ABSTRACT

Srinivas Melkote, Advisor

After the initial outbreak, gay men followed by African Americans have been disproportionately affected by HIV/AIDS. According to the Centers of Disease Control (CDC) in 2005, African Americans made up roughly 13% of the U.S. population; however, Blacks accounted for almost 50% of all new reported cases of HIV/AIDS. The purpose of this study was to examine various social and psychological variables relating to HIV/AIDS prevention among African-American college students. The study also examined pertinent factors that were related to and predictive of sustained condom use within the defined study population. Lastly, the study examined any relative vulnerabilities to HIV/AIDS among African American male and female college students. By examining the social and psychological variables and the factors associated with sustained condom use among African American college students, academics and practitioners would be able to develop better communicative strategies to decrease the spread of HIV/AIDS.

One hundred thirty African American college students participated in the study. The study found that the participants had moderately high to high levels of behavioral involvement/information seeking behaviors in terms of HIV/AIDS. The students also had very high levels of knowledge about HIV/AIDS and they showed positive attitudes toward the disease and toward people who were HIV/AIDS positive. The study also showed that there was a positive relationship between knowledge of HIV/AIDS infection through non-sexual contact and attitudes related to blaming someone for being HIV/AIDS positive. In the sample, the study
indicated that higher levels of HIV/AIDS cognitive involvement were associated with more information seeking behaviors. In terms of safe sex practices, the study concluded that knowledge of HIV/AIDS sexual contact was an important predictor of safe sex behaviors among the sampled students. Lastly, outcome expectancy of convenience and positive feelings of condom use were both strong predictors of condom use among the respondents.

The results show that it is important for scholars and practitioners to continue to design mass media campaigns that improve knowledge levels and continue to reinforce positive attitudes about HIV/AIDS among African American students. It is critical for mass media messages to emphasize the importance of using condoms during sex because the results of the study showed positive feelings about condom usage resulting in higher rates of condom use.
This dissertation is dedicated to my mother Angelia Washington, my grandmothers Fannie Moore and Martha Taylor who both have passed on to Heaven, and lastly, to all of the people who are living with and have died from HIV/AIDS.
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CHAPTER I. INTRODUCTION

Human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS) have become one of the biggest health issues that have resulted in more than 25 million deaths around the world since 1981 (World HIV/AIDS Statistics, 2006). The disease is also responsible for the social and economic decline within many communities across the globe such as Sub-Saharan Africa, the Caribbean, and Asia. Across sections of Africa, HIV/AIDS has significantly affected health care systems because of the demand for care. HIV/AIDS is an issue that is important for the present and the future. The disease has taken a destructive toll on people around the world, but no group has been affected more than people of African descent (Fitzpatrick, McCray, & Smith, 2004).

Because African Americans are disproportionately affected by HIV/AIDS, and many are contracting the disease during their younger years, the objectives of this study were to examine HIV/AIDS knowledge levels, attitudes, behavioral/cognitive involvement, and sexual activity among the African American college population. The study was also conducted to determine the predictors of condom use in the context of HIV/AIDS prevention, and also to examine the relative vulnerabilities of African American males and females to HIV/AIDS. The outcomes of the study will be helpful in creating specific HIV/AIDS intervention strategies/communication campaigns among African American college students.

HIV/AIDS among African Americans

African Americans are immensely affected by HIV/AIDS (Beatty, Wheeler, & Gaiter, 2004). According to the Centers for Disease Control (2006), African Americans have 10 times the rate of contracting AIDS versus Whites and three times the rate compared to Hispanics.
Moreover, African American women have more than 20 times the rate of contracting AIDS than White women (Centers for Disease Control African Americans Overview, 2006).

Even though there are approximately 38,000 new reported cases of HIV/AIDS each year in the United States, the percentage of Whites with the disease has declined throughout the years, while the percentage for African Americans and other minority groups has risen (Fitzpatrick et al., 2004). The number of HIV/AIDS cases reported among African Americans has been more prominent in states such as California, Florida, Maryland, New York, New Jersey and Texas (Fitzpatrick et al., 2004). “Among diseases that disproportionately affect African Americans, HIV/AIDS has had a particularly devastating effect. At every stage from HIV diagnoses through the death of persons with AIDS, the hardest-hit racial or ethnic group is African Americans” (Centers for Disease Control African Americans Overview, 2006, p.1). African Americans make up about 13% of the population in the U. S., but they account for almost half of the 2005 new cases of HIV/AIDS as shown in Figure 1. In 2002, HIV/AIDS was the second leading cause for death among African Americans ages 35-44 years. For African American women between the ages of 25-34 years, it was the leading cause of death (Centers for Disease Control African Americans Overview, 2006).
Research data clearly demonstrate the disproportionate rate of infection found among African American women in the United States versus women of other races and ethnicities. During the middle 1990s, African American women accounted for more than a third of all new HIV/AIDS cases (The Henry J. Kaiser/ HIV/AIDS, 2006). By 2004, African American women made up 64% of all new HIV/AIDS cases among women compared to 17% of White women and 15% of Hispanic women. According to the CDC, more than three-fourths of all the new cases of HIV/AIDS among African American women from 2001 through 2004 were contracted through heterosexual contact followed by intravenous drugs use which was responsible for approximately one fifth of the other cases (Centers for Disease Control: African Americans, 2006).

**Sexual Behaviors and Other Risk Factors**

The main mode of transmission for HIV/AIDS among African American women is unprotected sex with a man. As shown in Figure 2, heterosexual sex is the main mode

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*Figure 1. Breakdown of Race/Ethnicity of People Diagnosed with HIV/AIDS in the U.S. 2005*

![Pie Chart]

- Black: 49%
- White: 31%
- Hispanic: 18%
- Asian/Pacific Islander: 1%
- American Indian/Alaska Native: <1%

No. = 37,331

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Figure 2. Transmission Categories among Adults and Adolescents with HIV/AIDS Diagnosed during 2005 in United States

Females (N=9893)

- Heterosexual Contact (80%)
- Injection Drug Use (19%)
- Other (1%)

Males (N=28,037)

- Male to Male Sex (67%)
- Heterosexual Contact (15%)
- Injection Drug Use (13%)
- Male to Male Sex/Drugs (5%)

of transmission among women. African American women are not always informed about a partner’s risk for HIV/AIDS because of multiple sex partners, intravenous drug use or bisexuality. According to Millett, Malebranche, Mason, and Spikes (2005), Black men who have sex with men (MSM) are more likely than White men not to inform their female sexual partners about their sexual behaviors with other men. “Moreover, as education level increased, white men were more likely and black men substantially less likely to disclose their sexuality” (Millett et al., 2005, p.54). As shown in Figure 2, for African American men the main mode of

---

contracting HIV/AIDS is through sexual contact with other men (Rangel et al., 2006) followed by heterosexual contact and intravenous drug use.

Millet (2005) found in one study that more than half of the African American men who had sex with men (MSM) also were having sex with women and failed to tell them about their sexual encounters with men. Almost ten percent of those men were HIV/AIDS positive. According to Thompson-Robinson et al. (2005), in many cases African American men who have sex with men do not identify their sexual orientation with homosexuality due to the negative connotations associated with the behavior in the African American community. The reasons for African American men not disclosing their sexual identity include fear of social isolation, possible discrimination, and verbal and physical abuse (Thompson-Robinson et al., 2005).

According to Essien, Meshack, Peters, Ogungbade, and Osemene (2005, Background section, ¶4):

Cultural and social norms in African-American communities are not supportive of homosexual behavior. It has been argued that negative attitudes associated with homophobia may lead to psychological distress and sexual risk taking among African-American men leading them to having relationships with both women and men.

Another risk factor is substance abuse. Among African American women, intravenous drug use is the second leading cause of infection while for African American men it is the third reason for infection. Also, studies have shown that when people are under the influence of an illegal drug, they are more inclined to engage in riskier behaviors such as sex without a condom (Centers for Disease Control HIV/AIDS Fact Sheet, 2006). African American female drugs users experience more stress than African American male drug abusers because of the combination of the aforementioned risk factors such as living alone and lack of finances. Most importantly, these women are more likely to have partners who are also drug users. Even for African American women who do not use illegal drugs, having a partner who abuses drugs
increases their risk of exposure to HIV/AIDS. It has been shown that approximately 80% of male intravenous drug users have relationships with women who are not drug users (Gilbert, 2003).

Another high risk factor is socioeconomic status. HIV/AIDS has been associated with people who have a lower income, which has a negative effect on quality of health care, prevention, and education. Moreover, studies show that one in four African Americans is living in poverty (Centers for Disease Control HIV/AIDS Fact Sheet, 2006). In many cases, the HIV/AIDS positive woman is the main supporter of her home and children. In some cases, this is a result of the woman’s husband dying from HIV/AIDS. Additionally, there is a percentage of African American women who have been historically in poverty before they were diagnosed as HIV/AIDS positive, which contributed to their lack of access to and information about HIV/AIDS protection and treatment (Gilbert, 2003).

Social structures and practices are other factors that play a key role in HIV/AIDS rates. Social structures that increase African American women rate of contracting HIV/AIDS are incarceration rates of African American men. The disproportionate rate of incarcerated African American men puts African American women at a higher risk for becoming HIV/AIDS positive. More arrests associated with the war on crime and the war on drugs has had a direct affect on the African American community with more Black men being incarcerated. According to Gilbert (2003):

In addition to racial disparities associated with income, employment, education, health care, geographic location, and drug use, biased law enforcement practices negatively impact African Americans. The disproportionate number of incarcerated Black men, for example, threatens family and relationships dynamics and also puts women at risk for HIV-infection. (p. 12)
In past studies, according to the CDC (2006), researchers have also found that misperceptions about HIV/AIDS may contribute to transmission of the disease among African American men and women. Some of the myths and misperceptions about the disease included denial of personal risk, perceptions that other people could become infected and not them, and perceptions that the government had a role in the spread of the disease and its effects within their community (Centers for Disease Control Fact Sheet HIV/AIDS among African American, 2006).

HIV/AIDS Risk among College Students in the United States

HIV/AIDS has not only been a bigger health issue for specific races and ethnicities such as African Americans and Hispanics but also for other populations such as college students who are also at a higher risk for contracting the disease. Information acquired through several research studies have concluded that college students take part in behaviors that put them at a risk for HIV/AIDS. It is estimated that by the end of the freshman year of college more than 80% of college students are sexually active and less than half of these students use condoms on a regular basis, meaning these students put themselves at a higher risk for HIV/AIDS transmission (Valentine, Wright, & Henley, 2003). During the late 1990s, it was estimated that out of roughly 12 million people living in America who have a sexual transmitted disease, roughly two-thirds of that population was younger than age 25 years (Foreman, 2003). According to the CDC and the American College Health Association, it is estimated that one in 500 American college students is HIV positive (Centers for Disease Control HIV/AIDS and College Students, 1995).

There are several other reasons why college students are at a risk for becoming HIV/AIDS positive. Research has shown that college students experience significant peer pressure that impairs their judgments. Alcohol and drug use on college campuses play a role in making students more susceptible to HIV/AIDS. As stated by the CDC, college students may
not use condoms correctly or simply may not use any condoms while under the influence of alcohol and drugs (Centers for Disease Control HIV/AIDS and College Students, 1995). In their literature review, Powell and Sergin (2004) reported that previous studies had found that more than 55% of college students not married or living with their sexual partner responded that neither the student nor their partner used a condom during their last sexual encounter. Research has also shown that a significant percentage of college students do not have a positive attitude toward using a condom; their attitudes have ranged from neutral to negative because of discomfort and inconvenience. Also, college students have reported not wanting to discuss condom use with a sexual partner and being embarrassed while purchasing condoms (Lewis & Malow, 1997).

Opt and Loffredo (2004) who examined knowledge, testing, and sexual practices among college students who attended a private college in Florida found that more than 80% of survey participants believed that AIDS is a serious issue for college students; however, less than half were concerned that he/she would become HIV/AIDS positive. Moreover, the research showed that women and Hispanics were more concerned about becoming diagnosed with the disease. In terms of knowledge about HIV/AIDS, the college students’ knowledge was consistent with the average American knowledge about the disease. The students knew about the lack of a cure and lack of vaccination, but they were not as knowledgeable about HIV/AIDS infection rates among young people and the link between sexually transmitted disease and HIV/AIDS. “The main reasons students reported getting tested included (a) routine checkup (37%), (b) surgery or blood donation (36%), and (c) unprotected sex (24%)” (Opt & Loffredo, 2004, p. 398).
African American College Students and HIV/AIDS

Across the spectrum, African Americans are disproportionately affected by HIV/AIDS and because of college students’ sexual practices; many African American college students could be at an even higher risk for the disease than non-African Americans. During the early part of this decade, North Carolina state health officials and researchers from the University of North Carolina-Chapel Hill discovered an outbreak of HIV/AIDS among African American male college students who had sex with men. The program called Screening and Tracing Active Transmission (STAT) allowed researchers to calculate new HIV infections in a given location, but it also allowed for tracing sexual networks of the virus. Researchers recognized that infection rates stayed fairly consistent for people who were not in college; however during the three year period from 2000 through 2003, the number of infections rose for college students. There were 6 cases in 2000, by 2001 there were 19, in 2002 there were 29 new cases, and in 2003 there were 30 HIV additional cases discovered. Of the 84 new HIV cases discovered among male college students, 88% were African American and a large percentage reported having sex with another man. Moreover, even though most of the college students who were diagnosed as HIV positive were African American men, there was no one specific college or university that was the hub for the network. The study found that colleges within the UNC system were impacted along with private colleges, historically Black colleges and universities, which were all affected by the outbreak (The Body, 2004).

Testing Behaviors and Intervention Strategies in the U.S.

It is estimated that as much as 300,000 people living in the United States do not know that they are HIV/AIDS positive, meaning getting tested for the disease is crucial for reducing the spread of the virus. Moreover, people who know their HIV/AIDS positive status through
testing cannot only become aware of their status, but they can start to receive education and counseling regarding prevention (Lauby, Bond, Eroglu, & Batson, 2006). According to data from the National Health Interview Survey that was analyzed by the CDC, more than 30,000 respondents were surveyed about their perceptions of risk and their testing behaviors. The data from the study showed that African Americans (slightly more than 45%) tested more often for the disease. Moreover Hispanics at 33.1% had the second highest frequency for HIV/AIDS testing compared to Whites at 28.5% testing rate. The reasons cited for testing also varied according to race and ethnicity. African Americans mainly took an HIV/AIDS test because they simply wanted to know their status; however Whites took the test for reasons ranging from insurance policies, jobs, and for the military. Hispanics got tested because of recommendations by health care providers, insurance companies and because of entrance into a hospital (Centers for Disease Control HIV Testing, 2001).

Throughout the past decade, there have been several nationwide campaigns designed to encourage people to get tested for HIV/AIDS. The “Know HIV/AIDS” campaign sponsored by CBS, Viacom, and the Henry J. Kaiser Family Foundation is one of the biggest media campaigns designed to encourage people to test for the disease. The various campaigns attempt to convince people to learn their HIV/AIDS status, so they can protect themselves and their partners. The CDC has introduced several initiatives to reduce the spread of HIV/AIDS. One of the major programs is “Advancing HIV Prevention” that includes four components (1) allowing for HIV testing as a regular aspect of medical care, (2) implementing new techniques for determining HIV as part of the medical environment, (3) stopping the spread of the virus by working with HIV/AIDS positive people and their partners, and (4) reducing the spread of contraction of the disease through prenatal transmission. Moreover, there are prevention programs directly aimed
at minorities. Through the Minority AIDS Initiative, the CDC examines methods to decrease health disparities among minorities who are at greater risk for contracting HIV/AIDS. Methods include but are not limited to awards and indirect funding for community based organizations that target young people such as “Street Smart” that focuses on youths with no homes and runaways (CDC HIV/AIDS among Youth, 2006).

The Balm In Gilead, a not-for-profit organization, aims to improve the health of people across the African Diaspora. The main disease addressed by the organization is HIV/AIDS. A program of the Balm In Gilead is the Black Church HIV/AIDS Network. The network includes churches that are both domestic and international. The mission of the network includes administering HIV/AIDS prevention information to the community and church goers, and participating in training programs about church ministry and programs that focus on HIV/AIDS education (The Balm in Gilead, 2007).

Need for the Study and Objectives

Not only is scholarly research limited on college students and their sexual behaviors, but there is also a need for more research that strictly focuses on African American college students and their sexual practices. Foreman (2003) explicates that there have been few studies done to examine why college students do not use condoms on a consistent bases. Therefore, an important criticism of research conducted on HIV/AIDS includes a lack of African Americans in the research samples, and not enough analysis done that only encompasses African Americans (Beatty, Wheeler & Gaiter, 2004). Research regarding HIV/AIDS among African Americans has been mainly concentrated in the area of low income population, intravenous drug users or those who live in urban areas. At the beginning of the AIDS epidemic, college students were not
considered an at risk group for contracting the virus, however throughout the following decades that has changed (Ferguson et al., 2006).

It is necessary to examine factors that are important in developing HIV/AIDS communicative intervention strategies for African American college students. In recent years, communication practitioners and scholars have not only developed HIV/AIDS campaigns that informed the public but there has been a shift to develop more campaigns to change behaviors, especially risky behaviors related to sexual activity. The results of the current study on African American college students will aid in giving scholars and health care program managers and communication practitioners more knowledge about a group that has been understudied in many areas of HIV/AIDS.

*Conceptual Frameworks for the Study*

Health campaigns are used to inform or persuade a target audience to take part in a certain behavior. Successful health campaigns over the short term may not lead to the desired behavior change; therefore, it is important for researchers and/or practitioners to develop health campaigns that focus on long-term strategies and goals (Ratzan, 1993). In order to increase the success of public health campaigns, theories are used to help develop messages and other intervention strategies in campaigns. Social Cognitive Theory (SCT) is used in many health campaigns especially HIV/AIDS because many campaigns anchor their foundation within a social cognitive approach. The Health Belief Model (HBM) and Theory of Reasoned Action (TRA) are also used as theoretical foundations for health campaigns. Behavioral determinants such as knowledge, attitudes, outcome expectancies, perceived self-efficacy, perceived susceptibility, perceived benefits, social support, and beliefs, are some of the social cognitive
constructs used in health campaigns that emphasize turning knowledge into behavior change (Bandura, 2004).

The conceptual frameworks for this study include different elements from the theories listed above and past research investigating HIV/AIDS. The health communication theories that have informed this study include the Health Belief Model (HBM), Theory of Reasoned Action (TRA), and Social Cognitive Theory (SCT). These theories are crucial for the development of health campaigns because they aid in identifying important variables that work together to produce a desired outcome. During the beginning of the HIV/AIDS crisis, academics and practitioners assumed that providing accurate information about the disease to individuals would be enough for behavioral changes. The current set of intervention strategies for today’s programs are a result of both cognitive and psychosocial approaches that are used to aid in the reduction of the spread of HIV/AIDS by targeting not just the knowledge/awareness variables but also focusing on specific factors that are predictive of risk reduction behaviors (McKee, Bertrand, & Becker-Benton, 2004).

The specific goals of this study have been informed by the research done by Goswami, Wulfert & Wan, and Velu. Goswami (1996) examined relationships between HIV/AIDS knowledge, attitudes, cognitive & behavioral involvement, knowledge gaps within socio-economic classes, and sexual activity among Indian college students. Wulfert & Wan (1993) examined condom use among heterosexual college students in the U.S., while Velu (2002) examined psychosocial predictors of condom use among female commercial sex workers. Consistent use of condoms during sex is at present considered to be an important risk reduction behavior vis-à-vis HIV/AIDS prevention. Wulfert & Wan and Velu identified and examined several important psychosocial factors such as knowledge, outcome expectancy, peer support,
perceived vulnerability of risk, and condom use self-efficacy with consistent condom use. The definitions of the constructs used in this study can be found starting on page 22. This study will replicate many of these goals on a sample of African American college students who constitute an understudied and a vulnerable group with regard to HIV/AIDS infection.

Specific Objectives of the Study

First Objective

An important objective is to examine certain social and psychological variables in the context of HIV/AIDS prevention. The variables chosen for this study are: HIV/AIDS knowledge, attitudes, socioeconomic status, cognitive/behavioral involvement, and risky behaviors. The study will identify and measure these variables and examine hypothesized relationships between the variables named above. The outcome is to provide research results on these social-psychological variables, especially the relationships between them. This will facilitate communication and educational interventions to target influential variables pertinent to attitude and behavior change in the context of HIV/AIDS prevention.

The following hypotheses are proposed:

**H1**: Knowledge about HIV/AIDS will be related to positive attitudes toward HIV/AIDS.

**Justification**: Knowledge levels regarding HIV/AIDS transmission routes, symptoms, and consequences have improved significantly since the mid-1980s, largely due to the exposure from mainstream mass media outlets, educational and communication campaigns. While increased knowledge and awareness is important, positive attitudes toward HIV/AIDS and people with AIDS is equally important. What is the relationship between knowledge and attitudes? It is hypothesized that higher levels of knowledge will be directly related to positive attitudes toward HIV/AIDS.
Goswami (1996) tested the hypothesis that knowledge about AIDS and AIDS-related issues will be positively related to attitude towards AIDS. The research revealed among a sample of students from India that the students who had greater knowledge about AIDS had a more positive attitude towards AIDS, people who were AIDS positive, and toward safe sex practices. One of the specific findings was that students who were more knowledgeable about AIDS not only had better attitudes about safe sex practices but they also had more favorable attitudes about using condoms (Goswami, 1996). McCann and Sharkey (1998) conducted a study and found a positive relationship between knowledge and attitudes about HIV among Australian and Asian nurses. This study showed that the nurses were more likely to disagree that people who were HIV/AIDS positive should be isolated from the rest of the community. Evans and Durant (1995) examined among British respondents the relationship between knowledge of science and levels of support for science. The researchers wanted to know if scientific understanding is related to an increased positive view of science and scientific research. The findings of the study showed that the respondent’s attitudes toward science depended on issues that seemed to be important to them and how the questions were asked of them. The researchers reported that “using a measure of scientific understanding that appears to be both internally consistent and strongly related to relevant indicators of validity, we have discovered some evidence that higher levels of knowledge are indeed associated with more supportive attitudes towards science” (Evans & Durant, 1995, p. 70).

**H2**: Cognitive involvement (with HIV/AIDS) will be positively related to behavioral involvement with HIV/AIDS.

**H3**: Cognitive involvement (with HIV/AIDS) will be positively related to knowledge about HIV/AIDS.
**H4:** Behavioral involvement (with HIV/AIDS) will be positively related to knowledge about HIV/AIDS.

**Justification:** Chaffee and Roser (1986) state that involvement is an important variable in determining how an individual will interpret a message. It is postulated that people who are more involved with a topic or issue will be able to process the information in more detail. Involvement can be classified into areas consisting of (1) cognitive involvement, consisting of a heightened state of awareness, and (2) behavioral involvement or information seeking.

It is important to study the relationship between involvement and knowledge given the knowledge gap found in many studies between groups of people. Several research studies have demonstrated a positive correlation between socio-economic indices (ex. income, educational levels) and higher levels of knowledge (Tichenor et al., 1970, 1973; Werner, 1975). However, while this relationship may have heuristic research value, it is of little use to administrators and practitioners since socio-economic indicators are relatively non-manipulable in the short run. So, communication program managers and campaign planners will need to look at other manipulable variables that could be used to reduce knowledge gaps, wherever they may exist. Two such variables are cognitive and behavioral involvement on the part of the targeted individuals.

In a study of college students in India, Goswami (1996) found a positive correlation between cognitive and behavioral involvement. Students who had a heightened state of awareness or attention to HIV/AIDS were also more likely to be active seekers of information on HIV/AIDS and vice versa. Other research studies have shown that higher cognitive involvement and more information seeking are associated with more knowledge (Melkote, Muppidi, & Goswami, 2000; Salmon, 1986). Rimal, Flora and Schooler (1999) found that higher information seeking behaviors regarding cardiovascular disease was related to greater knowledge.
levels and interpersonal communication about the disease. Similarly, other studies have indicated that active information seeking or behavioral involvement of individuals was a predictor of higher knowledge levels (Ettema et al., 1983; Ettema and Kline, 1977).

**H5a:** Socioeconomic status index (SES) of a person will be positively related to knowledge of HIV/AIDS, indicating a knowledge gap between persons of high and low socioeconomic status.

**H5b:** Cognitive involvement (with HIV/AIDS) will narrow the knowledge gap between persons of high and low SES.

**H5c:** Behavioral involvement (with HIV/AIDS) will narrow the knowledge gap between persons of high and low SES.

**Justification:** Various socioeconomic characteristics exist that are related to HIV/AIDS. HIV/AIDS has had higher prevalence in communities that are low-income and inner city urban areas with populations of more than one million residents (Kelly, 2003). People who are living in poverty are usually less likely to be able to obtain access to quality health care or information about HIV/AIDS prevention. Persons of lower socioeconomic status tend to spend their time focusing on the basic necessities of life such as shelter, food and money, which can negatively affect the amount of time and resources they can invest in getting information about HIV/AIDS (Centers for Disease Control and Prevention, 2007).

Tichenor et al. (1970) explained that the mass media continue to disseminate an abundance of information to sections of the population with higher socioeconomic status and that this population will usually receive the information faster than individuals of a lower socioeconomic status leading to a greater gap in knowledge between people of higher and lower socioeconomic levels. Goswami (1996) tested the knowledge gap hypothesis among Indian
college students and found that there was a knowledge gap between the students of different levels of socioeconomic status.

Knowledge gaps in the target population due to differences in socioeconomic indicators such as income, education, etc. constitute barriers to effective information dissemination. As explained earlier, socioeconomic factors such as income and education are relatively non-manipulable in the short run. Therefore, it is important to identify other factors that are more manipulable in a project situation that could narrow or eliminate the knowledge gap. Behavioral involvement or information-seeking on the part of the targeted individuals have been known to reduce knowledge gaps. Ettema, Brown, and Luepker (1983) showed that the motivation to acquire information in the specific knowledge domain under study was a significant factor mediating gap effects. Goswami (1996) also showed in his study on college students in India that the direct correlation between socio-economic factors and knowledge levels was reduced when the effects of involvement such as cognitive and behavioral involvement were statistically partialled out.

**H6:** Behavior (safe sex behavior) will be predicted by knowledge, attitude, and cognitive and behavioral involvement factors.

**Justification:** Previous research has suggested that active processing of messages are determined by levels of involvement (Ray, 1973). Salmon (1986) has shown that cognitive and behavioral involvements have been shown to lead to greater levels of knowledge. In turn, knowledge levels are predictive of performing preventive behaviors. Research studies have reported a large data base that has built connections between knowledge of relevant health issues and problems and preventive behaviors. Thus, the importance of accurate and credible information/knowledge on HIV/AIDS can play a key role in leading to risk reduction behaviors. In a recent public opinion
poll, a large number of people reported that messages about prescription drugs in the mass media directly targeted at them had positive influences on their attitudes and risk reduction behaviors (http://www.harrisinteractive.com, 2007). Fishbein and Middlestadt (1989) have also shown conclusively that knowledge of HIV/AIDS transmission is a potential determinant of AIDS risk reduction behaviors. Even in situations where knowledge alone is not sufficient to influence behavior, information about risks associated with a certain action along with other relevant factors can provide a platform to consider different options for risk reduction behavior (Carovano & Middlestadt, 1993). Hingson, Strunin, Berlin, and Heeren (1990) as well as Shafer and Boyer (1991) showed in their research that use of safe sex measures such as wearing condoms during sex were significantly related to HIV/AIDS knowledge factors. Attitudes have also been shown to be influential to behavior. The Health Belief Model stipulates that an individual’s attitudes toward ill-health or its negative consequences will influence the actions or behaviors that the individual will take to ward off the ill-health condition (Rosenstock, Stretcher, & Becker, 1994).

Second Objective

A frequently suggested strategy in the context of HIV/AIDS prevention cited in medical literature as well as by UNAIDS and other field agencies is the consistent use of condoms during sex. Therefore, the second objective of this study is to examine relevant and important factors that are related to and/or predictive of consistent and sustained use of condoms during sex. The influential factors identified in the literature include the following: knowledge (of and about HIV/AIDS), perceived vulnerability (to HIV/AIDS), peer support, outcome expectancies (related to the keeping and use of condoms), and condom use self-efficacy. The outcome of this objective is to provide research based results that will facilitate health communication/education
campaigns to develop interventions that would influence factors pertinent to the sustained use of condoms during sex.

The following hypothesis is proposed:

**H7**: Condom use will be predicted by HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancies, and condom use self-efficacy factors.

**Justification**: As noted in an earlier section of this chapter, research studies have built connections between knowledge of relevant health issues and problems and preventive behaviors. Thus, the importance of accurate and credible information/knowledge on HIV/AIDS can play a key role in leading to risk reduction behaviors (Fishbein & Middlestadt, 1989; Carovano & Middlestadt, 1993; Hingson et al, 1990; Shafer & Brown, 1991). The Health Belief Model has also suggested that perceptions of vulnerability and the outcome expectancies of preventive behavior influence preventive behavior. Studies have shown that negative outcome expectancy of condom use could have a retarding influence on the use of condoms (Ford, Wirawan, & Fajans, 1998; Prybylski & Alto, 1999). Support of peers in executing preventive behaviors has also been supported (McAlister, 1987). Self-efficacy along with social modeling are other factors that have been used in communication campaigns related to AIDS prevention (Freimuth, 1992; Jana, 1997; Velu, 2002).

**Third Objective**

The third objective of this study is to look at the relative vulnerability between the two genders to HIV/AIDS infection. A research question rather than a hypothesis is proposed under this objective because not much research data exists to hypothesize a relationship. The following question is posited for investigation:

**RQ**: What is the relative vulnerability of males vs. females to potential infection of HIV/AIDS?
In the earlier section under the seventh hypothesis, it was outlined that knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy are influential factors in undertaking preventive behaviors such as the sustained use of condoms during sex. This research question, then, will be investigated and answered by looking at variances in HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy factors between males and females.

Definition of Terms

The variables used in the study have been previously operationalized by Velu (2002) and Goswami (1996); however, some of the definitions of terms have been modified to fit the current study.


_Knowledge_ is defined as African American college students’ awareness and familiarity with HIV/AIDS and the means of contracting the disease. This also includes knowledge of safe sex practices. In this study using the factor analysis procedure, the knowledge variable was further subdivided into three categories. The three categories are _knowledge of HIV/AIDS sexual contact_, _knowledge of HIV/AIDS effects and reduction methods_, and _knowledge of HIV/AIDS infection through non-sexual contact_.

_Knowledge of HIV/AIDS sexual contact_ is defined as African American college students’ awareness and familiarity of contracting the disease through sexual contact.

_Knowledge of HIV/AIDS effects and reduction methods_ is defined as African American college students’ awareness and familiarity of the effects associated with being HIV/AIDS positive.
Knowledge of HIV/AIDS infection through non-sexual contact is defined as African American college students’ awareness and familiarity of not being able to contract the disease through non-sexual contact with a person.

Attitudes are defined as African American students’ values, beliefs, and feelings toward HIV/AIDS and toward people who are HIV/AIDS positive. In this study using the factor analysis procedure, the attitude variable was further subdivided into four categories. The four categories are attitudes of person blame, attitudes of quarantine and punishment, attitudes of shamefulness, and attitudes toward HIV/AIDS and persons with AIDS.

Attitudes of person blame are defined as African American college students’ values, beliefs, and feelings about who is to blame in a relationship for contracting the disease.

Attitudes of quarantine and punishment are defined as the respondents’ values, beliefs, and feelings about isolating and punishing someone who is HIV/AIDS positive.

Attitudes of shamefulness is defined as the respondents’ values, beliefs, and feelings of shamefulness of being HIV/AIDS positive or being ashamed of associating with someone who is HIV/AIDS positive.

Attitudes toward HIV/AIDS and persons with AIDS is defined as African American college students’ values, beliefs, and feelings toward the disease and those who are AIDS positive. This variable was not used in subsequent analyses because of a low Cronbach alpha level.

Involvement is defined by two concepts that consist of cognitive involvement, which is defined as a heightened state of awareness/attention; and behavioral involvement, which is defined as active information seeking behavior.

Risk reduction behaviors are defined as the behaviors and actions that African American students engage in that may reduce their risk of becoming HIV/AIDS positive. In this study using the factor
analysis procedure, the risk reduction behaviors variable was further subdivided into two variables. The variables are *sex with multiple partners* and *sex with high risk persons*.

*Sex with multiple partners* is defined as the respondents or their partners having sex with more than one person during a relationship.

*Sex with high risk persons* is defined as the respondents or their partners having sex with persons who engage in practices that put them at a higher risk for contracting the disease.

*Self-perception of risk* is defined as African American college student’s perception of risk for contracting HIV/AIDS.

*Perceived vulnerability* is defined as African American college students’ perceived risk of becoming HIV/AIDS positive from unsafe sexual behaviors. In this study using the factor analysis procedure, the perceived vulnerability variable was further subdivided into three categories. The three categories are *perceived vulnerability in relation to partner’s external characteristics*, *perceived vulnerability if no condom is used during sex*, and *perceived vulnerability of being at risk of contracting HIV/AIDS*.

*Perceived vulnerability in relation to partner’s external characteristics* is defined as African American college students’ perceived risk of contracting HIV/AIDS if the partner appears to be not at risk for contracting the disease.

*Perceived vulnerability if no condom is used during sex* is defined as African American college students’ perceived risk of contracting HIV/AIDS if no condom is used during a sexual act.

*Perceived vulnerability of being at risk of contracting HIV/AIDS* is defined as African American college students’ perceived risk of contracting the disease. This variable was not used in subsequent analyses because of a low Cronbach alpha level.
Outcome expectancies are defined as the consequences the African Americans students expect to result from using or not using a condom during sex. In this study using the factor analysis procedure, the outcome expectancy variable was subdivided into five categories. The five categories are outcome expectancy of convenience, outcome expectancy of HIV/AIDS prevention, outcome expectancy regarding negative interpersonal relations, outcome expectancy of condom unreliability, and outcome expectancy of condom accessibility.

Outcome expectancy of convenience is defined as the respondents’ expectations of his/her partner reactions to convenience of condom use.

Outcome expectancy of HIV/AIDS prevention is defined as the respondents’ expectations of regular condom use.

Outcome expectancy regarding negative interpersonal relations is defined as the respondents’ negative expectations of asking a partner to use a condom.

Outcome expectancy of condom unreliability is defined as the respondents’ expectations of the reliability of using condoms.

Outcome expectancy of condom accessibility is defined as the respondents’ positive or negative expectations of condom accessibility.

Peer support is defined as African American college students’ perceptions whether people important to him/her (sexual partner/s), friends, community and the general society are in agreement with keeping and using a condom during sex. In this study using the factor analysis procedure, the peer support variable was further subdivided into two categories. The two categories are interpersonal support and peer support for condom use.

Interpersonal support is defined as the respondents’ perceptions of family, friends, and the community caring about and listening to issues regarding his/her health.
Peer support for condom use is defined as the respondents’ perceptions of family, friends, and the community support of his/her condom use.

Condom use self-efficacy is defined as the degree of confidence that the respondents show in their ability to engage in safe-sex practices by obtaining condoms, keeping condoms, negotiating condom use and using condoms with their partner/partners to protect themselves from contracting HIV/AIDS. In this study using the factor analysis procedure, condom use self-efficacy variable was subdivided into five categories. The categories are self-confidence in condom use, condom use self-efficacy with partner, positive feelings of condom use, accessibility to condoms, and condom use self-efficacy at home.

Self-confidence in condom use is defined as African American college students’ perceptions in their ability to properly use a condom.

Condom use self-efficacy with partner is defined as the respondents’ perceptions of their ability to get partners to use a condom.

Positive feelings of condom use are defined as the respondents’ positive feelings about using condoms during sex.

Accessibility to condoms is defined as the respondents’ beliefs that they will be able to obtain a condom. This variable was not used in subsequent analyses because of a low Cronbach alpha level.

Condom use self-efficacy at home is defined as the respondents’ feelings that it is possible to keep condoms at home. This variable was not used in any subsequent analyses.

Socioeconomic status (SES) in this study comprises the students’ mother’s and father’s education levels and total household income.
Organization of the Study

Chapter 2 includes a comprehensive review of literature pertaining to the subject matter of this study. This chapter also includes a description of the theoretical framework used to help develop and guide the research.

Chapter 3 describes the methodology used in this study. This chapter also includes description of data collection and compilation procedures used in this study.

Chapter 4 describes data analysis and the results of the statistical analysis of the data in this research.

Chapter 5 entails a summary of the complete study. There is summary information regarding the findings of the current study and a discussion of the importance of the current findings. Lastly, there is a discussion regarding the implications of the current research findings for HIV/AIDS intervention strategies that may be useful to health education/communication practitioners, administrators, and field agencies.
CHAPTER II. REVIEW OF LITERATURE

The Role of Communication Channels in HIV/AIDS Prevention

It is apparent that communication’s role is important in almost every aspect of health; however, communication might be one of the most important factors in HIV/AIDS prevention. More than twenty-five years after HIV/AIDS was first diagnosed, medical researchers are still researching for a cure or vaccine for the disease. Since, there is no vaccine or cure for the disease, there has been an emphasis on prevention. In order for people to take the right precautions to help them not become HIV/AIDS positive, they must be properly informed and they must want to respond in the correct manner to the information that they have obtained about protecting themselves (Edgar, Fitzpatrick, & Freimuth, 1992). According to Melkote, Muppidi, and Goswami (2000):

Although HIV has been identified as the etiological agent causing AIDS, transmission of this virus depends on human behavior related largely to sexuality and drug use. Communication plays an important role in this process because it disseminates information that may prevent risk behavior and spread awareness leading to reduction of social stigma. (p. 17)

Because communication is such an important intervention tool in HIV/AIDS prevention, it is important for both scholars and practitioners to better understand the role of different communication channels used in disseminating HIV/AIDS information.

There are several forms of communication dissemination methods that can be used to distribute HIV/AIDS information. According to Ginn (1987) there are five main entities that share the responsibility of administering HIV/AIDS information. The five sectors are: service organizations at the state, local and national levels; health professionals such as doctors and researchers; consumers such as people who are HIV/AIDS positive and the general public who are also responsible for information sharing; the government that disseminates information at
both the local, state and national levels such as the Centers for Disease Control; and last, are the media.

As a means of eradicating the disease, most nations have implemented media campaigns as a means of education and prevention. Most of the campaigns have used the mass media as the main channels for disseminating the information. “Although the precise impact of mass media on reducing AIDS risk behaviors is continually debated, knowledge about AIDS is obtained most often from mass media (i.e., television, radio, newspapers, magazines, pamphlets, and posters) rather than from interpersonal sources (i.e., friends, health workers, or the workplace)” (Myhre & Flora, 2000, p. 29). The use of communication and communicative strategies are not only used in preventing HIV/AIDS, but are also beneficial for giving literature and information regarding how to live with the disease if one is HIV/AIDS positive. Effective communication is the main intervention for prevention, reducing stigma, gaining knowledge about rights and options regarding available services and treatment (Goldstein, Usdin, Scheepers, & Japhet, 2005).

In agenda setting, the news media set the stage for the type of information that is presented to the public. At the beginning of the HIV/AIDS epidemic during the early 1980s, the Centers for Disease Control (CDC) sent weekly reports to the media about the disease, but at that time HIV/AIDS was not on the media’s agenda. It took roughly 2 years after the first case was detected before a news story about HIV/AIDS appeared on the cover of the New York Times, and President Ronald Regan did not address the epidemic until 1987. It is critical for any issue to be addressed by the President or be illustrated on the front cover of the New York Times because these two events usually allow for any issue to gain more national attention (Singhal & Rogers, 2003).
Rogers, Dearing and Chang (1991) identified four specific eras of HIV/AIDS media coverage. The four eras are initial era, a science era, human era, and political era. The initial era relates to how the science agenda and the enormity of the situation affected the media agenda. During the science era, dissemination of HIV/AIDS information started to dominate the news and in return affect the media agenda, which started affecting the polling agenda. The human era was the result of the polling and media agendas influencing each other. For example, media groups would sponsor polls about the disease and then give stories about the data from the polls. During the political era, policy agenda was influenced by both media and science agendas (Rogers et al., 1991).

Media coverage of HIV/AIDS is a vital part in the fight against the disease. In spite of a 2003 survey by the Kaiser Family Foundation that indicates more than 70% of the people in the U.S. obtain most of their information about HIV/AIDS through mass media sources, some researchers believe that the media coverage of the disease has not been consistent (Brodie, Hamel, Brady, Kates, & Altman, 2004). Swain (2005) gives an in-depth illustration of HIV/AIDS role and portrayal in the media throughout the past 25 years. The author quickly points out that the media’s coverage of the disease has been erratic. From, the early 1980s, many journalists and news organizations had to be convinced to cover the disease. During the 1980s, the coverage of HIV/AIDS was marked by a sudden rush of coverage. Media coverage of the disease focused on transmission, San Francisco bathhouses, and concerns about the disease being connected to gay relationships. Moreover, because of its means of transmission, HIV/AIDS was also associated with a germ panic. “Lack of security against fatal infection caused by a superbug coexisted with a moral panic about forms of social deviance including homosexuality, promiscuity, and intravenous drug use” (Swain, 2005, p. 258).
The HIV/AIDS epidemic was framed in the media as an emergency and not as an event that has lasted for more than two decades. During the 1990s, HIV/AIDS coverage was prompted by celebrity announcements such as Magic Johnson and Arthur Ashe revealing to the public about their HIV positive status. Other HIV/AIDS coverage in the 1990s focused on the number of heterosexual people with the disease, the introduction of protease inhibitors or new medications, and the growing epidemic of AIDS in Africa.

There has been some concern that in the 21st century, HIV/AIDS has been framed in the media as a disease that has been all but cured giving a false impression to the public and may have aided in a complacency toward AIDS prevention behaviors. According to Swain (2005):

The sharpest decline coincided with the reframing of HIV infection from absolute death sentence to chronic disease. This decline also occurred during a time when there were few major new developments in vaccines and treatments and when African Americans were increasingly infected. (p. 259)

In the media, the issues of AIDS have had to compete with other health issues. Moreover, since the beginning of the 21st century, most of the coverage about the disease has focused on AIDS in Africa (Swain, 2005).

Research conducted through the Kaiser Family Foundation sought to answer questions about the media’s coverage of HIV/AIDS. Some of the questions were focused on the amount of coverage of the epidemic since the early 1980s; the changes in topics; the coverage of AIDS in the U.S.; coverage of the global epidemic; the amount of stories focused on education about public transmission, prevention, testing, and treatment; balance of optimism versus pessimism in AIDS coverage; and the important differences between print and broadcast coverage (Brodie et al., 2004).

Brodie et al. found that of 41,000 news stories in the print and broadcast media on HIV/AIDS between 1981 through 2002, the coverage increased during the 1980s and peaked
with more than 5,000 stories during 1987. By 2002, there were less than 1,000 stories on the topic. The coverage of HIV/AIDS coincided with popular events such as AIDS affecting the U.S. blood supply, and President Reagan’s response to the disease. By the early 1990s, most of the stories surrounding HIV/AIDS were linked to Magic Johnson announcement about his positive status and the death of Arthur Ashe. By the dawn of the 21st century, most of the stories shifted to HIV/AIDS in Africa. Events that have triggered more media coverage of the disease are the international AIDS conferences. Three percent of HIV/AIDS coverage is attributed to international conferences and it has increased during the past years, and the amount of media coverage rose significantly during the period of a big conference (Brodie et al., 2004).

More than 90% of the stories were from a U.S. perspective but during the late 1990s more of the stories especially through the broadcast medium took on a global perspective of the disease (Brodie et al., 2004). The mass media as tools to prevent the spread of HIV/AIDS have been used less in the U.S. compared to many other countries such as in parts of Africa (Romer & Hornik, 1992). In terms of groups portrayed in the coverage of HIV/AIDS, gay men who dominated the headlines during the early 1980s quickly declined in the news media stories about AIDS. However, other groups that are greatly affected by the disease declined in coverage such as minorities. The people used in stories were very seldom related to a specific group. Moreover, the topics of the stories were mainly focused on prevention and education; however roughly 11% of the stories focused on research. Only one in ten stories was based on transmission and social issues, for example different types of discrimination (Brodie et al., 2004).

During the middle to late 1990s, slightly more than 25% of the media coverage of HIV/AIDS was optimistic and a little less than 25% was pessimistic with the other stories being
more neutral. Also, during the time frame of 2000 through 2002, broadcast news coverage was more pessimistic. Throughout the years, stories relating to prevention and education have also declined which is troubling since a survey done in 2000 found that four in 10 Americans thought that one could get HIV/AIDS through kissing (Brodie et al., 2004). It is debatable if media fatigue has occurred since the amount of HIV/AIDS stories has declined. However, it is normal for media outlets not to cover a topic if there are no new developments and when an illness mainly affects small and marginalized groups of people in the United States (Brodie et al., 2004).

There have been many barriers in using the mass media to promote HIV/AIDS awareness. During the 1980s and 1990s, because of the topic there were less national television campaigns focusing on the benefits of using a condom. Secondly, for television campaigns, it was difficult to buy television time because many public service announcements use donated air time and it was challenging to obtain a good air time for HIV/AIDS public service announcements. However, by the late 1980s and early 1990s, more television shows such as A Different World started airing episodes that focused on HIV/AIDS and prevention (Romer & Hornik, 1992).

Theoretical Frameworks

In any research, it is crucial to have a theoretical foundation for bases of assumptions. Theories are useful as aids in organizing and giving a synopsis of knowledge. One of the most helpful characteristics of theories is that they allow a conceptual map for researchers to examine variables and their relationships. “Many theories allow the inquiry to make predictions about outcomes and effects in the data. This ability to predict is important in the applied communication areas such as persuasion and attitude change, psychotherapy, small group dynamics, and organizational communication” (Littlejohn, 1983, p.14).
In health education, there are academicians and practitioners who in many instances have different views about using theories in health campaigns. Among scholars who are interested in examining what factors determine an individual’s health decisions and behaviors, theories are important for developing a foundation for research and intervention strategies. Scientific theories are crucial because they are the building blocks for understanding behaviors. However, practitioners are sometimes more concerned about delivering concrete results and policies, so their foundation is based on strategies not theories (Hochbaum, Sorenson, & Lorig, 1992). In the case of HIV/AIDS intervention, Leviton (1989) indicates that formal scientific theories are crucial because they help to eliminate mistakes regarding dogmas about HIV/AIDS prevention.

There are a host of theories and models that have been used in health communication campaigns to show changes in human behaviors. Behavioral theories have aided researchers in explaining and predicting behaviors that are considered to put a person at high risk for contracting HIV/AIDS. “Behavioral theories provide insights into health behaviors at the individual, dyadic, social network, organizational, and societal levels of analysis” (Miabach, Kreps, & Bonaguro, 1993, p.23). The main group of behavioral theories used in communication along with other disciplines such as psychology and sociology include Social Cognitive Theory (SCT), the Health Belief Model (HBM), and the Theory of Reasoned Action (TRA).

SCT, HBM, and TRA are the theoretical frameworks used to guide the current study. First, the three theories are the dominant theories of health behavior, promotion, and education (Glanz, Lewis, & Rimer, 1997). Moreover the theories used in the study have guided past HIV/AIDS campaigns. The three micro level theories are important for the current research because they focus on individual behavior change versus macro level approaches or theories
such as Social Marketing and Diffusion of Innovations that emphasize the socio-cultural environment (Lapinski & Witte, 1998).

**Social Cognitive Theory**

Social Cognitive Theory (SCT) has its foundation in psychology and it branched from social learning theory, which focuses on the psychosocial elements of health behaviors and tools for promoting behavior change. The theory describes the psychosomatic through the lens of what people think based on their perceptions and its effect on their behaviors (Perry, Baranowski, & Parcel, 1990). SCT was developed by Albert Bandura during the mid-1980s and is used by many researchers in health communication because it encompasses aspects of health behavior and mass media effectiveness. The main tenets of the theory for behavior changes help to construct health educational media (Maibach, 1993). Maibach (1993) wrote:

> As a theory of behavior, social cognitive theory has achieved the highest standards of utility, in that it can predict behavior, it can explain behavior, and most importantly, it can be used to help correct dysfunctional behaviors. Moreover, the causal mechanisms specified in social cognitive theory have been shown to operate across a broad spectrum of both health and nonhealth related behaviors. SCT has been used effectively to explain and correct a diverse set of health problems including smoking, weight, and dietary control, lack of exercise, failures in contraceptives practices and AIDS risk behaviors. (pp. 208-209)

A significant concept of social cognitive theory is self-efficacy. Self-efficacy is the belief that a person can successfully carry out a specific behavior that will lead to a desired outcome (Rosenstock, Strecher, & Becker, 1994). Self-efficacy is used to distinguish what people’s beliefs in their abilities are and if they can change their current situation. The main focus is a person’s confidence to overcome any situation under given circumstances. Self-efficacy is an important AIDS prevention strategy in HIV/AIDS campaigns through encouraging enhancements in AIDS prevention self-efficacy. Secondly, self-efficacy is important because it
allows for modeling appropriate AIDS behaviors in order to increase a person’s self-efficacy (Maibach, 1993).

SCT aids in the realization that it is crucial to inform people about the risk of contracting HIV/AIDS and also provide the best means of protecting oneself from becoming infected. Thus, it is imperative to remember that information about impairing health habits is needed, but people must also be given the resources and means to alter any risky behaviors. The audience must receive various self-motivation cues and guidance to engage in successful self-regulatory behavior (Bandura, 1994).

*Health Belief Model*

HBM is another psychological model that aids in predicting and explaining behaviors. The HBM postulates that individual behavior changes are based on how serious a person believes is the perceived threat of contracting the disease or illness. If the perceived threat is high, then there is a greater probability that the individual will adhere to the recommendations in order to reduce the threat (Rosenstock et al., 1994). The model was developed during the 1950s through the U.S. Public Health Service when a group of social psychologists wanted to explain why people were not interested in participating in programs designed to protect them from various diseases such as tuberculosis screenings. Hochbaum, one of the founding fathers of the model, decided not to focus on why people did not take part in the screenings, but focus on why people did participate in the screenings. One of the main variables researched in the 1950s study was perceived susceptibility to health threat that is a part of the principles that shape the HBM (Rosenstock, 1990). Besides perceived susceptibility to health threat, other main principles or components of HBM include perceived severity to health threat, perceived barriers that may cause an individual to not be able to adhere to the proposed recommendations, perceived benefits
of engaging in the recommendations and cues to action (Lapinski & Witte, 1998). Later, Bandura’s self-efficacy idea became an added component to HBM. Self-efficacy was added to increase the model’s explanatory power (Rosenstock et al., 1994). According to Freimuth (1992):

> The model suggests that readiness to engage in a health behavior follows from a perceived threat of disease, coming from an individual’s perception of his or her susceptibility to the disease and its potential severity. The cue for action is a triggering device stimulated by a private perception or by communication from the media or other people. Behavior is evaluated from an estimate of the potential benefits of engaging in the recommended health behavior to reduce susceptibility or severity. The benefits are then weighed against perceptions of physical, psychological, financial, and other costs or barriers inherent in the recommended health behavior. Demographic, social, structural, and personality factors are included in the model because they are believed to indirectly influence behavior. (p.100)

The different components of the HBM have been used in several research studies to examine the relationship between its postulates and characteristics that are associated with an individual being at a higher risk for HIV/AIDS. Survey-based research that has tested principles of the HBM against knowledge, attitudes, and behaviors associated with HIV/AIDS risk has found that perceptions of the disease can have an impact on a person’s behaviors. Another component of the model that seems to have an impact on behavioral change is barriers to change because of finances (Michal-Johnson & Bowen, 1992).

*Theory of Reasoned Action*

The third theory that will be discussed is TRA, which incorporates variables from the HBM. TRA was first introduced during the late 1960s though the theory incorporated more changes during the 1970s and 1980s. Scholars Icek Ajzen and Martin Fishbein expanded the theory in order to study human behaviors. However, by the late 1980s another component was added to the theory to address some of the shortcomings of the TRA. The other component was
perceived behavioral control that led to the theory of planned behavior (Kashima, Gallois, & McCamish, 1992). The TRA focuses on the connections between the beliefs, attitudes, intentions, and behaviors. The theory has been used to explain why people do or do not participate in various behaviors (Fishbein, Middlestadt, & Hitchcock, 1994). A main theoretical underpinning of the theory is that the actual intention to partake in the behavior has a direct effect on that behavior, which is more pronounced when the intention and behavior are close in time. A person’s intention to partake in a given behavior is predicted by the person’s attitude toward the behavior (Kashima, Gallois, & McCamish, 1992). Carter (1990) wrote:

The strength of a person’s intention to perform a specific behavior is a function of two factors: attitude toward the behavior and the influence of the social environment or general subjective norms on the behavior. Attitudes and subjective norms each have two components. Attitude toward the behavior is determined by an individual’s belief that a given outcome will occur if he or she performs the behavior and by an evaluation of the outcome. (p.68)

In terms of the use of theory of reasoned action for HIV/AIDS prevention, various variables within the theory could be used to examine behaviors associated with HIV/AIDS infection/prevention. Moreover, different people from different cultures could have various ideas of what is considered a high risk behavior and what is considered a normal behavior. Different groups could have a different understanding of the same behavior. Kashima et al. (1992) wrote:

The theory of reasoned action implies that intervention programs aiming to bring about health-promoting behavior need to take at least the following factors into account: the specific group of people at which interventions are targeted, the type of behavior that is targeted for change, and the causal influences on the intentions relevant to this behavior. (p.26)

Criticisms of the Theories

There is no denying that the main theories used in HIV/AIDS research among social scientists have been critical tools for guiding and shaping the context and theoretical framework
of research studies. However, many of the theories and models such as social cognitive theory, theory of reasoned action and the health belief model are based on individual level variables and not on the whole community or culture (Airhihenbuwa & Obregon, 2000). The majority of the research on preventive HIV/AIDS measures in the African American community stems from theories and methodologies that are not rooted in a culturally relevant paradigm. The Association of Black Psychologists suggests various cultural characteristics be used in theories and methodologies pertaining to research of African Americans and HIV/AIDS (Beatty et al., 2004). Beatty et al. (2004) wrote:

They proposed an African American cultural precepts (i.e., consubstantiation, interdependence, unicity/egalitarianism, collectivism, transformation, cooperation, humanness, and synergism) that they advanced as significant in understanding and implementing change in African American populations. These precepts were used to guide the development of a training program for prevention practitioners working with African Americans, but the model has theoretical utility for guiding prevention intervention research. (p.45)

Because SCT, TRA, and the HBM place an abundance of emphasis on the individual, scholars have written about the importance of using an Africentric framework to research and develop preventive messages for HIV/AIDS in the African American community. The Africentric model in HIV/AIDS places more emphasis on community and family than the individual. This is particularly important as more young people in the African American community are diagnosed with the disease because many of their decisions are not solely based on their thinking alone but are based on peer pressure. Even though theories such as the TRA do entail the role of significant other in one’s decisions and behaviors, it does have some limitations that might affect research based on African Americans. Communalism and sensitivity are also characteristics of the Africentric model that should be considered (Randolph & Banks, 1993). Randolph and Banks (1993) wrote:
African American families and communities are the bases for subjective norms and thus must be understood as they affect motivation to comply which is strongest among those with an African worldview as opposed to those who are more Eurocentric in their orientation. Because the basis for the African worldview (and thus subjective health norms) is likely to be rooted in the family or community, an understanding of the factors that influence behavior change, including family and community processes, is needed to develop more effective prevention strategies. Thus a more expanded model of health is needed, and it is suggested that it be guided by Africentric dimensions. (pp. 208-209)

As the epidemiology of HIV/AIDS continues to illustrate devastating effects on people of different cultures such African Americans and other minority groups, it becomes extremely important that the theories and models used in developing preventive strategies be culturally consistent and relevant. Allowing more culturally specific constructs to be added to the most used social psychological theories and models used in HIV/AIDS preventive research could aid in making sure the correct prevention messages are reaching the right target audience and helping to change the audience’s risky behaviors.

**HIV/AIDS Knowledge**

Statistics have shown that most of the U.S. population has some sufficient level of HIV/AIDS knowledge about virus transmission and various risk factors, but research also shows that there are some groups such as Blacks, Hispanics and the less educated who are not as knowledgeable about various HIV/AIDS topics. Cunningham, Davidson, Nakazono, and Anderson (1999) studied the most used communication channels among both Blacks and Whites, people of different ages, and education levels within a specific urban setting. The researchers’ data came from more than 1760 adults that were interviewed in Baltimore, Maryland. One reason Baltimore was chosen for the study was because of the high percentage of both Blacks and Whites that dwell in urban areas. A cross-sectional design was used for the study and participants were surveyed throughout a nine month time frame.
Cunningham et al. (1999) found that among both Whites and Blacks, educated and less educated participants cited television and other broadcast media as their main sources of HIV/AIDS information followed by newspapers and other print media. The study showed that government and public health agencies were more commonly used for AIDS information among the 35-44 years age group versus the older respondents. Also, family and friends as sources of information were more common among Blacks than among Whites. Moreover, the research showed differences among doctors or physicians as the source of HIV/AIDS information.

Cunningham et al. (1999) wrote:

Lower educated younger Blacks, arguably the riskiest stratum in the sample were more than twice as likely as their White counterparts to have received AIDS prevention education from their medical doctors. This finding suggests that medical doctors are approximately targeting this high-risk group for more intensive AIDS prevention messages. In addition, both physician in high-risk areas and lower educated younger Blacks might have more frequent contact with those who are HIV infected. (p. 709)

One of the biggest differences in sources of information came from churches or some type of religious organization. Blacks were more likely than Whites to obtain information about the disease from religious organizations (Cunningham et al., 1999).

Henderson et al. (2004) examined information sources and knowledge of HIV/AIDS among women 50 years and older. The three objectives of the study were to inquire about their basic knowledge, assess their information sources, and examine the relationship between knowledge and sources.

Approximately 515 female participants were selected from an urban general medical clinic. Henderson et al. (2004) found in terms of knowledge about HIV/AIDS that most of the women did not possess a lot of information. More than 60% of the women only answered a few questions correctly. Regarding level of symptom knowledge about HIV/AIDS it revealed that
more than 60% thought that kissing on the lips was a possible means of transmitting HIV/AIDS. In the case of information sources, most of the women cited television followed by friends, family, and the newspaper as their main sources for HIV/AIDS. Lastly, about 38% received information from a health professional. There was also a relationship between age and knowledge with women roughly 59 years and younger knowing more about the disease than women 60 years and older (Henderson et al., 2004).

Engelberg, Flora, and Nass (1995) examined channels of HIV/AIDS information and their relationship with actual knowledge and perceived knowledge about the disease. The researchers hypothesized that 1) the amount of high involvement channels used for AIDS information will be positively associated with actual and perceived knowledge and, 2) use of high involvement channels for AIDS information is related to increased levels of perceived and actual knowledge. Interpersonal sources of information were also explored in the study as a high involvement channel (Engelberg et al., 1995).

Engelberg et al. (1995) used secondary data based on the AIDS Knowledge and Attitudes surveys done in 1987. The survey was done by telephone. Newspapers, magazines, brochures, fliers or pamphlets were considered as high involvement channels. Low involvement channels consisted of radio and television. Variables such as age, years of education, gender, race and marital status were used as control variables in the analysis (Engelberg et al., 1995). It was found that channel involvement (high or low) would predict actual and perceived knowledge about HIV/AIDS. The study also found that interpersonal communication, which is considered to be a high involvement channel, was positively related to both actual and perceived knowledge. Demographic variables were related in different ways to levels of channel involvement. The
variable that had the strongest relationship with channel involvement was education (Engelberg et al., 1995).

**Conspiracy Beliefs and African Americans**

African Americans have historical social problems that are associated with their higher numbers of HIV/AIDS. Lower socioeconomic levels and lower levels of education are a couple of social factors that have been associated with HIV/AIDS infection rates in the African American communities. Other factors are homophobia and stigma in the Black community, which in many cases considers homosexuality as immoral and anti-Black (Recommendations for Confronting the Epidemic in Black America, 2006).

Other possible barriers to HIV/AIDS prevention in the African American community are conspiracy beliefs. According to Klonoff and Landrine (1999), some health care workers have suggested that African Americans believe that HIV/AIDS is a virus that has been artificially created by vested interests. Also, there is a belief among some in the African American community, that HIV/AIDS prevention programs are just a hoax and are just a pretext for increasing the HIV/AIDS-affected population within the African American community, which is a part of bigger government-sponsored conspiracy to obliterate the Black community. Klonoff and Landrine (1999) found in their survey of 520 Black adults living in California that slightly more than 25% agreed with the statement “HIV/AIDS is a man-made virus that the federal government made to kill and wipe out black people” (Klonoff & Landrine, 1999, p.455). Moreover, almost 23% reported that they neither agreed nor disagreed with the statement while almost 51% disagreed. Other important findings of the study were that African Americans who agreed with the conspiracy beliefs had higher income and education, which shows that it is not
just people who are poor and less educated who believe in the conspiracy beliefs. Moreover, men were more likely to believe in the conspiracy beliefs because of past discrimination.

There is not a significant amount of research that has examined how conspiracy beliefs about HIV/AIDS among African Americans affect their behaviors and attitudes. According to Bird and Bogart (2005), previous research was conducted through telephone interviews to explore the relationship of HIV/AIDS conspiracy beliefs and birth control conspiracy beliefs to attitudes and behaviors of African Americans. The results of the study showed that roughly 70% of the participants either somewhat or strongly agreed that information about HIV/AIDS was being held back from the public, and slightly more than half believed that there was a cure for the disease but it was not being given to the poor. In terms of the relationship to behaviors and attitudes, Bird and Bogart (2005) wrote:

Belief in HIV government conspiracies was related to less positive attitudes toward condoms for birth control and greater numbers of partners in the past three months, suggesting that mistrust of government institutions reduces openness to public health prevention messages regarding HIV. In contrast, belief in HIV/AIDS treatment conspiracies was related to more positive attitudes about using condoms in the next three months and a greater reported likelihood of using condoms at next intercourse among all respondents. We speculate that individuals who do not trust new treatments for HIV may be motivated to use condoms in order to avoid those treatments. (p.113)

Because there is a significant percentage of the African American population which believes in various HIV/AIDS conspiracies and since these beliefs can be a deterrent from participating in behaviors that reduce the risk of contracting the disease, it is important for prevention educators and researchers to acknowledge these beliefs and address them through culturally tailored messages (Klonoff & Landrine, 1999).

In the fight against HIV/AIDS transmission, there have been several strategies used which have included: testing and counseling, peer education, needle exchange and more;
however, the importance of health communication is sometimes overlooked by those within the field of health care. According to *Healthy People 2010* health communication is vital for decreasing risk behaviors of HIV/AIDS by raising awareness, motivation, and skills needed for risk reduction. Even though the media have had a big impact on getting out the message about HIV/AIDS, there seems to be a problem with getting the message out to African Americans; that is why it is noted that some scholars believe that the messages should be culturally appropriate.

*Socioeconomics and Knowledge Gap*

Social status or socioeconomic levels have been connected to interpretation of an illness though the explanation of socioeconomic indices has been debatable. Using socioeconomic indices to refer to only income, or property would give a personal context and not societal; therefore, socioeconomic status should depict several social elements such as occupation, education, lifestyle, and the personal characteristics that would include money and property (Gochman, 1988).

Tichenor et al. (1970) explain that as the mass media continue to disseminate an abundance of information to public sectors of the population with higher socioeconomic status, the people of higher status will usually receive the information faster than individuals of a lower socioeconomic status leading to a greater knowledge gap between the two groups. Communication skills, stored information/existing knowledge, relevant social contact, selective exposure/acceptance/retention of information, and the medium that delivers the information aid in widening the knowledge gap. An individual who is more formally educated should have higher levels of comprehension than someone who is less educated; also the more educated person is usually already informed about a given topic when the issue is presented in the media. Moreover, education usually allows people to develop more interpersonal contacts and partake in
more activities which generate discussions about public issues. One of the biggest factors tied to education is selective exposure. Tichenor et al. (1970) wrote:

As Sears and Freedman have pointed out, voluntary exposure is often more closely related to education than to any other set of variables. They contend that what appears to be selective exposure according to attitudes might often more appropriately be called “de facto” selectivity resulting from educational differences. Selective acceptance and retention, however might be a joint result of attitude and educational differences. A persistent theme in mass media research is the apparent tendency to interpret and recall information in ways congruent with existing beliefs and values. (p. 162)

Besides selective exposure, the mass media channels that present the information also contribute to knowledge gap. Traditionally people who are more educated and of higher socioeconomic status seek the print media (Tichenor et al., 1970).

There have been some discrepancies in research that tested the knowledge gap hypothesis. Wanta and Elliott (1995) tested knowledge gap after Magic Johnson's announcement that he was HIV positive. The research did not support the knowledge gap hypothesis that people with more education would learn more about HIV/AIDS after Magic Johnson’s announcement than those less educated. The results illustrated that even though there was a knowledge gap between people of more and less education, that gap did not increase; moreover people with less education increased their knowledge more significantly than those who had higher levels of education (Wanta & Elliott, 1995).

Cognitive Involvement

Krugman (1965) illustrated the importance of involvement in mass communication research. Chaffee and Roser (1986) posit that involvement is an important variable in determining how an individual will interpret a message. It is postulated that people who are more involved with a topic or issue will be able to process the information in more detail. There have been debates regarding the definition of involvement. Involvement has been characterized as a
personality trait, and an internal state. Conceptually, involvement has also been characterized as the motivations that get people to pay attention to mass media content, as a state of attention or activation during exposure, and as the information processing which is aroused through attention. Involvement has been operationalized as a component of the medium or the message topic. Involvement can be classified into with 3 areas consisting of (1) cognitive involvement, consisting of a heightened state of awareness, (2) affective involvement relating to self-perception of risk, and (3) behavioral involvement or information seeking (Chaffee & Roser, 1986).

Chaffee and Roser (1986) hypothesized that for every involvement, the high involvement condition would result in greater correlations between knowledge, attitudes and behaviors compared to lower involvement. The data for the study were collected through the Stanford Heart Disease Prevention Program which was designed to decrease the risk of heart disease through education. The study showed that there was a link between knowledge, attitudes, and behaviors to higher levels of cognitive involvement.

Petty and Cacioppo (1984) hypothesized that in situations where there is low issue involvement, the amount of arguments in the message will be more important to determine attitudes than the actual quality of the argument. It would be more important to increase the number of arguments for individuals who are not motivated or have low involvement. Moreover, when there is high involvement the quality of the message would be more important than the number of arguments. After conducting the experiment with college students as participants, Petty and Cacioppo (1984) found the amount of arguments can have an effect on attitudes. Also, if the arguments are well supported they could result in favorable cognitions and more agreement as a result. The study’s findings illustrate that under low involvement condition
more arguments can act as a cue for more thought, but under high involvement the arguments are
scrutinize carefully.

Information seeking is linked to behavioral involvement. Higher levels of involvement
can lead to increase in health knowledge. Information dissemination is a vital part of any mass
media campaign. Mass media campaigns can only reach a certain number of people and can
only provide some information; therefore, campaign facilitators count on the audience to seek
more information (Salmon & Atkin, 2003). Salmon and Atkin (2003) wrote:

In many campaigns, there is a need to provide information that produces knowledge gain
and skills acquisition. If the behavioral components are elaborate or complex, messages
can educate the audience by providing a detailed blueprint. If certain individuals lack the
confidence to carry out the behavior, messages can provide encouragement or training to
enhance self-efficacy. (p.459)

Goswami (1996) examined the relationship between cognitive involvement and information
seeking behavior. It was hypothesized that cognitive involvement and information-seeking
behavior would be positively related to HIV/AIDS knowledge. The hypothesis was supported.
The study found that there was a relationship between cognitive and behavioral involvement
because students who were more aware of the disease were also active information seekers of
HIV/AIDS. Moreover, the students who were active information seekers also had a higher level
of HIV/AIDS knowledge than those who did not seek as much information about the disease.

Perceived Vulnerability/Self-perception of Risk

Self-perception of risk or perceived risk is an individual’s belief that he/she will be able
to contract a certain disease. Perceived risk of a disease is an indicator of a health outcome. Self-
perception of risk has been used in various theories and models that use different names for the
construct which include: perceived susceptibility, probability of occurrence, subjective
probability of threat, and perceived threat (Rimal & Adkins, 2003). Perceived vulnerability to
HIV/AIDS is connected to self-efficacy and outcome expectancies. “A high level of fear combined with low outcome expectations and/or low self-efficacy results in dysfunctional behavior such as denial of one’s own susceptibility and scape-goating of risk groups” (Kok, Harm, Hospers, & Wit, 1997, pp. 237-238).

Melkote and Muppidi (1999) hypothesized that there are different components that might influence self-perceptions of risk for HIV/AIDS. These components consisted of knowledge about HIV/AIDS, attitudes, cognitive, behavioral, and affective involvement, and risk reduction behaviors. The sample for the study was college students living in a small Midwestern city. Their study produced mixed finding among the participants. Melkote and Muppidi (1999) wrote:

The respondents knew that as long as they did not have unprotected sex or use injected drugs their risk of contracting AIDS virus was minimal. Thus, knowledge of AIDS through internal contact with body fluids and from general contact with infected persons did not produce any tension in their minds thus leading to perceptions of lower risk. However, contact with external body fluids such as saliva through cough or sneeze from an infected person or being kissed (even on the cheek) seemed to produce some tension vis-à-vis perceptions of risk even when these respondents were aware that AIDS virus may not be transmitted through external contact. (p. 24)

Oshi et al. (2007) conducted focus groups at three different universities in Eastern Nigeria to explore if a greater perception of risk for HIV/AIDS among undergraduate students would be related to risky sexual behaviors. Participants who were not concerned about contracting HIV/AIDS had one sexual partner and did not use condoms; however the participants who felt that they were at a higher risk for becoming HIV/AIDS positive had more sexual partners and did not use condoms (Oshi et al., 2007)

According to DiClemente and Wingood (1997) among African American adolescents, there is less concern for contracting HIV/AIDS and they are also less likely to protect themselves from becoming HIV/AIDS positive through condom use. African American youth also have the perception that HIV/AIDS is only associated with homosexuality. “Without accurate appraisal
of their personal risk, African-American adolescents may be less motivated to attend to prevention messages and to modify their risk behavior” (DiClemente & Wingood, 1997, p. 65).

Self-efficacy

An individual’s belief or attitude that he/she can achieve an outcome through his/her own actions is self-efficacy. The individual’s perceived self-efficacy is based on his/her belief that he/she has control of the thought processes, emotional state, and behaviors. If a person does not have a high level of self-efficacy, the individual may not be successful in a given situation because of self-doubt (Bandura, 1994). Bandura 1994 wrote:

People’s beliefs that they can motivate themselves and regulate their own behavior plays a crucial role in whether they even consider altering habits detrimental to health. They see little point to even trying if they believe they cannot exercise control over their own behavior and that of others. Even people who believe their detrimental habits may be harming their health achieve little success in curtailing their behavior unless they believe they have sufficient power to resist those who instigate it. (p. 29)

Self-efficacy is an important determinant in reducing risky sexual behaviors that could lead to HIV/AIDS. Research has shown many women do not feel that they are very efficacious in safe sex practices because of lack of authority to change sexual behavior decisions (Moore, Harrison, & Doll, 1994). Ferguson, Quinn, Eng, and Sandelowski (2006) conducted research that explored the social and cultural elements of the campus dating atmosphere and its relationship to HIV/AIDS behaviors. The second main reason for the study was to explore the perceptions of African American college students’ susceptibility to the disease; and lastly, gender differences related to condom negotiations and school officials strategies for prevention.

Ferguson et al. (2006) study consisted of 31 African American students who were separated into four focus groups where group interviews were conducted. During the focus groups, students consistently pointed to the fact that there were more women on campus than men. Because of the imbalance of women to men on campus, the students indicated that men on
campus had more than one sexual partner called “man sharing” and women tend to comply more with a man’s decision whether to use or not to use a condom. Moreover, women in the study felt because of the imbalance that they had less power in the relationship and had concerns about losing their partners to another person so they agreed with high risk sexual practices. The women believed the men would have a negative reaction to using condoms and a woman who wanted to use condom would not be accepted (Ferguson et al., 2006).

Burns and Dillon (2005) tested three constructs: locus of control, self-efficacy, and temporal orientation to examine if the constructs would positively and significantly predict African American college students’ self-reported frequency of condom use within the past six months and lifetime. Locus of control references the extent a person feels that his/her outcomes are decided by his/her own inputs and outputs. The second construct self-efficacy in the study refers to a person’s thinking that an action or behavior can be successfully accomplished which can be used to help predict behavior. The third construct temporal orientation refers to cognitive and behavioral orientation referring to if the participants are dwelling in the past, living for now, or planning for tomorrow.

In the study, the respondents were undergraduate African American students from a historically black college or university (HBCU) in the southeast. The findings of the study revealed that students who showed higher levels of self-efficacy for safe sexual practices had a higher condom usage in the past six months. Also, future time orientation played a role in higher condom usage among participants. For lifetime use of condoms, self-efficacy was always the best predictor of condom usage, moreover future time orientation was also positively associated with lifetime condom usage. Other findings suggest that in terms of gender differences as a predictor of condom usage in the past six months and lifetime, it was more important for men.
For women, future orientation was an important construct in reporting condom usage for six months and lifetime. The research found the AIDS health locus of control did not help decide condom usage among the respondents (Burns & Dillon, 2005).

Research has explored elements of support in behaviors associated with HIV/AIDS. DiIorio et al. (2001) examined among adolescents the roles of self-efficacy, outcome expectancies, and perception of peer attitudes at the beginning of sexual activity and the study examined how the constructs affect the use of condoms among young people who are sexually active. The study was a part of a larger study that consisted of mothers and their adolescents and more than 80% of the participants were African Americans. DiIorio et al. (2001) found that individuals who used condoms on a regularly basis had a higher level of self-efficacy about his/her ability to physically use a condom, communicate about sexual history, and had higher levels of perceptions that their friends used condoms.

**Outcome Expectancies**

An individual’s mindset or belief that a specific action will have a positive or negative outcome constitutes outcome expectancy (Murray-Johnson & Witte, 2003). Positive outcome expectancy is the perceived benefits of conducting a specific action and negative outcome expectancy is the perceived cost of performing an action (Zebracki & Drotar, 2004). Maibach and Cotton (1995) wrote:

Outcome expectations are open to influence through the communication process. Similar to self-efficacy, people develop their outcome expectations through some combination of direct experience, observational learning, and persuasive communication. Health messages that manage to establish new positive outcome expectations or to reinforce existing positive expectations, through demonstration or persuasion, are likely to increase people’s motivation for engaging in the relevant health behavior. Health messages that
reduce or eliminate negative outcome expectations associated with the new behavior are also likely to increase people’s motivation to enact the behaviors. (p. 50)

Outcome expectancy is a construct that has been tested in studies about condom use. Velu (2002) hypothesized that there would be a relationship between outcome expectancies of condom use and condom use self-efficacy. The study did show a significant relationship between outcome expectancies of condom use and condom use self-efficacy among commercial sex workers in India. There was a relationship between commercial sex workers who thought they could persuade their clients to use condoms to reduce their probability of contracting HIV/AIDS and the women’s confidence in using a condom correctly.

Other research about outcome expectancy and condom use includes Wulfert and Wan’s (1993) examination of outcome expectancies, condom use, self-efficacy, and peer group influences, perceived vulnerability, and knowledge about HIV/AIDS. The participants of the study were more than 200 undergraduate students. More than 80% of the participants perceived themselves at a minimum risk for contracting the virus. Moreover, the study revealed self-efficacy was associated with outcome expectancies. Positive outcome expectancies regarding condom use such as to prevent HIV/AIDS were associated with self-efficacy; and, negative outcome expectancies, for example lack of pleasure from condom use was not associated with self-efficacy. O’Leary, Goodhart, Jemmott, and Boccher-Lattimore (1992) examined college students from four different academic institutions located in New Jersey about their HIV/AIDS knowledge, behaviors and other constructs of social cognitive theory. An important finding of the study was that male participants had higher levels of negative outcome expectancies regarding condom use.

Peer Support
There are several different dimensions of social support. Social support can be illustrated as emotional support, appraisal support, instrumental support, and informational support. In the context of health, emotional support is very important because it entails showing love, trust, and caring within the relationship. Appraisal support is also critical because it allows for affirmation and social comparison. Instructional support consists of giving services to aid in an individual’s needs or desires. Informational support encompasses giving someone suggestions or advice to aid in problem solving (Israel & Schurman, 1990).

Social support is critical to an individual’s personal change because changes take place within a network of social influences. People within a given social network can either aid or deter an individual to change various behaviors associated with sexual practices. “Social norms influence behavior anticipatorily by the social consequences they provide. Behavior that violates prevailing social norms brings social censure or other punishing consequences, whereas behaviors that fulfills socially valued norms is approved and rewarded” (Bandura, 1994, p.43).

Lewis and Succop (2000) explored sociocultural factors that influence the frequency of condom use among African American female college students and the history of STD acquisition. The study also tested the relationship between family characteristics, levels of religious affiliation, and perceived normative behaviors with condom usage (Lewis & Succop, 2000).

The participants of the study were undergraduate students who were selected from a university roster. Among African American college women, more than 95% believed that female friends who were sexually active did sometimes use condoms; however, there is a perception that only almost 12% of their friends always used condoms. “The participants who believed their friends used condoms regularly were more likely to report that they, themselves, used condoms regularly than were the participants who believed their friends used condoms
irregularly “(Lewis & Succop, 2000, p.21). There was no meaningful relationship found between perceptions of peers’ condom use and peers’ STD prevalence with the respondents’ STD history (Lewis & Succop, 2000).

Fisher, Misovich, and Fisher (1992) examined undergraduate college students’ relationship between their views of their peers as pro or anti-HIV/AIDS prevention versus the students’ level of HIV/AIDS prevention. The study found that for both males and females there was less importance between participants thinking that their peers used condoms and the participants’ actual condom use. However, there was a stronger relationship between participants who thought that their current or future sexual partner supported using condoms because those participants were more consistent condom users, and among participants who believed that their current or future sexual partner did not support using condoms they were not consistent condom users themselves.

Condom Use

According to Civic (2000), undergraduate students who use condoms have increased. However there is still a significant number that does not use condoms consistently during sex. It has been found that some undergraduates do not use condoms because of embarrassment about buying them, dislike for condoms, usage of other methods of contraceptives, and feel uncomfortable discussing condoms with sexual partners. Some of the research questions explored were: 1) reasons for using or not using condoms in the beginning and later in a relationship, 2) reasons for increasing and decreasing condom use throughout a relationship, 3) reasons for condom nonuse based on objective standard (such as a negative HIV test) or on a subjective judgment or risk, and 4) reasons for condom nonuse for vaginal versus anal intercourse.
The researcher used information from a cross-sectional survey of 215 undergraduate students. The data analysis found that there were very few differences among males and females. In terms of recent sexual behaviors, most of the participants reported having vaginal intercourse more than once a week during the first and most recent month of the relationship. More than 75% of participants reported condoms as the main form of birth control during the first month of the relationship but that dropped to 48% for the most recent month of vaginal sexual intercourse. Also, roughly half of the participants reported consistently using condoms during the first month of the relationship but only 34% consistently used condoms during the most recent months. A few of the reasons given for not using condoms for vaginal sex included knowing that the partner was safe and being familiar with the partner’s sexual history followed by usage of another method of birth control. Other reasons included dislike of condoms and the spontaneous nature of sex. “Knowing one’s partner’s sexual history was chosen by the highest percentage of participants (25%) as the single most important reason for lack of consistent condom use in the first month of the relationship” (Civic, 2000, p. 99). The study also showed that 40% of the participants lessen their condom usage throughout the relationship. The main reasons for not using condoms during anal sex included knowing that the partner was safe, and absence of concerns about getting pregnant (Civic, 2000).

Valentine, Wright, and Henley (2003) examined safe sex practices among allied health students (referring to students who are a part of a cluster of health professions) who mainly attended Historically Black Colleges or Universities (HBCUs) by comparing the two biggest ethnic groups of the study, i.e. Whites and African Americans. African Americans were more likely to use condom; however, a higher percentage of Whites (slightly more than 82%) reported being in monogamous relationships compared to slightly less than 70% of African Americans.
The findings also showed that students living on campus, especially women were more likely to use condoms. Moreover, approximately 63% of African American students had been tested for HIV/AIDS compared to approximately 53% of Whites. The study illustrates that for African American allied health students the gap between behavior and knowledge is not too wide compared to the same demographics in other studies which leads researchers to advocate using allied health students to coordinate and formulate prevention models for African American communities (Valentine et al., 2003).

Winfield and Whaley (2002) used the four main components of the HBM (perceived susceptibility, perceived severity, perceived benefits, and perceived barriers) and other extended parts of the model such as self-efficacy, cues to action, demographic and sociopsychological and structural variables to examine if the inclusive version of the HBM would aid in predicting condom use among sexually active heterosexual African American college students. Researchers postulated that the comprehensive HBM would account for significantly more differences in condom use during vaginal intercourse than the main components of the HBM such as perceived susceptibility, perceived barriers and severity, perceived benefits, self-efficacy, and cues to action, which were examined to predict condom use. The participants of the study were slightly more than 250 African Americans from a predominately White university in the Midwest.

Winfield and Whaley found that roughly 81% of the students reported using condoms during vaginal sex within the past six months. However, only slightly more than 30% of the condom users reported using condoms all of the time during those past six months. And, almost half of the participants reported only having one sexual partner within the six months while the others had at least two partners within the past six months. Almost 90% of the sample answered
the questions correctly about AIDS risk behavior knowledge which showed that even though students knew about the risk factors, many still engaged in risky behaviors. The study also found that among sociopsychological variables there was a significant positive relationship only between perceived barriers and condom use. However, other parts of the HBM did not seem to be a factor among these African American college students condom usage. So it was concluded that the extended HBM was not significant in increasing the prediction of condom use for students who were African American (Winfield & Whaley, 2002).

Winfield and Whaley (2005) also examined the relationship status of African American college students and their psychological thinking toward sexual behaviors that are deemed risky such as inconsistent condom use or no condom use. Relationship status is an important variable in determining if a college student engages in safe sex because as longevity increases in a relationship students practice less behaviors associated with safe sex. The study assessed the relationship between students who refrain from sex, consistent users, and inconsistent users of condoms to develop a richer understanding of the elements that have a bearing on college students’ risk factors. The research also examined psychological variables that might have an impact on a student’s decisions about safe sex.

The psychological variables examined were perceived susceptibility to HIV/AIDS, perceived barriers to safer sex behaviors, and knowledge about HIV/AIDS transmission. Researchers hypothesized that (1) “students who are in a committed romantic relationships will engage in greater risky sexual behavior than single, noncohabiting students and (2) students who are nonusers of condoms are significantly different than students who are inconsistent users of condoms on demographic and psychological variables” (Winfield & Whaley, 2005, p. 193). There was partial support for the first hypothesis that students in romantic relationships would
engage in riskier sexual behaviors and the second hypothesis was fully supported that students
who were nonusers of condoms would have different demographic and psychological variables
than students who were inconsistent condom users. Winfield and Whaley (2005) found that
single people in college tended to be inconsistent users of condoms versus nonusers, but married
college students tend to be nonusers of condoms versus inconsistent users. Also, gender did
make a difference between consistent and inconsistent condom users among African Americans
in college. Female college students were less likely to have sex without a condom. Moreover,
people who were nonusers of condoms had a perception of more barriers to safer sex than the
students who consistently used condoms. Even though female college students were less likely
to have sex without a condom, they were found to be inconsistent condom users versus men
(Winfield & Whaley, 2005).

Foreman (2003) conducted an exploratory study through in-depth interviews to inquire
about the circumstances that help African American female college students decide to use a
condom by constructing the meaning women attach to sex as one of the biggest factors in the
decision to use a condom. The women who participated in the study from a university in Texas
described their sexual relationships in a self-defined “hierarchy of sex arrangements” which is a
sexual stratification ladder. The sexual hierarchy consisted of four levels that include: wham-
bam, casual, homie-lover friend, and long term. The “wham-bam” type of sex is considered to
be the lowest level of the hierarchy and it is the type of sex that is associated with no
commitments. The second level of sex is casual sex. In casual sex, there is no commitment
between the male and the female but there is some type of emotional ties for the women,
however the male and the female are free to date and have sex with other people. The third level
of the hierarchy is “homie-lover friend” which is similar to casual sex; however, in this type of
relationship the woman has a sexual relationship with someone whom she has known since high school or even earlier but they have no commitments. The last relationship is “long term.” Long term is the preferred type of relationship and this is the type of relationship where women discuss love, commitment, and trust (Foreman, 2003).

Emotional ties to the male sexual partner helped to determine if the women in the study used a condom and emotions acted as a barrier to safer-sex practices. Some of the women expressed that they knew they should use a condom all the time but admitted in relationships such as with a “homie-lover friend” condoms were not always used (Foreman, 2003).
CHAPTER III. METHODOLOGY AND DESIGN

This chapter will describe the methodology and design employed in this study. First, the population and sampling procedures will be described followed by a detailed description of the development of the questionnaire and the pretesting of this instrument. The data collection procedures and the challenges faced while recruiting students for the study will be described next followed by data compilation and analyses procedures. This section of the chapter will provide a detailed description of data compilation procedures, which include factor analyses and reliability analyses of scales used in the study.

Restatement of Hypotheses and Research Question

**H1:** Knowledge about HIV/AIDS will be related to positive attitudes toward HIV/AIDS.

**H2:** Cognitive involvement (with HIV/AIDS) will be positively related to behavioral involvement with HIV/AIDS.

**H3:** Cognitive involvement (with HIV/AIDS) will be positively related to knowledge about HIV/AIDS.

**H4:** Behavioral Involvement (with HIV/AIDS) will be positively related to knowledge about HIV/AIDS.

**H5a:** Socioeconomic status index (SES) of a person will be positively related to knowledge of HIV/AIDS, indicating a knowledge gap between persons of high and low socioeconomic status.

**H5b:** Cognitive involvement (with HIV/AIDS) will narrow the knowledge gap between persons of high and low SES.

**H5c:** Behavioral involvement (with HIV/AIDS) will narrow the knowledge gap between persons of high and low SES.
**H6:** Behavior (safe sex behavior) will be predicted by knowledge, attitude, cognitive and behavioral involvement factors.

**H7:** Condom use will be predicted by HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy factors.

**Research Question:** What is the relative vulnerability of males vs. females to potential infection from HIV/AIDS?

**Research Design, Population and Sample**

The sample survey design was employed to collect data and generate the results as well as test the hypotheses in this study. A structured questionnaire was used to collect data from the respondents. The population constituted African American college and university students in the United States. A non-random sampling method was used to select participants for the study. African American students were selected from several U.S. colleges and universities using a snowball sample.

The survey was administered through *Survey Monkey*, an online questionnaire. Potential respondents were given the link to the website to access and complete the questionnaire.

**Questionnaire**

The questionnaire developed to test the aforementioned hypotheses is attached in the appendix. This questionnaire was administered to African American college students. Items on the questionnaire were developed from a variety of sources that included Velu (2002), who examined knowledge, perceived vulnerability, perceived social support, condom use self-efficacy, peer support, and outcome expectancies of condom use among commercial sex workers in India. The questionnaire also included items used by Goswami (1996) who examined cognitive involvement, behavioral involvement, socioeconomic status, attitudes and knowledge...
of HIV/AIDS among college students in India. Additionally, other sources included Carey and Schroder’s (2002) HIV knowledge questionnaire, and a survey about attitudes towards people with HIV/AIDS from the HIV/AIDS survey library, which was retrieved from the Population Council’s website (www.popcouncil.org). Some of the questions from each of the different resources were adapted to fit the population of this study.

In the first part of the questionnaire, the items examined cognitive involvement, behavioral involvement or information seeking behavior, attitudes, knowledge, and perceived risk of contracting HIV/AIDS. The second part of the questionnaire sought information on condom use, condom use self-efficacy, perceived vulnerability, peer group support, outcome expectancies, and risk reduction methods. The last section of the questionnaire elicited demographic information from the respondents. The socio-demographics-related items examined age, gender, education level, mother and father’s education levels, and household income.

Cognitive involvement/awareness. The first few items in the survey questionnaire addressed cognitive involvement/awareness about HIV/AIDS among African American college students. Cognitive involvement/awareness referred to a heightened state of awareness of HIV/AIDS. Respondents self-reported their cognitive involvement/awareness by answering one open-ended question and two closed-ended questions:

- If you think the United States is facing serious medical problems, illnesses or diseases, please name the most serious. (The respondents could list up to four responses)
- How serious do you think AIDS is? (This item was measured by using a 3 point scale: “very serious” “slightly serious” and “not serious”)
• How much do you think you know about AIDS? (This item was measured by using a three point scale: “a lot” “some” and “very little”)

Behavioral involvement. Behavioral involvement is associated with information seeking behaviors about HIV/AIDS. There were six items used to examine behavioral involvement among the African-American college students. The items were measured using a 4 point scale that consisted of responses: “never” “once” “few times” and “many times.” The following items were used to examine behavioral involvement:

• Have you ever read a booklet, brochure or other printed material (magazine, newspaper article, etc.) about HIV/AIDS?
• Have you seen films or TV, video, audio shows or heard radio programs on HIV/AIDS?
• Have you read posters/ signs/ about HIV/AIDS?
• Have you attended meetings or classes where HIV/AIDS was discussed?
• Have you ever initiated a conversation with someone about HIV/AIDS?
• Have you ever talked to someone who has HIV/AIDS?

Attitudes. The attitude-related items consisted of 15 statements measured on a 5 point scale (strongly agree, agree, neutral, disagree, and strongly disagree). The attitude items examined the African American college students’ feelings toward HIV/AIDS and people who were infected with HIV/AIDS. The following items were included in the questionnaire:

• AIDS is the worse disease a person can get.
• People with HIV/AIDS should be ashamed of themselves.
• I will be very ashamed if I had HIV/AIDS.
• I would be ashamed if someone in my family had HIV/AIDS.
• I would feel ashamed to be seen in public with a friend who was known to have HIV.
People with HIV/AIDS are promiscuous.

Promiscuous women are the ones who spread HIV in our community.

People with HIV/AIDS should bear the consequences of their bad behavior.

Promiscuous men are the ones who spread HIV/AIDS in our community.

In a marriage, it is the woman who is to blame for HIV/AIDS.

In a marriage, it is the man who is to blame for HIV/AIDS.

People with HIV/AIDS are to blame for their infection.

HIV/AIDS is a punishment by God for leading an immoral life.

It is wrong to send a student with HIV/AIDS to school with other children.

A person who has HIV/AIDS must be quarantined.

HIV/AIDS knowledge. Four different groups of knowledge items were used to measure the different components of knowledge of HIV/AIDS among the African American college students. All knowledge items were measured by “yes” or “no” responses. The four knowledge types consisted of symptoms of HIV/AIDS, contracting HIV/AIDS through internal and external contact, behavioral situations about spread of the disease, and overall knowledge of the disease.

The items measuring symptoms of HIV/AIDS were based on misunderstandings about HIV/AIDS. Five items were used to examine this component of knowledge:

- Have you heard about the virus called HIV or AIDS?
- Can a person have HIV and not show any symptoms?
- Can a healthy looking person have HIV and pass it on to others?
- Can a person with HIV/AIDS virus be cured?
- Can HIV/AIDS be treated like other sexually transmitted diseases?
To examine knowledge about the spread of HIV/AIDS both internally and externally, 16 items were examined. The items consisted of the following:

- Can one get HIV/AIDS by touching an infected person?
- Can one get HIV/AIDS by kissing on the cheek?
- Can one get HIV/AIDS by having vaginal intercourse?
- Can one get HIV/AIDS by oral sex?
- Can one get HIV/AIDS by having anal sex?
- Can one get HIV/AIDS by sharing needles?
- Can a HIV/AIDS infected mother pass the virus to her unborn child?
- Can a HIV/AIDS infected mother pass the virus to her child while nursing?
- Can one get HIV/AIDS by sharing food or cups and plates with an infected person?
- Can one get HIV/AIDS by sharing the same toilet with an infected person?
- Can one get HIV/AIDS by wearing the clothes of an infected person?
- Can one get HIV/AIDS by mosquito or other insect bites?
- Can one get HIV/AIDS by being coughed or sneezed upon by a person who has HIV/AIDS?
- Can one get HIV/AIDS by eating in a restaurant where the cook or server has HIV/AIDS?
- Can one get HIV/AIDS by working near someone who has HIV/AIDS?
- Can one get HIV/AIDS by attending school with someone who has HIV/AIDS?

The 10 items used to examine behaviors that could either increase or decrease the spread of HIV/AIDS were:

- A male/female can get HIV/AIDS through anal sex with a male.
• A woman cannot get HIV/AIDS if she has sex during her menstrual period.
• There is a female condom that can help decrease a woman’s chance of getting HIV/AIDS.
• A natural skin condom works better against HIV/AIDS than does a latex condom.
• Using vaseline or baby oil with condoms lowers the chance of getting HIV/AIDS.
• A female can get HIV if she has vaginal sex with a man who has HIV/AIDS.
• Athletes who share needles when using steroids can get HIV/AIDS from the needles.
• Douching after sex will keep a female from getting HIV/AIDS.
• Taking vitamins keeps a person from getting HIV/AIDS.
• Use of condoms when having sex is an effective way to reduce the chances of getting HIV/AIDS.

Other knowledge related questionnaire items included:

• Only homosexual and bisexual males are vulnerable to HIV/AIDS.
• AIDS can reduce the body’s natural protection against diseases.
• A person can have the HIV virus and not have the AIDS disease.
• A person who practices sexual abstinence or restricts sex to uninfected partner has no chance of being infected.
• A vaccine is available that protects a person against AIDS.
• At present there is no cure for AIDS.

Perception of risk. The measurement scale for examining African American college students’ self-perceptions of risk of contracting HIV/AIDS consisted of two items measured on a 4 point scale: high chance, medium chance, low chance, no chance. The following questions were asked:
- What do you think your chances are of being infected with HIV/AIDS?
- Are you afraid of getting HIV/AIDS?

*Condom use.* The items used to measure condom use among African American college students were to interpret usage of condom with the respondent’s partner/s. The measurement of condom use during sex was examined by using 5 questionnaire items. The following condom use items were included:

- Have you ever used a condom? (A dichotomous response was used that consisted of “yes” or “no.”)
- In situations where a condom was used who suggested using a condom? (A three part response was included consisting of “me,” “partner,” and “both.”)

To measure the next two items of condom use, a five point scale was used. The response choices for each item consisted of “never” “once” “few times” “many times” and “always.” The two items were as follows:

- Among your last five partners, how many times did you have to negotiate for condom use?
- Of those times, how many times were you successful in the negotiations?

The last item for measuring condom use consisted of a five point scale that was based on frequency of condom use during the last five sexual acts. The respondents could choose between “0” “1” “2” “3” “4” and “5.”

*Condom use self-efficacy.* Condom use self-efficacy was based on two distinct behavioral actions related to condom use by the respondent and condom use with the respondent’s partner/s. For all items used for condom self-efficacy the measurement scale was based on a five point scale consisting of “strongly agree,” “agree,” “don’t know,” “disagree,” and
“strongly disagree.” The items for condom use self-efficacy consisted of a total of sixteen items. The first section related to condom use self-efficacy and consisted of nine items, and second section relating to condom use self-efficacy with partner consisted of seven items.

- I know how condoms should be used properly.
- I know where I can get ready access to condoms whenever I want them.
- I can always take condoms with me when on a date.
- It is possible for me to keep condoms at home.
- I can make sex fun using a condom with my partner.
- I would feel like I did the right thing if I used condoms.
- I can confidently use a condom without fumbling.
- I can confidently use a condom without hesitation.
- I can confidently use a condom in such a way that it will not slip or break.

The second dimension of measuring condom use self-efficacy was based on a respondent’s ability to use a condom with a partner. The measurement was based on seven items.

- I am sure that I can use a condom every time I have intercourse with my regular partner.
- I can negotiate condom use successfully if my regular partner opposes it.
- I refuse to have sex if my partner refuses to use condoms.
- I feel embarrassed/afraid to ask my partner to use a condom.
- I can get my regular partner to use a condom even if we have not used them in the past.
- I can get my regular partner to use a condom even if he/she does not want to use them.
- I would feel like I did something wrong if I didn’t use condoms with my regular partner.

Peer support. Perceived peer support was measured with five items measured on a five point scale: strongly agree, agree, don’t know, disagree, and strongly disagree.
• My peers think condoms should be used during sex.
• My friends/significant other think condoms should be worn during sex.
• If I am worried or upset about my health, my friends and well-wishers are always willing to listen to me and console me.
• When a friend is worried about her/his health, I always listen to his/her advice.
• I can always purchase condoms at the neighborhood store without hesitation.

Perceived vulnerability. African American college students’ perceived vulnerability for contracting HIV/AIDS was measured by nine items using a five point scale. The response scale consisted of “strongly agree,” “agree,” “don’t know,” “disagree,” and “strongly disagree.” The first two items were general statements to measure perceived vulnerability:

• If someone like me is infected with HIV, then I might also be at risk of getting infected.
• If people have intercourse without using condoms, they are at risk of getting HIV/AIDS.

The next four items measured perceived vulnerability of contracting HIV/AIDS from sexual partners:

• It is safe to have sex if the partner seems like an educated, decent man/woman.
• It is safe to have sex if I only have a few partners.
• It is safe to have sex if I am with a partner who I am more attached to or whom I like.
• It is safe to have sex if I do not find any rashes, abrasions, cuts or tumors on my partner.

The next set of items used to measure perceived vulnerability was related to a type of contraceptive used:

• There is no need to use condoms if I use oral contraceptives.
• There is no need to use condoms if I thoroughly wash my genital area after having sex.
• There is no need to use condoms if the penis is withdrawn before ejaculating.
**Outcome expectancies.** Outcome expectancies referred to the consequences African American college students believe will be the result of deciding to use or not use a condom. Seventeen items were used to measure outcome expectancies. They were categorized into three dimensions consisting of positive outcome expectancies of condom use, negative outcome expectancies of condom use, and outcome expectancies based on partner’s perceptions. The measurement was based on a five point scale consisting of “strongly agree,” “agree,” “don’t know,” “disagree,” and “strongly disagree.”

The first category of positive outcome expectancies consisted of three items:

- Regular condom use will prevent pregnancy.
- Regular condom use will prevent sexually transmitted diseases.
- Regular condom use will protect against HIV and AIDS.

The second category of negative outcome expectancies consisted of five items:

- Condoms are sometimes unreliable because they can tear or break or burst during intercourse.
- Condoms are sometimes unreliable because they can slip and go inside the vagina during intercourse.
- Condoms are sometimes unreliable because they cause dryness and irritation in the female.
- Condoms are sometimes unreliable because the price of condoms is too high to buy and use regularly.
- Condoms are sometimes unreliable because I cannot get a condom whenever I need it.

The last section of outcome expectancies was based on partners’ perceptions:

- Most of the time my partner gets angry when condom use is suggested.
• A reason my partner gives for not using condoms is it reduces pleasure.
• A reason my partner gives for not using condoms is it takes to a long time.
• A reason my partner gives for not using condoms is it is inconvenient or difficult.
• If I ask my partner to use condoms he/she would immediately suspect that I have an STD or HIV/AIDS.
• If I ask my partner to use condoms he/she will think I am questioning his/her sexual health.
• If I insist that my regular partner use condoms he/she will get angry.
• My partner is always happy if we used condoms.

Risk reduction methods. The risk reduction methods items were used in the survey to inquire if African American college students were engaging in unsafe sexual practices that could put them at a higher risk for contracting HIV/AIDS. Risk reduction methods were measured by using five items using a three point response scale: “all of the time,” “sometimes,” and “never.” The five items were:

• Do you (or your partner) use a condom every time during sex?
• Do you (or your partner) have more than one sexual partner?
• Do you (or your partner) have sex without a condom?
• Do you (or your partner) have sex with commercial sex workers?
• Do you (or your partner) have sex with casual acquaintances (i.e. ex-boyfriend/girlfriend, childhood friend, etc.)?

Demographics. The last section of the survey examined the gender, age, respondent’s education level, and both parents’ education level, and total household income. There were six demographic questions:
• Are you? “male” or “female”
• Enter the last two digits of your birth year.
• What is your education level?
• What is your mother’s education level?
• What is your father’s education level?
• What is your total household income ($) per annum, including all earners in your household?

The last three items in the list above were used to measure the socio-economic status (SES) of the respondent. Higher levels of parents’ education level and household income constituted a higher SES and vice-versa.

Pretesting of Questionnaire

Field pretesting of the questionnaire was conducted by administering the questionnaire to a similar sample of respondents. The pretest sample consisted of college students of various ethnicities. The pretest allowed the researcher to gain insights about the language used in the survey questionnaire, whether it was appropriate and culturally sensitive. Also, the pretesting helped to gain more insight about the structure of the survey, and if any confusing questions existed that might bias the results. After the participants finished the survey, a debriefing occurred to explain the importance of the survey and to gain more information regarding how to make the survey better. The questionnaire items were modified based on the results of the pretest. To ensure validity of the study, the researcher used the pretest to make sure the definitions were operationalized accurately for all the items in the questionnaire. This did not preclude running reliability and validity tests on the data collected from the real sample during the data analysis phase.
Data Collection

The research proposal, the questionnaire, and all data collection protocols and procedures were submitted for review and approval of the Human Subjects Review Board (HSRB) at Bowling Green State University (BGSU). After approval from the HSRB, an e-mail was sent to the randomly selected 800 African American college students at BGSU. The introduction letter explained the purpose of the study and included a consent form. Students who agreed to participate e-mailed back their response indicating what time (of the suggested times offered) that they were able to participate in the survey. Lunch was offered at the site where students filled out the questionnaire. However, because of the low response rate (only five people), the survey questionnaire was then distributed electronically for which only a few more responses were collected. Next, the survey was sent through a web based format called Survey Monkey for easier accessibility. All African American students at BGSU were sent the link through e-mail and requested to complete the survey. This resulted in a more students filling out the online survey questionnaire. Approximately, 70 students filled out the survey at BGSU before the questionnaire was snowballed through African American organizations on college campuses and through African American college students in the U.S. The president/head of African American student organizations and other volunteers were given a prewritten statement to send with the survey link. The statement explained the age requirements for taking the survey (18 years and above), the researcher’s name, and the subject of the survey. All the completed questionnaires were then secured with the researcher. The data collection time frame was from April through early July.

Limitations of Data Collection Methods
One of the limitations of data collection was not being able to continue the random sampling process. Because there was such a low response rate, the survey had to be available to all African American students on campus at BGSU. The second limitation of data collection was that the researcher had to further extend the survey to all African American college students outside BGSU because of the limited response of students at BGSU. Because of the changes in data collection methods from random sampling to a non random snowball sample, this will limit the researcher’s ability to generalize the results to African American student population.

The third limitation of the data collection procedures was not ensuring that respondents did not skip questions since some of the questions were skipped by the respondents. The researcher should have inserted some type of controls that would not have allowed participants to skip questions; however, the researcher had to allow respondents the ability to stop participating in the survey at any point during the process, since this was one of the conditions stipulated by the HSRB.

Data Compilation and Analysis Procedures

The questionnaire that was administered to African American college students across the United States was collected through Survey Monkey, a web-based online survey tool. All of the respondents’ answers were automatically coded in a code book provided by Survey Monkey. A total of 130 completed questionnaires were recorded on the Survey Monkey. Once all the data were collected through Survey Monkey, they were displayed automatically in an Excel spreadsheet. The data were cleaned for any errors and then transferred into a data file in the Statistical Program for Social Sciences (SPSS) for analyses. The researcher named all the variables, gave them descriptive labels, and the data were re-checked for more errors by running frequency distributions. After obtaining the printout of the frequency tables any discrepancies in
the data were checked again to make sure the data file was free of errors. The final data set was now ready for analysis in SPSS.

Factor Analyses

The data were subjected to a factor analysis; a statistical data reduction method used to determine which variables are closely related to each other and form a factor or a cluster. Factor analysis allowed the researcher to know which variables were correlated so they could be combined to form a single variable in subsequent data analysis. The researcher used the principal components method of factor analysis and the variables were rotated in factor space using the varimax method of factor rotation. Factor analysis was employed to reduce the number of variables in the following seven sections of the survey instrument: HIV/AIDS knowledge, attitudes about HIV/AIDS, outcome expectancies of condom use, condom use self-efficacy, perceived vulnerability, peer support, and risk reduction practices.

Knowledge of and about HIV/AIDS

The questionnaire consisted of 31 items that tested knowledge of HIV/AIDS. Factor analysis yielded 3 factors with eigenvalues greater than 1. The three factors were 1) knowledge of HIV/AIDS spread through sexual contact 2) knowledge of HIV/AIDS effects and reduction methods, and 3) knowledge of HIV/AIDS infection through non-sexual contact. Table 1 presents the results of the factor analysis. Items having factor loadings of .50 or greater were included in the resulting factors.

Attitudes about HIV/AIDS

The fifteen questionnaire items used to measure attitudes about HIV/AIDS were also subjected to a factor analysis that resulted in four factors with an eigenvalue of 1 or greater. Table 2 shows questionnaire items loading at .50 or higher on the four new factors, which were
1) attitudes of person blame, 2) attitudes about quarantine and punishment, 3) attitudes of
shamefulness and 4) attitudes toward HIV/AIDS and persons with AIDS.

Outcome Expectancy of Condom Use

The questionnaire included 16 items that measured outcome expectancy of condom use. The factor analysis procedure reduced those items to five factors, each with an eigenvalues of 1 or greater: 1) Outcome expectancy of convenience, 2) Outcome expectancy of HIV/AIDS prevention, 3) Outcome expectancy regarding negative interpersonal relations, 4) Outcome expectancy of condom unreliability, and 5) Outcome expectancy of condom accessibility. Table 3 presents the results of the factor analysis. Items having factor loadings of .50 and higher were included in the factors.

Condom use Self-efficacy

Condom use self-efficacy construct was measured in the questionnaire by using 16 items. Factor analyses yielded five dimensions with an eigenvalue of one or greater: 1) Self-confidence in condom use, 2) Condom use self-efficacy with partner, 3) Positive feelings of condom use, 4) Accessibility to condoms, and 5) Condom use self-efficacy at home. Table 4 illustrates the factors and the questionnaire items loading at .50 and higher. The fifth factor was not used in subsequent analyses as there was only one item loading on that factor.
Table 1: Factor Analysis of Knowledge of HIV/AIDS Scales

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Knowledge of HIV/AIDS sexual contact</td>
<td></td>
</tr>
<tr>
<td>• Can one get HIV/ADS by having anal sex</td>
<td>.77</td>
</tr>
<tr>
<td>• A natural skin condom works better against HIV/AIDS than does latex</td>
<td>.62</td>
</tr>
<tr>
<td>• A male/female can get HIV/AIDS through anal sex with male</td>
<td>.60</td>
</tr>
<tr>
<td>• Can a person have HIV/AIDS and not have any symptoms</td>
<td>.50</td>
</tr>
<tr>
<td>2. Knowledge of HIV/AIDS effects and reduction methods</td>
<td></td>
</tr>
<tr>
<td>• AIDS can reduce the body’s natural protection against disease</td>
<td>.73</td>
</tr>
<tr>
<td>• A person can have HIV virus and not have the disease</td>
<td>.70</td>
</tr>
<tr>
<td>• Taking vitamins keeps a person from getting HIV/AIDS</td>
<td>.56</td>
</tr>
<tr>
<td>3. Knowledge of HIV/AIDS infection through non-sexual contact</td>
<td></td>
</tr>
<tr>
<td>• Can one get HIV/AIDS by touching an infected person</td>
<td>.63</td>
</tr>
<tr>
<td>• Can one get HIV/AIDS by eating in a restaurant where the cook or</td>
<td>.60</td>
</tr>
<tr>
<td>• Can one get HIV/AIDS by mosquito or other insect bites</td>
<td>.60</td>
</tr>
<tr>
<td>• Can one get HIV/AIDS by being coughed or sneezed on by a person</td>
<td>.59</td>
</tr>
<tr>
<td>• Can one get HIV/AIDS by sharing the same toilet with an infected</td>
<td>.52</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>1=2.22</td>
</tr>
<tr>
<td>Variance explained</td>
<td>2=2.18</td>
</tr>
<tr>
<td>(Total variance explained by the three factors = 21.24%)</td>
<td>3=2.18</td>
</tr>
</tbody>
</table>
Table 2: Factor Analysis of Attitudes of HIV/AIDS Scales

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Attitudes of person blame</td>
<td></td>
</tr>
<tr>
<td>• In a marriage it is the man who is to</td>
<td>.87</td>
</tr>
<tr>
<td>blame for HIV/AIDS</td>
<td></td>
</tr>
<tr>
<td>• In a marriage it is the woman to blame for HIV/AIDS</td>
<td>.80</td>
</tr>
<tr>
<td>• Promiscuous men are the ones who spread HIV/AIDS in our community</td>
<td>.79</td>
</tr>
<tr>
<td>• People with HIV/AIDS are to blame for their infection</td>
<td>.51</td>
</tr>
<tr>
<td>2. Attitudes about quarantine and punishment</td>
<td></td>
</tr>
<tr>
<td>• It is wrong to send a student with HIV/AIDS to school with other</td>
<td>.83</td>
</tr>
<tr>
<td>children</td>
<td></td>
</tr>
<tr>
<td>• A person who has HIV/AIDS must be quarantined</td>
<td>.75</td>
</tr>
<tr>
<td>• HIV/AIDS is a punishment by God for leading an immoral life</td>
<td>.67</td>
</tr>
<tr>
<td>3. Attitudes of shamefulness</td>
<td></td>
</tr>
<tr>
<td>• I would be ashamed if someone in my family had HIV/AIDS</td>
<td>.82</td>
</tr>
<tr>
<td>• I would be ashamed if I had HIV/AIDS</td>
<td>.75</td>
</tr>
<tr>
<td>• I would feel ashamed to be seen in public with a friend who was</td>
<td>.55</td>
</tr>
<tr>
<td>known to have HIV</td>
<td></td>
</tr>
<tr>
<td>• People with HIV/AIDS should be ashamed of themselves</td>
<td>.51</td>
</tr>
<tr>
<td>4. Attitudes towards HIV/AIDS and persons with AIDS</td>
<td></td>
</tr>
<tr>
<td>• AIDS is the worse disease a person can get</td>
<td>.80</td>
</tr>
<tr>
<td>• Promiscuous women are the ones who spread HIV in the community</td>
<td>.61</td>
</tr>
</tbody>
</table>

Eigenvalue                      1=2.98  2=2.53  3=2.41  4=1.25
Variance explained              19.88   16.89   16.05   8.34
(Total variance explained by the 4 factors = 61.17%)
Table 3: Factor Analysis of Outcome Expectancy of Condom Use Scales

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors 1</th>
<th>Factors 2</th>
<th>Factors 3</th>
<th>Factors 4</th>
<th>Factors 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Outcome expectancy of convenience</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A reason my partner gives for not using condoms is it is inconvenient or difficult</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A reason my partner gives for not using condoms is it takes a long time</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A reason my partner gives for not using condoms is it reduces pleasure</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Most of the time my partner get angry when condom use is suggested</td>
<td>.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Outcome expectancy of HIV/AIDS prevention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Regular condom use will prevent sexually transmitted diseases</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Regular condom use will prevent pregnancy</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Regular condom use will protect against HIV and AIDS</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. Outcome expectancy regarding negative interpersonal relations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If I ask my partner to use condoms he/she would immediately suspect that I have an STD or HIV/AIDS</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If I insist that my regular partner use condom he/she will get angry</td>
<td>.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If I ask my partner to use condoms he/she will think I am questioning his/her sexual health</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• My partner is always happy if we used condoms</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. Outcome expectancy of condom unreliability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Condoms are sometimes unreliable because they can tear or break or burst during intercourse</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Condoms are sometimes unreliable because they can slip and go inside the vagina during intercourse</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Condoms are sometimes unreliable because they cause dryness and irritation in the female</td>
<td>.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. Outcome expectancy of condom accessibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Condoms are sometimes unreliable because the price of condoms is too high to buy and use regularly</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Condoms are sometimes unreliable because I cannot get a condom whenever I need it</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Eigenvalue payments (V) = 1=2.68  2=2.57  3=2.27  4=1.94  5=1.84
Variance Explained (in %) = 16.72  16.05  14.21  12.14  11.48
(Total variance explained by the 5 factors= 70.59%)
<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-confidence in condom use</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>• I can confidently use a condom without fumbling</td>
<td>.85</td>
</tr>
<tr>
<td>• I can confidently use a condom in such a way that it will not slip or break</td>
<td>.80</td>
</tr>
<tr>
<td>• I can confidently use a condom without hesitation</td>
<td>.78</td>
</tr>
<tr>
<td>• I can make sex fun using a condom with my partner</td>
<td>.72</td>
</tr>
<tr>
<td>2. Condom use self-efficacy with partner</td>
<td>.83</td>
</tr>
<tr>
<td>• I can get my regular partner to use a condom even if he/she does not want to use them</td>
<td></td>
</tr>
<tr>
<td>• I can get my regular partner to use a condom even if we have not used them in the past</td>
<td></td>
</tr>
<tr>
<td>• I am sure that I can use a condom every time I have intercourse with my regular partner</td>
<td></td>
</tr>
<tr>
<td>• I feel embarrassed/afraid to ask my partner to use a condom</td>
<td>.57</td>
</tr>
<tr>
<td>• I can negotiate condom use successfully if my regular partner opposes it</td>
<td>.52</td>
</tr>
<tr>
<td>3. Positive feelings of condom use</td>
<td>.77</td>
</tr>
<tr>
<td>• I would feel like I did something wrong if I didn’t use condoms with my regular partner</td>
<td></td>
</tr>
<tr>
<td>• I refuse to have sex if my partner refuses to use condoms</td>
<td>.72</td>
</tr>
<tr>
<td>4. Accessibility to condoms</td>
<td>.82</td>
</tr>
<tr>
<td>• I know where I can get ready access to condom whenever I want them</td>
<td></td>
</tr>
<tr>
<td>• I can always take condoms with me when on a date</td>
<td>.62</td>
</tr>
<tr>
<td>5. Condom use self-efficacy at home</td>
<td>.92</td>
</tr>
<tr>
<td>• It is possible to keep condoms at home</td>
<td></td>
</tr>
</tbody>
</table>

| Eigenvalue | 1=3.05 2=2.66 3=1.60 4=1.59 5=1.15 |
| Variance explained | 19.05 16.59 9.98 9.93 7.21 |
| (Total variance explained = 62.77%) |
Perceived Vulnerability of HIV/AIDS

The nine items on the questionnaire that measure perceived vulnerability to HIV/AIDS were subjected to a factor analysis which yielded three new factors that showed an eigenvalue of one or greater. The three new factors were 1) Perceived vulnerability in relation to partner’s external characteristics, 2) Perceived vulnerability if no condom is used during sex, and 3) Perceived vulnerability of being at risk of getting HIV/AIDS.

Table 5: Factor Analysis of Perceived Vulnerability Scales

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Perceived vulnerability in relation to partner’s external characteristics</td>
<td></td>
</tr>
<tr>
<td>• It is safe to have sex if I am with a partner who I am more attached to or whom I like</td>
<td>.82</td>
</tr>
<tr>
<td>• It is safe to have sex if the partner seems like an educated, decent man/woman</td>
<td>.78</td>
</tr>
<tr>
<td>• It is safe to have sex if I do not find any rashes, abrasions, cuts on my partner</td>
<td>.77</td>
</tr>
<tr>
<td>• It is safe to have sex if I only have a few partners</td>
<td>.74</td>
</tr>
<tr>
<td>2. Perceived vulnerability if no condom is used during sex</td>
<td></td>
</tr>
<tr>
<td>• There is no need to use condoms if the penis is withdrawn before ejaculating</td>
<td>.87</td>
</tr>
<tr>
<td>• There is no need to use condoms if the lady uses oral contraceptives</td>
<td>.86</td>
</tr>
<tr>
<td>• There is no need to use condoms if I thoroughly wash my genital area after having sex</td>
<td>.83</td>
</tr>
<tr>
<td>3. Perceived vulnerability of being at risk of contracting HIV/AIDS</td>
<td></td>
</tr>
<tr>
<td>• If someone like me can become infected with HIV, then I might also be at risk of getting HIV/AIDS</td>
<td>.84</td>
</tr>
<tr>
<td>• If people have intercourse without using condoms, they are at risk of getting HIV/AIDS</td>
<td>.56</td>
</tr>
</tbody>
</table>

Eigenvalue          1=2.66  2=2.57  3=1.14
Variance explained   29.55  28.57  12.63
(Total variance explained by 3 factors =70.76%)
HIV/AIDS. All nine items loaded on the factors at .50 or greater (see Table 5).

Peer Support

The factor analysis of the five peer support questionnaire items yielded two components with eigenvalue of one or greater. The two new factors were:

1) Interpersonal support, and 2) Peer support for condom usage. Table 6 shows that all five items loaded at .50 or greater.

Risk Reduction Practices

The five items used to measure risk reduction practices on the questionnaire yielded two factors with eigenvalue of one or greater: 1) Sex with multiple partners, and 2) Sex with high risk persons. Shown in Table 7 are all of the items in the factor analysis that loaded at 0.50 and greater.

Reliability Analysis

The items loading on the respective factors of the constructs: HIV/AIDS Knowledge, attitudes about AIDS, outcome expectancies of condom use, condom use self efficacy, perceived vulnerability, peer support, and risk reduction practices (see Tables 1 through 7) were then combined to constitute a summative scale. The resulting scales were then subjected to a reliability analysis. Table 8 shows the alpha coefficient score for each scale. The alpha coefficient shows the internal consistency of the scales and is a measure of reliability. Scales with Cronbach alpha scores of at least .50 or higher were retained for subsequent data analysis. Because of the low Cronbach’s alpha levels, several scales had to be dropped from analysis, which included: 1) Attitudes towards HIV/AIDS and persons with AIDS, 2) Accessibility to condoms, and 3) perceived vulnerability of being at risk of getting HIV/AIDS.
### Table 6: Factor Analysis of Peer Support Scales

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Interpersonal support</strong></td>
<td></td>
<td>.88</td>
<td>.80</td>
</tr>
<tr>
<td>• When a friend is worried about her/his health, I always listen to his/her advice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If I am worried or upset about my health, my friends and well-wishers are always willing to listen to me and console me</td>
<td></td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>• I can always purchase condoms at the neighborhood store without hesitation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Peer support for condom usage</strong></td>
<td></td>
<td>.87</td>
<td>.87</td>
</tr>
<tr>
<td>• My peers think condoms should be used during sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• My friends/significant other think condoms should be worn during sex</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Eigenvalue**

<table>
<thead>
<tr>
<th>1=1.74</th>
<th>2=1.57</th>
</tr>
</thead>
</table>

**Variance explained**

<table>
<thead>
<tr>
<th>34.78</th>
<th>31.38</th>
</tr>
</thead>
</table>

(Total variance explained by the two factors = 66.16%)

### Table 7: Factor Analysis of Risk Reduction Practices Scales

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Sex with multiple partners</strong></td>
<td></td>
<td>.93</td>
<td>.92</td>
</tr>
<tr>
<td>• Do you (or your partner) have more than one sexual partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Do you (or your partner) have sex with casual acquaintances (i.e. ex-boyfriend/girlfriend, childhood friend, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Sex with high risk persons</strong></td>
<td></td>
<td>.89</td>
<td>.87</td>
</tr>
<tr>
<td>• Do you (or your partner) have sex with commercial sex workers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Do you (or your partner) have or had sex with a person/s who inject illegal drugs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Eigenvalue**

<table>
<thead>
<tr>
<th>1=1.79</th>
<th>2=1.58</th>
</tr>
</thead>
</table>

**Variance explained**

<table>
<thead>
<tr>
<th>35.73</th>
<th>31.60</th>
</tr>
</thead>
</table>

(Total variance explained by two factors = 67.33%)
<table>
<thead>
<tr>
<th>Constructs</th>
<th>Factors/Scales</th>
<th>Alpha Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge of HIV/AIDS</strong></td>
<td>Knowledge of HIV/AIDS infection through sexual contact</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>Knowledge of HIV/AIDS effects and reduction methods</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>Knowledge of HIV/AIDS infection through non-sexual contact</td>
<td>.57</td>
</tr>
<tr>
<td><strong>Attitudes about HIV/AIDS</strong></td>
<td>Attitudes of person blame</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Attitudes about quarantine and punishment</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>Attitudes related to shamefulness</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>Attitudes towards HIV/AIDS and persons with AIDS</td>
<td>.26 *</td>
</tr>
<tr>
<td><strong>Outcome Expectancy of Condom Use</strong></td>
<td>Outcome expectancy of convenience</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>Outcome expectancy of HIV/AIDS prevention</td>
<td>.91</td>
</tr>
<tr>
<td></td>
<td>Outcome expectancy reg. negative interpersonal relations</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>Outcome expectancy of condom unreliability</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>Outcome expectancy of condom accessibility</td>
<td>.80</td>
</tr>
<tr>
<td><strong>Condom Use Self-Efficacy</strong></td>
<td>Self-confidence in condom use</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>Condom use self-efficacy with partner</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>Positive feelings of condom use</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>Accessibility to condoms</td>
<td>.30 *</td>
</tr>
<tr>
<td><strong>Perceived Vulnerability of HIV/AIDS</strong></td>
<td>Perceived vulnerability to partner’s external characteristics</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>Perceived vulnerability if no condom is used during sex</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>Perceived vulnerability of being at risk of getting HIV/AIDS</td>
<td>.20 *</td>
</tr>
<tr>
<td><strong>Peer Support</strong></td>
<td>Interpersonal support</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>Peer support for condom usage</td>
<td>.69</td>
</tr>
<tr>
<td><strong>Risk Reduction Practices</strong></td>
<td>Sex with multiple partners</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>Sex with high risk persons</td>
<td>.66</td>
</tr>
</tbody>
</table>

*These factors had Cronbach’s alpha levels below .50 and were not used in subsequent analyses.
Data Analyses Procedures

Frequency distributions were generated for all the independent, dependent and demographic variables. Detailed descriptions of the score distributions are provided with Tables and Figures, wherever needed. The scales/factors obtained from the factor analyses are also described in detail using frequency distributions and descriptive statistical indicators. Hypotheses 1-5 were tested using correlation measures (Pearson ‘r,’ rho, and Kendall’s Tau-b). The default level set for statistical significance was $p \leq .05$. Hypotheses 6 and 7 were tested by running multiple regression analyses. The default level set for statistical significance was $p \leq .05$. All relevant residual analyses such as tests for multicollinearity, linearity, normality, and heteroscedasticity were conducted and are reported in Chapter 4. The research question was tested using the MANOVA procedure since the gender groups were being compared across multiple dependent variables.
CHAPTER IV. RESULTS

This chapter will present results from data analyses and tests of hypotheses. The first section will include a demographic profile of the respondents, which will be followed by a detailed analysis of the scores on all the independent and dependent variables. The last section will consist of the tests of the hypotheses and the research question.

Profile of Respondents

Sex of Respondents

The respondents for the study were African American college students. The sex of the college students was not equally distributed with about 79% of the respondents being females. Twenty respondents did not report their sex (see Table 9 and Figure 3).

Figure 3
Respondents’ Sex
### Table 9: Respondent’s Sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>23</td>
<td>17.7</td>
<td>20.9</td>
<td>20.9</td>
</tr>
<tr>
<td>Female</td>
<td>87</td>
<td>66.9</td>
<td>79.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>84.6</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>15.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 10. Respondents’ Age in Years

<table>
<thead>
<tr>
<th>Age</th>
<th>F</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>.9</td>
</tr>
<tr>
<td>19</td>
<td>14</td>
<td>10.8</td>
<td>12.6</td>
<td>13.5</td>
</tr>
<tr>
<td>20</td>
<td>18</td>
<td>13.8</td>
<td>16.2</td>
<td>29.7</td>
</tr>
<tr>
<td>21</td>
<td>6</td>
<td>4.6</td>
<td>5.4</td>
<td>35.1</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>12.3</td>
<td>14.4</td>
<td>49.5</td>
</tr>
<tr>
<td>23</td>
<td>5</td>
<td>3.8</td>
<td>4.5</td>
<td>54.1</td>
</tr>
<tr>
<td>24</td>
<td>4</td>
<td>3.1</td>
<td>3.6</td>
<td>57.7</td>
</tr>
<tr>
<td>25</td>
<td>6</td>
<td>4.6</td>
<td>5.4</td>
<td>63.1</td>
</tr>
<tr>
<td>26</td>
<td>4</td>
<td>3.1</td>
<td>3.6</td>
<td>66.7</td>
</tr>
<tr>
<td>27</td>
<td>5</td>
<td>3.8</td>
<td>4.5</td>
<td>71.2</td>
</tr>
<tr>
<td>28</td>
<td>5</td>
<td>3.8</td>
<td>4.5</td>
<td>75.7</td>
</tr>
<tr>
<td>29</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>76.6</td>
</tr>
<tr>
<td>30</td>
<td>3</td>
<td>2.3</td>
<td>2.7</td>
<td>79.3</td>
</tr>
<tr>
<td>31</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>80.2</td>
</tr>
<tr>
<td>32</td>
<td>4</td>
<td>3.1</td>
<td>3.6</td>
<td>83.8</td>
</tr>
<tr>
<td>33</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>84.7</td>
</tr>
<tr>
<td>34</td>
<td>4</td>
<td>3.1</td>
<td>3.6</td>
<td>88.3</td>
</tr>
<tr>
<td>35</td>
<td>3</td>
<td>2.3</td>
<td>2.7</td>
<td>91.0</td>
</tr>
<tr>
<td>36</td>
<td>2</td>
<td>1.5</td>
<td>1.8</td>
<td>92.8</td>
</tr>
<tr>
<td>37</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>93.7</td>
</tr>
<tr>
<td>40</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>94.6</td>
</tr>
<tr>
<td>41</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>95.5</td>
</tr>
<tr>
<td>42</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>96.4</td>
</tr>
<tr>
<td>45</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>97.3</td>
</tr>
<tr>
<td>46</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>98.2</td>
</tr>
<tr>
<td>51</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>99.1</td>
</tr>
<tr>
<td>55</td>
<td>1</td>
<td>.8</td>
<td>.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Total | 111 | 85.4 | 100.0 |
| Missing | 19  | 14.6 |
| Total   | 130 | 100.0 |
The respondents’ year of birth ranged from 1952 to 1989. The median age was 23 years and the mean age was 25.7 years (See both Table 10 and Figure 4).

**Respondent’s Education**

As shown in Figure 5, 45% of the respondents were graduate students; however among undergraduate students, freshman comprised the lowest percentage of survey respondents at less than 10% and seniors had the largest percentage of 17%.

**Socioeconomic Status of Respondents**

Socioeconomic indices included mother’s and father’s education levels and total household income. The distribution of responses for mother’s education are shown in Table 11 and illustrated in Figure 6. The results showed that almost 38% of the respondents’ mothers had at least earned their high
school diploma or GED. Approximately 19% of the respondents' mothers had earned an Associate Degree, about 21% had earned a BA/BS, and about 14% had graduate degrees.

Figure 5
Respondents’ Education Level

For the respondents’ father’s education, as shown in Table 12 and illustrated in Figure 7, 48% of the respondents’ fathers had obtained a high school diploma or GED. Though the highest percentage of fathers had an education level of high school diploma and GED, the fathers’ education level was almost evenly distributed in the other categories. For example, 13% of the fathers had an education level of less than high school and 13% education level was an associated degree, and nearly 12% had graduate/professional degrees.

For the socioeconomic index of total household income as shown in Table 13 and illustrated in Figure 8, 27% of the respondents’ incomes were less than $20,000 yearly. Respondents whose total incomes were between $20,000 and $39,999 and $40,000 through
$59,999 each contained 22% of the respondents. The data showed that 12% of the respondents had a yearly income of $80,000 or more.

Table 11
Mother’s Education (N=111)

<table>
<thead>
<tr>
<th>Education</th>
<th>Frequency</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School</td>
<td>6</td>
<td>5.4</td>
</tr>
<tr>
<td>High School/GED</td>
<td>42</td>
<td>37.8</td>
</tr>
<tr>
<td>Associates Degree</td>
<td>25</td>
<td>22.5</td>
</tr>
<tr>
<td>BA/BS</td>
<td>23</td>
<td>20.7</td>
</tr>
<tr>
<td>Graduate/ Professional</td>
<td>15</td>
<td>13.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>111</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Figure 6
Mother’s Education

- Graduate/ Professional: 13.5%
- Less than high school: 5.4%
- BA/BS: 20.7%
- High school/ GED: 37.8%
- Associates degree: 22.5%
## Table 12
Father’s Education
N=107

<table>
<thead>
<tr>
<th>Education</th>
<th>Frequency</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School</td>
<td>14</td>
<td>13.1</td>
</tr>
<tr>
<td>High School/GED</td>
<td>51</td>
<td>47.7</td>
</tr>
<tr>
<td>Associates Degree</td>
<td>14</td>
<td>13.1</td>
</tr>
<tr>
<td>BA/BS</td>
<td>15</td>
<td>14.0</td>
</tr>
<tr>
<td>Graduate/ Professional</td>
<td>13</td>
<td>12.1</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>100.0</td>
</tr>
</tbody>
</table>

## Figure 7
Father’s Education

- Graduate: 12.1%
- No high school: 13.1%
- BA/BS: 14.0%
- Associates degree: 13.1%
- High school/GED: 47.7%
## Table 13
**Total Household Income($$)**

N=107

<table>
<thead>
<tr>
<th>Income Category</th>
<th>Frequency</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>29</td>
<td>27.1</td>
</tr>
<tr>
<td>$20,000 - 39,999</td>
<td>24</td>
<td>22.4</td>
</tr>
<tr>
<td>$40,000 - 59,999</td>
<td>24</td>
<td>22.4</td>
</tr>
<tr>
<td>$60,000 - 79,999</td>
<td>17</td>
<td>15.9</td>
</tr>
<tr>
<td>$80,000 or more</td>
<td>13</td>
<td>12.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>107</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

## Figure 8
**Total Household Income**
Results

Cognitive Involvement

Cognitive involvement/awareness referred to a heightened state of awareness of HIV/AIDS. Respondents self-reported their cognitive involvement/awareness by responding to a couple of questions in the questionnaire.

Is HIV/AIDS a serious issue in the United States? Almost all the respondents (98.5%) responded that it was a very serious issue while the remaining felt that it was “slightly serious.”

How much do you know about HIV/AIDS? This question was used to gauge the respondent’s cognitive involvement/awareness about HIV/AIDS. 37% of the participants responded that they knew ‘a lot’ about the issue while 59% of the respondents felt they had ‘some’ knowledge/awareness of HIV/AIDS issues. A minority (5%) felt they knew very little about the issue (see Table 14).

<table>
<thead>
<tr>
<th>Knowledge/Awareness</th>
<th>Frequency</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot</td>
<td>48</td>
<td>36.9</td>
</tr>
<tr>
<td>Some</td>
<td>76</td>
<td>58.5</td>
</tr>
<tr>
<td>Very little</td>
<td>6</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Behavioral Involvement

Behavioral involvement was measured through information seeking behaviors about HIV/AIDS. There were six items used to examine behavioral involvement of HIV/AIDS among African American college students. The 6 questionnaire items were collapsed to constitute a summative behavioral involvement scale (see Table 15 and Figure 9).
Table 15: Summary of Mean Responses to Behavioral Involvement Scale*  
(N=123)  

<table>
<thead>
<tr>
<th>Mean Score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.8</td>
<td>3.1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

*Cronbach alpha reliability score for the scale = .71

Figure 9
Spread of Scores for Behavioral Involvement/Information Seeking Behavior

The lower end of the scale in Figure 9 represented low levels of behavioral involvement/information seeking behavior and the upper end of the scale was indicative of high levels of involvement. The mean score shown in Table 15 indicates that there was a moderately high level of information seeking behavior among the respondents. There was a negative skew to the distribution of scores indicating that a large number of respondents had scores toward the higher end of the behavioral involvement scale.

Knowledge Constructs
The mean responses to knowledge constructs 1) knowledge of HIV/AIDS spread through sexual contact, 2) knowledge of HIV/AIDS effects and reduction methods, and 3) knowledge of HIV/AIDS infection through non-sexual contact, along with the mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank of each construct are presented in Table 16.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg. Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spread through sexual contact</td>
<td>7.81</td>
<td>.56</td>
<td>4</td>
<td>8</td>
<td>1.95</td>
</tr>
<tr>
<td>Effects and reduction methods</td>
<td>5.90</td>
<td>.41</td>
<td>3</td>
<td>6</td>
<td>1.97</td>
</tr>
<tr>
<td>Infection through non-sexual contact</td>
<td>9.61</td>
<td>.78</td>
<td>5</td>
<td>10</td>
<td>1.92</td>
</tr>
</tbody>
</table>

On each of the knowledge clusters, the lower end of the scale is representative of scores for “incorrect” responses and the upper end of the scale represents “correct” response. The last column in Table 16 shows the rank for each scale. The first rank is given to the scale with the highest averaged mean score and the last rank is given to the scale with the lowest averaged mean score. Knowledge of HIV/AIDS effects and reduction methods has the highest rank followed closely by knowledge of HIV/AIDS spread through sexual contact and knowledge of HIV/AIDS infection through non-sexual contact.

Data in Table 16 show that for all the constructs, there is a high level of knowledge and awareness. Scores on all the three knowledge scales show a prominent negative skew with the majority of scores bunching up at the upper end of the scales (see Figures 10, 11, 12).
Figure 10
Spread of Scores on ‘Knowledge of HIV/AIDS Spread through Sexual Contact’ Scale

Figure 11
Spread of Scores on ‘Knowledge of HIV/AIDS Effects and Reduction Methods’ Scale
**Attitudes about HIV/AIDS Constructs**

The mean responses of the respondents’ attitudes toward HIV/AIDS on 1) attitudes related to blame, 2) attitudes about quarantine and punishment, and 3) attitudes related to shamefulness are exhibited in Table 17. Also shown in Table 17 are mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank of each construct.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg.</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blame</td>
<td>16.05</td>
<td>3.13</td>
<td>9</td>
<td>20</td>
<td>4.01</td>
</tr>
<tr>
<td>Quarantine and punishment</td>
<td>13.05</td>
<td>2.07</td>
<td>3</td>
<td>15</td>
<td>4.35</td>
</tr>
<tr>
<td>Shamefulness</td>
<td>15.45</td>
<td>2.77</td>
<td>8</td>
<td>20</td>
<td>3.86</td>
</tr>
</tbody>
</table>

For all the constructs shown in Table 17, scores toward the upper end of the scale denote more positive attitudes, in general, toward HIV/AIDS. In other words, higher scores indicate attitudes not supportive of blaming someone, not supportive of quarantine and punishment, or attitudes of shamefulness. The last column in Table 17 shows the rank for each scale. The first rank is given
to the scale with the highest averaged mean score and the last rank is given to the scale with the
lowest averaged mean score.

Figure 13
Scores on ‘Attitudes about Quarantine and Punishment’

Figure 14
Scores on ‘Attitudes Related to Blame’
Data in Figure 13 show that the majority have scores toward the higher end of scale thus exhibiting attitudes that do not support quarantine and punishment toward HIV/AIDS or persons with AIDS. Attitudes relating to blame had the second rank but there was little support for blaming someone for his/her HIV/AIDS infection (see Figure 14). Also, attitudes related to shame of association with an HIV/AIDS infected person found little support though it had the lowest rank among the three constructs (see Figure 15).

**Figure 15**  
Scores on ‘Attitudes Related to Shamefulness’

![Scores on ‘Attitudes Related to Shamefulness’](image)

**Outcome Expectancy of Condom Use**

The mean responses to outcome expectancy of condom use constructs 1) outcome expectancy of convenience, 2) outcome expectancy of HIV/AIDS prevention, 3) outcome expectancy regarding negative interpersonal relations, 4) outcome expectancy of condom unreliability and 5) outcome expectancy of condom accessibility along with the mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank of each construct are presented in Table 18.
Table 18: Summary of Mean Responses to Outcome Expectancy of Condom Use Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg. Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenience</td>
<td>16.20</td>
<td>3.30</td>
<td>8</td>
<td>20</td>
<td>4.05</td>
</tr>
<tr>
<td>HIV/AIDS prevention</td>
<td>11.33</td>
<td>3.17</td>
<td>3</td>
<td>15</td>
<td>3.78</td>
</tr>
<tr>
<td>Negative relations</td>
<td>15.60</td>
<td>3.12</td>
<td>8</td>
<td>20</td>
<td>3.90</td>
</tr>
<tr>
<td>Condom unreliability</td>
<td>6.57</td>
<td>2.62</td>
<td>3</td>
<td>15</td>
<td>2.19</td>
</tr>
<tr>
<td>Condom accessibility</td>
<td>8.47</td>
<td>1.60</td>
<td>5</td>
<td>10</td>
<td>4.24</td>
</tr>
</tbody>
</table>

Scores on the higher end of the scales in Table 18 denote positive outcome expectancies of condom use. The last column shows the rank for each scale. The first rank is given to the scale with the highest averaged mean score and the last rank is given to the scale with the lowest averaged mean score.

**Figure 16**
Spread of Scores on ‘Outcome Expectancy of Condom Use Accessibility’

Data in Table 18 show fairly high mean scores on the constructs of 1) outcome expectancy of condom accessibility, 2) outcome expectancy of convenience, and 3) outcome expectancy regarding negative interpersonal relations. The spread of scores in
Figures 16 through 18 exhibit a left skew that indicates that scores are bunching up toward the higher end. This indicates that the respondents expected positive outcomes in terms of ready availability of condoms, showed lack of support for inconveniences related to condom use and a lack of support for negative reactions from partner vis-à-vis condom use.
The mean score on the constructs of ‘outcome expectancy of HIV/AIDS prevention’ was moderate showing a more bell-shaped score distribution (see Fig. 19) indicating moderate support for the expectancy of condom use leading to HIV/AIDS prevention. On the construct of ‘outcome expectancy of condom use unreliability’ the mean score was relatively low indicating a relative lack of support for positive outcomes related to reliability of condom use during sex. The scores in Fig. 20 show a right skew and a concentration of scores at the bottom end of the scale.
**Condom Use Self-efficacy Constructs**

The mean responses to condom use self-efficacy constructs 1) self-confidence in condom use, 2) condom use self-efficacy with partner, and 3) positive feelings of condom use along with the mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank of each construct are presented in Table 19.

Table 19: Summary of Mean Responses Condom Use Self-efficacy Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg. Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condom Use Self-efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-confidence</td>
<td>13.74</td>
<td>2.56</td>
<td>8</td>
<td>16</td>
<td>3.43</td>
</tr>
<tr>
<td>Partner’s condom use</td>
<td>21.41</td>
<td>3.16</td>
<td>14</td>
<td>25</td>
<td>4.28</td>
</tr>
<tr>
<td>Positive feelings of condom</td>
<td>7.02</td>
<td>2.29</td>
<td>2</td>
<td>10</td>
<td>3.51</td>
</tr>
</tbody>
</table>

In Table 19, scores toward the higher end of the scale denote higher levels of self-efficacy of condom use for all the constructs. The last column shows the relative rank of...
each scale. The first rank is given to the scale with the highest averaged mean score and the last rank is given to the scale with the lowest averaged mean score. Data in Table 19 and Figures 21 to 23 show that for all the constructs there is a high level of self-efficacy of condom use. All the histograms show a left skew and a concentration of scores toward the middle and upper end of
the scales. ‘Condom use self-efficacy with partner’ has the highest rank, followed by ‘positive feelings of condom use’ and ‘self confidence in condom use self efficacy.’

Figure 23
Spread of Scores on ‘Self-confidence in Condom Use Self-efficacy’

Perceived Vulnerability Constructs

The mean responses to perceived vulnerability constructs 1) perceived vulnerability in relation to partner’s external characteristics, and 2) perceived vulnerability if no condom is used during sex are shown in Table 20. Also shown in Table 20 are mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank of each construct. Higher scores denote greater vulnerability to HIV/AIDS. The last column

Table 20: Summary of Mean Responses to Perceived Vulnerability Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg. Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Vulnerability to HIV/AIDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner’s external characteristics</td>
<td>6.92</td>
<td>3.18</td>
<td>4</td>
<td>16</td>
<td>1.73</td>
</tr>
<tr>
<td>Sex without condoms</td>
<td>3.97</td>
<td>1.52</td>
<td>3</td>
<td>10</td>
<td>1.32</td>
</tr>
</tbody>
</table>
shows the rank for each scale. The first rank is given to the scale with the highest averaged mean score.

Data in Table 20 suggest that the construct ‘perceived vulnerability in relation to partner’s external characteristics’ has a higher mean score than ‘perceived vulnerability if no condom is used during sex.’ The scores on both constructs (see Figures 24 and 25) are toward the lower end of the respective scales denoting low levels of vulnerability to HIV/AIDS.

Figure 24
Spread of Scores on ‘Perceived Vulnerability in Relation to Partner’s External Characteristics’

Peer Support Constructs

The mean responses to peer support constructs of 1) interpersonal peer support among friends, and 2) peer support for condom use are shown in Table 21 along with the mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank for each construct. In Table 21, scores toward the higher end of the scales are indicative of stronger peer support for both constructs. The last column shows the relative rank for each scale. The first rank is given to the scale with the highest averaged mean score.
Data in Table 21 show that on both scales, the mean scores are toward the lower end of the scales suggesting lower levels of peer support. As shown in Figures 26 and 27, the spread of the scores has a right skew indicating a bunching up at the lower end of the scale.

Table 21: Summary of Mean Responses to Peer Support Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg.</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal Support</td>
<td>4.65</td>
<td>1.48</td>
<td>3</td>
<td>8</td>
<td>1.55</td>
</tr>
<tr>
<td>Support for condom use</td>
<td>3.81</td>
<td>1.51</td>
<td>2</td>
<td>8</td>
<td>1.90</td>
</tr>
</tbody>
</table>
Risk Reduction Constructs

The mean responses for the constructs on risk reduction practices 1) sex with multiple partners, and 2) sex with high risk persons are shown in Table 22 along with the mean scores of the constructs, standard deviation, range of scale, averaged mean and the rank for each construct. Scores toward the higher end of the scales denote reduced risk or safe sex practices for both
Table 22: Summary of Mean Responses to Risk Reduction Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean score</th>
<th>Std. Dev</th>
<th>Range of Scale</th>
<th>Avg. Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Reduction Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex with multiple partners</td>
<td>5.21</td>
<td>1.05</td>
<td>2</td>
<td>6</td>
<td>2.60</td>
</tr>
<tr>
<td>Sex with high risk persons</td>
<td>5.96</td>
<td>.26</td>
<td>4</td>
<td>6</td>
<td>2.98</td>
</tr>
</tbody>
</table>

Figure 28
Spread of Scores on ‘Sex with Multiple Partners’

Figure 29
Spread of Scores on ‘Sex with High Risk Persons’
constructs. The last column shows the relative rank for each scale. The first rank is given to the scale with the highest averaged mean score. Data in Table 22 shows that for both scales, the mean scores are at the higher end of the scales suggesting reduced risk or safe sex practices among the respondents. The spread of the scores in Figures 28 and 29 show a prominent left skew with a majority of the scores piling up at the upper end of the scales.

Self-perception of Risk for HIV/AIDS Infection

The respondents were queried about their self-perception of risk for HIV/AIDS infection. The results are depicted in Table 23 and Figure 30. Overall, the respondents felt that they were at low risk for contracting HIV/AIDS. The median score was 2.0 on a 4.0 scale. A large majority (81%) reported that they was ‘no chance’ or ‘low chance’ that they would be infected with the HIV virus.

Table 23. What are your chances of being infected with HIV/AIDS virus?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No chance (1)</td>
<td>24</td>
<td>18.5</td>
<td>18.9</td>
<td>18.9</td>
</tr>
<tr>
<td>Low Chance (2)</td>
<td>79</td>
<td>60.8</td>
<td>62.2</td>
<td>81.1</td>
</tr>
<tr>
<td>Medium Chance (3)</td>
<td>21</td>
<td>16.2</td>
<td>16.5</td>
<td>97.6</td>
</tr>
<tr>
<td>High Chance (4)</td>
<td>3</td>
<td>2.3</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>127</td>
<td>97.7</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing (9)</td>
<td>3</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Median = 2.0; Mean= 2.02; Std. Deviation= .67
Condom Use

In order to gauge the use of condoms during sex, the respondents were queried as to the frequency of their use of condoms during the preceding 5 sexual encounters. Table 24 and Figure 31 report the results. The mean score was 3.3 showing that a slight majority of the respondents reported using condoms at least 4 or more times during the previous 5 acts of sex. However, 50 respondents (38%) chose not to answer this question.

Table 24. Condom Use During Preceding Five Sex Acts

<table>
<thead>
<tr>
<th>Condom Use</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27</td>
<td>20.8</td>
<td>33.8</td>
<td>33.8</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2.3</td>
<td>3.8</td>
<td>37.5</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>4.6</td>
<td>7.5</td>
<td>45.0</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>5.4</td>
<td>8.8</td>
<td>53.8</td>
</tr>
<tr>
<td>5</td>
<td>37</td>
<td>28.5</td>
<td>46.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>61.5</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>50</td>
<td>38.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean = 3.3; Std. Deviation = 1.81
Test of Hypotheses

First Hypothesis

The first hypothesis stated that knowledge about HIV/AIDS will be related to positive attitudes toward HIV/AIDS. The data were observed for correlations. Table 25 exhibits the correlation between the three variables of HIV/AIDS knowledge and the three variables of HIV/AIDS attitudes. Pearson’s correlation values are reported with the level of significance for a 2-tailed hypothesis test.

Table 25: Correlation between Knowledge of HIV/AIDS and Attitudes toward HIV/AIDS

<table>
<thead>
<tr>
<th></th>
<th>Attitudes of blame</th>
<th>Attitudes of quarantine &amp; punishment</th>
<th>Attitudes of shamefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of HIV/AIDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sexual contact</td>
<td>.147</td>
<td>.063</td>
<td>.034</td>
</tr>
<tr>
<td>Knowledge of HIV/AIDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects and reduction</td>
<td>-.048</td>
<td>.033</td>
<td>.084</td>
</tr>
<tr>
<td>methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of HIV/AIDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>infection through non-</td>
<td>.240**</td>
<td>.218**</td>
<td>.248**</td>
</tr>
<tr>
<td>sexual contact</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<.01
The first hypothesis was supported for the positive relationship between knowledge of HIV/AIDS infection through non-sexual contact and the attitudes related to blaming someone for being HIV/AIDS positive, attitudes about quarantine and punishment, and attitudes related to shamefulness of being HIV/AIDS positive. Higher scores on attitude are indicative of positive responses. This shows that higher scores on knowledge and awareness of HIV infection through non-sexual contact are associated with attitudes supportive of not blaming the victim, attitudes not supportive of quarantine and punishment of HIV/AIDS infected persons or attitudes of shamefulness toward HIV/AIDS infected persons (see Table 17). There was no statistically significant relationship between the other two knowledge variables and the attitude variables.

Second Hypothesis

The second hypothesis stated that cognitive involvement with HIV/AIDS would be positively related to behavioral involvement with HIV/AIDS. Table 26 shows the relationship between the two variables. Kendall Tau-b correlation values are reported in Table 26 with the level of significance for a 2-tailed test.

Table 26: Correlation between Cognitive Involvement and Behavioral Involvement

<table>
<thead>
<tr>
<th>Cognitive Involvement</th>
<th>Behavioral Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Involvement</td>
<td>1.0</td>
</tr>
<tr>
<td>Behavioral Involvement</td>
<td>.288**</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

**p<.01

The hypothesis was supported. The data in Table 26 indicate that there is a significant positive relationship (p<.01) between cognitive involvement with HIV/AIDS and behavioral involvement/information seeking behavior. This indicates that higher levels of cognitive involvement with HIV/AIDS were associated with greater information seeking behavior vis-à-vis HIV/AIDS.
**Third Hypothesis**

The third hypothesis stated that cognitive involvement with HIV/AIDS would be positively related to knowledge about HIV/AIDS. Data in Table 27 show no significant relationship between cognitive involvement and HIV/AIDS knowledge. Kendall’s Tau-b correlation values are reported in Table 27 with the level of significance for a 2-tailed test.

<table>
<thead>
<tr>
<th>Knowledge of HIV/AIDS sexual contact</th>
<th>Knowledge of HIV/AIDS effects and reduction methods</th>
<th>Knowledge of HIV/AIDS infection through non-sexual contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Involvement (with HIV/AIDS)</td>
<td>.043</td>
<td>.120</td>
</tr>
</tbody>
</table>

Note: All correlations p>.05

The third hypothesis was not supported. The data reported in Table 27 showed no significant relationship (p> .05) between the respondents’ cognitive involvement with AIDS–related issues and their levels of knowledge regarding the disease.

**Fourth Hypothesis**

The fourth hypothesis stated that behavioral involvement with HIV/AIDS would be positively related to knowledge about HIV/AIDS. Data in Table 28 show the relationship between the three knowledge scales and behavioral involvement scale. Pearson’s correlation values are reported in Table 28 with the level of significance for a 2-tailed test.
Table 28: Correlation between Behavioral Involvement and Knowledge of HIV/AIDS

<table>
<thead>
<tr>
<th>Behavioral involvement</th>
<th>Knowledge of HIV/AIDS sexual contact</th>
<th>Knowledge of HIV/AIDS effects and reduction methods</th>
<th>Knowledge of HIV/AIDS infection through non-sexual contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.270**</td>
<td>-.028</td>
<td>.195*</td>
</tr>
</tbody>
</table>

*p≤.05 ; **p≤.01

The data in Table 28 suggest that the hypothesis was supported for the positive relationship between the respondents’ behavioral involvement and knowledge of HIV/AIDS sexual contact (p< .01), and the positive relationship between knowledge of HIV/AIDS infection through non-sexual contact and behavioral involvement/information seeking behavior (p< .05). There was no significant relationship between knowledge of HIV/AIDS effects and reduction methods and information seeking behaviors among the respondents (p> .05).

Fifth Hypothesis

The fifth hypothesis stated that socioeconomic status (SES) of a person would be positively related to HIV/AIDS knowledge indicating a knowledge gap between persons of high and low socioeconomic status. In this study, total household income, mother’s educational level and father’s educational level were used as indicators of SES. Higher scores on these variables were indicative of higher SES. The second part of the hypotheses stated that cognitive involvement would narrow the knowledge gap between persons of high and low SES; and the third part of the hypothesis stated that behavioral involvement would narrow the knowledge gap between persons of high and low SES.

Data in Table 29 illustrate the relationship between the socioeconomic variables and the three knowledge variables of HIV/AIDS. The Spearman’s rho correlation values are reported in Table 29 with the level of statistical significance for a 2-tailed test.
Table 29: Correlation between Socioeconomic Status and Knowledge of HIV/AIDS

<table>
<thead>
<tr>
<th></th>
<th>Knowledge of HIV/AIDS sexual contact</th>
<th>Knowledge of HIV/AIDS effects and reduction methods</th>
<th>Knowledge of HIV/AIDS infection through non-sexual contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother’s educational</td>
<td>-.004</td>
<td>.079</td>
<td>.011</td>
</tr>
<tr>
<td>Father’s educational</td>
<td>.171</td>
<td>.057</td>
<td>-.079</td>
</tr>
<tr>
<td>Total household income ($)</td>
<td>.057</td>
<td>-.042</td>
<td>.018</td>
</tr>
</tbody>
</table>

Note: All correlations were p > .05

The hypothesis of a significant relationship between SES indices and knowledge variables was not supported (p > .05). There was no significant relationship between knowledge of HIV/AIDS sexual contact and mother’s education, father’s education, and total household income. Also, there was no significance between the other two knowledge variables and the socioeconomic status of the respondents. As there was no significant relationship between the knowledge factors and socioeconomic status of the respondents, there was no knowledge gap between high and low SES groups. Hence, there was no need to test the relationship between cognitive involvement and knowledge gap (i.e. Hypothesis 5B) or the need to test if behavioral involvement would narrow the knowledge gap (i.e. Hypothesis 5C).

Sixth Hypothesis

The sixth hypothesis, which stated that risk reduction behaviors (safe sex) will be predicted by HIV/AIDS knowledge, attitudes, cognitive involvement, and behavioral involvement factors, was modeled using multiple regression analysis. Regression analysis was used to assess the predictive power of HIV/AIDS knowledge, attitudes, cognitive involvement, and behavioral involvement factors on risk reduction behaviors (i.e. safe sex behaviors) among the survey respondents. The predictor variables were chosen based on previous research.
(Goswami, 1996) in this area. The backward elimination method was chosen to select the final set of predictor variables for the regression analysis. The goal was to build a simple model that predicted safe sex behaviors well since including irrelevant variables in a model would increase the standard errors of the regression coefficients without improving prediction (Norusis, 2005).

In the backward elimination method of selecting predictor variables, I started with a regression model that contained all the independent variables. At each step, the variable with the largest observed significant level (default criterion for removal was an observed level of 0.1 or higher) was removed from the model. This process was repeated at each step until there were no more variables to remove from the model. This resulted in the following simple linear regression model that predicted risk reduction behavior:

\[ \text{Predicted } Y = \text{Constant } + b_1x_1 \]

\[ Y = \quad \text{Sex with high risk persons} \]
\[ x_1 = \quad \text{Knowledge of HIV/AIDS sexual contact} \]
\[ b_1 = \quad \text{Partial regression coefficient} \]

Table 30 shows the results of the overall regression F test. The test of the null hypothesis was based on the ratio of the mean square regression to the mean square residual. In Table 30, this ratio labeled F is equal to 17.41 (p = .0009). Since the observed significance level is less than .001, the null hypothesis that there is no linear relationship between “sex with high risk persons” and the predictor variable of “knowledge of HIV/AIDS sexual contact” is rejected. In other words, “knowledge of HIV/AIDS sexual contact” is a significant predictor of “sex with high risk persons.” The multiple R, which is the correlation coefficient between the observed value of “sex with high risk persons” and the predicted value based on the regression model is 0.45. This is moderately high, showing that the linear regression model predicts well. The R
square value indicates that 20% of the observed variability in the dependent variable of “sex with high risk persons” is explained by “knowledge of HIV/AIDS sexual contact.” The adjusted R square (19%) is an estimate of how well the model would fit another data set from the same population.

Table 30: Multiple Regression ANOVA Table for Sex with High Risk Persons Regressed on Knowledge of HIV/AIDS Sexual Contact

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.795</td>
<td>1</td>
<td>.795</td>
<td>17.41</td>
</tr>
<tr>
<td>Residual</td>
<td>3.149</td>
<td>69</td>
<td>.046</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.944</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple R = 0.45; R Square = 0.20; Adjusted R Square = 0.19; Standard Error of estimate = .21

Table 31: Regression Coefficients

<table>
<thead>
<tr>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.26</td>
<td>.410</td>
<td>10.39</td>
<td>.0009</td>
</tr>
<tr>
<td>Knowledge of HIV/AIDS sexual contact</td>
<td>.22</td>
<td>.052</td>
<td>.45</td>
<td>4.17</td>
</tr>
</tbody>
</table>

Data in Table 31 suggest that it is possible to reject the null hypothesis that the coefficient for ‘knowledge of HIV/AIDS sexual contact’ is zero. In other words, “knowledge of HIV/AIDS sexual contact” is a significant predictor of “sex with high risk persons.”

Using the coefficients in Table 31, the estimated multiple regression equation is:

\[ Y^\prime = 4.26 + .22x_1 \]  
(\text{where } Y^\prime = \text{predicted value of ‘sex with high risk persons’ and } x_1 = \text{‘knowledge of HIV/AIDS sexual contact’}). \text{ The predicted value for ‘sex with high risk persons’ increases by .22 units for 1 unit increase in the scale of ‘knowledge of HIV/AIDS sexual contact’}. \]
contact.’ (Note: Higher values on the scale of ‘sex with high risk persons’ denote reduced risk or safer sex behavior)

**Multiple Regression Diagnostic Tests**

There are a few assumptions that will need to be met in any multiple regression test: a) the relationship between the dependent and the independent variables should be linear, b) for each combination of values of the independent variables, the distribution of the dependent variables should be normal with a constant variance (homoscedasticity).

*Plots against independent variables.* To check for linearity, a partial regression plot was drawn (see Figures 32). It is a plot of two residuals (Norusis, 2005). On the vertical axis are plotted the residuals from predicting ‘sex with high risk persons’ from all the independent variables except the variable being plotted on the horizontal axis. On the horizontal axis is plotted the residuals from predicting ‘knowledge of HIV/AIDS sexual contact’ from the other independent variable(s). By calculating the residuals, the linear effects of the other independent variable(s) is removed from both the dependent variable (y-axis) and the independent variable (x-axis). If the assumption of linearity is met, a random scatter of data points will be seen around the regression line. There will be no curvy pattern. Figure 32 indicates that the assumption of linearity is met.
Examining normality. To examine the normality assumption, a stem-and-leaf plot of studentized deleted residuals was first drawn. Since the sample size is N=87, the distribution should be approximately normal. The plot (see Figure 33) shows a single dominant peak. Most of the data values seem to be clustering at one point.
The Q-Q plot of residuals is shown in Figure 34. If the residuals are from a normal population, they should fall close to the straight line. The data in Figure 34 show no departure from normality.

*Examining homoscedasticity.* Figure 35 is a scatterplot of predicted and observed values of ‘sex with high risk persons’ (dependent variable). For each observed value of ‘sex with high risk persons,’ there is a range of predicted values. If the assumption of equal variances is met, the range should be roughly same for all observed values of safe sex behaviors. In Figure 35, we see that for the observed values at the end of the scale, the range is not roughly the same and the spread is not fairly distributed above and below the line. The range of spread for the intermediate points on the horizontal axis scale, however, are either below or above the line. This is probably because there were very few respondents who reported such scores (see Figure 29). Therefore, there was not much observed variability in “sex with high risk persons” for people who reported lower or intermediate values on that scale.
Seventh Hypothesis

The seventh hypothesis, which stated that condom use will be predicted by HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy factors, was modeled using multiple regression analysis. Regression analysis was used to assess the predictive power of HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy factors for condom use among the survey respondents. The predictor variables were chosen based on previous research (Velu, 2001) in this area. The backward elimination method was chosen to select the final set of predictor variables for the regression analysis. The goal was to build a simple model that predicted condom use well since including irrelevant variables in a model would increase the standard errors of the regression coefficients without improving prediction (Norusis, 2005). In the backward elimination method of selecting predictor variables, I started with a regression model that contained all the independent variables. At each step, the variable with the largest observed significant level (default criterion for removal was an observed level of 0.1 or higher) was removed from the model. This process was repeated at each step until there were no more
variables to remove from the model. The multiple linear regression equation used that predicted condom use was:

\[
\text{Predicted } Y = \text{Constant} + B_1 x_1 + B_2 x_2, \text{ where}
\]

\[
Y = \text{Condom Use}
\]

\[
x_1 = \text{Outcome expectancy of convenience}
\]

\[
x_2 = \text{Positive feelings of condom use (Condom use self efficacy factor)}
\]

\[
B_1 \text{ & } B_2 = \text{Partial regression coefficients}
\]

Table 32 shows the results of the overall regression F test. The test of the null hypothesis was based on the ratio of the mean square regression to the mean square residual. In Table 32, this ratio labeled F is equal to 22.71 (p = .0009). Since the observed significance level is less than .001, the null hypothesis that there is no linear relationship between condom use and the two predictor variables is rejected. At least one of the population regression coefficients is not zero. The multiple R, which is the correlation coefficient between the observed value of condom use and the predicted value based on the regression model is 0.63. This is quite large, showing that the linear regression model predicts well. The R square value indicates that 39% of the observed variability in condom use is explained by ‘outcome expectancy of convenience’ and ‘positive feelings of condom use.’ The adjusted R square (38%) is an estimate of how well the model would fit another data set from the same population.
Table 32: Multiple Regression ANOVA Table for Condom Use Regressed on Outcome Expectancy of Convenience and Positive Feelings of Condom Use

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>91.047</td>
<td>2</td>
<td>45.524</td>
<td>22.71</td>
<td>.0009</td>
</tr>
<tr>
<td>Residual</td>
<td>140.322</td>
<td>70</td>
<td>2.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>231.370</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple R= 0.627; R Square= 0.394; Adjusted R Square= 0.376; Standard Error of estimate = 1.42

Table 33: Regression Coefficients

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.685</td>
<td>.883</td>
<td>-.776</td>
<td>.440</td>
<td></td>
</tr>
<tr>
<td>Outcome Expectancy of convenience</td>
<td>.031</td>
<td>.052</td>
<td>.057</td>
<td>.593</td>
<td>.555 .932</td>
</tr>
<tr>
<td>Positive feelings of condom use</td>
<td>.503</td>
<td>.080</td>
<td>.610</td>
<td>6.328</td>
<td>.0009 .932</td>
</tr>
</tbody>
</table>

Data in Table 33 suggest that it is possible to reject the null hypothesis that the coefficient for ‘positive feelings of condom use’ is zero. It is not possible to reject the null hypothesis that the coefficient for ‘outcome expectancy of convenience’ is zero. However, this finding does not mean that ‘outcome expectancy of convenience’ is not a good predictor of condom use when considered alone. The Pearson r value for the correlation between ‘outcome expectancy of convenience’ and condom use was .22, which was statistically significant at p=.033. The correlation between ‘outcome expectancy of convenience’ and ‘positive feelings of condom use’ was r = .26, which was statistically significant at p= .013. The two independent variables are significantly correlated with each other. So, it is likely that much of the information supplied by ‘outcome expectancy of convenience’ is already conveyed by ‘positive feelings of condom use.’
However, the data are not multicollinear. The tolerance statistics values in Table 31 are much greater than 0.1 for either independent variable indicating that multicollinearity is not a problem. Tolerance is the proportion of variability of a variable that is not explained by its linear relationship with the other independent variable in the model.

Using the coefficients in Table 33, the estimated multiple regression equation is:

\[ \hat{Y} = -0.69 + 0.03x_1 + 0.5x_2 \]  

(where \( \hat{Y} \) = predicted condom use, \( x_1 \)= outcome expectancy of convenience, and \( x_2 \)= positive feelings of condom use). The predicted value for condom use increases by 0.5 and 0.03 units for 1 unit increase respectively in the scales of ‘positive feelings of condom use’ and ‘outcome expectancy of convenience.’

**Multiple Regression Diagnostic Tests**

There are a few assumptions that will need to be met in any multiple regression test: a) the relationship between the dependent and the independent variables should be linear, b) for each combination of values of the independent variables, the distribution of the dependent variables should be normal with a constant variance (homoscedasticity).

*Plots against independent variables.* To check for linearity, partial regression plots were drawn (see Figures 36 & 37). It is a plot of two residuals (Norusis, 2005). On the vertical axis are plotted the residuals from predicting condom use from all the independent variables except the variable being plotted on the horizontal axis. On the horizontal axis is plotted the residuals from predicting the specific independent variable from the other independent variable(s). By calculating the residuals, the linear effects of the other independent variable(s) is removed from both the dependent variable (y-axis) and the independent variable (x-axis).
Figure 36
Partial Regression Plot for the Dependent Variable of Condom Use and Independent Variable ‘Positive Feelings of Condom Use’

Figure 37
Partial Regression Plot for the Dependent Variable of Condom Use and Independent Variable ‘Outcome Expectancy of Convenience’
If the assumption of linearity is met, a random scatter of data points will be seen around the regression line. There will be no curvy pattern. Figures 36 and 37 indicate that the assumption of linearity is met for both independent variables.

**Figure 38**
Stem and Leaf Plot of Studentized Residuals

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Stem &amp; Leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Extremes</td>
</tr>
<tr>
<td>1.00</td>
<td>-1 .</td>
</tr>
<tr>
<td>3.00</td>
<td>-1 .</td>
</tr>
<tr>
<td>.00</td>
<td>-1 .</td>
</tr>
<tr>
<td>7.00</td>
<td>-1 .</td>
</tr>
<tr>
<td>3.00</td>
<td>-1 .</td>
</tr>
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<td>2.00</td>
<td>-0 .</td>
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<tr>
<td>2.00</td>
<td>-0 .</td>
</tr>
<tr>
<td>5.00</td>
<td>-0 .</td>
</tr>
<tr>
<td>2.00</td>
<td>-0 .</td>
</tr>
<tr>
<td>1.00</td>
<td>-0 .</td>
</tr>
<tr>
<td>15.00</td>
<td>0 .</td>
</tr>
<tr>
<td>8.00</td>
<td>0 .</td>
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<td>6.00</td>
<td>0 .</td>
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<td>.00</td>
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<td>4.00</td>
<td>1 .</td>
</tr>
<tr>
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<td>2.00</td>
<td>1 .</td>
</tr>
<tr>
<td>1.00</td>
<td>1 .</td>
</tr>
<tr>
<td>1.00</td>
<td>Extremes</td>
</tr>
</tbody>
</table>

**Examining normality.** To examine the normality assumption, a stem-and-leaf plot of Studentized deleted residuals was first drawn. Since the sample size is N=73, the distribution should be approximately normal. The plot (see Figure 38) looks fairly symmetrical. There is a single dominant peak situated fairly in the center of data values.

The Q-Q plot of residuals is shown in Figure 39. If the residuals are from a normal population, they should fall close to the straight line. The data in Figure 39 show no departure from normality.
Finally, in Figure 40, a boxplot of residuals is drawn. The distribution is fairly symmetric as the median falls fairly in the middle of the plot. The middle half of residuals (i.e. between 25th and 75th percentiles) lie between .5 and -.7. The corresponding quartiles for a normal distribution are .68 and -.68, so the sample results match quite well. The whiskers extend to +2 and -2, which is expected from a sample from a normally distributed population (Norusis, 2005).

**Examining homoscedasticity.** Figure 41 is a scatterplot of predicted and observed values of condom use (dependent variable). For each observed value of condom use, there is a range of predicted values. If the assumption of equal variances is met, the range should be roughly same for all observed values of condom use. In Figure 41 we see that for the values at the ends of the scale, the range is roughly the same and the spread is fairly well distributed above and below the line. The range of spread for the intermediate points on the scale, however, are either below or above the line. This is probably because there were very few respondents who reported such scores (see Table 24). Therefore, there was not much observed variability in condom use for people who reported using 2, 3, or 4 times in the preceding 5 sexual acts.
Research Question

What is the relative vulnerability of males vs. females to potential infection of HIV/AIDS?

At present, since there is no known cure for AIDS, prevention using safe sexual practices is recommended as the best strategy for protecting oneself from potential infection of HIV/AIDS. Regular and consistent condom use during sex has been encouraged by health
agents and UNAIDS agency (www.unaids.org) as a safe and practical strategy. In this study, the seventh hypothesis, which was supported, showed that outcome expectancy and condom use self-efficacy factors were significant predictors of condom use. So, in order to answer this research question, the mean scores of men and women were compared on the combined set of dependent variables of outcome expectancy and condom use self-efficacy factors. If there was a significant difference in the mean scores on the combined set of multiple dependent variables, it would then be possible to look for potential vulnerability of the two genders to HIV/AIDS infection. The MANOVA test was used to test this difference. The MANOVA test showed that there was no significant difference between men and women on the multiple dependent variables of outcome expectancy and condom use self-efficacy (Pillai’s test value = .019, F = .78, Hypothesis df = 2.0, Error df = 79.0, p = .46). Since there was no significant difference between males and females, no post-hoc tests were performed. With the present data set, it is not possible to posit if men or women are more vulnerable to HIV/AIDS since there is no difference between them on the predictor variables of safe sex.
CHAPTER V. DISCUSSION AND CONCLUSION

The major sections of this chapter include the purpose the study, the theories and models used to guide the research, discussion of findings and their comparison with past research. The last section of the study consists of future HIV/AIDS research that needs to be done among African Americans college students and limitations of the study.

Purpose of the Study

The study was used to investigate the knowledge levels, attitudes, cognitive and behavioral involvement of HIV/AIDS among African American college students. Moreover, the research also investigated among the targeted group the socio-psychological variables that help contribute to safer sex practices such as condom use. It is important to understand not only the level of knowledge, attitudes and involvement among the students but it is also imperative to discover what socio-psychological variables contribute to African American students decreasing their risk of becoming HIV/AIDS positive.

The results of the study are important because it is essential to gain more insights about a population that has been understudied. Foreman (2003) explicates that there have been few studies done to examine why college students do not use condoms on a consistent bases. Not only is scholarly research limited on college students and their sexual behaviors, but there is also a need for more research that strictly focuses on African American college students and their sexual practices. The main criticisms of research conducted on HIV/AIDS include but are not limited to the following: there is a lack of African Americans in the sample, and there is not enough analysis done that only encompass African Americans.

The study tested several hypotheses and asked one research question:

**H1:** Knowledge about HIV/AIDS will be related to positive attitudes toward HIV/AIDS.
H2: Cognitive involvement (with HIV/AIDS) will be positively related to behavioral involvement with HIV/AIDS.

H3: Cognitive involvement (with HIV/AIDS) will be positively related to knowledge about HIV/AIDS.

H4: Behavioral Involvement (with HIV/AIDS) will be positively related to knowledge about HIV/AIDS.

H5a: Socioeconomic status index (SES) of a person will be positively related to knowledge of HIV/AIDS, indicating a knowledge gap between persons of high and low socioeconomic status.

   H5b: Cognitive involvement (with HIV/AIDS) will narrow the knowledge gap between persons of high and low SES.

   H5c: Behavioral involvement (with HIV/AIDS) will narrow the knowledge gap between persons of high and low SES.

H6: Behavior (safe sex behavior) will be predicted by knowledge, attitude, cognitive and behavioral involvement factors.

H7: Condom use will be predicted by HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy factors.

Research Question: What is the relative vulnerability of males vs. females to potential infection from HIV/AIDS?

Conceptual Framework

The research questions and hypotheses were generated from a combination of past research and theories that have been used for intervention strategies in HIV/AIDS communication/education campaigns. Six hypotheses posited in this study have been tested.
before among university students in India by Goswami (1996). More than 10 years later, the study is still relevant because there is a lack of testing of socio-psychological variables among college students in the United States who constitute a vulnerable group to HIV/AIDS infection. The theories used to develop the constructs for the study consisted of the Health Belief Model, Theory of Reasoned Action, and Social Cognitive Theory. Various constructs from the theories were beneficial in laying the groundwork for understanding African American college students’ condom use. The Health Belief Model focuses on the perception of vulnerability to contracting HIV/AIDS, which is a construct tested in this research. The Theory of Reasoned Action posits that an individual’s intentions will influence the individual’s behavior. Self-efficacy posits that an individual must believe that he or she has the ability to change his/her situation.

Overview of Research Process

The participants of the study are African American college students who were selected through a non-random snowball sample. At the beginning of the study, only African American college students from a mid-size university in the Midwest were selected for the study but because of a low response rate, the study had to be opened to African American college students across the United States. The researcher used snowball sampling to generate more responses to the survey. A total of 130 African American college students completed the survey. Roughly 90% of all participants took the survey on a web based format called Survey Monkey for easier accessibility.

The survey instrument was developed from a combination of previous surveys. Items on the questionnaire were developed from a variety of sources that include: Velu (2002) who examined knowledge, perceived vulnerability, perceived social support, condom use self-efficacy and outcome expectancies of condom use among commercial sex workers. The
questionnaire also includes items used by Goswami (1996) who examined cognitive involvement, socioeconomic status, attitudes and knowledge among college students in India. Additionally, other sources included Carey and Schroder’s (2002) HIV knowledge questionnaire, and a survey about attitudes towards people with HIV/AIDS from the HIV/AIDS survey library retrieved from the Population Council website. Some of the questions from each of the different resources were adapted to fit the population of this study. In the first part of the questionnaire, the items examined cognitive involvement, information seeking, attitudes, knowledge, and perceived risk of contracting HIV/AIDS. The second part of the questionnaire sought information on condom use, condom use self-efficacy, perceived vulnerability, peer group comparison, outcome expectancies, and safe sex behaviors. The last section of the questionnaire examined the socio-demographics of the respondents. The socio-demographic variables included age, gender, education level, mother and father’s education levels, and household income.

Statistical Analysis

After collecting the data, they were cleaned for any errors. The data were then entered into a SPSS file. Frequency distributions were generated and carefully examined for errors in data collection, tabulation, and transcription. The data were then saved for further analysis.

The scales for knowledge, attitudes, involvement, self-efficacy, outcome expectancy, peer support, and perceived vulnerability were generated by running principal component factor analyses using varimax rotation technique. The factor loadings were examined for each scale. Items that loaded at 0.50 and higher levels were included in the respective factors. The factors were subjected to a reliability analysis. The hypotheses proposed in the study were tested by running correlation analyses, multiple regression, and MANOVA statistical procedures.
Summary of Main Findings

1. In terms of the demographic profile of the respondents, about 79% consisted of females. The median age was 23 years and the mean age was 25.7 years. The educational level of the respondents was as follows: Freshman (9%), Sophomores (15.3%), Junior (13.5%), Senior (17.1%), and Graduate Students (45%). In terms of total household income per annum, the distribution was as follows: Less than $20,000 (27.1%), $20,000 to 39,999 (22.4%), $ 40,000 to $59,999 (22.4%), $60,000 to $79,999 (15.9%), and $80,000 or more (12.1%).

2. Respondents self-reported their cognitive involvement/awareness by responding to a couple of questions in the survey. The cognitive involvement level was high. Almost all the respondents (98.5%) responded that HIV/AIDS was a very serious issue while the remaining felt that it was “slightly serious.” Almost 37% responded that they knew ‘a lot’ about the HIV/AIDS issues while 59% of the respondents felt they had ‘some’ knowledge/awareness of HIV/AIDS issues. A minority (5%) felt they knew very little about the issue.

3. Behavioral involvement or information seeking behaviors (vis-à-vis HIV/AIDS) scale had a range from 8 to 24. The mean score on this measure was 17.8, which indicated that there was a moderately high level of information seeking behavior among the respondents.

4. The knowledge of HIV/AIDS variables were collapsed into 3 scales using the method of factor analysis. The mean knowledge levels were very high on all three scales with
knowledge of HIV/AIDS effects and reduction methods having the highest rank followed closely by knowledge of HIV/AIDS spread through sexual contact and knowledge of HIV/AIDS infection through non-sexual contact.

5. Attitudes about HIV/AIDS variables were reconstituted into 3 scales after factor analyses. Higher scores on these scales indicated positive attitudes toward HIV/AIDS. The mean attitude scores were high on all the scales with attitude about quarantine and punishment toward HIV/AIDS or persons with AIDS occupying the first rank, followed by attitudes relating to blame with the second rank, and attitudes related to shameful securing the third rank. These results show that there was little support for quarantine and punishment for individuals infected with HIV/AIDS, blaming someone for his/her HIV/AIDS infection, or being shameful of association with an HIV/AIDS infected person.

6. Risk reduction behavior-related variables were reconstituted into 2 scales after factor analyses: sex with high risk persons and sex with multiple partners. Higher scores on both scales indicated reduced risk to HIV/AIDS infection or safe sex practices. The mean scores were high on both scales with sex with high risk persons occupying the first rank. These results suggest reduced risk or safe sex practices among the respondents.

7. Factor analyses of ‘outcome expectancies from condom use’ variables resulted in five scales: 1) outcome expectancy of condom accessibility, 2) outcome expectancy of convenience, 3) outcome expectancy regarding negative interpersonal relations, 4) outcome expectancy of HIV/AIDS prevention, and 5) outcome expectancy of condom unreliability. Higher scores on the scales denoted positive outcome expectancies. The first three scales listed above had fairly high mean scores on the constructs indicating that the respondents expected positive outcomes in terms of ready availability of condoms,
showing a lack of support for inconveniences related to condom use and a lack of support for negative reactions from partner vis-à-vis condom use. The mean score on the fourth construct, namely outcome expectancy of HIV/AIDS prevention was moderate indicating moderate support for the expectancy of condom use leading to HIV/AIDS prevention. On the last construct of outcome expectancy of condom use unreliability, the mean score was relatively low indicating a relative lack of support for positive outcomes related to reliability of condom use during sex.

8. Variables related to condom use self-efficacy were subjected to factor analyses, which resulted in three constructs: 1) self-confidence in condom use, 2) condom use self-efficacy with partner, and 3) positive feelings of condom use. Scores toward the higher end of the scale denoted higher levels of self-efficacy of condom use for all the constructs. Condom use self-efficacy with partner had the highest rank, followed by positive feelings of condom use, and self-confidence in condom use self-efficacy. The results showed that for all the three constructs there was a high level of self-efficacy of condom use.

9. Variables related to perceived vulnerability to HIV/AIDS yielded two scales after factor analyses: 1) perceived vulnerability in relation to partner’s external characteristics, and 2) perceived vulnerability if no condom is used during sex. Higher scores on these scales denoted greater vulnerability to HIV/AIDS. The construct perceived vulnerability in relation to partner’s external characteristics has a higher averaged mean score than perceived vulnerability if no condom is used during sex. The scores on both constructs were toward the lower end of the respective scales denoting low levels of perceived vulnerability to HIV/AIDS.
10. Factor analyses yielded two factors for the ‘Peer Support’ measure: *interpersonal peer support among friends*, and *peer support for condom use*. Scores toward the higher end of the scales were indicative of stronger peer support. *Peer support for condom use* had a higher averaged mean score than *interpersonal peer support among friends*. The mean scores for both scales were located toward the lower end indicating lower levels of peer support.

11. In order to measure the use of condoms during sex, the respondents were queried as to the frequency of their use of condoms during the preceding 5 sexual encounters. The mean score was 3.3 with a slight majority of the respondents using condoms at least 4 or more times during the previous 5 acts of sex.

**Summary of Results from Tests of Hypotheses**

1. The first hypothesis stated that knowledge about HIV/AIDS will be related to positive attitudes toward HIV/AIDS. The hypothesis was supported for the positive relationship between knowledge of *HIV/AIDS infection through non-sexual contact* and the attitude related to blaming someone for being HIV/AIDS positive, attitudes about quarantine and punishment, and attitudes related to shamefulness of being HIV/AIDS positive (*p* ≤ .01, two-tailed). This shows that higher scores on knowledge and awareness of *HIV infection through non-sexual contact* are associated with attitudes supportive of not blaming the victim, attitudes not supportive of quarantine and punishment of HIV/AIDS infected persons or attitudes of shamefulness toward HIV/AIDS infected persons.

2. The second hypothesis stated that cognitive involvement with HIV/AIDS would be positively related to behavioral involvement with HIV/AIDS. The hypothesis was supported. There was a significant positive relationship (*p* ≤ .01) between cognitive
involvement with HIV/AIDS and behavioral involvement/information seeking behavior. This indicates that higher levels of cognitive involvement with HIV/AIDS were associated with greater information seeking behavior vis-à-vis HIV/AIDS.

3. The third hypothesis stated that cognitive involvement with HIV/AIDS would be positively related to knowledge about HIV/AIDS. This hypothesis was not supported (p > .05).

4. The fourth hypothesis stated that behavioral involvement with HIV/AIDS would be positively related to knowledge about HIV/AIDS. This hypothesis was supported for the positive relationship between the respondents’ behavioral involvement and knowledge of HIV/AIDS sexual contact (p ≤ .01), and the positive relationship between knowledge of HIV/AIDS infection through non-sexual contact and behavioral involvement/information seeking behavior (p ≤ .05).

5. The fifth hypothesis stated that socioeconomic status (SES) of a person would be positively related to HIV/AIDS knowledge indicating a knowledge gap between persons of high and low socioeconomic status. In this study, total household income, mother’s educational level and father’s educational level were used as indicators of SES. Higher scores on these variables were indicative of higher SES. The second part of the hypotheses stated that cognitive involvement would narrow the knowledge gap (if any) between persons of high and low SES; and the third part of the hypothesis stated that behavioral involvement would narrow the knowledge gap (if any) between persons of high and low SES. The hypothesis of a significant relationship between SES indices and knowledge constructs was not supported (p > .05) indicating the absence of a knowledge gap between high and low SES groups.
6. The sixth hypothesis, which stated that risk reduction behaviors (safe sex) will be predicted by HIV/AIDS knowledge, attitudes, cognitive involvement, and behavioral involvement factors, was modeled using multiple regression analysis. Regression analysis was used to assess the predictive power of HIV/AIDS knowledge, attitudes, cognitive involvement, and behavioral involvement factors on risk reduction behaviors (i.e. safe sex behaviors) among the survey respondents. The backward elimination method was chosen to select the final set of predictor variables for the regression analysis, which was “knowledge of HIV/AIDS sexual contact.” The null hypothesis that there is no linear relationship between “sex with high risk persons” and the predictor variable of “knowledge of HIV/AIDS sexual contact” was rejected. In other words, “knowledge of HIV/AIDS sexual contact” was a significant predictor of “sex with high risk persons.”

The multiple R, which is the correlation coefficient between the observed value of “sex with high risk persons” and the predicted value based on the regression model was 0.45. This is moderately high, showing that the linear regression model predicted well. The R square value indicated that 20% of the observed variability in the dependent variable of “sex with high risk persons” was explained by “knowledge of HIV/AIDS sexual contact.”

The estimated regression equation was: \( \hat{Y} = 4.26 + .22x_1 \) (where \( \hat{Y} \) = predicted value of ‘sex with high risk persons’ and \( x_1 = \) ‘knowledge of HIV/AIDS sexual contact’). This indicates that the predicted value for ‘sex with high risk persons’ increases by .22 units for 1 unit increase in the scale of ‘knowledge of HIV/AIDS sexual contact.’ (Note: Higher values on the scale of ‘sex with high risk persons’ denote reduced risk or safer sex behavior).
7. The seventh hypothesis, which stated that condom use will be predicted by HIV/AIDS knowledge, perceived vulnerability, peer support, outcome expectancy, and condom use self-efficacy factors, was modeled using multiple regression analysis. The backward elimination method was chosen to select the final set of predictor variables for the regression analysis, which were outcome expectancy of convenience and positive feelings of condom use (condom use self-efficacy factor). The null hypothesis that there was no linear relationship between condom use and the two predictor variables was rejected \((p \leq .001)\). The multiple R, which is the correlation coefficient between the observed value of condom use and the predicted value based on the regression model was 0.63. This was quite large, showing that the linear regression model predicted well. The \(R^2\) value indicated that 39% of the observed variability in condom use was explained by outcome expectancy of convenience and positive feelings of condom use. The estimated regression equation was: \(Y^* = -.69 + .03X_1 + .5X_2\) (where \(Y^*\) = predicted condom use, \(X_1\) = outcome expectancy of convenience, and \(X_2\) = positive feelings of condom use). The predicted value for condom use increases by .5 and .03 units for 1 unit increase respectively in the scales of ‘positive feelings of condom use’ and ‘outcome expectancy of convenience.’

8. There were no differences in vulnerability of males versus females of contracting HIV/AIDS.

Discussion and Implications of Main Findings

_Cognitive and Behavioral Involvement_

The African American college students who participated in this study showed a high level of cognitive involvement/awareness about HIV/AIDS. More than 98% of the students reported that HIV/AIDS was a very serious health issue in the United States. The high level of
cognitive involvement demonstrates that the students are very aware of the seriousness of HIV/AIDS as a health and social issue in the United States (U.S). This finding is consistent with the results of a recent survey. Opt and Loffredo (2004) reported in their survey of college students that nearly 80% believed HIV/AIDS to be a serious issue for college students.

There is some concern, though, that in the last few years some of the media coverage has been giving the perception that the disease has been all but eliminated in the U.S. (Swain, 2005). This may be giving a false sense of security to the public and may facilitate complacency towards the existence and spread of HIV/AIDS. Also, the issue of AIDS has had to compete with other health issues such as cancer and with the incidence of HIV/AIDS in other parts of the world for adequate media coverage. However, given these constraints with media framing, this study indicates that there is a high level of cognitive involvement with the issue of HIV/AIDS and its serious implications for the US.

The overall level of behavioral involvement or information-seeking was moderately high. This included exposure to media programs, printed materials such as newspapers, magazines, and booklets, attending meetings or talking with HIV/AIDS infected persons. The results of the students’ information-seeking behaviors indicate that HIV/AIDS information materials and/or opportunities to be involved with the issues are available and accessible to African American college students. The higher levels of cognitive and behavioral involvement should be encouraging for practitioners and academics that develop HIV/AIDS campaigns for African American college students. The current results show that there is already a higher level of awareness about the disease and students are actively acquiring information about the disease. It appears that the challenge would be to continue to use the correct medium and develop the most effective messages in order to help students practice safe sex.
Knowledge of HIV/AIDS

The mean knowledge levels of HIV/AIDS symptoms and risk reduction methods were very high for the sample in this study. These findings are important in the context of sexual behaviors and other risk factors in the U.S., especially among African Americans. Statistical indicators collected by the Center for Diseases and Control (2007) on the transmission categories of adults and adolescents with HIV/AIDS show that the main transmission mode for African American women is unprotected sex with a man. In the case of African American males, the main transmission path is male-to-male sexual contact. African American women are poorly informed about a partner’s risk for HIV/AIDS because of multiple partners, intravenous drug use or bisexuality. In a recent focus group study among young African American men, the participants believed that unsafe sex practices were the main reasons why African American men were becoming infected (Essien et al., 2005). In light of these factors, it is significant to learn from the results of this study, that African American college students surveyed came out with very high knowledge scores on HIV/AIDS spread, symptoms, and risk reduction methods. Other studies among college students corroborate the findings from this study. Opt and Loffredo (2004), who examined knowledge, testing, and sexual practices among U.S. college students found that HIV/AIDS knowledge was high and consistent with the average American knowledge about the disease. Braithwaite and Thomas (2001) found among African American and Caribbean women in college that both groups had a high level of knowledge of HIV/AIDS with African American women having a higher level of HIV/AIDS knowledge. Also, Thomas, Gilliam and Iwrey (1989) found that African American college students had sufficient knowledge about HIV/AIDS. High levels of knowledge are important because information about risky behaviors and options to reduce such practices can provide a good foundation for assessing behavior options (Carovano
& Middlestadt, 1993). Thus, knowledge and awareness of HIV/AIDS transmission could be important determinants of AIDS risk reduction behavior.

*Attitudes toward HIV/AIDS*

The respondents of the study displayed positive attitudes about HIV/AIDS. The respondents were not supportive of quarantining and punishing those who are HIV/AIDS positive. Also, the African American college students were not supportive of blaming an infected person for being HIV/AIDS positive and they were not ashamed of being associated with someone who is HIV/AIDS positive. The findings of the current study support the research findings of Herek, Capitanio, and Widaman (2002), who conducted telephone surveys through the middle to late 1990s. The study revealed that the candid comments or negative attitudes about persons with HIV/AIDS had decreased, especially attitudes of placing someone with the disease in quarantine.

It is important to add here that attitudes are at the core of behavioral actions. The Theory of Reasoned Action (TRA) posits that the strength of a person’s intentions to perform a specific behavior is a function of attitude toward the behavior (Carter, 1990; Kashima, Gallois, & McCamish, 1992). Therefore, this health communication theory implies the utility of creating a positive and supportive attitudes structure toward HIV/AIDS and persons with AIDS for effective safe-sex behavior.

The research findings of this study are also corroborated by a survey done among college students in India. Goswami (1996) found that his respondents showed a positive attitude to persons with AIDS. They did not agree that a person with AIDS should be quarantined. In addition, there was little support for shamefulness associated with HIV/AIDS infection. These research results are countered by the findings of other studies that show negative attitudes toward
HIV/AIDS. For example, according to the Kaiser Family Foundation Survey of Americans on HIV/AIDS (2006), 40% of the people surveyed felt that it was a person’s fault for getting AIDS. However, the results of the current study show that at least among college students since the 1990s there is more positive attitudes towards HIV/AIDS and people who are infected with HIV/AIDS.

*Risk Reduction Methods*

The results from the current study show that the sample of African American college students is participating in risk reduction practices. This finding is welcome given the statistics on the spread of HIV/AIDS, especially among African Americans. Recent statistics from the Center for Diseases and Control show that unsafe sex practices, such as male to male sex, unprotected heterosexual sex, illegal injected drug use, sex with multiple partners, and sex with high risk persons constitute the major modes of transmission of HIV/AIDS among adults and adolescents (Center for Diseases and Control, 2007; Essien et al., 2005).

The respondents showed reluctance to engage in sexual activity with multiple partners. The students’ behavior was in line with safe-sex behavior that outlined the importance of minimizing the number of sexual partners in order to reduce the risk of contracting sexually transmitted diseases and HIV/AIDS. The respondents also showed a reluctance to have sex with people who would be considered at a higher risk for contracting HIV/AIDS such as people who inject illegal drugs and commercial sex workers. Because the respondents indicated that they are practicing safe sex practices, it may be likely that many of the students are responding to media messages of reducing sexual partners and not engaging in illegal activities that put them at a greater risk of contracting HIV/AIDS. This study has tested this hypothesized relationship
between knowledge and risk reduction behaviors and found a significant connection between the two factors, which will be discussed later in this section.

Outcome Expectancy of Condom Use

Outcome expectancy of condom use has been described as an individual’s mindset or belief that a specific course of action (such as using a condom during sex) may reap positive or negative consequences (Murray-Johnson & Witte, 2003). Thus, positive outcome expectancies would be the subjective perceived benefits of engaging in a certain behavior while negative outcome expectancies would be the perceived cost of performing that action (Zebracki & Drotar, 2004). The results of this study show that respondents expect positive outcomes in terms of easy accessibility to condoms, expect neither inconveniencies related to proper use of condoms nor any negative reactions from partners due to use of condoms. Other research studies corroborate the findings of this study. Velu (2002) demonstrated that outcome expectancy of condom use contributed to self-efficacy in condom usage among female sex workers. Similar results were obtained among college students by Wulfert and Wan (1993).

However, this study also shows that there is a relative lack of support for positive outcomes related to the reliability of condoms during sex. Condoms were perceived as breaking or tearing easily during sex. The perceived unreliability of condoms may explain negative outcome expectancies of condom use among male college students in other research studies (O’Leary et al., 1992). This finding has implications for campaign planners and program managers. The reliability of condoms to perform well must be demonstrated and communicated effectively.

These data results are instructive to managers of communication interventions and provide guidance to program planners (Carovano & Middlestadt, 1993), because knowledge
about the perceptions of the consequences of a behavior among targeted groups may be important determinants of that behavior. For example, messages that reinforce positive consequences and reduce negative outcome expectancies of condom use are likely to increase motivations for the usage of condoms during sex (Maibach & Cotton, 1995). Later in this study, the importance of outcome expectancies of condom use on condom usage will be demonstrated through the hypothesis tests.

Overall the respondents felt that there were many positive outcomes of using a condom during sex. The results of high levels of positive outcome expectancies of using condoms shows African American students have favorable attitudes toward condom use. This information can be helpful for HIV/AIDS health campaign planners because it tells them that African American college students do have healthy attitudes about the importance of condom use, and it is therefore important to reinforce those messages.

Condom use Self-efficacy

Self-efficacy is a desired outcome expectancy in HIV/AIDS intervention programs. Bandura (1994) posits that a person must believe that he/she, if given the proper skills or tools, will be able to perform successfully an action or task. In the current study, African American college students felt that they could get their partner to use a condom even if the partner did not want to use a condom or even if a condom was not used in the past. Among the respondents, there were higher levels of self-confidence in condom use because the college students felt that they could confidently use condoms without hesitations and without making mistakes. Moreover, there were positive feelings of condom use. The students were confident about not having to have sex if a partner refused to use a condom, and the respondents indicated that they would have misgivings about not using a condom during sex.
Understanding condom use self-efficacy levels of African American college students is important in formulating the correct and most effective messages for HIV/AIDS campaigns targeted at such populations. Self-efficacy has been proven to be an important variable in predicting condom use. Burns and Dillon (2005) tested self-efficacy among African American college students from a historically Black college or university (HBCU) and found that higher levels of self-efficacy for safe sexual practices had a higher condom usage in the previous six months. Moreover, Dilorio et al. (2001) also found that people who used condoms on regular bases had higher levels of self-efficacy about their ability to physically use a condom in a correct manner. Creating and sustaining high levels of self-efficacy among the African American students has important implications for HIV/AIDS prevention campaigns/strategies, which will be discussed in a later section in this chapter.

Perceived Vulnerability to HIV/AIDS

There was a low level of perceived vulnerability to HIV/AIDS among the African American college students in this study. In terms of perceived vulnerability in relation to a partner’s external characteristics, the respondents understood that it is not safe to have unprotected sex with a person who appears to be educated or decent or with a partner who one is attached to. Moreover, in terms of perceived vulnerability, if a condom was not used during sex, respondents understood that a condom should be worn during sex even if the female uses oral contraceptives.

The Health Belief Model (HBM) posits that individuals must perceive their vulnerability to HIV/AIDS infection to be real or imminent to even entertain the idea of changing risky behaviors (Rosenstock, 1974). It is important to understand better the levels of perceived vulnerability of African American college students. Perceived vulnerability could be an
important predictor of condom use because in recent years there have been more HIV/AIDS campaigns targeting the demographics of the current study. Previous research on this topic has indicated that a person’s perceived vulnerability to HIV/AIDS infection is an important determinant of safe sex practices (Janz & Becker, 1984). Research has shown that even general attitudes toward condoms and their use during sex is related to the perception of vulnerability among the concerned individuals, with those concerned about their susceptibility to HIV/AIDS infection having positive attitudes toward condom use (van der Plight et al., 1993). Other research studies have shown conclusively a positive relationship between perceived vulnerability and intention to use condoms (Basen-Engquist, 1992). DiClemente, Forrest and Mickler (1990) established that perceived vulnerability is associated with behaviors conducive to reducing the risk of HIV/AIDS.

The low levels of perceived vulnerability bode well for the practice of safe sex among the respondents of this study, which will be discussed further in the section under condom use.

*Peer Support of Condom Use*

The current study showed that the respondents felt that there were low levels of peer support for condom use. In terms of interpersonal peer support, the respondents felt that they could not always confide in their friends about various health issues. In addition, the respondents did not always feel that their peers supported the idea that condoms should be used all the time during sex. Peer support is a construct that has been used in health communication campaigns because it is a predictor of condom use. The finding of a low level of peer support is a source of concern. Research has shown that if an individual believes that his/her friends support using condoms then it could lead to more condom use by the individual. Lewis and Succop (2000) found that among African American female college students the respondents who thought
that her friends used condom on a regular basis were also more likely to report using condoms more consistently.

Social support is important to facilitate an individual’s change either in attitude or behaviors since such changes take place within a network of social influences (Williams, 1994). The norms within a given social network can help or retard the efforts of an individual to change behaviors, especially those related to sexual practices. So, peer support in a network could influence future behavior by invoking social censure or other consequences for violating peer supported norms and behavior (Bandura, 1994). The finding of a low level of peer support in this study for consistent condom use is both a source of concern as well as an opportunity and a niche for health education and communication planners to create a positive atmosphere among African American college student population toward use of condoms. Building or mobilizing a supportive environment in a community toward safe sex practices aids in enhancing the sense of collective efficacy, and in turn this is a powerful factor in determining the use of condoms.

Condom Use

This study has showed that a slight majority (54%) of the African American students used condoms at least 3.3 times (mean score) in the previous five sexual acts. However, nearly 33% of the students reported using condoms only once in the last five sexual encounters.

Consistent and sustained use of condoms during sex is considered very important in the fight against HIV/AIDS infection. There is rich literature (some of which has been described in the literature review chapter) on the research results of predicting condom use in communication, education, and health sciences areas. The HBM is based on the premise that perceived vulnerability and outcome expectancies are two factors that contribute to safe sex behaviors (DeHart & Birkimer, 1997). Social Learning Theory emphasized peer support (King, 1999),
while Bandura (1986, 1989) puts the emphasis on self-efficacy skills on the part of individuals. The research literature points to several factors that impact the intention to use or the actual use of condoms. They include knowledge and awareness (Hingson et al., 1990), perceived vulnerability (Basen-Engquist, 1992), peer support (Lewis & Succop, 2000), outcome expectancy (Maibach & Cotton, 1995), and condom use self-efficacy (Burns & Dillon, 2005). Thus, condom usage is determined by several factors that are amenable for interventions in HIV/AIDS reduction campaigns and programs. In the next section, this study will examine the predictability of the above named factors on condom use during sex.

Discussion of Hypotheses Tests and their Implications

Knowledge and Attitudes

The hypothesis about the proposed relationship between HIV/AIDS knowledge and positive attitudes towards HIV/AIDS and persons with AIDS (PWAs) was supported for the positive relationship between knowledge of HIV/AIDS infection through non-sexual contact with the attitude related to blaming someone for being HIV/AIDS positive, attitudes about quarantine and punishment, and attitudes related to shamefulness of being HIV/AIDS positive. This showed that higher scores on knowledge and awareness of HIV infection through non-sexual contact were associated with attitudes supportive of not blaming the victim, attitudes not supportive of quarantine and punishment of HIV/AIDS infected persons or attitudes of shamefulness toward HIV/AIDS infected persons.

These findings are important as they highlight the supportive role that communication and media information campaigns could play in creating increased knowledge of HIV/AIDS symptoms, causes, and spread, and consequently facilitate attitudes of tolerance to the HIV/AIDS disease and PWAs. Accurate and comprehensive knowledge of HIV/AIDS
symptoms, causes and transmission could facilitate a more tolerant public opinion of PWAs so that they could be effectively treated and/or rehabilitated rather than being punished or quarantined. Negative attitudes about AIDS and PWAs are regressive and retard effective intervention efforts to combat AIDS or take care of PWAs. It is also a question of human rights. Destigmatization of AIDS and PWAs is important and positive attitudes will foster a climate of tolerance and understanding so that PWAs are not denied their basic rights.

This finding is consistent with many previous research studies. Evans and Durant (1995) examined the relationship between knowledge and understanding of science and attitudes of support toward scientific research. These researchers reported that higher levels of knowledge were associated with more supportive attitudes toward science. In a study more specific to HIV/AIDS, McCann and Sharkey (1998) conducted a survey and found a positive relationship between knowledge and attitudes about HIV among Australian and Asian nurses. The results of this survey showed that the nurses were more likely to disagree that people who were HIV/AIDS positive should be isolated from the rest of the community. Goswami (1996) in his research conducted among college students in India showed that students who had higher knowledge of HIV/AIDS reported that they were more positively disposed to PWAs and the AIDS disease.

The implication of this finding is that individuals who are more knowledgeable about the different aspects of HIV/AIDS symptoms, causes, and transmission may be less likely to hold homophobic attitudes or harbor misconceptions about HIV/AIDS. They would be less likely to think that AIDS is a curse or be shameful of AIDS or PWAs. In the following sections, the implications for academics, practitioners, policy makers and others to address ways to increase cognitive and behavioral involvement as well as knowledge levels will be discussed in more detail.
Cognitive and Behavioral Involvement

This study showed a significant positive relationship between cognitive involvement with HIV/AIDS and behavioral involvement or information-seeking behavior pertaining to HIV/AIDS issues and activities. This finding indicated that higher levels of cognitive involvement with HIV/AIDS were associated with greater information-seeking behaviors and vice versa. Previous research in this area has suggested that active processing of messages are determined by levels of involvement (Ray, 1973). The construct of involvement could be broken down into cognitive and behavioral components. Cognitive involvement denotes a heightened state of awareness whereas behavioral involvement indicates levels of active information-seeking (Chaffé & Roser, 1986). The finding from this study that shows a significant positive relationship between these two involvement factors reinforces the construct validity of the involvement concept.

The present finding is corroborated by Goswami (1996). In a study of college students in India, he found that cognitive involvement was strongly associated with behavioral involvement. Students who had a heightened state of awareness or attention to HIV/AIDS were also more likely to be active seekers of information on HIV/AIDS and vice versa.

The implications of this finding are many. It is important that general information about HIV/AIDS as a health and social issue be repetitive and pervasive through the mainstream media such as the radio and television, and other channels such as the church, interpersonal channels such as medical doctors, and specific communication/education campaigns. It appears that producers of HIV/AIDS campaigns are raising the level of awareness about the disease. The high level of awareness about HIV/AIDS could be attributed to the increase in communication campaigns in the African American communities. There have been more campaigns such as the Viacom and Kaiser Family Foundation public service announcements that target African
Americans. Moreover, in order to reach a broader audience and those who might not be broadcast media consumers, there have been organizations created such as Balm N. Gilead to help spread the message about the dangers of the disease to African Americans through Black churches across the U.S. Another possible contributing factor of greater awareness and knowledge is the active role colleges and universities have taken informing students about HIV/AIDS. Health care centers on college campuses keep pamphlets and brochures about HIV and there are many HIV/AIDS lectures, meetings and symposiums to discuss college students’ vulnerability of contracting HIV.

**Behavioral Involvement and Knowledge**

The hypothesis relating behavioral involvement with knowledge was supported for the positive relationship between the respondents’ behavioral involvement and knowledge of HIV/AIDS sexual contact and knowledge of HIV/AIDS infection through non-sexual contact. This finding is consistent with Rimal, Flora, and Schooler (1999) who found that those who sought more information about cardiovascular disease had more knowledge and engaged in more conversations about the disease. In addition, Goswami (1996) demonstrated that behavioral involvement was positively related to knowledge indices of HIV/AIDS among college students in India.

Several research studies have demonstrated a positive relationship between socioeconomic indices such as income and educational attainment with higher levels of knowledge (Tichenor et al, 1970; Tichenor et al, 1973; Werner, 1975). However, socioeconomic indices are relatively non-manipulable in the short run, so communication program managers and campaign planners have to seek other variables that are associated with higher knowledge levels, which may be more manipulable. One such variable is behavioral involvement or information-seeking
behavior on the part of the targeted individuals. This study has demonstrated that active information-seeking or behavior involvement with HIV/AIDS issues is strongly associated with higher knowledge of HIV/AIDS issues, symptoms, and transmission. This finding is supported by other research studies on health campaign effects. These studies have shown that active information-seeking behavior of individuals was a predictor of higher knowledge levels (Ettema et al., 1983; Ettema & Kline, 1977). There is evidence to show that higher cognitive and behavioral involvement on the part of individuals will lead to greater levels of knowledge (Salmon, 1986). Thus, the significance of this finding has important implications for communication and educational programs and campaigns. It may be effective to manipulate involvement variables in communication intervention strategies to increase knowledge levels among people of different socioeconomic groups. It is also essential to work with community support groups and peer networks in providing credible information and sustainable opportunities to facilitate information seeking behavior.

Knowledge and Behaviors

This study indicated that knowledge of HIV/AIDS, in particular ‘knowledge of HIV/AIDS sexual contact,’ was a significant predictor of behaviors pertaining to safe sex. The data showed that safe sex behavior, such as avoiding sex with ‘high risk’ individuals, increases with higher levels of knowledge of ‘HIV/AIDS transmission through sexual contacts.’

In a recent Harris poll, a large number of people reported that messages about prescription drugs in the mass media directly targeted at them had positive influences on their attitudes and risk reduction behaviors (http://www.harrisinteractive.com, 2007). Research studies on this subject have also shown conclusively that knowledge of HIV/AIDS transmission is a potential determinant of AIDS risk reduction behaviors. Even in situations where knowledge
alone is not sufficient to influence behavior (Fishbein & Middlestadt, 1989), information about risks associated with a certain action along with other relevant factors can provide a platform to consider different options for risk reduction behavior (Carovano & Middlestadt, 1993). Hingson et al. (1990) as well as Shafer and Boyer (1991) showed in their research that use of safe sex measures such as wearing condoms during sex were significantly related to HIV/AIDS knowledge factors.

More recently, studies have looked at the effects of health messages on viewers of popular television entertainment shows. ER recently included syphilis in its storyline to coincide with a syphilis outbreak in some U.S. metropolitan areas among those who engage in male to male sex (MMS). An evaluation of the effects of this show indicated that among MMS viewers who visited gay chat rooms, those who were exposed to ER were more likely than non-viewers to report their behavioral intentions to get tested for sexually transmitted diseases (Whittier et al., 2005). On another episode of ER, a story about the importance of healthy diet and exercise was related to a significant increase in healthy behaviors (Valente et al., no date). A similar effect was reported from the viewing of a Law & Order: SVU episode that featured problems related to obesity and diabetes. African American viewers reported behavioral intentions to eat healthy diets and exercise when compared with non-viewers (Murphy et al., 2006).

The research studies reported above are representative of a very large data base that has built connections between knowledge of relevant health issues and problems and preventive behaviors. Thus, the importance of accurate and credible information/knowledge on HIV/AIDS can play a key role in leading to risk reduction behaviors, and the implications for communication program managers and campaign planners are profound.
In the past, “mass media campaigns have traditionally been used to stimulate awareness, leaving the subsequent steps of behavior-change to more interpersonal sources. Yet a few media campaigns have included motivational messages” (Freimuth, 1992, p.106). The information about African American college students’ knowledge, attitudes, awareness, and behaviors regarding HIV/AIDS could be used to help develop more motivational messages for African American college students to continue to keep positive attitudes and practice safer behaviors. In the United States (US), the mainstream mass media constitute valuable sources for disseminating HIV/AIDS information. A 2003 survey by the Kaiser Family Foundation has indicated that more than 70% of the people in the U.S. obtain most of their information about HIV/AIDS through the mainstream mass media channels (Brodie et al., 2004). Yet, the mass media have been less used as vehicles to prevent the spread of HIV/AIDS in the U.S. compared to many countries in Asia and Africa (Singhal & Rogers, 2003). The public service announcements (PSA) have been the preferred outlets on commercial television but they are often relegated to times when few people are watching. Scholars have pointed out that the agenda setting role of mainstream mass media in prioritizing the challenges posed by HIV/AIDS has been weak. The media’s coverage of the disease has been erratic, peaking at times when celebrities were infected with HIV (Singhal & Rogers, 2003). Moreover, a lot of the coverage has been framed as discrete events rather than as a process that has continued to be a health and social issue in the U.S. for the last 25 years. Also, at the beginning of the epidemic, another frequent framing technique has been to treat HIV/AIDS as an incurable disease and therefore a death sentence rather than as a chronic and debilitating disease wherein infected persons suffer over a long period of time with adverse consequences on their families, entire communities, the regional and national health care systems. All of these factors have important implications for policy makers and organizations
working on HIV/AIDS prevention projects on how best to harness the power of the mass media in the U.S. to be a potent force to lead the fight against HIV/AIDS and to mitigate the effects on people and communities suffering from it.

Besides the mass media’s role in HIV/AIDS prevention, research has also shown that interpersonal networks such as family and friends, medical doctors and physicians, churches as well as government and other public health agencies have played an important role in aiding cognitive and behavioral involvement of people with the issues related to HIV/AIDS and disseminating knowledge and providing care to individuals as well as HIV/AIDS affected persons (Cunningham, 1999). All of the above factors then point to the fact that policy makers, practitioners, and administrators in the social service and health sectors prioritize the importance of HIV/AIDS and create an environment wherein there is repetitive and pervasive information diffusion using the mass media, interpersonal networks, the church, and targeted communication/education campaigns.

*Predictors of Condom use*

The study showed that outcome expectancy factor (relating to convenience of keeping and using condoms) and self-efficacy factor (relating to positive feelings of condom use) were significant predictors of consistent use of condoms during sex. As much as 39% of the variability in condom use was explained by these two factors. The results of this hypothesis also suggested that there is a significant positive correlation between outcome expectancy factor of convenience and the self-efficacy factor of positive feelings toward condom use.

The Health Belief Model, an influential model in HIV/AIDS prevention research, is based on the premise that perception of the risk, the severity of the consequences, and outcome expectancies of preventive behavior among other things contribute to preventive behavior. In
this study, the primary preventive behavior that is stressed is engaging in safe sex by consistently using condoms. This study did not show a connection between perception of risk and engaging in preventive behaviors but the results of the present study have demonstrated that outcome expectancy factors are important predictors of safe sex practices such as the use of condom during sex.

An important contributing factor to sustained condom use in this study was the outcome expectancy factor. This factor related specifically to one of convenience of using condoms during sex and also overcoming partner’s objection to the use of a condom. Every behavior even if it is good has benefits and associated costs. A clear understanding of the outcomes of that behavior is important and can provide guidance to program planners and campaign managers (Carovano & Middlestadt, 1993). Several studies have indicated that negative outcome expectancy of condom use such as resistance from the sex partner is the key reason for lack of condom use during sexual relations (Campbell, 2000; Dyson, 1992; Ford, Wirawan, & Fajans, 1998; Prybylski & Alto, 1999). However, other studies have shown that if the preventive behavior has the approval of significant others, then it will be adhered to (McAlister, 1987) as shown in the present study where the partners were supportive of condom use. Thus, the importance of working with the larger community (to which the individual belongs) is paramount. This will be elaborated further later on in this section.

What are the other pertinent factors that could be predictive of safe sex behaviors? In the previous hypothesis discussed above, it was found that knowledge of HIV/AIDS transmission was a significant predictor of safe sex behaviors. However, other theories in health communication posit that the contribution of knowledge of HIV/AIDS by itself does not contribute to overcoming and managing all the risky health behaviors (Bandura, 1994). Health
communication theories suggest that to effectively change behavior, people need to be given the behavioral means, self-efficacy skills, and peer support besides mere information and justifications to alter their risky health behaviors. Self-efficacy, along with social modeling, are two elements that have been widely employed in AIDS campaigns (Freimuth, 1992). In this study, we find that self-efficacy factor (besides outcome expectancy factor) is a significant predictor of sustained condom use. According to Bandura (1986, 1989), self-efficacy refers to a person’s belief in his/her personal efficacy, which then determines the course of action the person will adopt even in the face of resistance and obstacles. Thus, carrying this idea further it would suggest that higher the self-efficacy the lower the likelihood of engaging in risky behavior. This connection has been demonstrated in this study. A host of other research studies have shown such a connection. Velu (2002) in her study of female commercial sex workers in India showed that condom use self-efficacy was significantly related to condom use during sex. In another study set in Indonesia among sex workers and modeled after the Health Belief Model and the Social Cognitive Theory, self-efficacy was highly predictive of condom use (Ford, Wirawan, & Fajans, 1998). Similar results were obtained in the Sonagachi project in Calcutta, India that showed the contributing factor of increased self-efficacy on adoption of safe sex behaviors (Jana, 1997).

Gaining more knowledge regarding the strongest predictors of condom use among African American college students will aid in developing more communicative intervention strategies that focus on understanding the positive outcomes associated with wearing condoms. Moreover, understanding that self-efficacy is important helps practitioners learn how to increase more positive feelings about using condoms on a consistent basis.
The more important challenge is to have sexual partners use condoms consistently since research has shown that often the male partner is reluctant to use condoms (Campbell, 2000; Ford, Wirawan, & Fajans, 1998; Prybylski & Alto, 1999). What is imperative in HIV/AIDS prevention efforts is to empower females to demand safe sex methods (Long & Messersmith, 1998). However, individuals who lack a sense of self-efficacy will be relatively unsuccessful in managing situations even when they have the intentions to perform a certain behavior (Bandura, 1990). The implications for HIV/AIDS prevention program planners and communication campaign managers are to provide motivation and guidance to individuals to execute efficacious prevention practices. These could be at the individual level, such as equipping a partner with negotiation skills for condom use with a non-cooperative partner. But, it is also important to encourage collective self-efficacy of the group or the community.

There must be research that identifies the socio-cultural elements that contribute to African American women not protecting themselves from contracting the disease. More research needs to be done on cultural/societal issues in the Black community such as the lack of African American men on college campuses. After conducting in-depth interviews with African American women in historically Black colleges and university campuses, Ferguson, Quinn, Eng, and Sandelowski (2006) in their survey of female college students pointed out that the gender imbalance on campus resulted in some men having more than one sexual partner and the girlfriend allowing infidelity in the relationship because of fear of losing her boyfriend. Fear of losing a boyfriend resulted in the female not requesting condom use during sexual intercourse. The imbalance between numbers of African American men and women on college campuses as a possible factor in determining condom use among African American women illustrates that there are bigger socio-cultural factors that must be addressed in the African American community. The
issue of more African American women to choose from than men is not just a dilemma on college campuses. Because of birth rate imbalances, death rates among young Black men, and higher levels of incarceration rates, it has led to African American womens’ perceptions that they have less bargaining power in a relationship with an African American man such as asking a man to use a condom (Logan, Cole & Leukefeld, 2002).

It is crucial to facilitate a community-wide sense of efficacy to achieve the desired objectives. African Americans as an ethnic group have been hit hardest by the AIDS epidemic in the US. Thus, it behooves the community to take ownership of the problem. Collective action by the community would facilitate effective and desired changes (Alinsky, 1969). The challenge then is to identify and seek collaboration of important stake holders such as local community leaders and church groups. These individuals and institutions could then be targeted and mobilized to set goals, unify the community, enable and motivate individuals by mounting communication campaigns to educate and inform on responsible sexual relationships and practices, dispel myths, as well as facilitate nurturing and care of infected individuals. Research (Bandura, 1999) has shown conclusively that collective efficacy programs and projects motivate and enhance an individual’s sense of efficacy and outcome expectancy to bring about positive changes in their personal lives.

Implications for Health Communication Theories

The three theories used to guide the current study are the health belief model (HBM), social cognitive theory (SCT), and theory of reasoned action (TRA). The health belief model (HBM) is a frequently used model in health behavior campaigns. The main constructs of the model are perceived severity of a health threat, perceived susceptibility to a health threat, perceived barriers to performing the recommended response, outcome expectancy of performing
the recommended response and cues to action. The main concepts of the HBM that were examined in the current study include: perceived severity of HIV/AIDS, perceived susceptibility to HIV/AIDS, and perceived benefits or outcome expectancies of using condoms.

Even though, the current study did not directly test the respondents’ perceived severity, the respondents did show a high level of awareness about HIV/AIDS because more than 98% of the respondents felt the disease was a serious health issue in the US. Moreover, the study did test for the respondents’ perceived susceptibility or self-perception of risk for HIV/AIDS, and the results did show that the African American college students felt they had a low chance of becoming HIV positive.

In accordance with the HBM, the current study shows that the African American college students feel that becoming HIV/AIDS is a negative consequence of not using condoms during sex. Also, the respondents felt that HIV/AIDS could be avoided if a condom is consistently used during sex. However, the results of the study differ from the HBM, because according to the model higher levels of self-perception of risk should mean individuals are more likely to use a condom. But, the current study shows that the respondents had low perceptions of risk and the African American college students consistently practiced safe sex behaviors such as not having sex with multiple sex partners and not having sex with high risk persons. This study did not show a connection between perception of risk and engaging in preventive behaviors but the results of the present study have demonstrated that outcome expectancy factors are important predictors of safe sex practices such as the use of condom during sex.

The second theory used to guide the current research is social cognitive theory (SCT) also called social learning theory. According to Bandura (2004):

The core determinants include knowledge of health risks and benefits
of different health practices, *perceived self-efficacy* that one can exercise control over one’s health habits, *outcome expectations* about the expected costs and benefits for different health habits, the health *goals* people set for themselves and the concrete plans and strategies for realizing them, and the *perceived facilitators* and social and structural *impediments* to the changes they seek. (p.144)

The concepts examined from SCT in the current study are knowledge of HIV/AIDS, perceived self-efficacy of condom use, and outcome expectancies for using condoms.

African American college students in the current study had high levels of HIV/AIDS knowledge regarding spread of the disease through sexual contact, high levels of knowledge regarding knowledge of HIV/AIDS effects and reduction methods, and lastly the respondents were knowledgeable about HIV/AIDS spread through non-sexual contact. Even though knowledge of health risks is one of the main determinants in SCT, the main determinant of safe sex practices is perceived self-efficacy. Self-efficacy is the idea that an individual can effectively control his/her health habits or behaviors (Bandura, 2004). The current study did show that knowledge of sexual contact was a significant determinant of safe sex behavior and importantly condom use self-efficacy factor was a significant predictor of condom use. In agreement with SCT, the current study showed that respondents felt comfortable using condoms and this is shown in the study through frequency of condom use. The respondents reported that of the last five sexual encounters, a slight majority reported using a condom at least 4 or more times.

The other important construct of SCT is outcome expectancy. Outcome expectancy refers to a person’s belief that conducting various behaviors will lead to either a positive or negative outcome (Lapinski & Witte, 1998). Outcome expectancy of condom use was one of the variables measured in the current study. Research has showed that respondents shared high levels of outcome expectancies of condom use in terms of condom accessibility, they did not show
support for inconveniences related to condom use, and there was a lack of support for negative reactions from a partner with regard to condom use. The study shows that the participants expected positive outcomes for using condoms with a partner. Moreover, the study concludes that the respondents were not only very knowledgeable about HIV/AIDS, but they also had higher levels of positive outcome expectancies and did show higher levels of self-efficacy, meaning they felt they were able to engage in safe sex practices. This study showed that outcome expectancy factor (relating to convenience of keeping and using condoms) was a significant predictor of consistent use of condoms during sex.

The last theory used to guide the research is the theory of reasoned action (TRA). TRA posits that an individual’s behavior is determined by his/her intentions and the intentions are determined by one’s attitudes toward the behavior (Lapinski & Witte, 1998). The theory also suggests that before behavior change can take place there must be two sets of beliefs changed. According to Lapinski and Witte (1998):

(1) Beliefs about the consequences of performing a certain behavior and the evaluation of those consequences (attitudes); and (2) beliefs about what other people or referents think about the behavior to be performed and the motivation to comply with those referents (subjective norms). Only when a message targets the salient beliefs of these variables do attitudes and subjective norms, and subsequently, behavioral intentions and behavior change. (p. 144)

African American college students who participated in the study appear to show positive attitudes regarding self-efficacy of condom use and positive outcomes for using condoms; however the respondents seem to somewhat lack the positive peer support which is important for motivating behavioral changes. Even though, the respondents do not have high levels of peer support, they still showed positive intentions for practicing safe sex.

The behavioral change theories outlined above are a part of a common metatheory for which psychosocial determinants are important promoters of an individual’s health. The
behavioral change models have some overlapping determinants but they have different names. Moreover, many of the behavioral models are good for predicting health behavior but many do not inform how to actually change an individual’s behavior (Bandura, 2004). According to Bandura (2004), a stepwise implementation model that has three steps could be used to promote health promotion programs. The first level includes individuals with higher levels of efficacy and positive outcomes for behavior change and these people need little assistance in achieving behavior change. The second level includes people who are not sure about their efficacy and the benefits of behavioral change but they do try to change but might have problems. The last and final level includes individuals who believe that their behavior cannot be changed (Bandura, 2004). The current study shows that the respondents could be categorized in the first level because they have higher levels of self-efficacy and they showed the desire for positive outcomes; therefore, it would be important for health campaign planners to continue to implement messages that would reinforce the importance of self-efficacy and the benefits (positive outcomes) of consistently using condoms during sex.

Limitations of the Study

The study had less than 150 participants due to lack of resources such as time and money. Also, the majority of the individuals who participated in the study were African American women so there is the need to gain more insights about the knowledge levels and condom usage among African American males. However, there is an expectation of less African American men in the study simply because there are fewer Black males in college than there are females.

The current research uses the main theories used by AIDS campaign planners; in future research, there is the need to use conceptual frameworks that are more culturally specific. Beatty, Wheeler and Gaiter (2004) argue that HIV/AIDS research, in general, does not use a
conceptual framework that is directly connected to the experiences or socio-cultural context of African Americans. The conceptual frameworks used in the current study are the theories and models normally used in health communication and used as the framework to inform health communication programs. Airhihenbuwa and Obregon (2000) discuss how theories used in health communication promotions are based on the individual and not a collective group of people. The theories may have less meaning in cultures of Asia, African, Latin American and the Caribbean. Beatty, Wheeler and Gaiter (2004) also address the need for more cultural centered models and theories that could be used in the African American community. Thompson and Chambers Jr. (2000) described African self-consciousness as an important construct in determining if African Americans take care good care their health. African Americans who have higher levels of African self-consciousness would be expected to engage in healthier practices.

Finally, even though the research gives valuable insights about African American college students’ knowledge, attitudes, involvement and predictors of condom use, the findings are not generalizable to the population of college students who are African American since a non-random sampling procedure was used. The results of this research should be considered as a case study of African American college students.

Recommendations for Future Research

For future research, a reanalysis should be done comparing variances between undergraduate and graduate African American college students. The reanalysis would examine the different knowledge levels, attitudes, cognitive and behavioral involvement levels between the two groups. Moreover, a reanalysis would assist health campaign planners in better understanding the constructs that are better predictors of safe sex behaviors and condom use for undergraduates versus graduate African American college students.
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APPENDIX A. HIV/AIDS QUESTIONNAIRE

Serial Number ____________
Date Completed ____________

Part I

1. If you think the United States is facing serious medical problems, illnesses or diseases, please name the most serious

(List a Maximum of 4)

i. ________________________________
ii. ________________________________
iii. ________________________________
iv. ________________________________

Place a check mark for your answer

2. How serious do you think AIDS is?

Very serious ( ) (3)
Slightly serious ( ) (2)
Not serious ( ) (1)

3. How much do you think you know about AIDS?

A lot ( ) (3)
Some ( ) (2)
Very little ( ) (1)

4. What should a person do to prevent or reduce his/her risk of getting AIDS?

(List a Maximum of 4)

i. ________________________________
ii. ________________________________
iii. ________________________________
iv. ________________________________
Place a check mark for your answer.

<table>
<thead>
<tr>
<th></th>
<th>Never (0)</th>
<th>Once (1)</th>
<th>Few times (2)</th>
<th>Many times (3 or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Have you ever read a booklet, brochure or other printed material (magazine, newspaper article, etc,) about HIV/AIDS?</td>
<td>( )</td>
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<tr>
<td>6. Have you seen films or TV, video, audio shows or heard radio programs on HIV/AIDS?</td>
<td>( )</td>
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<tr>
<td>7. Have you read posters/ signs/ about HIV/AIDS?</td>
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<tr>
<td>8. Have you attended meetings or classes where HIV/AIDS was discussed?</td>
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<tr>
<td>9. Have you ever initiated a conversation with someone about HIV/AIDS?</td>
<td>( )</td>
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<tr>
<td>10. Have you ever talked to someone who has HIV/AIDS?</td>
<td>( )</td>
<td>( )</td>
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</tbody>
</table>

Place a check mark for your answer

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree (5)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly Disagree (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. AIDS is the worse disease a person can get</td>
<td>( )</td>
<td>( )</td>
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<tr>
<td>12. People with HIV/AIDS should be ashamed of themselves</td>
<td>( )</td>
<td>( )</td>
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<tr>
<td>13. I will be very ashamed if I had HIV/AIDS</td>
<td>( )</td>
<td>( )</td>
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<tr>
<td>14. I would be ashamed if someone in my family had HIV/AIDS</td>
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<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
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<td>Strongly Disagree</td>
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<tr>
<td>15. I would feel ashamed to be seen in public with a friend who was known to have HIV</td>
<td>( )</td>
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<tr>
<td>16. People with HIV/AIDS are promiscuous</td>
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<tr>
<td>17. Promiscuous women are the ones who spread HIV in our community</td>
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<tr>
<td>18. People with HIV/AIDS should bear the consequences for their bad behavior</td>
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<tr>
<td>19. Promiscuous men are the ones who spread HIV/AIDS in our community</td>
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<tr>
<td>20. In a marriage, it is the woman who is to blame for HIV/AIDS</td>
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<tr>
<td>21. In a marriage it is the man who is to blame for HIV/AIDS</td>
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<tr>
<td>22. People with HIV/AIDS are to blame for their infection</td>
<td>( )</td>
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<tr>
<td>23. HIV/AIDS is a punishment by God for leading an immoral life</td>
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<td>24. It is wrong to send a student with HIV/AIDS to school with other children</td>
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<tr>
<td>25. A person who has HIV/AIDS must be quarantined</td>
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<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
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<td>-------------------------------------------------------------------------</td>
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<tr>
<td>26. Have you heard about the virus called HIV or AIDS?</td>
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<td>(0)</td>
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<tr>
<td>27. Can a person have HIV/AIDS and not have any symptoms?</td>
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<td>28. Can a healthy looking person with HIV/AIDS pass it on to others?</td>
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<td>29. Can a person with HIV/AIDS virus be cured?</td>
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<td>30. Can HIV/AIDS be treated like other sexually transmitted diseases?</td>
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<td>31. Can one get HIV/AIDS by touching an infected person?</td>
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<td>32. Can one get HIV/AIDS by kissing on the cheek?</td>
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<td>33. Can one get HIV/AIDS by having vaginal intercourse?</td>
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<td>34. Can one get HIV/AIDS by oral sex?</td>
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<tr>
<td>35. Can one get HIV/AIDS by having anal sex?</td>
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<tr>
<td>36. Can one get HIV/AIDS by sharing needles?</td>
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<td>37. Can a HIV/AIDS infected mother pass the virus to her unborn child?</td>
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<td>38. Can a HIV/AIDS infected mother pass the virus to her child while nursing?</td>
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<td>39. Can one get HIV/AIDS by sharing food or cups and plates with an infected person?</td>
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<td>40. Can one get HIV/AIDS by sharing the same toilet with an infected person?</td>
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<td>Question</td>
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<tr>
<td>41. Can one get HIV/AIDS by wearing the clothes of an infected person?</td>
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<tr>
<td>42. Can one get HIV/AIDS by mosquito or other insect bites?</td>
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<td>43. Can one get HIV/AIDS by being coughed or sneezed on by a person who has HIV/AIDS?</td>
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<td>44. Can one get HIV/AIDS by eating in a restaurant where the cook or server has HIV/AIDS?</td>
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<td>45. Can one get HIV/AIDS by working near someone who has HIV/AIDS?</td>
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<td>46. Can one get HIV/AIDS by attending school with someone who has HIV/AIDS?</td>
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<tr>
<td>47. A male/female can get HIV/AIDS through anal sex with a male.</td>
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<td>48. A woman cannot get HIV/AIDS if she has sexual intercourse during her period</td>
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<td>49. There is a female condom that can help decrease a woman’s chance of getting HIV/AIDS</td>
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<td>50. A natural skin condom works better against HIV/AIDS than does a latex condoms</td>
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<td>51. Using vaseline or baby oil with condoms lowers the chance of getting HIV/AIDS</td>
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<tr>
<td>52. A female can get HIV if she has vaginal sex with a man who has HIV/AIDS</td>
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<tr>
<td>53. Athletes who share needles when using steroids can get HIV/AIDS from the needles</td>
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<tr>
<td>54. Douching after sex will keep a female from getting HIV/AIDS</td>
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</tbody>
</table>
55. Taking vitamins keeps a person from getting HIV/AIDS ( ) ( )

56. Use of condoms when having sex is an effective way to reduce the chances of getting HIV/AIDS ( ) ( )

57. Only homosexual and bisexual males are vulnerable to HIV/AIDS ( ) ( )

58. AIDS can reduce the body’s natural protection against diseases ( ) ( )

59. A person can have the HIV virus and not have the AIDS disease ( ) ( )

60. A person who practices sexual abstinence or restricts sex to uninfected partner has no chance of being infected ( ) ( )

61. A vaccine is available that protects a person against AIDS ( ) ( )

62. At present there is no cure for AIDS ( ) ( )

**Place a check mark for your answer**

<table>
<thead>
<tr>
<th>63. What do you think your chances are of being infected with HIV/AIDS?</th>
<th>High chance (4)</th>
<th>Medium chance (3)</th>
<th>Low chance (2)</th>
<th>No chance (1)</th>
</tr>
</thead>
<tbody>
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<td>( )</td>
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</tbody>
</table>

| 64. Are you afraid of getting HIV/AIDS? | ( ) | ( ) | ( ) | ( ) |
(IF YOU HAVE NEVER BEEN SEXUALLY ACTIVE PLEASE SKIP TO QUESTION 120)

Part II Place a check mark for your answer

65. Have you ever used a condom during sex?  Yes  No
   (1)   (0)
   ( )   ( )

66. In situations where a condom was used, who suggested using a condom?
    Me   Partner   Both
    (1)      (2)       (3)
    ( )      ( )       ( )

67. With your last partner, how many times did you have to negotiate for condom use?
    Never   Once   Few times   Many times   Always
    (0)       (1)     (2)       (3-4)      ( )
    ( )      ( )       ( )       ( )      ( )

68. Of those occasions how many times were you successful in the negotiations?
    Never   Once   Few times   Many times   Always
    ( )      ( )       ( )       ( )      ( )

69. During the last five occasions, how often did you use condoms?
    1       2       3       4       5
    ( )     ( )      ( )      ( )      ( )

Place a check mark for your answer

Tell me what you feel when you hear the following statements:
SA=Strongly Agree; A=Agree; DK=Don’t Know; D=Disagree; SD=Strongly Disagree

70. I know how condoms should be used properly
    SA  A  DK  D  SD
    (5) (4) (3) (2) (1)
    ( ) ( ) ( ) ( ) ( )

71. I know where I can get ready access to condoms whenever I want them
    ( ) ( ) ( ) ( ) ( )

72. I can always take condoms with me when on a date
    ( ) ( ) ( ) ( ) ( )
73. It is possible for me to keep condoms at home  
74. I can make sex fun using a condom with my partner  
75. I would feel like I did the right thing if I used condoms  
76. I can confidently use a condom without fumbling  
77. I can confidently use a condom without hesitation  
78. I can confidently use a condom in such a way that it will not slip or break  
79. I am sure that I can use a condom every time I have intercourse with my regular partner  
80. I can negotiate condom use successfully if my regular partner opposes it  
81. I refuse to have sex if my partner refuses to use condoms  
82. I feel embarrassed/afraid to ask my partner to use a condom  
83. I can get my regular partner to use a condom even if we have not used them in the past  
84. I can get my regular partner to use a condom even if he/she does not want to use them  
85. I would feel like I did something wrong if I didn’t use condoms with my regular partner  
86. My peers think condoms should be used during sex  
87. My friends/significant other think condoms should be worn during sex  
88. If I am worried or upset about my health, my friends and well-wishers are always willing to listen to me and console me  
89. When a friend is worried about her/his health, I always listen to his/her advice  
90. I can always purchase condoms at the neighborhood store without hesitation
91. If someone like me can be infected with HIV, then I might also be at risk of getting infected

92. If people have intercourse without using condoms, they are at risk of getting HIV/AIDS

93. It is safe to have sex if the partner seems like an educated, decent man/woman

94. It is safe to have sex if I only have a few partners

95. It is safe to have sex if I am with a partner who I am more attached to or whom I like

96. It is safe to have sex if I do not find any rashes, abrasions, cuts on my partner

97. There is no need to use condoms if the lady uses oral contraceptives

98. There is no need to use condoms if I thoroughly wash my genital area after having sex

99. There is no need to use condoms if the penis is withdrawn before ejaculating

100. Regular condom use will prevent pregnancy

101. Regular condom use will prevent sexually transmitted diseases

102. Regular condom use will protect against HIV and AIDS

103. Condoms are sometimes unreliable because they can tear or break or burst during intercourse

104. Condoms are sometimes unreliable because they can slip and go inside the vagina during intercourse

105. Condoms are sometimes unreliable because they cause dryness and irritation in the female

106. Condoms are sometimes unreliable because the price of condoms is too high to buy and use regularly

107. Condoms are sometimes unreliable because I cannot get a condom whenever I need it
108. Most of the time my partner gets angry when condom use is suggested ( ) ( ) ( ) ( ) ( )

109. A reason my partner gives for not using condoms is it reduces pleasure ( ) ( ) ( ) ( ) ( )

110. A reason my partner gives for not using condoms is it takes a long time ( ) ( ) ( ) ( ) ( )

111. A reason my partner gives for not using condoms is it is inconvenient or difficult ( ) ( ) ( ) ( ) ( )

112. If I ask my partner to use condoms he/she would immediately suspect that I have an STD or HIV/AIDS ( ) ( ) ( ) ( ) ( )

113. If I ask my partner to use condoms he/she will think I am questioning his/her sexual health ( ) ( ) ( ) ( ) ( )

114. If I insist that my regular partner use condoms he/she will get angry ( ) ( ) ( ) ( ) ( )

115. My partner is always happy if we use condoms ( ) ( ) ( ) ( ) ( )

**Place check mark for your answer**

<table>
<thead>
<tr>
<th></th>
<th>All the time (3)</th>
<th>Sometimes (2)</th>
<th>Never (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>116. Do you (or your partner) have more than one sexual partner?</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>117. Do you (or your partner) have sex without a condom?</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>118. Do you (or your partner) have sex with commercial sex workers?</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>119. Do you (or your partner) have sex with casual acquaintances (i.e. ex-boyfriend/girlfriend, childhood friend, friends with benefits)?</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>120. Do you (or your partner) have or had sex with a person/s who inject illegal drugs?</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
121. Are you?
   (1) (    ) male  (2) (    ) female

122. Enter the last two digits of your birth year

123. What is your education level?
   (1) (    ) Freshman  (2) (    ) Sophomore  (3) (    ) Junior  (4) (    ) Senior  (5) (    ) Graduate Student

124. What is your mother’s education level?
   (    ) Less than High School
   (    ) High School/GED
   (    ) 2 Year College Degree (Associates)
   (    ) 4 Year College Degree (BA, BS)
   (    ) Graduate/ Professional Degree

125. What is your father’s education level?
   (    ) Less than High School
   (    ) High School/GED
   (    ) 2 Year College Degree (Associates)
   (    ) 4 Year College Degree (BA, BS)
   (    ) Graduate/ Professional Degree

126. What is your total household income per annual, including all earners in your household?
   (    ) Less than $20,000
   (    ) $20,000-39,999
   (    ) $40,000-59,999
   (    ) $60,000-79,999
   (    ) $80,000 or more
APPENDIX B. CONSENT LETTER

Hello, my name is DaKysha Moore. I am a doctoral student here at Bowling Green State University. If you are 18 years old or older, you are asked to be in a research study on HIV/AIDS. I am conducting a study for my dissertation about HIV/AIDS knowledge, attitude, cognitive involvement, and self-perception of risk for the disease. The study will also examine condom use among African American college students. The findings of the study will help researchers gain more insights about the attitudes and behaviors that might put African American college students at a risk for contracting the disease. From the data collected from the questionnaire, I would like to examine the variables that might put African American college students at risk for the disease, but I would also want to use the findings to aid in developing interventions that influence factors pertinent to behavior and attitude change related to HIV/AIDS infection.

Your answers for this study will be kept confidential. I will not give anyone your name for any reason. Some of the questions will be personal but it is very important to inquire about the variables that could increase a person’s risk for contracting the disease. Moreover, the anticipated risks to you are no greater than those normally encountered in daily life. Your participation in the study is completely voluntary and you can withdraw at any time. The decision to participate or not to participate will have no impact on your grades or relationship with Bowling Green State University or any other university.

It should take approximately 30 minutes to complete the questionnaire. **If you decide to participate in the study, start to answer the questions. By sending back the survey, you are consenting to take part in the study and you are implicating that you are 18 or older.** Please remember to clear your browser’s cache and page history after you submit the questionnaire in order to protect your privacy. Also, some employers use tracking software to monitor and record keystrokes, mouse clicks, and web sites visited. This could impact the confidentiality of your responses. Therefore, you may wish to complete the questionnaire on your home computer or a public computer. If you have any questions about the questionnaire, please feel free to contact me at the address or e-mail address listed below.

Thank you for your support and cooperation.

Sincerely,
DaKysha P. Moore

My contact information:
DaKysha Moore
06 West Hall
Bowling Green, OH 43403
419-372-1998

You can also contact my advisor Dr. Srinivas Melkote or the Chair of the Human Subjects Review Board at Bowling Green State University.

Dr. Srinivas Melkote
School of Communication Studies
316 West Hall/ 419-372-9324
melkote@bgnet.bgsu.edu

The Chair/Human Subjects Review Board
Bowling Green State University
419-372-7716
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