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Knowledge of HIV/AIDS and Attitudes towards Condom Use among African American Men Ages 18 to 35

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Abstract

Background: Of all racial/ethnic groups in the United States young African Americans are the most impacted by HIV/AIDS, including rates of new infections and deaths.

Purpose: To determine whether attitude towards condom use differed according to knowledge of HIV/AIDS and demographics such as age, education, income, length of relationships, and years sexually active.

Methods: A cross-sectional quantitative study of 162 young African American men aged 18 to 35 years from an urban geographic area.

Data collection: Demographic and survey data was collected from a metropolitan hospital in northern New Jersey and other local faith-based organizations where young African American men congregate or program network. A ten question paper and pencil survey tool was developed from the Multidimensional Condom Attitude scale; the HIV Knowledge Questionnaire scale; and, the National Sexual Health Survey.

Data analysis: Three hypotheses were tested with correlation statistics. The fourth involved hierarchical multiple linear regression to investigate the ability of HIV/AIDS knowledge to predict attitude towards condoms, after controlling for age, income, years sexually active, education and length of relationship.

Findings: Pearson *r* analyzed the relationship among the variables since it is sensitive to linear relationships. A positive relationship was found between attitude toward condom use scores with age (r=0.20, p=0.00), income (r=0.29, p=0.000), and knowledge of HIV/AIDS (r=0.39, p=0.000). Younger African American men with less years of sexual activity (r=-0.23, p=0.00) and less knowledge of HIV/AIDS were negatively related to condom use. An independent-sample *t*-test also revealed a significant difference in attitude towards condom use based on the participants' age group, $t(160)$=-2.58, p=0.011). The mean attitude score for the 18-24 age group was 19.42, (SD=4.54); for the 24-35 age group it was 21.53, (SD=5.80). *Beta* values were significant for HIV/AIDS (β=0.28, p=0.002), income (β=0.31, p<0.03), and number of years sexually active (β=-0.38, p=0.000).

Implications: Educational programs and community outreach are needed for the younger African American male to prevent HIV/AIDS and other opportunistic infections by increasing their knowledge and improving their attitudes towards condom use.

Keywords: Attitudes towards condom use; Knowledge of HIV/AIDS; African American men; Youth

Background

The Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Disease Syndrome (AIDS) remains a persistent global problem. Globally, an estimated 35 million people are infected [1,2]. AIDS remains the leading cause of death worldwide among individuals aged 15-59, the third leading cause of death among African American men aged 35-44, and the fourth leading cause of death for Latinos aged 35-44. A growing concern is the increasing concentration in urban communities where racial/ethnic minorities, especially younger African Americans and Latinos, are often disproportionately represented [3-5].

Significance

On average, the survival time for African Americans with AIDS is lower than for other racial or ethnic groups. The impact on younger male communities is overwhelming and alarming. Young people are the most likely to be unaware of their infection. Among people aged 13-24, an estimated 44% (25,300) of those living with HIV have not yet been diagnosed. It is important for them to have knowledge not only of their HIV/AIDS infection, but also its implications, and methods of prevention.

Relationship instability-caused by economic stress, stigma, homophobia, discrimination, domestic violence, migration, and incarceration contribute to sexual partner mixing patterns that foster HIV transmission. Other barriers such as male masculinity, poverty, lack of access to health care, higher rates of some sexually transmitted diseases, injectable drug use, and being unaware of HIV status have also contributed to the high prevalence [6]. Additionally, substance use can reduce the likelihood a person will take protective actions, such as using condoms [7,8].

Poor knowledge, attitudes, and behaviors about HIV/AIDS have been cited as contributing factors [9]. Pleck et al. [10] found that African

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Americans are more likely to have more negative attitudes toward condoms, less consistent use, and less belief in male responsibility for contraception. Mosisa et al. [11] identified from the Cochrane review data base 14 discordant couples (i.e., couples in which one of the partners is HIV-positive and the other is HIV-negative). They found that condom use remains the single most important method of preventing HIV infection. Notably, they found the incidence of HIV infection was 1.14 per 100 person-years (95% Confidence Interval 0.56-2.04) among those who always used condoms, while it was 5.75 per 100 person-years (95% Confidence Interval 3.16-9.66) among those who never used them. This result indicates an 80% reduction in the incidence of infection with condom use.

Studies focusing on the determination of whether attitude towards condom use differ according to knowledge of HIV/AIDS and demographics are virtually non-existent. Collaboration with younger African American men is important to compile current information to improve the quality of data needed for informed decision-making. Addressing the paucity in empirical investigation, the purpose of this quantitative study was to determine whether attitude towards condom use differed according to knowledge of HIV/AIDS, and demographics such as age, education, length of relationships, and years sexually active among younger African American men living in New Jersey.

Literature Review

The updated 2013 CDC Health Disparities & Inequalities Report [12] supplement emphasized the importance of multi-sectoral collaboration, highlighting the need for a comprehensive, community-driven approach to reducing health disparities in the US [13]. Overall, the US HIV epidemic is characterized by HIV cases densely concentrated in local hotspots that house the most socially disenfranchised and marginalized populations [7,14,15].

Health-protective sexual communication is related to health discussion aimed at ensuring safe sexual health, including condom use, number of past sexual partners, and discussion about getting tested for HIV [7,16,17]. The importance is underscored by the elevated prevalence of HIV among men who have sex with men (MSM) and the fact that, if partners adopt this communication, it may serve as a risk reduction strategy leading to measures that promote safe sexual behavior.

There is a dearth of information by US scholars on the topic of virtual communities where high-risk sexual behavior occurs [18,19]. Researchers have determined 35% to 85% of MSM use the Internet to search for sexual partners [20-23]. Websites such as Manhunt, Craigslist, Gay.com and Adam4Adam and mobile-based apps (e.g., Grindr, Jack'd, Scruff, etc.) are used to seek sexual partners. Poon et al. [19] interviewed 21 Asian MSM about online perception of partner risk. Individuals who were younger and had high-paying jobs were perceived as less likely to be HIV positive than older individuals and individuals who had lower incomes.

Studies have evaluated condom use by using online profiles and preferences as proxies for sexual communication, sexual negotiation, and health-protective sexual communication [1,24,25]. Carballo-Dieguez et al. [26] operationalized sexual negotiation as HIV sero-status disclosure among a nationwide sample (n=200 HIV-negative, n=50 HIV-positive) of Latino men. HIV-positive MSM were significantly less likely to disclose or misrepresent their sero-status to a potential partner. Horvath et al. [27] operationalized sero-status disclosure and condom use. They examined the relationship between sexual communication and HIV testing status (n=2,716) and found only 75% of the tested and 72% of the never-tested groups disclosed an HIV-negative status in all of their online profiles.

Young men who have sex with men (YMSM), aged 13 to 24, account for more than one quarter of all new infections in the United States and more than two thirds of new infections among all 13- to 29-year-olds [3]. YMSM who use Grindr practice safer sex with partners met via the application than with partners met elsewhere. Rice et al. [28] utilized the geo-locating feature of Grindr to recruit 195 YMSM, aged 18 to 24, based on their location within West Hollywood and Long Beach, CA between August and October 2011. YMSM reported significantly higher rates of condom use with partners met on Grindr (59.8%) relative to those partners met elsewhere (41.9%). In contrast, Landovitz et al. [29] collected similar data on 375 YMSM who used Grindr in metropolitan Los Angeles and found participants had a 46.1% sexual partnering and unprotected anal intercourse in the past 3 months.

African American men who have sex with women (MSW) are also greatly underrepresented in the literature [30,31]. First, African American men's HIV risk behaviors (particularly IV drug injection and unprotected sex) are the leading exposure categories for African American women. Although heterosexual transmission accounts for only eight percent of reported cases of AIDS among African American men, this exposure category accounts for 39% of the cumulative cases of AIDS among African American women [32,33]. Secondly, MSW figure prominently in many of the psychosocial conceptualizations of women's HIV risk due to the greater power in relationships and masculine ideologies of African American men, male violence, and sexual coercion [34,35].

One area negatively impacting those living with HIV in the African American community is the associated stigma [36-38]. Studies [39,40] revealed that, behaviorally, stigma has been found to negatively affect HIV test-seeking behavior, willingness to disclose HIV status, health-seeking behavior, quality of health care, and social support. In addition, studies have found HIV stigma to be associated with various interpersonal and psychosocial issues such as feelings of shame and guilt, fear and anger, mental strain, and feelings of self-loathing. HIV stigma has also been associated with clinical symptoms of depression in a variety of HIV-infected populations. In a recent study of stigma among Asian and Pacific Islanders in the United States, Zhang et al. [40] found that the harmful effects of stigma, including social rejection and isolation, were sustained over a period of two years.

Experiences with homophobia have been shown to interfere with the ability of gay and bisexual men to establish and maintain long-term same-sex relationships, which protect against HIV acquisition [41,42]. Homophobia may affect sexual risk-taking indirectly by exacerbating the mental health burden in those who experience it [43,44]. Gay and bisexual men are more likely to experience bullying and other forms of violence, which can lead to mental distress and engagement in risky behaviors that are associated with becoming infected with HIV [45].

Although a growing body of qualitative work has begun to examine the psychosocial issues that non-gay identified (NGI) African American men who have sex with men and women face as both ethnic and sexual minorities, little of this work has focused directly on attitudes toward condom use [46-48]. In a cross-sectional study, Geter and Crosby [49] investigated pleasure-related, partner-related, and social normative correlates of recent condom refusal in young African American men (YBM) (n=561) attending clinics treating sexually transmitted diseases in three cities. Mean age was 19.6 years (SD=1.87). Nearly one of every

two young men (46.8%) indicated recent refusal to use a condom after a request from their partner. Geter and Crosby [49] examined condom refusal in YBMSW. Significant qualitative findings included partner-related beliefs: "I feel closer to my partner without a condom" (OR=2.52, 95% confidence interval (CI)=1.65-3.83) and "condoms make sex hurt for the female partner" (OR=1.69, 95% CI=1.14-2.52). Their findings suggest condom refusal may stem from the belief that sexual enjoyment will be compromised with condoms or that sex will be enhanced through skin-to-skin contact.

Barbershops are increasingly being used as a site for outreach and health promotion activities since barbers are willing to engage in health education activities with their clients [50]. Wilson et al. [51] screened 122 men who completed audio computer-assisted self-interviews (ACASI) in barbershops, using privacy screens and headphones to protect their privacy. From among them a subgroup of 22 men participated in focus groups and/or individual interviews. Topics included masculinity, partner selection and networks, sexual risk behaviors, attitudes, beliefs and intentions regarding HIV-testing; condom use; myths and stigma surrounding HIV; and, suggestions for program development.

Theoretical Framework

Tenets from three main theories were collectively used to frame this study on HIV prevention; namely, understanding knowledge and attitudes toward condom use in the younger male population. Theory of Reasoned Action [52] provided a basis for understanding attitudes and for predicting human behaviors. The theory posits an individual's behavior is a function of a specific intention that is influenced by attitudes and subjective norms toward it. Attitudes and subjective norms are then seen as a result of an individual's perceptions of the attitudes and beliefs of one's referents (i.e., those persons considered important in one's life). Researchers have used the theory to model a variety of health-promoting behaviors [53].

Social Cognitive Theory [54] underpinned the examination of risky sexual behaviors to better understanding why African American men may engage in unhealthy behaviors without considering their effects [55]. The theory proposes individuals "function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences" [56-58]. Human beings are considered proactive and self-regulating agents, rather than passive and reactive to inner drives or external stimuli [59].

The Health Belief Model [60] was used to propose a way of explaining the role of knowledge in relationship to behavior. A psychological model, it attempts to explain and predict individuals' health behaviors by focusing on their attitudes and beliefs that account for their "readiness to act." An added concept, cues to action, activates that readiness and stimulates overt behavior. According to the model, in order to achieve successful behavior change, individuals must feel their current behavior presents a realistic and significant risk to their health (perceived susceptibility), and that making specific changes will result in positive health outcomes (perceived benefit), with low cost (perceived barriers), while facilitating the necessary skills to implement the change and overcome any perceived barriers (self-efficacy) [61]. With the addition of health motivation [61,62] the model further assumes that motivation is a necessary condition for action that selectively determines an individual's perceptions.

Independent variables in this study were knowledge of HIV/AIDS; demographic characteristics, including age, level of education, income, length of relationship; and, years of sexual activity. The dependent variable was attitude towards condom use. According to the theoretical synthesis, a direct relationship between knowledge, attitude, and behavior was proposed [53]. Specifically, behavior change (i.e., condom use) will eventually lead to a reduction in the high prevalence of HIVS/AIDS infection in the younger African American male population. The implication was the motivation to reduce HIV/AIDS risk and perform the requisite behavioral skills is based on the individual's perception.

Using the Health Belief Model, it was hypothesized a person:

- takes a health-related action (i.e., use condoms) if they feel that a negative health condition (i.e., HIV) can be avoided,
- has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition (i.e., using condoms will be effective at preventing HIV),
- believes that he/she can successfully take a recommended health action (i.e., he/she can use condoms comfortably and with confidence).

Research Questions

This study asked:

1) Are attitudes toward condom use related to knowledge of HIV/AIDS, and demographics such as age, education, income, length of relationships, and years sexually active among younger African American males?
2) Does knowledge of HIV/AIDS, and demographics such as age, education, income, length of relationships, and years sexually active affect attitudes toward condom use among younger African American males?
3) Does knowledge of HIV/AIDS and demographics such as age, education, income, length of relationships, and years sexually active predict condom usage?

Research Hypotheses

A quantitative design provided the ability to adequately test the hypotheses and allowed the use of statistical analyses to explain the relationship between knowledge of HIV/AIDS and attitudes towards condom use.

Four hypotheses were tested to answer the research questions above:

Ho1: Knowledge of HIV/AIDS is not related to attitude towards condom use.

H_A1: Knowledge of HIV/AIDS is related to attitude toward condom use.

Ho2: Age, income, and years sexually active are not related to attitude towards condom use.

H_A2: Age, income, and years sexually active are related to attitude towards condom use.

Ho3: Length of relationship and educational level are not related to attitude toward condom use.

H_A3: Length of relationship and educational level are related to attitude towards condom use.

Ho4: Knowledge of HIV/AIDS and demographic factors do not predict attitudes towards condom use.

H_A4: Knowledge of HIV/AIDS and demographic factors predict attitudes towards condom use.

Methodology

A descriptive cross-sectional design was used to determine whether

attitude towards condom use differed according to knowledge of HIV/AIDS, age, education, length of relationships, and years sexually active among the younger African American men, aged 18-35 years. Research questions and hypotheses warranted statistical testing using correlation and linear and multiple regression analyses.

Data Collection

A large urban community in Essex County in northeastern New Jersey was selected to sample the understudied younger population. New Jersey has a large population of African Americans (14.8%) compared to 13.6% of the U.S. population [63]. The use of convenience sampling enabled access to a larger population within a large metropolitan area where there is increased incidence of HIV/AIDS. The collection of highly sensitive data prohibited random sampling. Following Institutional Review Board approvals from Kean University and St. Michael's Hospital in Newark, New Jersey, study recruitment flyers were posted at multiple sites around the hospital and other local faith-based organizations where young African American men are known to congregate, program network, or hang out. The researcher had no prior relationship to the data collection sites. Quantitative results were viewed in an aggregate format and no responses were linked to any individual participant to ensure confidentiality. Since study participants may have had the potential to experience discomfort when answering questions eliciting perceived discrimination and stigmatization, referral to counseling was made available, free of charge. At the end of data collection, each survey questionnaire was assigned a coded number to protect participants' privacy and ensure anonymity.

Sample size

Power analysis, using G power program for correlation and regression analysis determined a needed sample size of 150 [64-66]. In order to conduct correlation analysis with a medium effects size of 0.5 with power (1-β err prob)=0.95, the sample size of 162 was adequate. For the regression analysis, a medium effect size of r^2=0.50 was estimated based on reported betas of previous studies (0.20, 0.56 and 0.73), with an average beta of 0.49 [67-72].

Measures

Demographic data described the sample characteristics: age, education, income, length of relationship, and years sexually active. Questions from a 25-item Multidimensional Condom Attitude, [73] a 45-item HIV Knowledge Questionnaire scale, [74] and the National Sexual Health Survey [75] were used to develop a ten-item paper and pencil questionnaire and operationalize attitude toward condom use among young AA men.

The National Sexual Health Survey is a national telephone survey of adults 18 years and older residing in the 48 contiguous states. Measures were developed to assess a wide range of HIV-related and human sexuality topics including, but not limited to, condom attitudes, condom slips and breaks. The survey has demonstrated adequate internal consistency reliability using Cronbach's alpha of 0.83 and above with a 95% Confidence Interval in the studies reviewed [76-83]. Permission to use the survey was obtained from the California Center for AIDS studies.

The 25-item Multidimensional Condom Attitude Scale had established reliability and validity among numerous groups [73]. The 45-item HIV Knowledge Questionnaire had a Cronbach's alpha of 0.83-91, with validity and discriminant analysis established by a panel of experts [74].

From the original 180-item NSHS questionnaire five true/false questions were used to measure HIV/AIDS knowledge. Respondents who marked Don't Know were scored as an incorrect answer. Each question was worth 20 points; the higher the test score, the more knowledge of HIV/AIDS. Five questions from the NSHS were also extracted to measure attitudes towards condom usage on a 7-point Likert-type scale, ranging from Strongly Agree to Strongly Disagree. Total scores ranged from 5-35; the higher the score, the more positive attitude toward condom use.

Findings

All data was analyzed using the *Statistical Packages for Social Sciences* (SPSS) software version 22.0 for Windows [84]. Education and length of relationship were regarded as ordinal data. Continuous data included age, income, and years sexually active. Descriptive analysis of the demographic data included means and standard deviations to describe the sample characteristics. Frequency tables, histograms, and scatterplots assessed distributions of study variables for normality. Tests for skewness and kurtosis were also conducted and data was inspected for inconsistencies. Correlation analysis was used to discover if the independent variables had a significant relationship to the dependent variable. Regression analysis was used to further examine the relationships and determine whether knowledge of HIV/AIDS predicts attitude towards condom use. A two-tailed test of significance set at 0.05 was used to reduce the risk of a Type I error [85].

One hundred and sixty-two men (n=162) completed the study. Sixty-two percent (62%) were age 25 or less; thirty-eight percent (38%) were between the ages of 26 to 34. 120 were college-educated, indicated as associate degree (43.5%; n=70), bachelor's degree (53%, n=32), and master's degree (11%; n=18). On average, annual income was reported as $27,000 per year ($SD$=5.9, range: $15,000 to $45,000 per year). Fifty-seven percent (57%) reported an annual income of $27,000 of less. Eight-two percent (82%) of the participants reported being sexually active for four years or less, and 8% reported they were not sexually active. Years of being sexually active among the 144 men (89% of 162 men) ranged from 0 to 11 years (M=3.13, SD=1.86) (Table 1).

Attitude and Knowledge of HIV/AIDS scores were normally distributed. Q-Q Plot and a skewness of -0.01 was demonstrated for attitude towards condom use; -0.50 for attitude scores. The mean score for attitude towards condom use was 20.38 (SD=5.42). Possible scores on the 5-items ranged from 5 to 35. Approximately fifty-four percent (54%) of the participants had a score less than the midpoint of 21.5, indicating a negative attitude towards condom use.

Variables	Mean	SD
Attitude towards condom use	20.38	5.24
Knowledge of HIV/AIDS	59.13	25.83
Age	24.06	3.35
Income	27.17	5.97
Years sexually active	2.13	1.86
Level of Education	**Number**	**Percent**
High School	20	12.4
Associate Degree	70	43.2
Bachelor's Degree	53	32.9
Master's Degree	18	11.2
Length of Relationship		
Not in a relationship	19	11.8
Less than 1 Year	30	18.6
1-3 Years	48	29.8
More than 3 Years	64	39.8

Table 1: Demographic characteristics of study population.

The Cronbach alpha reliability coefficient was 0.72 among the 162 young Black men. A mean score of 59.14 (*SD*=25.83) for knowledge of HIV/AIDS was obtained. The 5-questions on the test had a possible range from 0 to 100. Frequency distribution showed that 58% of the participants had a score of 60% or less on the test, indicating they had poor knowledge of HIV/AIDS.

The first survey question indicated the participants were aware of a difference between HIV and AIDS; 82.1% of the participants answered the question correctly. 20.4% responded negatively to the question, use of a condom interrupts foreplay. Less than 50% of the participants were able to answer the questions on transmission and disease progress correctly. The second survey question about a condom's reliability revealed 53.1% positive attitudes towards condoms.

Pearson product-moment correlation coefficient, or Pearson *r*, was used to analyze the relationship among the variables (i.e., attitudes toward condom use with knowledge of HIV/AIDS, age, income, and years sexually active) since it is sensitive to linear relationships. A positive relationship between age (r=0.20, p=0.00), income (r=0.29, p=0.000), and knowledge of HIV/AIDS (r=0.39, p=0.000) and attitude toward condom use was revealed. As age, income and knowledge of HIV/AIDS increased so did scores on the attitude toward condom use questionnaire. In other words, participants with increased age, income, and knowledge of HIV/AIDS had more positive attitudes towards condom use (Table 2).

In the first step of hierarchical multiple regression, three predictors were entered into the model: age, income, and years sexually active. This model was statistically significant F (3, 134)=11.38; p=0.000 and explained 20% of the variance in attitude towards condom use. Beta weights revealed that only income β=0.38, p=0.003 and years sexually active β=-0.38, p=0.000 made significant unique contributions to the model.

After entry of education and length of relationship at Step 2 the total variance explained by the model as a whole remained at 20% F (5, 132)=6.81; p=0.000. Education and length of relationship did not make significant contributions to the model.

Step 3, the introduction of HIV/AIDS knowledge, explained an additional 5% of variance in attitude towards condom use, after controlling for age, income, and years sexually active (R^2 Change=0.05; F (1, 131)=9.57; p=0.002). In the final model three out of five predictor variables were statistically significant, with years sexually active recording a higher Beta value (β=-0.38, p=0.000) than HIV/AIDS Knowledge (β=0.28, p=0.002) and income (β=0.31, p<0.03) (Table 3; Figure 1).

Knowledge of HIV/AIDS was found to predict 15% of the variance in attitude towards condom use [R=0.394, R^2=0.155, F(1,160)=29.381, p=0.000]. The analysis indicated that 4% of the variance in attitude towards condom use was explained by age [R=0.204, R^2=0.041, F(1,160)=6.924, p=0.009]. Income was found to affect 9% of the variance in attitude towards condom use [R=0.299, R^2=0.089, F(1,155)=15.202, p=0.000]. An inverse relationship between attitude toward condom use was found with years of sexual activity (r=-0.23, p=0.00). Participants with increased years of sexual activity had negative attitudes towards condom use. The number of years of sexual activity was found to predict 5% of the variance in attitude towards condom use [R=0.230, R^2=0.053, F(1,142)=7.963, p=0.005] such that as years increased, attitude scores decreased, meaning the participants had a negative attitude towards condom use. An independent-sample t-test conducted to evaluate whether there was a significant difference in attitude towards condom use based on the participants' age group was significant t(160)=-2.58, p=0.011). Participants in the age group 18-24 had a mean score of 19.42, (*SD*=4.54). The age group 24-35 had a statistically significant higher mean score of 21.53 (*SD*=5.80).

Discussion

This study sought to determine whether attitudes towards condom use among younger African American males differs according to their knowledge of HIV/AIDS, and demographics such as age, education, income, length of relationships, and years sexually active. Statistical analyses revealed HIV/AIDS knowledge, income, and years sexually active to be related to attitudes toward condom use. As measured by

	1	2	3	4	5	6	7
Age	1						
Education	0.727**	1					
Length of Relationship	0.452**	0.332**	1				
Income	0.791**	0.769**	0.446**	1			
Years Sexually Active	0.427**	0.300**	0.493**	0.308**	1		
Total HIV/AIDS Knowledge Score	0.411**	0.418**	0.211**	0.481**	0.176*	1	
Total Attitude Towards Condoms Score	0.204**	0.149	0.058	0.299**	-0.230**	0.394**	1

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed)

Table 2: Pearson correlation coefficients among the continuous variables.

	Model 1			Model 2			Model 3		
	B	SE B	B	B	SE B	B	B	SE B	B
Age	0.020	0.214	0.013	0.035	0.236	0.035	0.032	0.231	0.020
Income	0.337	0.112	0.379**	0.395	2.845	0.395**	0.275	0.122	0.309*
Years Sexually Active	-1.081	0.243	-0.382**	-0.392	-4.225	-0.392**	-1.085	0.255	-0.383**
Education				-0.057	-0.431	-0.057	-0.730	0.802	-0.119
Length of Relationship				0.030	-0.319	0.030	0.136	0.484	0.026
HIV/AIDS Knowledge							0.060	0.019	0.227**
R^2		0.203			0.205			0.259	
For change in R^2		11.383**			0.156			9.57**	

*p<0.05; **p<0.00

Table 3: Hierarchical Regression of Variables Predicting Attitude Towards Condom Use (*N*=138).

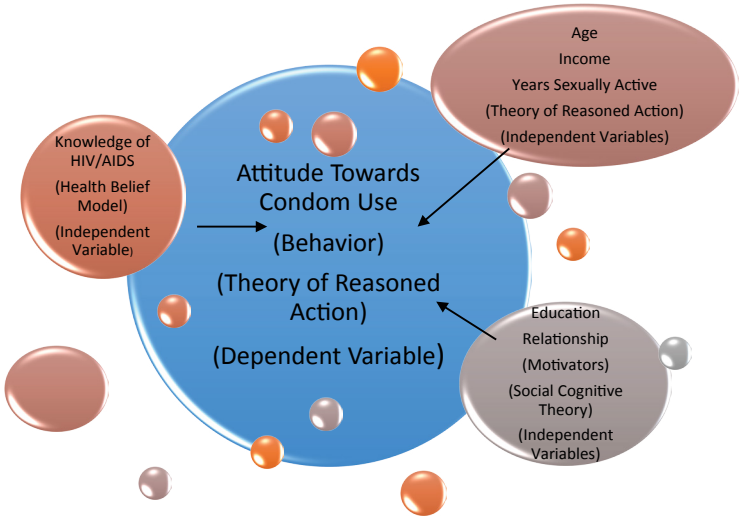

Figure 1: Hypothesized conceptual model.

the 10-item questionnaire, the younger African American sampled had a negative attitude towards condom usage. Study participants were also found to have a low level of knowledge about HIV/AIDS with more than half of the participants scoring a 60 or less on the survey. These test scores indicate the participants are at risk since the literature suggests that if young people were equipped with adequate knowledge of HIV/AIDS, their attitudes toward condom use would improve [86-89]. Study findings also corroborate those of Cai et al. who found that only 25% of their sample of high school seniors in China who had been sexually active for some time reported condom use in their first sexual encounter, with only one-ninth reporting consistent condom use. Additionally, these students demonstrated poor knowledge of HIV/AIDS as measured by the Information-Motivation-Behavior Skill (IMB) model. Study participants may not have had open communication with their parents about sex. Cai and associates' study findings [90] are in contrast to Harris et al. [91] who reported more positive attitude toward condom use among young African American men (n=138, M=20.1, SD=1.5) who had increased communication with their parents about sex.

In this study four hypotheses were tested with statistical analyses. Hypothesis #1 was supported, since Knowledge of HIV/AIDS was related to improved attitude towards condom use when subjected to Pearson correlation, and was found to predict 15% of the variance in attitude towards condom use.

Hypotheses # 2 that age, income, and years sexually active would be related to attitudes toward condom use was also supported. Age (r=0.20, p=0.00) and income (r=0.29, p=0.000) were positively related. Increased age and income correlated with increased condom use. These findings align with those of Cornelius and associates who found age was a primary factor to improve attitude toward condom use among young (M=15.4, SD=1.7) people (n=40) with approximately half of the participants being female (52.5%). Years of being sexually active (r=-0.23, p=0.00) were negatively related to attitude towards condom use. Participants who had increased years of being sexually active had a more negative attitude towards condoms. This may be due in part to the fact that African American men view sexual behavior as a more central component of intimacy, and subsequently may be more likely to see sex as a way of preserving their relationship [92].

Hypotheses # 3 that there was a relationship between attitude towards condom use and the ordinal variables, length of education (p=0.07), and years in a committed relationship (p=0.46) was not supported when subjected to Spearmen Correlation. These results corroborate Masoda and Govender's [93] who found that thirty-three participants (24%) had a negative attitude towards using condoms for contraception.

Hypothesis # 4 that predicted attitude towards condoms, after controlling for age, income, years of sexually active, education and length of relationship was only partially supported through hierarchical multiple regression analysis. Preliminary analyses were conducted to ensure no violation of the assumption of multicollinearity. All correlations were moderate to strong, ranging between r=0.17, p=0.02 and r=0.79, p=0.000, indicating multicollinearity was unlikely to be a problem [86]. After controlling all other factors (age, income, years sexually active, education, and relationship), HIV/AIDS knowledge was evaluated as significantly affecting attitude toward condom use (β=0.28, p=0.002).

In the final regression model, three out of five predictor variables were statistically significant, with years sexually active recording a higher Beta value (β=-0.38, p=0.000) than HIV/AIDS Knowledge (β=0.28, p=0.002) and income (β=0.31, p<0.03). As hypothesized, knowledge of HIV/AIDS was related to attitude toward condom use (r=0.394, p=0.000). Knowledge of HIV/AIDS was found to predict 15% of the variance in attitude towards condom use. These findings are congruent with Harawa et al. [94] who engaged in a 16-site behavioral surveillance study of anal intercourse among 30 HIV-positive MSM/W with a mean age of 42 years. The researchers found that due to the participants' knowledge of HIV/AIDS, the older African American men were sexually abstinent or practiced safer sex by using condoms. In contrast, Morisky et al. [95] reported that establishing policies and practices on condom use among certified sex workers in the Philippines were more important than their knowledge of HIV or their attitude toward condoms.

Study Strengths and Limitations

The high sensitivity of study data prohibited nationwide random sampling. Convenience sampling enabled a more accessible study population. Data collection involved minimal risk of researcher bias since there was no prior relationship to the data collection sites. Multiple recruitment sites mitigated sampling error. Participants had no prior knowledge of the study.

The study was limited to the use of data and clients made available by the St. Michael's Medical Center and the four Faith Based Organizations located in one urban area of only one US state. Limitations were: 1) the non-experimental, cross-sectional study design that limits generalizability to the general population of younger African American men; 2) a convenience sampling design prohibited a truly representative sample of the population *[*96]; 3) the study included a modified self-administered sexual health survey which can have an inherent risk of reporting bias and disclosure of sexual risk behaviors that may have created socially desirable responses. As a modified questionnaire the 10-items may have had limited validity, but the reliability Cronbach's alpha was 0.724; 4) many community venues catering to, or frequented by, young African American men were (e.g., barber shops, local bodegas and stores, soup kitchens, community agencies, homeless shelters) were not used for recruitment because permission could not be obtained; and, 5) the study sample was garnered from only one county in New Jersey; that is, Essex.

Implications and Recommendations

The study found decreased knowledge of HIV/AIDS and negative attitude towards condom use among younger African American men. The literature provides evidence [97] that educational programs improve knowledge. Health care providers should develop educational interventions, including support groups, to combat the high prevalence of HIV/AIDS in this population. If condoms are used correctly and consistently, they are about 80-90% effective in preventing heterosexual and homosexual HIV transmission [98].

The trend for young people to become sexually active at an earlier age is a reason to promote education in the use of condoms. For some of these young people having sex for the first time at age 16 is normal. This early initiation to sex is associated with risky sexual behaviors [3,89,99]. Educational efforts need to be tailored toward younger African American men, and to further understand how layers of information from the beliefs of peers, friends, and intimate partners merge to influence the decision-making process of condom use in them.

Few community-based resources exist to help reduce HIV/AIDS risk among Black heterosexual men who engage in unprotected sex with multiple or concurrent female sex partners [51]. Providing increased access to HIV and other opportunistic infections testing that is culturally suitable for both younger and older African American men is needed, as is training community healthcare providers to identify and recommend HIV testing to individuals at risk [99-101].

Future research should investigate the myths and misconceptions surrounding condom use by young urban adult African American males traditionally least likely to use them [102-103]. The impact on condom refusal by messages from multiple communication channels needs continued examination [104].

Conclusion

The gap between HIV/AIDS knowledge and condom use among the high-risk group and the community must be bridged. Community-level interventions are needed to develop community support that will strengthen African American men's influence on, and control over, their sexuality. Those empowering African American men through organizational social support can effectively improve younger men's knowledge of HIV and attitudes toward condom use. Continuous dissemination of information on HIV and opportunistic infections where young African American men tend to congregate must occur throughout the year. Owners of community/faith-based organizations can be educated towards this endeavor. Technology could help to assuage minority youth's tendency to challenge dominant norms. Sexual risk behavior with geosocial networking-located partners could be addressed with mobile HIV prevention applications, or within Grindr and other similar ones. Peer education programs that provide a context for collective negotiation of alternative sexual norms may promote sexual health in this group of young men.

Study findings can help provide the basis for influencing existing programs or creating new intervention programs to ensure the younger generation of African American men, aged 18 to 35, develops essential life skills that will help in the fight against HIV and other opportunistic infections. This study provides program administrators and policymakers with useful information to improve HIV/AIDS programs, and develop more effective policies to ensure the younger population of African American men begins to understand that their physical and social environment can influence risky sexual behaviors.

This study provides some insight into the relationships of variables that could be used to explain attitude toward condom use. The results aid in dispelling the misconceptions about condom use. Continued knowledge of the impact will strengthen national/global structural networks for improved monitoring and surveillance of HIV/AIDS and other communicable diseases.

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