, women had a mean of 3.65 on the condom negotiation efficacy scale (the highest possible value was 4), with higher values representing higher levels of confidence in negotiating condom use. (See Table 1)

Group Support and Ethnic Identity

The mean on the group support scale was 5.68, with a range from 1 to 6, with higher scores indicating higher levels of support from the group. Participants reported a

mean of 3.63 on the ethnic identity scale, with a range from 1-4, with higher scores indicating higher levels of ethnic identity (See Table 1).

Table 1

Means, Standard Deviations and Observed Ranges for Each Variable

Variable	M	SD	Observed Range
1. Age	19.21	1.21	18 - 23
2. Relationship Length	0.82	1.42	0 - 10
3. Ethnic Identity	3.63	0.46	1 - 4
4. Perceived Group Support	5.68	0.67	1 - 6
6. Condom Negotiation Efficacy	3.65	0.41	2 - 4
7 Condom Attitudes	1.53	0.43	1 - 4
9. Condom Use	0.87	0.32	0 – 1

Bivariate Correlations

Bivariate correlations were computed to determine relationships among dependent variables and partner status, and relationship length. An alpha level of 0.05 was used for all statistical tests.

Correlation analyses revealed that partner status and condom use were significantly and positively correlated, such that those who were not in relationships reported more consistent condom use [r (244) = 0.36, $p < 0.0001$]. Relationship length and condom

attitudes were also significantly and positively correlated, such that an increase in relationship length was correlated with less positive condom attitudes[r (232) = 0.14, $p < 0.05$]. Relationship length was significantly and negatively correlated with condom use [r (239) = - 0.14, $p < 0.05$]. This relationship indicated that likelihood of condom use decreased as relationship length increases.

Condom attitudes were significantly and negatively correlated with both condom negotiation efficacy [r (230) = -0.46, $p < 0.01$] and condom use [r (223) = -0.32, $p < 0.01$] in the expected direction (e.g., low condom attitudes scores denoted favorability for using condoms). The ability to negotiate condom use increased with more positive condom attitudes. In addition, condom use was positively associated with positive attitudes toward condom use. Condom negotiation efficacy was significantly correlated with condom use [r (229) = 0.24, $p < 0.01$]. An increase in the ability to negotiate condom use was correlated with an increase in likelihood of condom use.

Ethnic Identity was significantly and negatively correlated with condom attitudes such that those who had higher levels of ethnic identity reported positive attitudes towards condom use [r (235) = - 0.15, $p < 0.05$]. Ethnic Identity was significantly and positively correlated with condom negotiation efficacy [r (242) = 0.24, $p < 0.01$]. Higher levels of ethnic identity was associated with a heighten ability to negotiate condom use with a main partner. Consistent condom use was not significantly associated with ethnic identity [r (243) = 0.004, $p > 0.05$].

Group support was significantly and negatively correlated with condom attitudes such that those who felt more supported by the group reported more positive attitudes

towards condom use [r (236) = - 0.13, p< 0.05]. Group support was also significantly and positively correlated to condom negotiation efficacy [r (243) = 0.13, p< 0.05]. Being supported by the group was associated with an increased ability to negotiate condom use with a main partner. Consistent condom use was not significantly correlated with perceptions of support by the group [r (243) = - 0.006, p > 0.05] (See Table 2).

Table 2

Correlations among Measures

Variable	1	2	3	4	5	6	7
1. Partner Status	----	-0.62**	-0.05	-0.04	0.36**	0.02	0.11
2. Relationship Length		----	-0.14*	-0.05	-0.14*	-0.14*	0.20**
3. Condom Attitudes			----	-0.46**	-0.32**	-0.15*	-0.13*
4. Condom Negotiation Efficacy				----	0.23**	0.24**	0.13*
5. Condom Use					----	0.04	-0.06
6. Ethnic Identity						----	0.11
7. Group Support							----

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Hypothesis Testing Condom Negotiation Efficacy

It was hypothesized that higher perceived support and higher levels of ethnic identity will be associated with higher condom negotiation efficacy at post-test after controlling for the effects of condom negotiation pretest scores, partner status, and

relationship length. It was also hypothesized that ethnic identity will moderate the effects of perceived group support on condom negotiation efficacy such that high perceived group support will influence condom negotiation efficacy more for those with higher levels than lower levels of ethnic identity. Hierarchical multiple regression revealed that the overall model for condom negotiation efficacy was significant, F (6, 208) = 21.50 p < 0.0001. The first step of the model, which included condom negotiation pretest scores, partner status and relationship length together, accounted for 36.9% of the variance. These variables significantly predicted condom negotiation at posttest [F_{change} (3, 211) = 41.09, p < 0.0001]. While this step was significant, only one variable, condom negotiation pretest scores was significant in this step. The second step of the model contained the two independent variables, group support and ethnic identity, which accounted for an additional 1.4% of the variance in condom negotiation at posttest. Specifically, the group support measure accounted for an additional 0.8% of the variance in condom negotiation at posttest and the ethnic identity measure accounted for an additional 0.6% of the variance in condom negotiation at posttest. Variables in the second step did not significantly contribute to the prediction of condom negotiation at posttest, F_{change} (2, 209) = 2.37, p = 0.10. The last step in the model included the interaction between group support and ethnic identity and it also did not significantly predict condom negotiation at posttest [F_{change} (1, 208) = 0.001, p = 0.98] (See Table 3).

Table 3

Summary of Hierarchical Regression Analysis: Ethnic Identity as a Moderator of Condom Negotiation Efficacy

Variable	*B*	*SE*	*β*	*t*	Δ R^2
Step 1					36.9
Partner	- 0.03	0.06	-0.03	-0.48	
Length	- 0.01	0.02	-0.05	-0.65	
Pretest CNE	0.53	0.05	0.58	10.29**	
Step 2					1.4
Ethnic Id	0.01	0.007	0.08	1.39	
Group Support	0.01	0.009	0.09	1.53	
Step 3					0.0
GS X EI	0.00	0.003	0.001	0.024	

Condom Attitudes

It was hypothesized that higher perceived support and higher levels of ethnic identity will be associated with more positive condom attitudes at post-test after controlling for the effects of condom attitude pretest scores, partner status, and relationship length. It was also hypothesized that ethnic identity will moderate the effects of perceived group support on condom attitudes such that high perceived group support will influence condom attitudes more for those with higher levels than lower levels of ethnic identity. Hierarchical multiple regression revealed that the overall model for condom attitudes was significant, F (6, 205) = 27.24 p < 0.0001. Variables in the first step of the model, which

included condom attitude pretest scores, partner status and relationship length together, accounted for 43.0% of the variance and significantly predicted condom attitudes at posttest F_{change} (3, 208) = 52.33, p < 0.0001. While this step was significant, only one variable, condom attitude pretest scores was significant in this step. The second step of the model contained the two independent variables, group support and ethnic identity which accounted for an additional 0.6% of the variance in condom attitudes at posttest, F_{change} (2, 206) = 1.11, p = 0.33. The group support measure accounted for an additional 0.6% of the variance in condom attitudes at posttest and was not a significant predictor of condom attitudes at posttest. In addition, the ethnic identity measure did not account for any additional variance in condom attitudes at posttest. The last step in the model, which included the interaction between group support and ethnic identity, accounted for 0.8% of additional variance in condom attitudes. While this additional explained variance was not significant F_{change} (1, 205) = 2.74, p = 0.10, there was a trend in the expected direction (See Table 4).

Table 4

Summary of Hierarchical Regression Analysis: Ethnic Identity as a Moderator of Condom Attitudes

Variable	*B*	*SE*	*β*	*t*	Δ R^2
Step 1					43.0
Partner	- 0.003	0.06	-0.003	-0.05	
Length	- 0.001	0.02	-0.005	-0.07	
Pretest CA	0.55	0.05	0.64	11.66	
Step 2					0.06
Ethnic Id	- 0.0005	0.007	-0.004	-0.08	
Group Support	- 0.008	0.009	-0.05	-0.84	
Step 3					0.08
GS X EI	0.005	0.003	0.10	1.65	

Condom Use

It was hypothesized that higher perceived support and higher levels of ethnic identity will be associated with more consistent condom use at post-test after controlling for the effects of condom use pretest scores, partner status, and relationship length. It was also hypothesized that ethnic identity will moderate the effects of perceived group support on condom use such that high perceived group support will influence condom use more for those with higher levels than lower levels of ethnic identity. Hierarchical multiple regression revealed that the overall model for condom use was significant, F (6, 214) = 44.85 p **<** 0.0001. Variables in the first step of the model, which included condom use

pretest scores, partner status and relationship length together, accounted for 55.3% of the variance and significantly predicted condom use at posttest [F_{change} (3, 217) = 89.46, p < 0.0001]. The control variables, partner status and condom use pretest scores were the only significant variables in this step. The second step of the model contained the two independent variables, group support and ethnic identity, which accounted for an additional 0.3% of the variance in condom use at posttest. Specifically the group support measure accounted for an additional 0.3% of the variance in condom use at posttest and the ethnic identity measure did not account for any additional variance in condom use at posttest. The variables in the last step in the model included the interaction between group support and ethnic identity. It accounted for an additional 0.1% of the variance in condom use at posttest and was not significant [F_{change} (1, 214) = 0.37, p = 0.54] (See Table 5).

Table 5

Summary of Hierarchical Regression Analysis: Ethnic Identity as a Moderator of Condom Use

Variable	*B*	*SE*	*β*	*t*	Δ R^2
Step 1					55.3
Partner	0.13	0.04	0.21	3.40**	
Length	0.02	0.01	0.09	1.41	
Pretest CU	0.64	0.04	0.68	14.18**	
Step2					0.3
Ethnic Id	- 0.002	0.004	-0.02	-0.38	
Group Support	- 0.007	0.006	-0.07	- 1.31	
Step 3					0.1
GS X EI	- 0.001	0.002	-0.03	- 0.61	

Condom use was also captured using a dichotomous measure that asked participants to indicate "yes" or "no" as to whether they had used a condom the last time they had sex. It was hypothesized that higher perceived support and higher levels of ethnic identity will be associated with condom use during last sexual encounter at post-test after controlling for the effects of condom use pretest scores, partner status, and relationship length. It was also hypothesized that ethnic identity will moderate the effects of perceived group support on condom use such that high perceived group support will influence condom use more for those with higher levels than lower levels of ethnic identity. The logistical regression analysis revealed that the overall model significantly

contributed to condom use, X^2 (4, N= 231) = 115.02, p < 0.0001. Relationship length, partner status, and condom use pretest scores were entered in the first step of the model. The combination of these variables significantly predicted condom use at posttest X^2 (3, N= 231) = 114.28, p < 0.0001. This model was able to distinguish between respondents that reported using a condom and those who reported not using a condom during their last sexual encounter. This model explained between 39.0% (Cox and Snell R square) and 63.7% (Nagelkerke R Square) of the variance in condom use, correctly classifying 91.8% of the cases. The addition of the group support and ethnic identity variable in the second step did not significantly add to the model X^2 (1, N= 230) = 0.78, p =.68. The last step of the model included the interaction between group support and ethnic identity. Adding the interaction variable also did not significantly add to the model X^2 (1, N= 230) = 0.07, p =.79 (See Table 6).

Table 6

Summary of Logistic Regression Analysis: Ethnic Identity as a Moderator of Condom Use

Var.	X^2	B	SE	Wald	df	Sig	Exp(B)	CI
Step 1	114.89							
Partner		- 0.63	0.64	0.97	1	0.32	0.53	0.15 – 1.86
Length		- 0.27	0.22	1.47	1	0.23	0.76	0.49 – 1.18
Pretest CU		- 4.43	0.57	61.08	1	0.00	0.01	0.004 – 0.04
Step 2	114.81							
Group Support		-0.08	0.13	0.37	1	0.54	0.92	0.72 – 1.19
Ethnic Identity		- 0.02	0.09	0.07	1	0.79	0.98	0.83 – 1.16
Step 3	114.81							
GS X EI		0.01	0.04	0.07	1	0.79	1.01	0.94 – 1.09

Secondary Analyses

Given the lack of support for the hypotheses, secondary analyses were conducted in order to explore and to present other findings of interest. Paired-samples t-tests were conducted to evaluate the effects of the SISTA intervention on condom negotiation efficacy, condom attitudes, and condom use. There was a significant increase in women's ability to negotiate condoms based on a self-report measure from pre-intervention Time 1 ($M = 3.54$, $SD = 0.46$) to post-intervention Time 2 ($M = 3.65$, $SD = 0.41$), t (221) = -4.492, $p < .0001$ (two-tailed). The mean increase in condom negotiation scores was 0.11 with a 95% confidence interval ranging from 0.07 to 0.16. The eta squared statistic (.08) indicated a moderate effect size.

There was also a significant decrease in attitudes towards condom use based on a self-report measure from pre-intervention Time 1 ($M = 1.65$, $SD = 0.50$) to post-

intervention Time 2 (M = 1.53, SD = 0.43), t (218) = 4.618, p < .0001 (two-tailed) with lower scores indicating more positive attitudes toward condom use. The mean decrease in condom attitude scores was 0.12 with a 95% confidence interval ranging from 0.07 to 0.18. The eta squared statistic (.09) indicated a moderate effect size.

Lastly, there was a significant increase in condom use consistency based on a self-report measure from pre-intervention Time 1 (M = 0.81, SD = 0.34) to post-intervention Time 2 (M = 0.86, SD = 0.32), t (231) = -3.366, p = .001 (two-tailed). The mean increase in condom use scores was 0.05 with a 95% confidence interval ranging from 0.02 to 0.08. The eta squared statistic (.05) indicated a moderate effect size.

Table 7

Summary of Paired Samples T-Tests: Intervention Outcomes

Variable	Mean Diff.	SE	t	Sig	CI
Condom Neg.	0.11	0.03	4.492	0.0001	0.06 – 0.16
Condom Att.	-0.12	0.03	-4.618	0.0001	- 0.18 – 0.07
Condom Use	0.05	0.02	3.366	0.001	0.02 – 0.08

Another way of examining the impact of ethnic identity and group support on condom outcomes was by determining whether or not there were differences in condom outcomes when ethnic identity and group support were categorized as high and low. A 2 by 2 between-group analysis of covariance was conducted to assess the effectiveness of the SISTA intervention in increasing positive attitudes toward condom use. The independent variables, group support and ethnic identity were dichotomized using a mean split. A mean

split was used instead of a median split due to the fact that the median score of group support was also the maximum score of 6 because group support was highly skewed toward favorability. The dependent variable was the post-test attitudes toward condom use measure. Pre-test attitudes towards condom use scores, partner status, and relationship length were used as covariates. After controlling for pretest scores, partner status, and relationship length there was a significant main effect F (1, 205) = 5.92, p = 0.016 for ethnic identity with a small effect size (partial eta squared = 0.03). The interaction between group support and ethnic identity was of borderline significance F (1, 205) = 3.31, p = 0.07 with a small effect size (partial eta squared = 0.02). These results suggest that perceived support matters more for those with lower ethnic identity than those with higher ethnic identity although the differences are not significant (See Figure 1). When both ethnic identity and group support is low, then condom attitudes are least favorable. However, when ethnic identity is high, group support does not seem to matter so much. This is opposite of what was predicted (See Table 8).

Table 8

Summary of Analysis of Covariance: Ethnic Identity as a Moderator of Condom Attitudes

	Sum of Squares	Df	Mean Square	F
Group Support	0.15	1	0.15	1.41
Ethnic Identity	0.63	1	0.63	5.92**
Interaction	0.35	1	0.35	3.31
Error	21.66	205	0.11	
Total	534.06	212		

**p < 0.05

Figure 1. Interaction: CondomAtt_T2

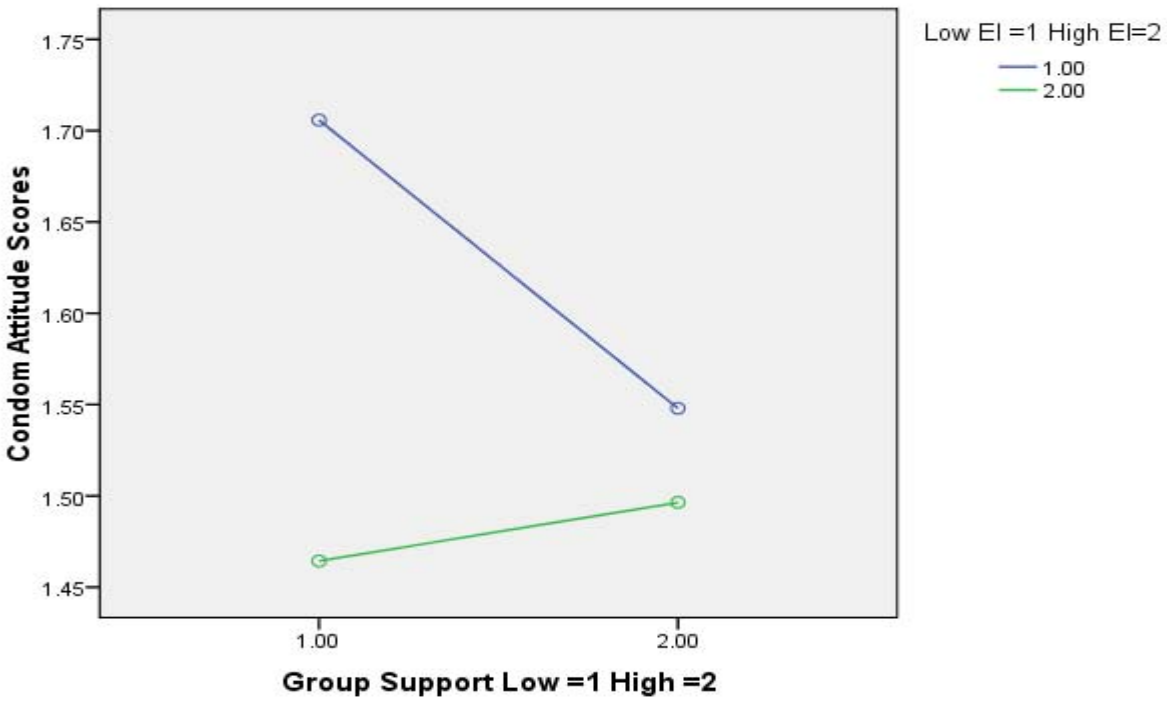

Table 9

Group Means: Condom Attitudes

Variable	Ethnic Identity	
	High	Low
Group Support		
High	1.46	1.58
Low	1.38	1.87

**p < 0.05

The same 2 x 2 analysis of covariance were conducted using condom negotiation and condom use as dependent variables but there were not significant findings.

CHAPTER 6 Discussion

The purpose of this study was to determine if condom outcomes vary as a function of perceived group support and ethnic identity among college participants in an HIV prevention intervention. Another purpose was to determine whether ethnic identity moderated the relationship between perceived group support and condom behaviors (condom use, condom negotiation efficacy, and condom attitudes) for college-age African American women. Specifically, the study investigated if perceived group support mattered more for women with higher than lower ethnic identity with respect to condom attitudes and behaviors following an intervention. The findings showed significant effects with respect to intervention effectiveness and condom outcomes but no significant support for the study hypotheses.

Hypothesis 1: Group Support

The first hypothesis predicted that higher perceived support will be associated with higher condom negotiation efficacy, at post-test after controlling for the effects of condom negotiation pretest scores, partner status, and relationship length. The model was significant; however after controlling for condom negotiation pretest scores, partner status, and relationship length this relationship was no longer significant. The significance of the overall model for condom negotiation was driven mostly by the control variables, particularly condom negotiation pretest scores. One potential reason for this finding is that this sample reported a high ability to negotiate condom use at pre-test. The purpose of using this measure was to evaluate the effectiveness of the intervention. However, the

condom negotiation measure may not have been sensitive enough to detect minute increases in a sample that already reported high ability to negotiate condoms.

The first hypothesis also predicted that higher perceived support will be associated with positive attitudes towards condom use at post-test after controlling for the effects of condom attitude pretest scores, partner status, and relationship length. The model was significant; however, after controlling for condom attitude pretest scores, partner status, and relationship length this relationship was no longer significant. Condom attitudes pretest scores was the only significant predictor in the model, driving the significance of the overall model. As mentioned previously, one potential reason for these findings is that the sample reported positive attitudes toward condom use at pre-test. The condom attitude measure may not have been sensitive enough to detect minute increases in a sample that already had positive attitude toward condom use.

The first hypothesis also predicted that higher perceived support will be associated with consistent condom use at post-test after controlling for the effects of condom use pretest scores, partner status, and relationship length. This hypothesis was not supported. Perception of support was not a significant contributor to consistency of condom use. The significance of the overall model for condom use was driven mostly by the control variables, particularly condom use pretest scores and partner status. There are a myriad of factors that influence behavior. While it is easier to provide evidence to support whether an overall intervention has success on behavioral outcomes, sometimes it is more difficult to isolate which parts of the intervention have a significant effect on behavior. This could particularly be the case for condom use where the relationship between group support and

condom use could be moderated and/or mediated by other variables, such as attitudes towards condom use, negotiation efficacy, and use efficacy. Perceived support from other group could members could moderate or mediate the effects of one or a number of variables, which in turn effects use. Other types of statistical methods such as path analysis, structural equation modeling and multi-level modeling could elucidate this more peripheral relationship between support and condom use and could possible show the various pathways through which perception of support lead to more consistent condom use following the SISTA intervention.

Condom use was also captured using a dichotomous measure that asked participants to indicate "yes" or "no" as to whether they had used a condom the last time they had sex. It was hypothesized that higher perceived support would be associated with condom use during last sexual encounter at post-test after controlling for the effects of condom use pretest scores, partner status, and relationship length. The finding did not support the hypothesized relationship between perception of support and condom use during the last sexual encounter after controlling for condom use pretest scores, partner status, and relationship length. Condom use during the last sexual encounter pretest scores was the only significant predictor in the model, driving the significance of the overall model.

The non-significant findings for the first hypotheses could possibly be related to the group support measure used in this study. There was little variability in the scores for perception of support and overall the sample reported a high perception of group support. High perception of group support could be related to several factors. One, the sample was

recruited from college campuses particularly from dorms and academic buildings. The women in this sample were more likely to know each other and to have friendships with one another than if they had been recruited from community settings. Two, because of the manner in which the sample was recruited, the groups in the college sample could have had more in common than community samples where there is more variability in age, marital status, employment status etc. The fact that the women in these groups were more familiar with one another and could have more characteristics in common, could account for the high overall perception of support and low variability along this factor. A third factor that could have influenced the reporting of high scores on this variable was that the facilitator was seen as part of the group. The SISTA intervention utilizes peer facilitators and in college samples, a student from the university was used as a peer facilitator. It may have been difficult for participants to differentiate between support for the facilitator and support from the group. A related factor is that facilitators are trained to bring the group together and to foster feelings of group cohesiveness and support. Therefore, the fact that group support was high on average is not surprising.

Hypothesis 2: Ethnic Identity

The second hypothesis predicted that higher levels of ethnic identity would be associated with higher condom negotiation efficacy, at post-test after controlling for the effects of condom negotiation pretest scores, partner status, and relationship length. The findings for the model were significant; however after controlling for condom negotiation pretest scores, partner status, and relationship length this relationship was no longer significant. The significance of the overall model for condom negotiation was driven

mostly by the control variables, particularly condom negotiation pretest scores. One potential reason for the finding is as noted previously the sample on average reported a high ability to negotiate condom use; they also reported high levels of ethnic identity. The second hypothesis also predicted that higher levels of ethnic identity would be associated with positive attitudes towards condom use at post-test after controlling for the effects of condom attitude pretest scores, partner status, and relationship length. The model was significant but the hypothesized relationship between ethnic identity and condom attitudes was not after controlling for condom attitude pretest scores, partner status, and relationship length. Condom attitudes pretest scores was the only significant predictor in the model, driving the significance of the overall model. The second hypothesis also predicted that higher levels of ethnic identity would be associated with consistent condom use at post-test after controlling for the effects of condom use pretest scores, partner status, and relationship length. This hypothesis was not supported. Ethnic identity was not a significant contributor to consistency of condom use. The significance of the overall model for condom use was driven mostly by the control variables, particularly condom use pretest scores and partner status.

Condom use was also captured using a dichotomous measure that asked participants to indicate "yes" or "no" as to whether they had used a condom the last time they had sex. It was hypothesized that higher levels of ethnic identity would be associated with condom use during last sexual encounter at post-test after controlling for the effects of condom use pretest scores, partner status, and relationship length. The findings did not support the hypothesized relationship between ethnic identity and condom use during the

last sexual encounter after controlling for condom use pretest scores, partner status, and relationship length. Condom use during the last sexual encounter pretest scores was the only significant predictor in the model, driving the significance of the overall model.

Previous research has found that ethnic identity is a protective factor for adolescent African American females. Ethnic identity has been associated with reduction in risky sexual attitudes among adolescents (Belgrave, Van Oss & Chambers, 2000). It has also been linked to consistent condom use in a sample of college students (Beadnell et al, 2003). The relationship between ethnic identity and condom use was in the expected direction but not significant.

The non-significant findings for the second hypotheses could also possibly be related to the measure used in this study. On average, the sample reported higher levels of ethnic identity resulting in little variability in the scores for ethnic identity. This issue is not unique to this study. Past research has shown that African American typically report high levels of ethnic identity (Branch et al., 2000). Other samples have reported more variability, which could mean that in this study our measure was not sensitive or that the sample was more homogenous that samples in previous research.

Hypothesis 3: Moderating Effects

It was hypothesized that ethnic identity would moderate the effects of perceived group support on condom negotiation efficacy such that high perceived group support will influence condom negotiation more for those with higher than lower levels of ethnic identity. The findings did not support the hypothesized relationship that ethnic identity would moderate the effects of group support after controlling for condom attitude pretest

scores, partner status, and relationship length. The significance of the overall model for condom negotiation was driven mostly by the control variables, particularly condom negotiation pretest scores.

It was also hypothesized that ethnic identity would moderate the effects of perceived group support on condom attitudes such that high perceived group support will influence condom negotiation more for those with higher levels than lower levels of ethnic identity. The model was significant; however after controlling for condom attitude pretest scores, partner status, and relationship length this relationship was no longer significant. There was a trend in the opposite direction. These findings suggest that perceived support matters more for those with lower ethnic identity than those with higher ethnic identity although the differences are not significant. When both ethnic identity and group support is low, then condom attitudes are least favorable. However, when ethnic identity is high, group support does not seem to matter so much. The significance of the overall model for condom attitude was driven mostly by the control variables, particularly condom attitude pretest scores.

The third hypothesis predicted that ethnic identity would moderate the effects of perceived group support on condom use such that high perceived group support will influence condom use more for those with higher levels than lower levels of ethnic identity. Findings were not supportive of the hypothesized relationship that ethnic identity would moderate the effects of group support after controlling for condom use pretest scores, partner status, and relationship length in either the continuous condom use variable or the dichotomous condom use variable. The significance of both overall models for

condom use was driven mostly by the control variables, particularly condom use pretest scores.

The non-significant findings of the third hypotheses are also likely due to the lack of variability in measures used in our sample.

Secondary Analyses

Given the lack of support for study hypotheses, secondary analyses were conducted in order to assess the effects of the program and also to explore other findings. The findings indicated support for the effectiveness of the SISTA intervention. There was a significant increase in self-reported ability to negotiate condom use from pre-intervention to post-intervention. Participants also reported more positive attitudes towards condom use from pre-intervention to post-intervention. Lastly, participants reported using condoms more consistently from pre-intervention to post-intervention. While the intervention significantly improved the intervention outcomes investigated in this study, the effect sizes for these outcomes were small to moderate. This could be due to the fact that the sample in this study had positive pre-intervention scores. This sample reported a high ability to negotiate condoms at pre-test, more positive attitudes toward condom use, and more consistent condom use. For example, 81% of the sample reported using condoms consistently at pre-test. Previous research has reported condom use consistency between 50 – 65% among college samples (ACHA, 2007 & Chernoff and Davison 2005). The fact that this sample reported more protective behaviors prior to the intervention may in part account for the lack of significant effects of the study variables.

Additional analyses were conducted to assess the effectiveness of the SISTA intervention in increasing positive attitudes toward condom use. Ethnic identity and group support were dichotomized and used as independent variables in a 2 x 2 analysis of covariance with post-condom attitude scores as the dependent variable. Pretest condom attitudes scores and partner status and relationship length were covariates. This analysis revealed a significant main effect for ethnic identity such that condom attitudes were more favorable for those with higher versus lower levels of ethnic identity. The interaction between group support and ethnic identity did not reach statistical significance, however that was a trend in the expected direction. These results suggest that when both group support and ethnic identity are low, condom attitudes are least favorable.

Implications

The results of this study provide further evidence for the need for culturally relevant prevention programs for African American women. DiClemente and Wingood (1995) developed the SISTA intervention to address the lack of culturally relevant HIV prevention programs targeting African American women. These findings provide evidence that prevention interventions designed to reduce HIV transmission among African American women should take a holistic approach, addressing both cultural and gender relevant experiences of Black womanhood. The current study shows that culturally relevant interventions can be successful and can increase HIV protective behaviors. .

The findings from this study suggest that further research is needed to understand the role that support plays in prevention interventions for African American women. Past theory and research provide evidence that being supported by the group should be a

protective component for African American women due to their relational and Africentric orientations (Grills, 2004; Hyde et al, 2005 & Miller, 1991). The findings of this study do not support this claim. However, because of sample (very homogeneous) and measurement issues (e.g., low variability), we cannot rule out support as a mechanism for increasing protective behaviors. The questions included in the current group support measure focused more on group cohesion, which involves a sense of belonging to and feeling valued by the group. While being a member of the group and feeling a sense of belonging to the group may be important in the beginning stages of the intervention, it may not be as relevant for behavior change. Instrumental support (resourcefulness), informational, emotional, or appraisal support could be more relevant to behavior change than cohesion. Feeling as though the group provides you with instrumental support could be useful in prevention by providing the individual with the resources necessary to apply and sustain behavior change. Instrumental support could be provided by other group members as well as by the facilitator.

Informational support is another component of group support that could be useful in promoting behavior change. While informational support could be provided by the group, it is usually provided by the leader or facilitator of the group. This type of support is the tactical specifics of how to change behavior ("how to guide of consistent condom use"). Although both informational and instrumental support are components of social learning theory, they were not measured by the group support measure used in this study. Additional questions that assess these components of support would allow researchers and program implementers to assess how these components of support impact effectiveness in

prevention interventions.

The last two components of support are emotional and appraisal support. The group support measure indirectly asks participants about emotional support by addressing whether they felt cared and respected by the group. However, there is much more to emotional support than feeling cared for and respected. Emotional support also involves helping someone deal with the real or perceived emotions she may experience. This could be dealing with the fear of discussing condom use with a main partner, or the frustrations associated with the refusal to use condoms by a main partner. Mostly, importantly, emotional support can help participants deal with the real or perceived fear of rejection associated with the initiation of condom conversations and negotiation of use. This also ties into the importance of appraisal support, which involves providing feedback and reinforcement. This type of support can be integral for prevention programs particularly those involving behavior change. Participants in the Hyde et al., 2005 study mentioned the importance of the group in experiential learning and the importance of having the group as a safe place to practice and hone their new skills. Future research should explore the effectiveness of different types of group support as a component in HIV prevention interventions.

The high level of protective HIV attributes reported by this sample of African American college students may have implications for programs and practice. The sample reported more positive pre-intervention attitudes and behaviors than previously research samples. What is it about this sample that makes them high in protective attributes? One possible explanation is that the majority of this sample attended HBCU's (Historically

Black Colleges and Universities). This environment could be more protective in nature by providing a stronger sense of ethnic pride and more avenues of social support than a predominately-White university. While there were still significant effects in post-intervention HIV outcomes, tailoring prevention programs for different sub-populations could further prevention efforts among African American women. Future research should explore whether there are differences in intervention outcomes between African American females attending predominately-White universities versus HBCU's and what factors might contribute to these differences.

Limitations

There are several limitations to the study. These limitations include limitations due to sampling, measures, and data analytic approach. One limitation was utilizing secondary data for this study. Secondary data analysis limits the types of questions that can be answered and what inferences one can make from the data. The purpose of the original study was to evaluate the effectiveness of an HIV prevention intervention. The manner in which data was collected and the types of measures used by the original researchers were geared towards the purpose of evaluating intervention effectiveness. The questions this study asked were limited to existing data. The measures used were also limited. In particular the group support measure was only a 4-item measure and was not able to fully capture the different components of support. The current measure focused more on group cohesion, which is an important element of group support. However the measure did not capture other important features such as instrumental support (resourcefulness), informational, emotional, or appraisal support. There were also limitations in the measure

of ethnic identity used in this study. The MEIM has two subscales, commitment and exploration. Only the commitment subscale was used in this study. Utilizing only one subscale could account for the lack of variability in the scores surrounding ethnic identity in our sample. Finally, the condom use measures have a retrospective memory bias that can be problematic when reporting risky behaviors.

Another limitation is associated with using regression models to test hypothesis. The major limitation of regression models is that one cannot infer causation. With multiple regression the researcher can only establish that there is a relationship between variables and how much variance is accounted for in the dependent variables by the independent variables.

An additional potential limitation of this study was that the sample was college students and these women also do not represent the full range of women at risk for HIV. This sample was also rather homogenous along some the key variables in the study. There was not a lot of variability in the sample along the measure of ethnic identity, condom attitudes, and condom negotiation efficacy. Pretest scores revealed positive condom attitudes and high ability to negotiate condom use. While the structure of the measure (types of questions and response options) were sensitive enough to detect a significant change in pretest to posttest scores, the response options may have accounted for the lack of variability in our sample detracting from the sensitivity of the measure. Social desirability biases may also have influenced participants' responses to items and also their ratings of other group members. Although participants were told their responses would be

anonymous and were seated so they could not see each other's responses, social desirability is always a possibility when collecting sensitive information.

Another potential sample limitation of this study was self-selection bias. The participants in this study voluntarily participated in the SISTA intervention. As previously mentioned the sample in this study was rather homogenous and at pre-intervention, reported high HIV protective behaviors. Thus, those who responded to the recruitment flyers may have been already motivated to protect themselves from HIV and interested in ways to remain protected. In addition, the picture on the flyer (an African American female) and the name of the program (SISTA) might have been attractive to those females who are in tune with their ethnic pride. Along this line, the women in our sample were high in ethnic identity at pre-test. This could possibly explain the protected nature of the current sample and provide some evidence of ethnic identity as a protective factor in adults.

Future Research

Future research could further explore the influences of peer group norms in both college and non-college adults samples. This line of research could help researchers pinpoint mechanisms that promote and prevent behavior change within certain populations. It could also help enhance interventions by highlighting which elements of support are instrumental in improving outcomes for different populations of African American women.

A different line of research could investigate how group support could be beneficial for those with lower levels of ethnic identity. The results of the secondary analyses suggested that group support mattered more for those with lower levels of ethnic identity

than those with higher levels of ethnic identity. These results were not significant, though trending in this direction. One of the goals of the intervention is to boost ethnic and gender pride. Being in a group with those who celebrate their ethnicity may have been an especially positive influence for those with lower levels of ethnic identity. Future research could highlight the differences in sexual risk behaviors among those with higher levels of ethnic identity and those with lower levels of ethnic identity to provide further evidence that ethnic identity serves as a protective factor for adults. In addition, investigating whether support from the group benefits individuals with lower levels of ethnic identity could have further implications for intervention programs specifically, for tailoring programs for sub-populations of women.

Another line of research could extend the results from the current study and look at how both group level factors and relationship factors affect sexual outcome behaviors. Future research could focus on group level factors such as group sexual norms, behaviors, and perception of peer support as well as relationship level factors such as sexual communication, partner attitudes toward condom use, attachment styles, commitment, and length to help tailor intervention programs to meet the needs of young women. Effective HIV prevention efforts continue to be a major priority for African Americans. Findings suggest that further research is needed to understand the role that support and ethnic identity plays in interventions for African American women.

Conclusion

The current study investigated if condom outcomes vary as a function of perceived group support and ethnic identity among participants in an HIV prevention intervention.

The study hypotheses were not supported because after controlling for pre-test scores, partner status, and relationship length associations between ethnic identity and group support and condom outcomes were not significant. While past research has suggested that group support and ethnic identity should be integral parts of HIV prevention interventions, the findings of this study suggest further exploration is needed to understand which components of support are most beneficial to prevention programs.

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APPENDIX A

Group Support Measure

Responses

1 Never

2 Rarely

3 Occasionally

4 More often than not

5 Most of the time

6 All of the time

During the SISTA Program sessions the other group members…

1. Cared about my feelings
2. Respected my opinion
3. Listened to me
4. Made me feel like an important part of the group.

Ethnic Identity Measure (MEIM)

Responses

1 Strongly Disagree

2 Disagree

3 Agree

4 Strongly Agree

1. I have a clear sense of my ethnic background and what it means for me.
2. I am happy that I am a member of the group I belong to.
3. I have a strong sense of belonging to my own ethnic group.
4. I understand pretty well what my ethnic group membership means to me.
5. I have a lot of pride in my ethnic group.
6. I feel a strong attachment towards my own ethnic group.
7. I feel good about my cultural or ethnic background.

Condom Negotiation Efficacy Measure

Responses

1 Definitely No

2 Probably No

3 Probably Yes

4 Definitely Yes

1. Can you discuss condom use with your main partner?
2. Can you insist upon condom use if your main partner does not want to use one?
3. Can you stop and look for condoms when you are sexually aroused?
4. Can you insist on condom use every time you have sex even when you are under the influence of drugs?
5. Can you insist on condom use every time you have sex even when your main partner is under the influence of drugs?
6. Can you put a condom on your main partner without spoiling the mood?
7. Can you insist on condom use every time you have sex even if you or your main partner uses another method to prevent pregnancy?

Condom Attitudes Measure

Responses

1 Strongly Disagree

2 Disagree

3 Agree

4 Strongly Agree

1. My main partner would get mad if I said we had to use a male condom.
2. Male condoms ruin the mood.
3. Sex doesn't feel as good when you use a condom.
4. My main partner would think I was having sex with another person if I said we had to use a condom.
5. Using male condoms would help build trust between my partner and me.
6. Sex with condoms doesn't feel natural.
7. Using male condoms breaks up the rhythm of sex.

Condom Use Measure

1. In the past 3 months, how many times have you had sex, with a man who put his penis into your vagina?

_____ (# of times had sex with a man who put his penis into my vagina in past 3 months)

2. In the past 3 months, when you had sex with a man who put his penis into your vagina how many times was a condom used?

_____ (# of times used a condom in past 3 months)

3. The last time you had sex did you use a condom? **YES** **NO**

VITA

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