

# **African American College Students' Attitudes toward HIV/AIDS: Implications for Historically Black Colleges and Universities**

---

**Sandra E. Taylor**

*Department of Sociology and Criminal Justice  
Clark Atlanta University*

**Tara Jones**

*Department of Medical Sociology  
University of Alabama – Birmingham*

---

## **Abstract**

This paper investigated African American college students' responses to a set of interview questions selected from a larger survey instrument in an exploratory study of basic attitudes about HIV/AIDS. Forty-two participants responded to an interview schedule in an investigation of student attitudinal domains regarding the HIV/AIDS epidemic. Results show that while most students' attitudes were consistent with expectations, a number of students expressed attitudes that are counterproductive in the fight against HIV/AIDS. Given the epidemic within the African American community, such findings appear ominous and implore strategies, in particular, from the institution whose primary function is the education of its populace. Unless aggressive steps are taken to address the problem across college and university campuses, there can be no lessening of the epidemic's impact within this community, and thereby no positive impact toward the goal of U.S. lowered rates consistent with recent global trends.

## **Introduction**

While HIV/AIDS cases have declined worldwide, ironically, the leading world superpower is not experiencing this optimistic trend. According to the World Health Organization (2007), 33.2 million people were estimated to have HIV in 2007 compared to 39.5 million who lived with the virus in 2006. In the United States, the HIV/AIDS epidemic has not hit a similar leveling, in part due to the high numbers of cases affecting the African American population. And within this particular population, a further irony is the number of black college students infected with HIV. While black college students represent only a very small proportion of HIV/AIDS cases overall, the significance lies in the African American numbers versus those in the Caucasian community, and in research showing gaps in knowledge between these two groups. In one study of ethnicity and sex differences in AIDS-related variables of knowledge, fear, and homophobia, the authors found that African American students had significantly lower scores on these measures (Waldner, Sikka, & Baig, 1999). Moreover, and irrespective to race or ethnicity, one would not expect such disparities from a sector focused on higher education. It is too often presumed that college campuses, replete with readily attainable informational resources, insulate their students from health-related risks, including HIV/AIDS.

The daunting statistics indicating an increase in HIV infections among African American young adults do not exclude the college populace. One might reason that at institutions of higher learning, students are somehow more “educated” about risk factors associated with contracting HIV, and thereby, less likely to engage in high-risk behaviors. However, cases of new HIV infection (84 male college students, 73 of whom were African American) revealed in an epidemiologic investigation involving 34 schools in North Carolina, show that college status is not an insulator. Rates of newly reported HIV infection among African American college student men who have sex with men were similar to their non-student counterparts (CDC, 2004). This research further showed that the majority of study participants did not perceive themselves to be at risk for HIV infection despite the elevated rates of high-risk behaviors.

Related literature on HIV/AIDS and college students indicates that while this population is knowledgeable about prevention measures and risky behaviors, students tend to underestimate

their vulnerability. In one sample of 649 African American male and female college students (aged 18-25 years) attending various 4-year institutions in a major southeastern metropolitan area, inconsistencies in knowledge and behavior were observed. Data indicate that while this population overall adheres to certain HIV-preventive behaviors, they nevertheless violate other important HIV-prevention practices (Taylor, Dilorio, Stephens, & Soet, 1997). For example, while the college women were more likely than college men to use measures that help prevent HIV transmission, both groups reported practices that expose them to risk, including engaging in sex without knowledge of a partner's sexual history. In an earlier study of African-American male college students, only 26% of respondents were steady condom users despite knowledge of the risk of not taking precautions (Johnson, Hinkle, Gilbert & Gant, 1992). Hence, a significant gap emerges between students' knowledge and their actions resulting in new cases of HIV infection.

Reasons for the failure of African-American college students as well as young African-Americans in general to follow safer sex guidelines tend to center around their perceptions of being invincible and somehow being disconnected from the reality that they might contract HIV. However, other studies suggest that the gap between student knowledge and behavior might be attributed to factors outside of the invincibility/invulnerability explanation. Included among these other factors are lapses in judgment (often due to alcohol or other substances), and believing that physical characteristics and appearance can inform one about their partner's HIV status. In light of the fact that college experiences can include experimentation with mind-altering substances, education and training campaigns attempt to appropriately emphasize the high risks involved with consumption and dating. Much of the literature has stressed the need for prevention and information messages that are tailored to the populations that appear increasingly vulnerable, including African American college students.

While empirical evidence in accounting for the gap between student knowledge and behavior has not been consistent, also inconsistent are factors explaining the gap between HIV rates of black and white college students. Research by Waldner, Sikka, & Baig (1999) show that AIDS knowledge scores were significantly lower for African American university students compared to Caucasian

students. African American students demonstrated higher rankings of homophobia as well. Davis et al (2007) found that although it appeared that white students were more aware of HIV facts than African American students, this effect could be explained through sexual status (sexually active students versus abstaining students, with the sexually active students reporting less knowledge).

A possible factor in the disproportionate number of black students contracting the virus is the increase of HIV/AIDS in certain U. S. regions. Reif, Geonnotti, and Whetten (2006) document that a substantial increase in AIDS cases in the Deep South occurred from 2000-2003. In contrast, other regions experienced more stable rates for this same time period. Given that black students are disproportionately located in the South and data suggesting colleges as potentially high transmission areas in the rural southeast (Hightow, Leone, MacDonald (2003), the regional hypothesis becomes a feasible one.

An epidemic of infection occurring in some North Carolina college students involving African American men who have sex with men is described by Hightow et al (2005) in terms of an at-risk, accessible population deserving further HIV prevention interventions. In this study of state surveillance records examining new HIV diagnoses in men 18-30 years old, risk behavior for HIV-infected men enrolled in college was compared with HIV-infected male non-enrollees. Newly diagnosed HIV infection was found in men in 37 colleges located in North Carolina or surrounding states and a sexual partner network investigation linked 21 colleges, 61 students, and 8 partners of students (Hightow et al, 2005). As a result, the authors describe an epidemic of HIV infection occurring in North Carolina college students that has captured the attention of both researchers and practitioners as well as college and university officials. The study clearly reveals that college students can no longer be viewed as a categorically low risk population, in part due to the nature of developmental stages associated with this age group.

The culture of late adolescence (including the college population) and the accompanying thought processes do not necessarily nor consistently coincide with the wider culture. That is, this population may tend to view sexual phenomena in ways different from other groups. Specifically, they may hold different views on what constitutes sex or particular sexual behaviors. For

example, while penile-vaginal intercourse is viewed as “having had sex,” oral-genital or penile-anal intercourse is not viewed as constituting “sex” as perceived by certain college students (Sanders & Reinisch, 1999). Similarly, Bogart et al (2000) found that vaginal intercourse and anal intercourse were considered sex by a group of undergraduates (n=233) under most circumstances. However, this same group categorized oral intercourse as sex contingent upon the gender and viewpoint of the actor, and whether orgasm occurred. This specific study by Bogart et al (2000) assessed the impact of four factors on respondents’ judgment of whether hypothetical actors would consider a particular behavior to be “sex.” The subjects read 16 scenarios featuring a male and female and judged whether each actor would consider the described behavior to be sex. The views of the subjects indicate the realm of differences related to what constitutes sex for this population. These findings suggest, as pointed out by the authors, that items in behavior surveys need to be clearly delineated to avoid subjective interpretations by respondents. Many studies on HIV/AIDS and adolescent/young adult age groups have repeatedly illuminated the inconsistencies that abound in defining “sex” for the college population.

The training of students in alleviating attitudes and behaviors that run counter to controlling the HIV/AIDS epidemic is certainly the purview of the education sector, but also begs for the input of the religious/faith sector. In light of the stigma and fear associated with HIV/AIDS, strategies to combat the epidemic within both sectors have been severely hampered. These key social institutions within the African American community represent crucial sectors in impacting the problem, but have only recently begun to engage in more aggressive initiatives toward addressing the problem.

Given the increased numbers of African American college and college-aged students who have contracted HIV, and in light of knowledge and attitudinal gaps, efforts toward understanding the nature of this population’s psyche relative to the epidemic would seem feasible. Within this context, an investigation into specific domains of HIV/AIDS was conducted in illuminating themes that adversely affect safer behaviors.

## Methods

This research included a sample of African American college students (n=42) who regularly attended a series of HIV/AIDS education and prevention activities at a Southeastern historically black university. Activities ranged from awareness seminars and forums to health fairs showcasing innovations in HIV/AIDS, with a major focus on training and education for prevention. Although a total of 166 participants responded to the larger survey instrument from which subsequent interview questions were extrapolated, complete interviews were conducted with forty-two students in comprising the content analysis for this study. Of the 42 respondents, the average age of the sample was 20 .2 years with a median of 19 years and a range of 18 – 29. They ranged from freshmen to seniors and all self-identified as black or African American. A majority of women in comparison to men were included (26 or 61.9% and 16 or 38.1% respectively).

The larger research used a survey instrument consisting of open-ended and structured questions to ascertain basic thoughts and actions of college students. These questions represent part of an extensive instrument designed to collect an array of measures on college students' attitudes and behaviors toward HIV/AIDS. Specific items were selected for content analysis in order to more closely investigate the students' attitudes on critical issues related to combating HIV/AIDS. The intent was to examine the students' overall disposition toward HIV/AIDS (i.e., whether internally-driven (including the expression of accurate information and knowledge of prevention indicative of high self-efficacy) or externally-driven (including the expression of inaccurate information and/or responses indicative of low self-efficacy).

This analysis uncovered in-depth data on three important domains related to college students' thoughts and feelings regarding HIV/AIDS and involve statements alluding to 1. fear, 2. conspiracy theories, and 3. a gay disease. Questions that showed significant unexpected responses (e.g., assuming you had put yourself at risk, would you consent to testing if convenience and confidentiality were guaranteed?) were extrapolated for the interview schedule. This follow-up to responses resulted in the dichotomy of internally-driven students (those who would be expected to engage in safer sex/risk reducing behaviors, and thereby contributing to combating

the epidemic) versus externally-driven students (those who would be expected to attach lesser importance to these same behaviors, thereby exacerbating the problem).

The three specific themes that emerged from the interview schedule including 1. students' fear of individual HIV/AIDS test results, 2. students' belief that the epidemic is part of a conspiracy, and 3. students' association of HIV/AIDS with the gay population indicate a need for enhanced programs that teach education and prevention within a culturally-specific context.

## Results and Discussion

The domains related to college students' thoughts and feelings regarding HIV/AIDS and the resulting themes provide insights as to how African American college students might be inclined to violate risk reduction and safer sex practices. For this population, perceptions appear to be their reality. Hence, messages about HIV/AIDS prevention must be centered in situational contexts, in an effort to reach these students based on their experiences, views, and ways of life. The themes unveiled corroborate past findings indicating the need for enhanced HIV/AIDS education for an array of populations.

The theme of "students' fear" captures sentiments of how afraid some students are to be tested even in the face of grave risk. For example, one student explained, "If I find out I have it, then what? So I would just rather not know." While the overwhelming majority of students (78%) stated that they would be tested if they had put themselves at risk, this leaves far too many behind still not understanding the importance of HIV testing. Additionally, a few students who alluded to the "what you don't know can't hurt you" syndrome made statements indicative of their experience with a large burden of other concerns that would appear to place a concern about their possible contraction of HIV as a minimal priority. For example, one student stated, "Right now, I'm dealing with trying to stay in school and keep my place . . . I just don't have time to do all these things that might give me another problem." While this student represents a minority view of the total population studied, the finding shows the myriad of complexities involved in the development of strategies for HIV/AIDS education and prevention.

The “conspiracy” domain is particularly interesting but perhaps is best understood from an African American historical context. Still, given persons who feel that they are helpless to control their HIV status because of a master plan, consistent preventive measures are unlikely. Bogart & Thorburn (2005) show that HIV/AIDS conspiracy beliefs are a barrier to prevention and may represent negative attitudes about condoms among black men. While only six of the 42 respondents for this analysis discussed the epidemic in terms of a conspiracy designed by the “powers-to-be,” five of the six had very strong opinions on how the virus emerged. One response captures the expressions of this group: “I do think that genocide is being committed to rid society of certain people.” Another student stated, “I believe it is a plan to wipe out all black people because it mysteriously surfaced in Africa to a large extent recently, and the worst effects are on Africa.” Still another stated, “I have proof that there was a plan . . . we need to know what they did and what they are still trying to do.” These statements indicate how attitudes and perceptions shape behaviors; hence, HIV/AIDS training and education specialists must consider the sentiments of this group in designing effective prevention messages.

Although HIV/AIDS awareness and prevention campaigns have done much to educate society in general about the epidemic, there still tends to be an association of HIV/AIDS almost exclusively with the gay community. This is particularly disturbing when college students make such blanket associations. This third domain, “gay association” surfaces as a theme from the content analysis in that students do not necessarily view all groups as being at risk. For example, 8 of the 42 students (or 19.0%) indicated “gays” to the question, “what populations or groups of people are most at risk for HIV-infection?” (The expected responses and those which had been communicated via training seminars and forums center around the point of “any persons who put themselves at risk or engage in risky behaviors.”) While the vast majority of student respondents answered in the expected direction, unacceptable numbers continue to believe that they are not at particular risk, when in fact (according to self-identified behaviors), they are indeed. Several students’ responses can be interpreted in terms of their inability or unwillingness to view HIV/AIDS as an equal opportunity disease. Overall, in addition to uncovering consequential attitudes, results from this analysis pose



an important question: If students who are motivated to attend HIV/AIDS awareness and prevention activities show adverse attitudes, do those not attending harbor even more severe attitudes? This and similar questions are posed for further study.

The fact that college and university students are at particular risk for the transmission of HIV has resulted in a number of programs and activities to address this problem. Across America, historically black colleges and universities as well as majority-serving institutions of higher education, have housed an array of projects initially including awareness efforts. More recently, however, these efforts have begun to focus more on prevention initiatives, acknowledging the platforms that have been made during the early nineties addressing awareness.

Given the seriousness of the HIV/AIDS epidemic within the African American community generally, and the numbers of HIV-infected African American college students in particular, specific strategies can be suggested. First, the major social institutions within the African American community must bolster their efforts in addressing the problem. The sector of higher education has a direct opportunity to do this and should take advantage of such to incorporate HIV/AIDS teaching and learning across various curricula. The importance of education as the primary response of higher learning, and the various issues surrounding HIV/AIDS on college campuses, point to this sector as a natural ally and collaborator in the fight toward curtailing the epidemic. Other institutions and community sectors are also critical in this fight, namely the religious sector or faith community.

The religious/faith community has come a distance in confronting the HIV/AIDS epidemic, but it has to now compensate for a stagnant period by taking bolder and more aggressive steps toward combating the problem. These institutions hold enormous potential for impacting the problem, as both education and religion have historically played a major significance in the African American community.

Secondly, measures that directly capture and sustain the attention of black college students would seem to make a difference. For example, given the popularity of hip-hop and rap music to this group, researchers, practitioners, and activists should greater explore the relationship between this genre's appeal and combating

HIV/AIDS. Previous literature has discussed a model for using hip-hop music with young adults as having heuristic value in promoting HIV/AIDS prevention (Stephens, Braithwaite, & Taylor, 1998.) Recognizing the potential of this genre of music to mobilize the targeted population, and implementing subsequent catalysts for change, can be a monumental strategy.

Lastly, reminders of risk to this target population at every viable opportunity cannot be overemphasized. Because of gross feelings of invincibility or invulnerability to HIV-infection, college students too often act as if they were magically insulated from becoming statistics in the epidemic. Persistent admonitions on risky behaviors from all socialization agents, but especially the media, can at a minimum, be a forceful reminder of the epidemic as a nonrandom culprit.

Ongoing HIV/AIDS education is undoubtedly one of the best mechanisms for stemming the epidemic within African American communities. Given an epidemic with no cure and no vaccine, accurate and timely information is indispensable to the ultimate goal. Specifically, within the context of African American college students, studies allude to the importance of increasing the specific knowledge level of this group regarding the subtleties of sexual transmission (Bazargan et al, 2000) in empowering them to better understand their risk.

### **Conclusion**

This research illuminates barriers to alleviating the HIV/AIDS epidemic among African American college students relative to their thinking about the disease and how it affects them. While a number of implications can be gleaned, a primary one is that until the most likely players (colleges and universities) step up in ways that only they can, improvements are not likely to occur within the black college populace.

Although it is difficult to predict specific interventions that would seem to bring the HIV/AIDS epidemic under greater control, it appears obvious that the sector of higher education can lessen the deleterious impact via the very means of its basic function. In broadening students' knowledge of the epidemic and in serving as a catalyst for them to be proactive, historically black colleges and universities (and all institutions of higher education) across the country can be a powerful force in the fight against HIV/AIDS.

## References

- Bazargan, M. Kelly, E. Stein, J. Husaini, B. & Bazargan, S. 2000. "Correlates of HIV risk-taking behaviors among African-American college students: the effect of HIV knowledge, motivation, and behavioral skills." *Journal of the National Medical Association* 92(8): 391-404.
- Bogart, L. M., Cecil, H., Wagstaff, D. A. & Abramson, P. R. 2000. "Is It "Sex"/: College students interpretations of sexual behavior terminology." *Journal of Sex Research* 37 (2): 108-116.
- Bogart, L. M. & Thorburn, S. 2005. "Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans?" *Journal of Acquired Immune Deficiency Syndromes* 38(2): 213-218.
- Centers for Disease Control. 2004. "HIV transmission among black college student and non-student men who have sex with men – North Carolina, 2003." *Morbidity and Mortality Weekly Report* 53(32): 731-734.
- Davis, D., Sloan, M., MacMaster, S. & Kilbourne, B. 2007. "HIV/AIDS knowledge and sexual activity: an examination of racial differences in a college sample." *Health and Social Work* 32 (3): 211-218.
- Hightow, L., MacDonald, P., Pilcher, C. Kaplan, A., Foust, E. Nguyen, T. Q. & Leone, P. A. "The unexpected movement of the HIV epidemic in the Southeastern United States: Transmission among college students." *Journal of Acquired Immune Deficiency Syndromes* 38(5): 531-537.
- Hightow, L., Leone, P., MacDonald, P. et al. (2003). "Are colleges high transmission areas in the rural southeast? Insights from acute HIV surveillance [Abstract WO-L305]." Presented at the *National HIV Prevention Conference*, Atlanta, GA, July 27-30.

- Johnson, E. H., Hinkle Y., Gilbert, D. & Gant, L (1992). "Black Males who always use condoms: their attitudes, knowledge about AIDS, and sexual behavior." *Journal National Medical Association* 84: 341-352.
- Reif, S., Geonnotti, K. L. & Whetten, K. 2006. "HIV Infection and AIDS in the Deep South." *American Journal of Public Health* 96 (6): 970-973.
- Sanders, S. A. & Reinisch, J. M. 1999. "Would you say you had sex if . . .?" *Journal of the American Medical Association* 28: 275-277.
- Stephens, T., Braithwaite, R. L. & Taylor, S. E. 1998. "Model for using hip-hop music for small group HIV/AIDS prevention counseling with African American adolescents and young adults." *Patient Education and Counseling* 35: 127-137.
- Taylor, S. E., Dilorio, Colleen, Stephens, T. T. & Soet, J. E. 1997. "A Comparison of AIDS-related sexual risk behaviors among African American College Students." *Journal of the National Medical Association* 89 (6): 397-403.
- Waldner, L. K., Sikka, A., & Salman, B. 1999. "Ethnicity and sex differences in university students' knowledge of AIDS, fear of AIDS, and homophobia." *Journal of Homosexuality* 37 (3): 117-133.
- World Health Organization. 2007. "Global HIV Prevalence has leveled off: Improvements in surveillance increase understanding of the epidemic, resulting in substantial revisions to estimates." Geneva, November 20, 2007. (<http://www.who.int/mediacentre/news/releases/2007/pr61/en/index.html>)

## **HIV/AIDS Perceptions, Attitudes and Behaviors Among HBCU Students**

---

**Michael Hodge**

*Morehouse College*

**Bruce H. Wade**

*Spelman College*

---

### **Abstract**

College environments are typically considered somewhat protected zones--protected from the “sins” of the general community. However, a recent report from CDC placed considerable attention on the resoundingly high rates of HIV infection among African American students attending predominately African American serving colleges and universities in North Carolina. In the “outside” world, data show that African Americans lead the nation in the rates of HIV/AIDS infections. This research turns on the light to view more clearly an oft-shielded group in an effort to identify and assess the exacerbating or ameliorating social forces that these campuses imbue. This project uses quantitative and qualitative methodologies to examine how college age young adults attending HBCU’s respond to the pandemic / epidemic. In the general African American population typical intervention approaches have had little to no positive effects on reducing the persistently high rates of infection. An in-depth look is taken into the lived-experiences of students at Historically Black Colleges and Universities as it relates to their sexual risk taking in the age of HIV/AIDS.

## Introduction

The HIV/AIDS pandemic is a significant social problem at the global, national and regional levels. It impacts persons regardless of gender, race, ethnicity, sexual orientation or age. This scourge may even have reached communities thought to be relatively immune to such incursions—college campuses. A recent report from the CDC placed considerable attention on the resoundingly high rates of HIV infection among African American students attending predominately African American serving colleges and universities (HBCU's) in North Carolina (MMWR, August 20, 2004/53(32): 731- 4). One CDC official states that there is no reason to think that we will not see this same trend on other campuses as well (see Hightower, L., MacDonald P, et al., 2003). This research was motivated by the gaps in the literature on the sexual risk behaviors and attitudes at HBCU's (historically black colleges and universities).

The importance of this project is found in the attempt to identify the sociocultural aspects of the student populations at HBCU's that may place them at greater risk of HIV/AIDS infection. By socio-cultural context, we mean the ways in which people's behaviors are linked to their social settings such as group membership, race, class, and gender. For example, there are gender dynamics that fuel the health disparities between black men and women. Consequently, while black men and women overall account for 40% of the cumulative AIDS cases through 2005, black females drive 60% of this rate (Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral hepatitis, STD, and TB Preventions June 28, 2007). Additionally, for 2005, black women constituted 66 percent of the female cases of HIV/AIDS (CDC HIV/AIDS Fact Sheet, June 2007). Although Black men have the highest rates of HIV/AIDS for any of the racial or ethnic groups in the U.S., HIV/AIDS is the leading cause of death for Black women aged 25–34 (CDC HIV/AIDS Fact Sheet, June 2007).

Studies of social context situate health-related behaviors within the framework of the social meaning, social relations and transactions of people's lives (Abel 1991). It is critical to focus on

understanding the social and cultural components of developing healthy lifestyles. Williams, et al point out that African Americans have the highest overall HIV prevalence, HIV incidence, and HIV mortality as well as the greatest number of years of potential life lost to this disease (2003:66). Sero-surveillance reports suggest that the HIV incidence among African American men 25-44 continues to increase and is particularly problematic for men who have sex with men (MSM). Within this group the HIV incidence is 16.7% per year compared to an incidence of 2.5% per year for white MSM in their twenties. (MMWR, Valleroy et al. 2000).

Few health behavior surveys have been conducted at HBCU's. Notably, however, Taylor, DiLorio, Stephens and Soet, (1997) reported that only 35% of students in their study reported using condoms on a regular basis. Until the recent North Carolina survey the only sero-prevalence study among college students was published in 1990 (Gayle et al.). College students were considered to be low risk although at least one publication suggested that African American college students may be the next group affected by HIV (Duncan C, Miller DM, Borskey EJ, Fomby B, Dawson P, and Davis L 2002). For instance, Black females diagnosed between ages 13 to 24 are twice as likely to contract HIV/AIDS through high risk heterosexual contact as their male counterparts. Black females diagnosed in this age group and risk category constitute 17.3% of new cases compared to 7.7% of men. It is important to understand the lived-experiences of these students as they negotiate a complex array of choices within their social settings.

Within the past decade, programs designed to stem the tide of this epidemic among African Americans have made little to no significant headway (Williams, Ekundayo, Udezulu, and Omishakin, 2003; Smith, Gwinn, Selik, Miller, Gaitor, Maat, DeCock, and Gayle, 2000). In the African American community, positive results are slow to be realized. Clearly, there are barriers to these efforts that go beyond the individual biological and psychological considerations of most intervention/risk reduction programs. Myers, et al (2003), for example, point out that "[T]his underscores the need for more aggressive and targeted risk reduction interventions for African

American men . . . because they do not seem to be getting the message about the need to be more sexually responsible” (p. 75). The scope of these risk reduction programs has not been broad enough in the African American community where, perhaps, cultural issues are more likely to impact people’s willingness to participate in open discussions of sexuality and sex, participate in support groups, and other treatments that appear effective in other communities. Even when these programs are focused on ‘community’ issues, the efforts are directed toward individuals.

The National College Health Risk Behavior Survey (Fact Sheet CDC, 1995) revealed that 79 percent of college students have ever had sexual intercourse and only 37 percent reported having used a condom during their last sexual encounter. However, this same study found that black students take fewer risks than their white counterparts. For instance, while about 10-percent of whites fail to use seatbelts when driving, only about 8-percent of blacks fail to use them. Additionally, about 31% of whites and only 15% of blacks report that they drink and drive. Focusing on sexual risk-taking, the national Youth Risk Behavior Survey of pre-college students revealed that 62.5% of whites used a condom during their last sexual encounter compared to 72.8% of black students – even though black students were reported to have been more likely to have had sex during high school than Whites. Based on an ongoing health behavior survey first conducted of 1,302 first year students in the Atlanta University Center (AUC) by the Morehouse School of Medicine in 2004, 64% of female and 73% of male first-year students reported having had sex at least once in their lives. Only 48% of the females reported using a condom during their last sexual encounter along with 54% of the males. We will explore this rather counter-intuitive finding later in this paper.

## **Methods**

The findings herein are based on a multi-modal data collection strategy, including qualitative interviews and survey research. We briefly describe these techniques. The Internet is an



emerging research tool that is proving to be very useful in the social and behavioral sciences. Most of the studies using the Internet rely on quantitative survey methods. There are a few that have used it for qualitative analyses. Focus groups and chat rooms are typically the choice for qualitative data collection and analyses (see Burgess, Donnelly, Dillard, and Davis 2001; Bowen, Williams, and Horvath 2004; Hudson and Bruckman 2004). The use of interviewing strategies, such as the technique described below, is still in its nascent stages of development (Davis, Bolding, Hart, Sherr, and Elford 2005).

The findings of this research are based on the collection of data from five (5) predominately African American serving institutions within a large southern metropolitan area with diverse student bodies (hereafter called AUC) utilizing secure internet “chat room” sites. The data reported herein is based on surveys and in-depth chats with 37 students. Each interview averaged 2.25 hours. Respondents were paid for their time and potential costs of internet connectivity. Respondents are interviewed “one-on-one” by a trained researcher using the Internet as the medium of communication. This method assures complete anonymity for the respondent, thereby encouraging open, honest, and frank discussions of material that potentially could create an uncomfortable setting for the respondent. Focus groups and dialog sessions were also held with students.

Additionally, more systematic data were collected by survey methodology. The findings discussed below are based on an annual survey completed by first-year students within the AUC. The research protocol was approved by the Institutional Review Board of the Morehouse School of Medicine. The questionnaires were voluntarily completed in large “convocation” settings. While the actual convocations were required, students were given the opportunity to “opt out” if they did not want to participate in the study. The majority of students completed the questionnaires; however, the lack of privacy and the large group setting undoubtedly had some impact on the quality of the data. The analysis below is based on data from the first two years of administration (2004 and 2005). The number of students who voluntarily participated in the

survey (2004 – 2005) was 2,021. The patterns of sexual involvement correspond to other data from large surveys of college students. The number of full time undergraduates at the five colleges (according to published fact books from 2004 – 2006) is 8633. Of this group, 44 percent (3805) is male.

## Results

Our multi-method approach yielded several key findings from the survey analysis as well as important themes related to HIV/AIDS risk reduction among African American college students. We will give a brief overview of the survey findings then turn to our more qualitative aspects.

We compiled data from surveys conducted of first year students in the AUC in 2004 and 2005. These data are shown in the tables below. Table 1 shows that males were significantly more likely to report having had sex than their female counterparts. Overall, about 63 percent of these first year students indicated that they had had sex at least once in their lives (56% of females and 71% of males).

Table 1			
Have you ever had sexual intercourse?	Female	Male	Totals
NO	420 (44.4%)	245 (29.3%)	665 (37.3%)
YES	527 (55.6%)	590 (70.7%)	1117 (62.7%)
TOTALS	947	835	1782
$X^2 = 42.735, df = 1, p=.000$			

These data indicate that while a greater percentage of males begin having sex at slightly younger ages than females, there was no statistically significant association between gender and the reported

age of first sexual intercourse. However, Tables 2 & 3 reveal that males report a higher number of sexual partners than females (lifetime and last 3 months).

Table 2			
# Lifetime Sex Partners	Female	Male	TOTALS
1 partner	162 (22.6%)	90 (14.9%)	252 (19.0%)
2 partners	174 (24.2%)	122 (20.2%)	296 (22.4%)
3 partners	99 (13.8%)	87 (14.4%)	186 (14.1%)
4 partners	124 (17.3%)	90 (14.9%)	214 (16.2%)
5 partners	68 (9.5%)	71 (11.7%)	139 (10.5%)
6+ partners	91 (12.7%)	145 (24.0%)	236 (17.8%)
TOTALS	718	605	1323
$X^2 = 38.936$ (df = 5) p= .000 / Gamma = .213 / p= .000			

Table 3			
# Sex Partners in last 3 Months	Female	Male	TOTALS
No partners	302 (43.1%)	199 (33.4%)	501 (38.7%)
1 partner	118 (16.9%)	134 (22.5%)	252 (19.5%)
2 partners	198 (28.3%)	154 (25.9%)	352 (27.2%)
3 partners	69 (9.9%)	57 (9.6%)	126 (.09%)
4 partners	9 (1.3%)	22 (3.7%)	31 (.02%)
5 partners+	4 (.6%)	29 (4.9%)	33 (.03%)
TOTALS	700	595	1295
$X^2 = 45.008$ p= .000 / Gamma = .149 / p= .000			

Interestingly, Table 4 indicates that males are more likely to report having used a condom during their last sexual intercourse than are females.

Table 4			
Condom use the last time you had sexual intercourse	Female	Male	TOTALS
NO	246 (34.8%)	193 (28.8%)	439 (31.9%)
YES	461 (65.2%)	478 (71.2%)	939 (68.1%)
TOTALS	707	671	1378
$X^2 = 5.770, df = 1 p=.016$			

We wanted to explore this finding a little more deeply. We analyzed the responses to a 13-item Condom Attitude Scale (DeHart and Birkimer 1997). The 13-item Condom Attitude Scale had a mean of 29.69 and a Standard Deviation of 13.412. The Cronbach's Alpha coefficient was .9214-demonstrating very good reliability. This analysis indicates that males, surprisingly, show more positive attitudes towards condoms than those of our female respondents. Additional analysis was conducted using multiple linear regression to ascertain which variables impacted condom attitudes (see Table 5 below). Surprisingly, neither the mother's nor father's level of education nor parental income had a significant influence on condom attitudes in this sample. Age at first sex and number of lifetime sex partners significantly (and favorably) impacted attitudes towards condoms. This finding reveals that men and more sexually experienced students are more favorable towards condoms and condom use. This may be the result of the socialization of males to favor condoms as a means of disease protection in this collegiate setting. Gender attitudes probably also help to explain this difference as females are socialized to emphasize intimacy and closeness in their relationships.

TABLE 5		
Condom Attitudes	Beta Coefficients	Significance
Sex (female = 1)	B = -4.915	P = .000
Age of first sex	B = 1.566	P = .000
Number lifetime partners	B = .820	P = .043

For women, this may prove to be a dangerous attitude given the nature of the HIV/AIDS epidemic in the U.S. While the greatest numbers of Blacks that are diagnosed with HIV/AIDS are between the ages of 35 to 44, Blacks between the ages of 13 to 24 constitute 60.1% of all recent HIV/AIDS diagnoses. The Centers for Disease Control and Prevention surveillance data reveal that the primary modes of transmission among Blacks include MSM (men having sex with other men, 30,154 new cases), high-risk heterosexual contact (having unprotected sex with a person who is HIV+, 14,698 new cases) and injection drug use (10,415 new cases). Black females diagnosed between ages 13 to 24 are twice as likely to contract HIV/AIDS through high risk heterosexual contact as their male counterparts (CDC, 2002). Black females diagnosed in this age group and risk category constitute 17.3% of new cases compared to 7.7% of males. The primary mode of transmission for Black males diagnosed at ages 13 to 24 is MSM behavior (19.9%).

These quantitative findings are closely linked to the evidence provided in our qualitative analysis of students from these campuses. Careful analysis of indepth interviews, focus group sessions, and student dialog sessions yielded a number of interesting themes that provide contextualization of the findings expressed above. These themes are important determinants of the socio-cultural context of the AUC. Our findings are also consistent with other research findings that examine traditional gender roles (see, for example, Hill-Collins 2004; Cole and Guy Sheftall 2003; Roberts, McNair & Smith 2004; Sobo 1995). Unpublished data from surveys conducted

by one of the co-authors over the last two years also indicate that “serial monogamy” and low or inconsistent condom use are common among undergraduates in the AUC. This research will help to inform approaches to risk reduction and HIV testing for young African Americans inside and outside of the academy.

One of the main ideas promoting risky sexual activity on this consortium campus was the popular media. In particular these respondents focused on what they termed highly sexual videos. They suggest that African Americans are more influenced by the combination of the music and what is seen than their white counterparts. These respondents see the media, not so much as causing sexual activity, but at least promoting a carefree sexual lifestyle. As one respondent said,

Yes, Media do influence my sexual thinking and especially my behavior. Sex on TV is free. TOO free sex is so simplified on TV, this makes it seem so cut and dry. I feel that TV promotes the need and pressure for sex....

Another respondent believes that “media encourage this behavior and our generation is easily influenced.” An interesting conversation centered on these videos and the movies that they [college age students] tend to watch. They said that none of the videos or movies ever show or suggest the use of protection in the sex scenes. They move directly from some minimal foreplay to a naked scene in the bed to the sleep scene or cut away to another shot.

Sex has been limited to just a normal human activity for any age these days especially on videos and shows. i guess its all cos of the change in the way we think and our being able to be more outspoken than humans were years ago. the media does influence our sexual thinking and attitudes and behaviors in a way but then i wouldnt put too much blame on them cos i think each and everyperson has the responsibility to process that information and interpret it as to whether they want to go by what they have seen or live by statutes that protect them.

Another respondent makes comment on the amount of sexualized imagery in contemporary media presentations:

There are a lot of shows on television, and in the movies that promote having a lot of sex with a lot of people, without having any regard to the safety of the individuals involved. These depictions of glamorous and desirable life stages do not present the realities of sex and sexual encounters. Clearly, no one in these movies gets an STI or HIV.

An important finding, captured in the students' comments above and that is revealed from many of these qualitative interviews is the normalizing of risky sex. These respondents do not think that media are setting out to increase risky sex among the viewers of these images; however, the respondents clearly indict media for depicting risky sex as normal. In this way, these respondents say, the media presents sex in such a way that what would be seen ordinarily as risky behavior is now normal, and even expected. One respondent was particularly cogent on this point:

It encourages the thinking that promiscuity is not so bad, and in fact is at times encouraged. And none of the people represented with the popular media go out of their way to promote safe sex. This heavily influences college students, who emulate what they see more than they would like to admit...like its nothing. Like its money, and everyone should rush to get as much as they can from as many different sources as possible.

These respondents point to many of the popular music videos and some movies where there is no sense of safe sex. Actors are depicted as having sex with multiple partners, without any indication of condom usage. And, as pointed out by Hill-Collins (2004), the lyrics and themes of the videos are also misogynist and patriarchal.

I think that since most young black males want to be a "player" and try to have sex with as many women as they can, causes diseases to be spread in our community. I think that the media encourages this behavior and our generation is easily influenced.

And, as one male respondent put it, “they allow videos that exploit sex(naked women).” Consequently, females are tacitly encouraged and shown to be passive in sexual relationships.

Another theme that is clearly present from the data targets the sex education received as a teen in high school and from home. We see these focal socializing agents as integrally connected providing both complementary as well as conflicting messages. Both agents seem to be missing the mark on sex education of children. The respondents agreed nearly unanimously that the standard approach used in high school was ineffective. They said that high school sex education tries to scare students away from sex while the realities are not discussed.

It needs to start in the homes. I think the parents needs to be knowledgeable about the dangers of sexual behavior, so that they can relay the info to their children. So there should be programs implemented to inform the adults.

A 20 years old male respondent very directly assesses the problem:

Well, I think the fundamental factor lies in the condition of the home. When I say family grounding, I mean a person may lack parental reinforcement, concerning sexual activity.

The men in the group said that the extent of the sex education received at home was their fathers telling them do not get anyone pregnant so wear a condom. One respondent said “my father started giving me condoms in 6<sup>th</sup> grade.” Another respondent said that he felt his father was telling him to have sex. His father told him that a “Viagra erection” was somehow superior to the natural erection thereby encouraging the use of drugs with his sexual encounters. (Note: there is information surfacing about the use of Viagra in young men for whom it is not prescribed and not recommended in combination with other drugs including crack cocaine and methamphetamines).

One of the most frequently stated ideas about college life among students is the notion of “freedom from parents.” They indicate that college provides them with the freedom to engage in all sorts of activities. Without a strong foundation about sex and



sexuality, the likelihood of risky sexual behavior is enhanced.

We note that the majority of HIV prevention programs focus on male-to-male sexual contact, male bisexual behaviors, injection drug users, and low-income women considered “at-risk”. By default, such efforts ignore the needs of Black college women attending HBCU’s. Our evidence highlights that societal norms, cultural productions, as well as the college environment itself encourage sexual experimentation and all types of sexual negotiation. African American women in college, many of whom arrive from inner cities and single-parent households, are part of a most recent hip hop generation that is besieged by misogyny, materialism and sexual risk-taking. Many African Americans strive to overcome their ascribed and inferior social status by constantly struggling against widespread stereotypes and assumptions regarding their very being. Their patterns of racial identity formation and maintenance influence how they respond to such representations, even within intimate relationships. The research herein reveals patterns of thinking among students, both men and women, which need to be addressed. A female freshman student reveals her thoughts in a focus group setting:

It’s hard being a Black woman, you’re fighting off negativity at every moment. You gotta be strong, when you’re in the bedroom setting you don’t want to fight anymore. You become submissive. You relax and let things flow.

Findings in the AUC corroborate those of Foreman (2003). She suggests that students used certain strategies to create philosophical and emotional rationalizations for their behaviors. Women also rely on a perceived level of commitment in their romantic relations to determine safer sex practices. Forman also finds that students had difficulty discussing condom use with sex partners and that many perceived that they had low levels of HIV knowledge. Our findings differed from those of Foreman in the area of HIV knowledge. Respondents had relatively high levels of knowledge even though many did not use condoms consistently. They were also less likely than those in the Foreman (2003) study to cite material reasons for

having unprotected sex.

A disturbing circumstance was noted in discussions with many of the respondents. The main thrust of the issue centered on attitudes towards risky sexual activity. When the question was asked why college students might engage in risk-taking behaviors, the respondents began a type of rational choice process in their responses. They believe that they weigh (accurately) the risks and determine that the risk is worth it. Of course, this position is wrapped up with all the other notions of their sexual activities – from seeing images in the media, to sex education in school and home. One respondent summed it up this way: “I’d rather have sex and take the risk and hope that I don’t get it [HIV/AIDS] than not to have sex.” Another added: “we continue to have sex because we are scared that we may not be able to have sex again.” Yet another respondent states that “disease is not something we think about, we are young and figure we have time to fix whatever may happen [based on current actions].” All of these themes fall squarely into the category of invincibility or a false sense of invulnerability. In other words, these college students feel that they are incapable of suffering harm from their actions. All of these behavioral factors appear to be linked to the sociocultural constraints of the college experience.

### **Sociocultural Findings**

Many of the conversations settled on concerns of a sociocultural nature. For example, the respondents began to focus on topics such as what it means to be a college student (particularly at a black school). Many suggested that college life means that you have to be having sex, and a lot of it. If you are not participating in sexual activity, peer groups view you as a child. As one respondent put it: “you’re told you’re not grown until you get a piece.” Many of these students may be trying to gain some sense of adulthood through risk-taking behavior. The links between college culture and behaviors of the students, no doubt, are complex. Distressingly, these respondents seem to navigate this complexity in ways that may enhance the probability of risky sex. The college culture provides the first sense of independence from parental control. Peer pressure

may lure students to engage in activities so that one will not feel left out or be seen as an odd-ball.

One of the most interesting conversations centered on the idea of sex as a proxy for the need to feel loved. The interesting thing about this conversation was that it was most often discussed by the males in the sample. The discussion from these young males is similar to literature suggesting that one of the reasons for underage pregnancy is the girl's need to feel unconditional love. She is able to give love and have that love unconditionally reciprocated through her dependent infant. It can be intoned from this discussion that students are using sex as a stand-in or substitute for their need to feel loved. Females are also socialized to emphasize intimacy and continuity in their relationships. As Sobo (1995) suggests, this need for intimacy increases the likelihood of sexual risk-taking among working class women. Our findings suggest that this need for intimacy among women may also contribute to less favorable attitudes about condoms and less condom usage - especially in on-going (vs. casual) relationships with their male partners (see Wade 2007). More investigation is needed to understand the mechanisms of this phenomenon.

## **Discussion**

### **Gender as Cultural Context**

Cole (2005) aptly describes the HIV/AIDS epidemic among black women as “a disease of mass destruction” (2005:51). She points out the limitations of the “ABC trilogy” of prevention. For many Black women, providing or “teaching” the facts about abstinence, faithfulness and consistent condom usage (ABC) are not enough to stem the tide of the epidemic given the societal issues that impact the broader African American community. The issues of “infidelity, rape, incest ... secret bisexuality, fears of rejection and loneliness, and serial monogamy” (2005:53) make it necessary to supplement the ABC model with other approaches to risk reduction. Cole agrees that it is crucial that Black women receive tailored and “comprehensive sex education” (2005:57) in response to this set of

issues. Such gender specific programs must: 1) Convey the gravity of the HIV/AIDS epidemic to women; 2) Influence personal behaviors and notions of responsibility (abstinence, alternative forms of intimacy, risk implications of multiple partners); 3) Enhance women's sense of personal empowerment (self esteem, self efficacy, condom negotiation skills), and 4) finally, emphasize HIV/AIDS advocacy to overcome community apathy, fatalism and conspiracy theories.

Another question related to gender role expectations and sexual risk-taking for women and men is how to combat the "valorization of thug life, misogyny, homophobic violence, and a constant need to prove one's manhood" (Hill Collins, 2004:81 – 82; Cole & Guy Sheftall, 2003). Such beliefs, norms and "contextual factors influence sexual risk-taking" (McNair, 2004:107). These factors include environmental stress, relationship history, perceived victimization status, an imbalanced sex ratio – fewer available partners and an attenuated ability for females to negotiate condom use (McNair, 2004). In a setting with an unbalanced sex ratio, there is considerable pressure on women to compete for the attention of men. Further, Black women in college are less likely to date outside of their race than men. Consequently, more attention must be given to these environmental pressures within the framework of HIV/AIDS prevention for HBCU students.

Although most intervention programs target the individual, health behaviors can illustrate how the health problems of Americans and especially youth are embedded in the social, economic and political structures of society. Evidence suggests that prevention programs need to begin early in life, before risk-taking behaviors cement themselves as a part of people's behavioral repertoires. Holtzman and Rubinson (1995) observed the impact of parent versus peer communication about HIV/AIDS among high school students in the U.S. They found that students who discussed HIV with their parents were significantly less likely to engage in risky sexual behaviors and drug injection than their peers who primarily discussed HIV with other students. Other studies have found convincing evidence linking family organization and interaction styles to risk-taking behaviors (see Walker, Vaughn, and Cohall 1991; Leland and

Barth 1993). Strategies that facilitate development of pro-social environments are needed to stem the tide of risk taking behaviors. Uncovering the social and cultural elements of the lived experiences of specific at-risk groups will provide much needed information for positive interventions of their risky sexual behaviors. This type of preparation for a productive life style may hold the most promise for reducing unhealthy life choices and the negative outcomes that seem to be endemic to many communities (see Stokes and Hodge 2000; Harris, Duncan, and Boisjoly 2002).

### **Youth and Sexuality in the Age of HIV/AIDS**

A study sponsored by The Kaiser Family Foundation/Children Now initiative (1999) surveyed 348 children between the ages of 10 and 15 in an effort to understand where youth receive information about subjects such as sex and AIDS. What the survey revealed was that youth between 13 and 15 years rely on peers as much or more than on parents for information on sex and sexual relations. For example, the respondents were asked to whom they would likely talk if they were thinking about sex. Over one-fourth (27%) responded that they would talk to friends. When asked if they had ever talked to their parents about a range of issues, 24% indicated they had never talked to either parent about AIDS, 19% had not talked to either parent about basic facts of sexual reproduction, 26% had not talked about issues surrounding becoming sexually active, and 21% had not talked to their parents about pregnancy or sexually transmitted diseases. Respondents also indicated interest in knowing more about issues concerning sex and its consequences. This and other studies show that youth are indeed interested in issues pertaining to reproductive health and health issues in general. Students come to college campuses with these questions and issues still unresolved. Many have already engaged in risky activities.

Social forces in the larger societal context operate to either aggravate or attenuate the behaviors on the college campuses. For instance, research indicates that African American adolescents initiate sexual encounters, on average, at an earlier age than their white and Hispanic counterparts (Bakken and Winter 2002). Most

interventions, therefore, focus on information processing. The idea is that the more knowledge students have about the negative outcomes, the less likely they will be to participate in risky behaviors. Seminars that provide factual information are clearly a necessary component for reducing risky sexual activity; but they may not be wholly sufficient. Programs that address the “cultural baggage” of students are needed to complete the package for effective behavior change. And, it is important that these programs are based on sound scientific foundations. We are looking to delineate the social and cultural structures that circumscribe the behavioral repertoires of these actors; but, moreso, we seek to understand the inter-relationships or interaction of the social context with the actor. In essence, we examine the mutual interpenetration and interdependence of agent and structure. We do not ask simply what are the social forces impinging upon each actor; but, what are the actors’ perceptions of these social forces as they negotiate the cultural milieu of on their campuses.

### **Interaction of Culture and Individual**

We believe that a major issue hampering effective intervention on college campuses, particularly HBCUs, is the belief that it is ultimately the individual that controls his/her behaviors and is the author of one’s own fate. Yet, sociological theory holds that individuality is constrained by social forces such as class, race, gender and social institutions such as family, education, religion, and work, among others. Factors relating to these social institutions must be included when trying to implement behavioral change strategies. Link and Phelan (1995), for example, demonstrate the connections between family interaction dynamics and risky sexual behaviors. Bakken and Winter (2002) show that there is an association between family characteristics and age of sexual initiation as well as the lifetime number of sexual partners (both variables that are important in assessing sexual risk). Hence, consistent with long-standing social science theory, the relationship between health-related behaviors, risk and knowledge can be incorporated in studies of social structure, social practices, and agency (Abel 1991).

Social structure is defined as the factors involving individuals' relationships to each other and the attendant power relations. Social practices are the reflexive activities in which people engage to make and transform the world. Agency is defined as the ability for people to deploy a range of causal powers—to “make a difference to a preexisting state of affairs or course of events” (Giddens 1984). In-depth qualitative analysis of case studies is the only way to fully assess the actor within the particular context of the college culture (Burawoy 1991; Feagin, Orum, and Sjoberg 1991).

Ample evidence exists demonstrating the relationship between social factors and effective health behavior intervention strategies. For example, research has shown that carefully designed interventions that take into account the socio-cultural context play an important role in reducing risky behaviors of adolescents and young adults for a variety of problem areas. Kirby et al. (1994) provide a review of school based programs designed to reduce sexual risk taking behavior among adolescents. They found that a number of programs were able to successfully reduce risk taking behaviors. Additionally, Frost and Forrest (1995) identified five programs that were successful in either reducing rates of sexual initiation by young adolescents or increasing the use of contraceptives for those who are engaging in sexual intercourse. More recently, Stokes and Hodge (2000) examine the effects of programs such as Upward Bound on the risk taking behavior of adolescents. These studies and others demonstrate the substantial influence social factors have as determinants of health behaviors. For instance, Myers, Javanbakht, Maritinez, and Obediah (2003) examine the behavioral, demographic, social, and psychological factors that may be associated with high sexual risk activities. They find that for heterosexual African American males, social support provided significantly decreased risk-taking activities. In other words, for every mean point increase in social support there was an associated 2.3% decrease in the likelihood of risky behaviors among this population group. A recently published study examined the influence of social context on individual behaviors that may place people at risk for negative health outcomes (Adimora and Schoenbach 2005). These researchers found important socio-

cultural factors that may put African Americans at greater risk for STIs and HIV. They find that sharply contrasting social settings for blacks and whites, particularly in their social networks, is likely to maintain the gap in HIV rates. They note that overlapping sexual partners is more prevalent among blacks. A lot of this finding can be traced to contextual factors such as incarceration rates of black males, segregation, and poverty. The study of sexual networks on Black College Campuses has not been done, to date. Numerous studies of college students have explored the relationship of knowledge about HIV and risky sexual behavior (see Parsons JT, Halkitis PN, Bimbi D, Borkowski T; Bazargan M, Kelly EM, Stein JA, Husaini BA, Bazargan SH 2000; Dilorio C, Dudley WN, Soet J, Watkins J, Maibach E. 2000). In many studies knowledge of HIV is not correlated with safe sex practices (Valentine PA, Wright DL, Henley GL. 2003; Lewis JE, Malow RM, Ireland SJ 1997) and interventions based on social cognition models have had limited success in changing risky sexual behavior (Ogden 2003). Other researchers have suggested the need to integrate social group process into cognition models for youth and young adults (Schofield PE, Pattison PE, Hill DJ, Borland R. 2003; Young RA, Lynam MJ, Valach L, Novak H, Brierton I, Christopher A. 2001). Several scholars have noted the importance of social factors and culture on sexual health behaviors of African Americans (Plowden K, Miller JL, James T. 2000; Plowden KO, Young AE 2003). College campuses provide an interesting social setting where lives are very closely intertwined on a number of levels.

## Conclusion

Students work, live, play, etc. in a very small space and issues of privacy are heightened by this type of organic density. These concerns are particularly salient on Historically Black Colleges and Universities where there is greater density than on traditionally larger majority campuses (literally, everyone is, at minimum, familiar to everyone). Institutional culture develops and changes as the nature of the interactions of its members adjust to social forces from inside and outside the institution. The findings chronicled herein, at least,



begin to focus much needed attention on the dynamic interplay among students at historically black colleges and universities. Given the cultural baggage African Americans bring with them to college, the lack of (or inconsistent) parental information provided to youth regarding sexual relationships and the inconsistent condom use among HBCU and other college students, it is crucial to provide students with culturally specific risk reduction programming that addresses the lack of risk knowledge, erroneous and problematic early life socialization about intimacy and relationships, and the gender imbalances in intimate relationships.

## REFERENCES

- Burawoy, Michael, et al 1991. *Ethnography Unbound: Power and Resistance in the Modern Metropolis*. Berkeley: University of California Press.
- Campbell, Carole A. 1999. *Women, Families and HIV/AIDS: A Sociological Perspective on the Epidemic in America*. Cambridge: Cambridge University Press.
- Centers for Disease Control and Prevention 1997. "Youth Risk Behavior Surveillance: National College Health Risk Behavior Survey United States, 1995." *MMWR* (46): 1 – 56.
- Centers for Disease Control and Prevention 2001. "U.S. HIV and AIDS Cases Reported Through December 2001." *HIV / AIDS Surveillance Report* 13 (2).
- Centers for Disease Control and Prevention 2004. "Methodology of the Youth Risk Behavior Surveillance System." *MMWR* (53): 1 – 13.
- Centers for Disease Control and Prevention 2007(b). "Update to Racial / Ethnic Disparities in Diagnoses of HIV / AIDS – 33 States, 2001 – 2005" *MMWR* 56(9):189 - 193.
- Centers for Disease Control and Prevention 2007. "Cases of HIV Infection and AIDS in the United States and Dependent Areas, 2005." *HIV / AIDS Surveillance Report* 17 (June, 2007).
- Cohen, Sheldon; Tom Kamarck; Robin Mermelstein 1983. "A Global Measure of Perceived Stress." *Journal of Health and Social Behavior*, Vol. 24 (4): 385-396.
- Cole, Johnnetta Betsch and Beverly Guy Sheftall 2003. *Gender Talk: The Struggle for Women's Equality in African American Communities*. New York: Ballantine Books.

- Cole, Lorraine 2005. "The Politics of HIV Prevention and Black Women." *The Harvard Journal of African American Public Policy* 11 (summer): 51 – 62.
- DeHart, D.D. & Birkimer, J.C. 1997. "Trying to Practice Safer Sex: Development of the Sexual Risk Scale." *The Journal of Sex Research* 34: 11 – 25.
- Foreman, F.E. 2003 "African American College Women: Constructing a Hierarchy of Sexual Arrangements." *AIDS Care* 15: 493-504.
- Foreman, Faith E. 2003. "Intimate Risk: Sexual Risk Behavior Among African American College Women." *Journal of Black Studies* 33(5):637 – 653.
- Hill Collins, Patricia 2004. *Black Sexual Politics: African Americans, Gender, and the New Racism*. New York: Routledge.
- Roberts, George W., McNair, Lily D. & Smith, Dawn 2004. "Introduction" *The Journal of Black Psychology* 30(1):5 - 10.
- Sobo, E.J. 1995 *Choosing Unsafe Sex: AIDS-Risk Denial Among Disadvantaged Women*. Philadelphia: University of Pennsylvania Press.
- Stokes, Carla E. and Gant, Larry M. 2002. "Turning the Tables on the HIV / AIDS Epidemic: Hip Hop as a Tool for Reaching African American Adolescent Girls." *African American Research Perspectives* 8(2) :71 – 81.
- Taylor, S.E., DiLorio, C., Stephens, T.T. and Soet, J.E. 1997. "A Comparison of AIDS-related Sexual Risk Behaviors Among African-American College Students." *Journal of the National Medical Association* 89(6): 397-403.
- U. S. Department of the Census 2000 Table P34B FAMILY TYPE BY PRESENCE AND AGE OF OWN CHILDREN (BLACK OR AFRICAN AMERICAN ALONE HOUSEHOLDER) [20] downloaded from [www.census.gov](http://www.census.gov) February 2, 2008.

Wade, Bruce H. 2007. "The Disabling Nature of the HIV / AIDS Discourse Among HBCU Students: How Postcolonial Racial Identities and Gender Expectations Influence HIV Prevention Attitudes and Sexual Risk-taking." in *WAGADU: A Journal Transnational Women's and Gender Studies Volume 4* (summer): 125 -141.

Wingood, Gina M., DiClemente, Ralph J., Bernhardt, J. M., Harrington, K., Davies, S. L., Robillard, A. and Hook, E. W. 2003 "A Prospective Study of Exposure to Rap Music Videos and African American Female Adolescents' Health." *American Journal of Public Health*, 93, 437-439.

## **Intersection Between Race, Gender, and Sexual Risk: Implications for STI/HIV on HBCU Campuses**

---

Sinead N. Younge,<sup>1</sup>  
Deidre Smith,<sup>2</sup>  
Lawrence Young,<sup>1</sup>  
Daphne Cole,<sup>2</sup>  
Danielle Dickens,<sup>2</sup>  
Lauren Reynolds,<sup>2</sup>  
Raqiyah Dixon,<sup>2</sup>  
Wilton Robinson,<sup>1</sup>  
Porsche N. Buchanan,<sup>2</sup>

---

### **Abstract**

There is a disproportionate incidence and prevalence rate of Human Immunodeficiency Virus (HIV) among African Americans. HIV/AIDS is one of the leading cause of death among Blacks, aged 25-44. It is likely that many of these individuals contracted HIV while they were college aged. Black college students are an understudied group. The behaviors of college students in general, and the combination of environment and individual behaviors, warrants further investigation of sexual risk behaviors among Black college students. Furthermore, it is important to understand both the risk and protective factors that different environments may play. A substantial number of Black students attend Historically Black Colleges and Universities (HBCUs), which have purported to have protective affects on risk behaviors. This paper will give a cursory review of the sexual risk literature of Black college students and identify some of the risk and protective factors associated with HBCUs.

---

<sup>1</sup> Department of Psychology, Morehouse College

<sup>2</sup> Departments of Psychology and History, Spelman College

## Introduction

While African Americans comprise approximately 13% of the U.S. population, they have higher incidence and prevalence rates of acute and chronic diseases, and overall poorer health outcomes in comparison with other racial groups. Nowhere are these disparities more evident than in the HIV/AIDS epidemic. Identified by the Centers for Disease Control and Prevention (CDC) in 1981, the human immunodeficiency virus (HIV) emerged in U.S. metropolitan cities among large numbers of homosexual males or men who have sex with men (MSM) and intravenous drug users (IDUs). These early cases led individuals to believe that HIV, which was originally coined as gay related immunodeficiency disease (GRID), mostly affected gay White males.

Much of the early prevention efforts targeted the gay community and despite CDC data suggesting that Blacks<sup>1</sup> may be at an increased risk for the disease as early as 1982, African Americans did not become a high priority group for prevention efforts until the 1990s. This early lack of focus and prevention efforts on communities of color may have indirectly influenced the increasing HIV incidence and prevalence rates among people of color and specifically, African Americans, while the rates of other groups began to decline or stabilize (CDC, 2007). Once Blacks became a high priority group for research and surveillance, the majority of research focused on low-income, urban, or intravenous drug using populations despite the fact that the risk behaviors of other segments of the Black population (i.e., college students) placed them at increased risk for sexually transmitted infections (STIs) including HIV, and it is likely that a substantial proportion of African Americans contracted HIV while in college (Ferguson, Quinn, Eng, Sandelowski, 2006). This paper will: (1) provide a cursory overview of the current literature on the understudied Black college student population, (2) the unique

---

<sup>1</sup> For the purposes of this paper, the labels African Americans and Blacks will be used interchangeably.

influence that HBCUs can have on risk and protective factors, and (3) examine how previously identified factors such as gender, race, and sexual risk intersect to play a role in the behaviors of Black college students.

### **Blacks and HIV/AIDS**

In 1992, 11 years after the CDC's identification of HIV, Blacks were 3.5 times more likely to contract AIDS than Whites and Black women were 13.8 times more likely to contract AIDS than White women (Jenkins et al. 1993). Eighteen years later in 2005, Blacks accounted for 49% of the new HIV/AIDS diagnoses (CDC, 2007). In 2005, Blacks were 10 times more likely than Whites to have an AIDS diagnosis and Black women were 23 times more likely than their White counterparts to have an AIDS diagnosis. Among Blacks, men who have sex with men remain the primary risk group for HIV followed by IDUs, and high risk heterosexuals (CDC, 2007). As of 2002, HIV was the second leading cause of death for individuals aged 25 to 44 (CDC, 2007). The majority of these individuals probably contracted HIV when they were college age.

### **Moving Beyond the Biomedical Framework**

Researchers have speculated about the multiplicity of risk factors that place Blacks at increased risk for HIV. Diverging from the biomedical model, the CDC reports that race and ethnicity alone are not risk factors for HIV infection. The second generation of HIV/AIDS research examines sexual risk behavior from an ecological perspective, examining how individuals interact with their environments and the resulting behaviors. Increased susceptibility to HIV is a function of behaviors, environment, and predisposing physiological conditions such as the existence of ulcerative and non-ulcerative STIs that make individuals biologically more susceptible to contracting HIV by compromising the mucosal barrier that normally protects against infection (Berman & Cohen, 2006; Clan, 2006). Despite comparable or higher rates of condom use reported between Blacks and Whites, Blacks remain more likely than Whites to have an STI which increases one's chance 3 or 5 fold of contracting HIV (CDC, 2007; Quinn, 1996). This finding of similar rates of condom use among some Blacks and Whites, but higher rates of STIs among

Blacks is purported to result from other social and economic factors. For instance, Blacks have historically had less access to healthcare including early diagnosis and treatment of STIs, mistrust of the medical establishment, higher rates of intravenous drug use, higher rates of incarceration, and a male-female sex ratio imbalance which may result in serial monogamy, or shared partner networks, power imbalances in relationships, homophobia, and risky social norms (Ferguson et al., 2006). Combined, all of these factors place Blacks at higher risk than their White counterparts for contracting an STI/HIV.

The majority of early research on Blacks and HIV has examined the proximal determinants of HIV and has taken a deficit perspective, focusing on the individual risk behaviors. Individual risk factors alone, to not explicate the disparate rates of HIV among the various racial and ethnic groups. As previously mentioned, there are a number of environmental or contextual factors to take into account. Additionally, there are inherent strengths within the Black community that can act as protective factors against sexual risk. Discourse on HIV is incomplete without an examination of both the risk and protective factors that influence sexual behavior.

### **Black College Students**

Black college students represent only one segment of the heterogeneous Black population. Research on Black college students can provide invaluable information about the 14% of African Americans over the age of 25, who hold a B.A. degree (U.S. Bureau of the Census, 2003). HBCUs enroll 13% to 14% of all Black students in higher education in the U.S., although they constitute only three percent of America's institutions of higher education. In 2001, more than one-fifth of all bachelor's degrees awarded to Blacks were from HBCUs (Provasnik & Shafer, 2008). Despite the high risk behaviors of college students in general, Black college students remain an underrepresented and understudied group. Blacks are often indirectly studied in small sample sizes as part of larger studies of the general college population at predominately White institutions (PWIs). When Blacks are the sole focus of a study, the risk and protective factors of these community and clinical (often low-income or IDU samples),



may not be generalizable to the experiences of other segments of the Black community (i.e., college educated samples). Although extensive epidemiological studies of the general college population are lacking, one early study speculated that the rate of HIV among college students is 2 per 1,000 students and are purported to be even higher among Black college students (Gayle, Keeling, Garcia-Tunnon, Kilbourne, Narkunas, Ingram et al., 1990).

### **Adolescents and Risky Behaviors**

The 2005 national survey of 9<sup>th</sup> through 12<sup>th</sup> grade U.S. public and private school students known as the National Youth Risk Behavior Surveillance (YRBS). Study reported that Black high school students were more likely to report having ever had sexual intercourse, having sexual intercourse before the age of 13, having more lifetime partners, being currently sexually active, and less likely to report using a condom the last time they had sex in comparison with their White counterparts. However, Black students were less likely to report using a number of illicit substances and having had an episode of heavy drinking, than their White counterparts (YRBS, 2006). These risk behaviors often carry over to the college years. It is estimated that greater than 80% of all college students are sexually active by their freshmen year, and less than half use condoms consistently (Fisher, Spurlock-McLendon, DelGado, & Melchreit, 1999; Lewis, Malow, & Ireland, 1997). Previous studies suggest that college students in general, consistently engage in high-risk behaviors including inconsistent condom use, illicit substance and alcohol use during sex, and sex with multiple partners (Hightow, Leone, MacDonald et al., 2006).

### **HBCUs in the Forefront**

The current interest in HBCUs and their roles in the HIV epidemic was stimulated in 2003 when the CDC published a report entitled “HIV Transmission Among Black College Student and Non-Student Men Who Have Sex With Men.” Based on the findings from this retrospective study conducted by the North Carolina Department of Health with the assistance of the CDC, researchers and the general population began to speculate about the role that men who have sex with men (MSM) played as vectors in the HIV

epidemic among African American women. The discussion over MSM became even more publicized in the popular media with the 2004 release of J.L. King's book, "On the Down Low: A Journey into the Lives of "Straight" Black Men Who Sleep with Men." The term downlow has been in existence in the Black community for a number of years, but it is currently used to describe the behavior of men who have sex with other men as well as women (MSM/W) and do not identify as gay or bisexual. While some women have been infected through intercourse with bisexual men, there is simply not enough empirical evidence to confirm this claim as a major route of transmission (CDC, 2007). Despite the misguided efforts of the mainstream media to assist Black women in identifying or revealing non-identified MSM/W as the main scapegoats in the contemporary HIV/AIDS epidemic in the Black community, Black MSM continue to have the highest risk for contracting HIV of all groups, and there remains a lack of understanding of this "difficult to reach" and often misunderstood group.

### **Black men who have sex with men**

The White gay community has effectively mobilized and organized HIV education and prevention efforts to reduce HIV incidence rates. In contrast, the Black gay community is not as visible and cohesive. Hence there is a significant proportion of Black MSM who, due to racial, cultural, or religious reasons, do not embrace a "gay identity." Racism, cultural beliefs about masculinity, sexual orientation, and religious doctrine (which often condemns homosexual behavior) decrease the desire to take on the label of "gay." Therefore, researchers have focused on the behavior of 'men who have sex with men,' rather than the identity of being gay.

With the advent of the internet including chat rooms and networking sites, Black MSM may find it easier and more comfortable to meet and interact with other MSM with a certain level of anonymity and confidentiality. Consequently, the internet also exposes individuals to a high number of potential sex partners with various HIV risk statuses. This perceived anonymity may sometimes cause individuals to engage in riskier behaviors-behaviors in which they would not typically engage. Consequently, the internet becomes

a new frontier for researchers to recruit and understand sexual risk behaviors under different social networks.

Individuals are often first exposed to vastly new social networks during their college years. Coincidentally, college becomes a time when individuals of all sexual orientations may attempt to exercise their new independence and autonomy and engage in sexual exploration and experimentation and/or practice safer sexual behaviors including abstinence, monogamy, and consistent condom use (Foreman, 2003).

### **Black Heterosexual Males**

An area of research that is receiving an increasing amount of attention is heterosexual African American male behavior. Researchers have long claimed that men are likely to be more casual than women in their sexual behaviors and to engage in greater sexual risk taking (Poppen, 1995). However, research indicates that gendered sexual risk difference is complicated and context specific. There are a number of sociocultural factors that influence the sexual risk behaviors of Black heterosexual males.

Traditional gender roles dictate that men be the initiators of sexual activity and many of the HIV prevention campaigns that target women, hold this supposition. However, there is evidence that men will engage in unwanted sexual activities because of their partner's tactics (Russell & Oswald, 2002; Struckman-Johnson, 1988). The types of sexual coercion by women may differ than the type of male initiated sexual coercion. Interestingly, some studies estimate that up to 44% of male college students reported being the recipient of a sexually coercive tactic (Russell & Oswald, 2002). Moreover, male initiated sexual coercion tactics are more likely to be viewed as threatening or capable of doing harm than women initiated sexually coercive tactics which may be viewed as promiscuous (Oswald & Russell, 2006). Unlike males who may be more likely to use alcohol, verbal, or physical strategies, women are more likely to use verbal tactics. Black males who are sexually coerced by women may have their masculinity questioned, and feel the need to have to prove their manhood through sexual acts, although more research in this area is needed to support this assertion.

Despite engaging in high-risk activities, college students (including Black college students) have a low subjective perception of HIV risk (Payne, 2006). In a qualitative study conducted by Thompson-Robinson and colleagues (2007) of the perceptions of heterosexual (N=57) African American males' high risk sexual behaviors, participants reported partner attractiveness, being in love, sensation seeking, substance use, knowing that another man had sex with a woman and did not contract a disease, and physical arousal as some reasons why heterosexual African American males may engage in unprotected sexual intercourse. When asked about cultural influences on African American males' sexual behaviors and practices, the participants reported that their friends and acquaintances, media, and spirituality all influenced sexual behavior. While religious doctrine was reported as influencing sexual decisions and behaviors, concerns regarding pregnancy and acquiring HIV or other STIs also acted as deterrents to risky behaviors. In a 2003, qualitative study of Black college women (n=15), similar findings as those of Thompson-Robinson and colleagues, were reported. Participants reported sensation seeking or pleasing their partners as a primary reason for not using condoms.

In a longitudinal, within group, cluster analysis of the heterogeneity patterns of sexual risk behaviors among African American youth, Burrow and colleagues (2007) found that patterns of sexual risk were related to lifetime psychiatric diagnoses, which is consistent with previous research in this age group (Shrier, Harris, Kurland, & Knight, 2003). African American are overrepresented in at risk populations that are susceptible for compromised mental health due to economics, incarceration, foster care, exposure to violence, access to health care (SAMHSA, 2008) therefore, prevention efforts need to target these groups specifically.

### **Black Heterosexual Women**

The HIV epidemic does not uniformly affect African American women. Instead, the increasing incidence rates are most commonly found among women of lower socioeconomic statuses and hence most of the research has focused on this group. Few studies have examined the risk factors of African American women college

students. One sociocultural factor that transcends social strata is interpersonal power. Interpersonal power has demonstrated to be necessary to engage in HIV protective behaviors within the context of dyadic relationships and there exist a number of cultural factors that are hypothesized to intersect and predict interpersonal relationship power in relationships that are generalizable to all women.

Wingood and DiClemente's (1998) Expanded Theory of Gender and Power (TGP) explains how interpersonal power influences HIV protective behavior among African American women, while taking into account the intersection of culture, gender relations, and various traditional cognitive behavioral factors. Namely, among Black college students, these power imbalances may be less influenced by threats of violence, gender and peer norms, perceived sex ratio-imbalance, and the desire to be in a relationship, also known as the structure of Cathexis in TGP. Foreman (2003) found that Black college women would rather relinquish their power to engage in safer sex and give in to their own or a partner's needs or desire, than engage safer sexual behavior. In Foreman's study, participants reported that their longing for intimacy and desire for a long-term relationship overshadowed or even compromised their risk reduction (e.g., condom negotiation) capabilities (Fullilove, Fullilove, Haynes, & Gross, 1990). This compliance with partners' actual or perceived preferences may be a result of the gender ratio imbalance articulated early in the HIV epidemic by Mays and Cochran (1988) and Fullilove and colleagues (1990).

The gender ratio imbalance among Blacks exists in the general society and particularly among Black college students, with Black females outnumbering Black males for the last several decades. The actual and perceived gender ratio imbalance, is purported to result in men having multiple sexual partners and women having to decide whether or not to accept this and perhaps knowingly engage in the act of man sharing (Ferguson et al., 2006). An additional consequence of the gendered sex ratio imbalance may be women who engage in serial monogamy in hopes of securing an intimate relationship while increasing their number of lifetime sexual partners, and in turn increasing their risk of contracting an STI. Subsequently, African American college women have reported being more likely to

engage in risky sexual behaviors such as condom non or inconsistent use, when they were in a committed romantic, sexual relationship (Winfield & Whaley, 2005).

### **Gender Roles**

Another influential social construct is gender roles which set up different sexual expectations for men and women. While biological gender differences transcend race, class, and sexual orientation, gender roles are socially constructed and may vary depending on cultural norms. In general, gender roles dictate that men initiate sexual activity and women are suppose to resist or limit sexual activity and be more concerned with romance and affection than sex (Peplau & Gordan, 1985). Although children are socialized to various gender role norms and expectations based on their cultural mores, the college years are a time of exploration during which ideas about gender are particularly salient and may shift according to the environment. College students may be exposed to mainstream and more common stereotypes in new domains such as generalizations about masculinity and femininity in dating relationships.

Traditionally defined gender roles within the confines of a relationship can have a significant impact on how individuals engage in sexual encounters. Traditional gender roles can influence sexual coercion or intimidation, which has been identified as a serious issue on college campuses (Owald, 2005). Though much of the initial research focused on men as the aggressor, recently, researchers have begun to acknowledge that women also behave in a coercive manner in their sexual encounters (Oswald & Russell, 2005). There is evidence that people judge men and women differently when they engage in the same aggressive behaviors (Oswald & Russell, 2005). Subsequently, there is a double standard in how individuals of different genders are perceived. Women who are sexually assertive or who carry condoms may be viewed as promiscuous. Conversely, men who refrain from sex or are not assertive may have their masculinity questioned. In a recent study conducted by Shearer (2005), the more men endorsed the idea that men should not behave in a feminine manner, the greater their likelihood of engaging in risky sexual behavior.

## **Substance Use**

In addition to the psychosociocultural factors that influence sexual risk behaviors, there are salient biological factors that place African American youth at increased risk. There is a well established behavioral and biological link between sexual risk behaviors and substance use including alcohol and other drugs (AOD). Individuals who abuse alcohol and other substances have demonstrated to be at increased risk for STIs including HIV (CDC, 2007). This relationship between substance use and increased risk for STIs can be caused by using substances which impair decision making, and/or comprising immune system functioning and in turn, cause individuals to be more susceptible for contracting an infection.

As previously noted, college is often a time of sexual exploration, and exploration/ experimentation with various substance. The aforementioned 2005 YRBS also examined substance use behavior in a national survey of 9<sup>th</sup> through 12<sup>th</sup> graders. Black students reported lower rates of cigarette smoking, lifetime and current prevalence of alcohol use, and all other illicit substances in comparison with their White counterparts (YRBS, 2006). Studies confirm that students at HBCUs and African American students in general drink substantially less and suffer fewer consequences than do students at predominantly White institutions (PWI). Researchers purport that the disparity in alcohol consumption appears to be strongly related to protective factors such as HBCUs' general emphasis on character development in their institutional missions and possibly, their enrollment of many students with strong religious values and their own religious foundations (Kapner, 2003). The environment at HBCUs may mitigate against the "culture of drinking" and other substance use found on many PWI campuses (Kapner, 2003). However, evidence suggests that Black students who attend PWI, also have lower rates of substance use in comparison with their White counterparts therefore, the protective factors may exist prior to entering college and be reinforced on HBCU campuses.

In a 2003 study of marijuana use at two HBCUs, Bowen-Reid and Rhodes found that 52% of their sample reported at least one instance of lifetime marijuana use. Twenty five percent of their sample reported starting to smoke between the ages of 15 to 17,

while 16% of their sample reported starting to smoke marijuana in college. Approximately 6.5% of the sample reported smoking marijuana daily. Gender differences also exist, males were more likely than females to smoke marijuana. The findings from this study also demonstrated that lower rates of marijuana use were related to higher levels of spirituality. Therefore, as previously noted, spirituality has demonstrated to be a protective factor against risky sexual behavior and substance use. Researchers are increasingly interested in the role of protective or factors that buffer against adverse health behaviors. If identified, these factors can be instrumental in developing effective prevention interventions. Among a number of identified protective factors are the family, social support, and spirituality and religiosity.

### **Role of the Family**

Parents play a critical role in shaping their children's behaviors. "Generally, the role of the family is to act as the primary socialization agent and provide support and codes of conduct for social competence for children within a given network" (Younge & McAdoo, in press). Traditionally, Blacks adhere to a communalistic or collectivist worldview and the Black family has been identified as one of the most enduring strengths in the resiliency of Blacks (McAdoo, 1992). Additionally, the Black family has been purported to act as a buffer or protective factor against "menacing societal stimuli" (Hayles, Bell, Evans, Floyd, Monteiro, Daniels & Harrell, 2004, p. 410). Previous research demonstrates that parents exert more power on the behavior of adolescents, than previously thought (Hutchinson & Montgomery, 2007). Parental factors that influence risk behaviors include parent-teen closeness, social support, parental monitoring, parental expectations, and parent-child communication (Jaccard, Dittus, & Gordan, 1996; DiClemente, Wingood, Crosby, Cobb, Harrington, Davies, Hook, & Oh, 2001; Li, Feigelman, & Stanton, 2000; Miller et al., 1999; DiLorio, Kelly, & Hockenberry-Eaton, 1999; Dutra, Miller, & Forehand, 1999, St. Lawrence, Brasfield, & Jefferson, 1994).

Some studies have shown that children will refrain from certain risky behaviors (e.g., substance use) for fear of disappointing their family and communities (Jordan, 2001). Black parents often



encourage their children to surpass the achievements of previous generation and children are commonly informed of the sacrifices made by their parents and prior generations. These expectations can enhance an investment in future orientation. Constructs such as future orientation or 'planning for tomorrow,' has demonstrated to positively predict African American college women's condom frequency. "Using condoms in the present provides an individual with a safeguard against possible negative future consequences associated with failure to use condoms consistently during sexual activity" (Burns & Dillon 2005:184).

Previous research has demonstrated that parental monitoring plays a critical role in the decrease of risky sexual behavior among adolescents (DiClemente et al., 2001). As individuals transition to college, parental monitoring becomes inconsequential and "social ties to family and other social institutions that promote conventional norms" (Voisin et al., 2006, p. 72) may act as a buffer for risky sexual behaviors. Another study examined parental influences on the sexual risk attitudes, beliefs, and behaviors of African American, late adolescent HBCU students (Hutchinson & Montgomery, 2007). The results demonstrated that female students had a greater amount of parent-teen sexual risk communication with their mothers, in comparison with male students. As expected, male students reported greater parent-teen sexual risk communication with their fathers in comparison with female students yet there were no significant differences between males and females in the total amount of communication from parents. Students who reported higher levels of communication also reported feeling closer to their parents during their high school years, and a greater perceived importance of their parent's opinions. This research indicates that an increase in mother sexual communication is associated with more conservative attitudes towards sex by students and less difficulty discussing sexual topics with their partners. Greater communication with fathers has also been associated with more positive attitudes toward condom use among female students and less difficulty discussing condoms among male students.

### **Media Influences**

In addition to parents, the media is influential in framing individuals' (particularly adolescents) perceptions and images about how relationships should and do function. Relatively little research has examined whether exposure to sex in the media has a long-term impact on teens' sexual behavior. In a recent longitudinal study conducted by Brown and colleagues (2006), researchers assessed whether early Black and White adolescents (aged 12 to 14) who have more exposure to media were more likely than those with less exposure to media to have more advanced precoital and coital behavior by middle adolescence? Their findings indicated that younger adolescents with the highest exposure to sexual media, were 2.2 times more likely than older adolescents to have had sexual intercourse. In their study, Black adolescents' sexual activity was more likely to be influenced by parental expectations and peer behavior, than media influences. This is consistent with the aforementioned influence of the Black family.

Currently, one of the most popular and influential entertainment mediums is hip-hop or rap music. Although hip hop has gone through several major iterations, the latest ongoing debate regarding its depiction of African American lifestyles remains controversial. Most recently, the misogynist portrayal of women in some music videos, television shows, and movies has been publicized and criticized. One of the major concerns of most critiques is the youth who are influenced by certain propaganda and ascribe to the stereotypical roles being portrayed. Thompson-Robinson and colleagues found that the media had an impact on the sexual behaviors and perceptions of HIV risk among their Black male, college participants. One male participant reported that the images of females in the music videos had an "impact on one's psyche" and if a rap artist was not having sex with all of the women in their [videos], they were "less of a man" (Thompson-Robinson et al., 2007, p. 162). The use of certain aspects, such as sex, fame, and glamorization of the hip-hop culture is used as a medium to promote the sale of products and lifestyles. The inability of some young people to discern entertainment from reality becomes even more troubling and results in the emulation by both men and women, to behave

in a manner which is consistent with certain aspects of some hip hop artists (i.e., the objectification of women as being hyper sexual, and men as abusive, the glamorization of casual sex, promiscuity, substance use), with little attention to consequences such as the acquisition of STIs. Another study of African American female adolescents sought to determine whether perceiving portrayals of sexual stereotypes in rap music videos was associated with adverse health outcomes including substance use and sexual risk behaviors (Peterson, Wingood, DiClemente, Harrington, & Davies, 2007). Peterson and colleagues demonstrated a relationship between increased perception of sexual stereotypes and binge drinking, marijuana use, multiple sexual partners, and negative body image. It appears that exposure to rap videos had a negative impact on the health behaviors of African American adolescent girls. However, these findings must be cautiously interpreted and it must be noted that this study can not determine the direction of the relationship such that does rap have an affect on health, or does one's sexual behavior influence how they perceive rap music? Given the current age of technology, it is apparent that the media's influence health behavior warrants further investigation.

### **Conclusion**

In accordance with the recognition that individual level, proximal factors such as beliefs, knowledge, attitudes, and behaviors alone do not sufficiently explain the disproportionate burden of HIV/AIDS on African Americans, researchers have begun to look to environmental or contextual factors. Additionally, rather than overwhelmingly focusing on specific segments of the Black population (e.g., low income, substance users, MSM), researchers are currently expanding their investigations to other segments of the Black population including college students. This focus on college students despite, little epidemiological data on their actual HIV rates is supported by the fact that many African Americans were infected while they were college age.

Application of an ecological model of health behaviors would lead to the examination of different environments for college students and the risk and protective factors associated with those

students and their environments. Differences in disease rates have demonstrated to be influenced by the differential distribution of risk behaviors including, smaller partner pools (e.g., small vs. large student populations), and risk behaviors (e.g., low vs. high substance use, IDU use versus alcohol or marijuana use). These differences influence the higher rates of STIs and HIV in certain populations, but also indicate that certain aspects of the HBCU environment may contain certain risk and protective factors against sexual risk. The college experiences of Black students vary by the type of institution they attend. Research has demonstrated that there is a distinction between Black students enrolled in predominantly White institutions (PWI) versus historically Black colleges or universities (HBCU), that needs to be further explored (Greer, 2007).

The goal of this paper was to describe how race and gender can interact to influence the sexual risk behaviors of Black college students with a specific interest on students attending HBCUs. College students may not face some of the same inequalities as the general population (e.g., lack of access to health care and education), therefore, prevention interventions need to address the specific challenges faced by this population. It must be noted that HIV incidence in the United States is highest in the Southeastern region, which is the same region of the United States which contains the highest concentration of HBCUs. College students often have sexual partners who are not college students; therefore, it is imperative that risk be conceptualized from a comprehensive perspective.

The nature of college campuses dictate that college students will be exposed to an abundance of sexual risk knowledge, but as demonstrated in numerous studies, knowledge alone is not enough to promote healthy behaviors. Despite the increased levels of self-report risky sexual behaviors, college students in general and Black college students inaccurately do not perceive themselves to be at risk (Braithwaite, Stephens, Sumpter-Gaddist, Murdaugh, Taylor, & Braithwaite, 1998; Payne, 2006). It is important to examine the reasons why Black college students still participate in risky behaviors despite their knowledge of the HIV/AIDS epidemic within the Black community. Some studies indicate that these personal fables of the consequences of sexually risky behaviors may be culturally

influenced. In order for prevention researchers and practitioners to be proactive and prevent Black college students from being the next leading group in the HIV/AIDS epidemic, more research and effective interventions are critical. Lastly, it is not enough for researchers to take conceptual models developed on White college student samples and simply generalize them to Black college students. Instead, the nuances of this group should be understood from a culturally congruent perspective.

### **Future Directions**

A large multi-site epidemiological study should be conducted on college campuses with adequate samples of Black students. There is an increased need for more accurate estimations of the STI/HIV incidence and prevalence rates of Black on college campuses. Second, in order to test some of the questions raised in this paper (i.e., protective/risk factors of HBCUs), the environments of Black students attending HBCUs and those attending PWIs should be examined and compared. Lastly, those individuals who are practicing healthy behaviors and in turn lowering their sexual risk, should be examined in depth. Correlates of protective behaviors can be identified and implemented into effective interventions.

## References

- Baldwin, J. D., & Baldwin, J. I. (1988). "Factors Affecting AIDS-Related Sexual Risk-Taking Behavior Among College Students." *The Journal of Sex Research*, 25(2), 181-196.
- Berman S.M., & Cohen M.(2006). "STD treatment: how can it improve HIV prevention in the South?" *Sexually Transmitted Diseases*, 33,7,S50-S57.
- Bowen-Reid, T.L. & Rhodes, W.A. (2003). "Assessment of Marijuana Use and Psychosocial Behaviors at Two Historically Black Universities." *Journal of Black Psychology*, 29, 4. 429-444.
- Brody, G., Stoneman, Z., Flor, D., & McCrary, C. (1994). "Religion's Role in Organizing Family Relationships: Family Process in Rural, Two-Parent African American Families." *Journal of Marriage & Family*, 56(4), 878-888.
- Braithwaite, R., Stephens, T., Sumpter-Gaddist, B.W., Murdaugh, H., Taylor, S., Braithwaite, K. (1998). "Sex-related HIV/AIDS prevention among African American college students: issues for preventive counseling." *Journal of Multicultural Counseling and Development*, 26 (3), 177-193.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and Design*. Cambridge, MA: Harvard University Press.
- Brown, J.D., Ladin, L'Engle, K., Pardun, C.J., Guo, G., Kenneavy, K., & Jackson, C. (2006). "Sexy Media Matter: Exposure to Sexual Content in Music, Movies, Television, and Magazines Predicts Black and White Adolescents' Sexual Behavior." *Pediatrics*, 117, 4. 1018-1027
- Burns, M.J. & Dillon, F.R. (2005). "AIDS Health Locus of Control, Self-Efficacy for Safer Sexual Practices, and Future Time Orientation as Predictors of Condom Use in African American College Students." *Journal of Black Psychology*, 31, 2. 172-188.

Younge, ET AL.

55

Burrow, A.L., Tubman, J.G., & Gil, A.G. (2007). "Heterogeneity in patterns of sexual risk behaviors among African American youth: Associations with general and race specific factors." *Journal of Community Psychology*, 35, 4, 447-462.

Centers for Disease Control and Prevention (2000). "HIV/AIDS among racial/ethnic minority men who have sex with men." United States, 1989--1998. *MMWR* 49:4--11.

CDC. Youth Risk Behavior Surveillance United States, (2005). *MMWR* 2004;53(SS-2):1-29.

Centers for Disease Control and Prevention (2007). 'HIV/AIDS and African Americans.' June, 2007. <http://www.cdc.gov/hiv/topics/aa/index.htm> Retrieved September 2007.

Centers for Disease Control and Prevention (2006). "Fatal attraction: sex, sexually transmitted infections, and HIV-1." *STD and AIDS*, 17,10, 643-651.

DiClemente, R.J., Wingood, G.M., Crosby, R., Sionean, C., Cobb, B.K., Harrington, K., Davies, S., Hook, E.W., Oh, M.K. "Parental monitoring association with adolescents' risk behaviors." *Pediatrics*, 106 (6). 1363-1368.

DiLorio, C., Kelley, M., & Hockenberry-Eaton, M. (1999). "Communication about sexual issues: Mothers, fathers, & friends." *Journal of Adolescent Health*, 24, 181-189.

Dutra, R., Miller, K., & Forehand, R. (1999). "The process and content of sexual communication with adolescents in two-parent families: Associations with sexual risk-taking behavior." *AIDS and Behavior*, 3, 59-66.

Fisher, J.A., Spurlock-McLendon J.L., DelGado B.P. & Melchreit R.L. (1999). "An assessment of the counseling and programmatic implications of repeat HIV testing." Paper presented at the *National HIV Prevention Conference*.

- Ferguson, Y.O., Quinn, S.A., Eng, E., & Sandelowski, M. (2006). "The gender ratio imbalance and its relationship to risk of HIV/AIDS among African American women at historically black colleges and universities." *AIDS Care*, 18(4), 323-331.
- Foreman, F.E. (2003). "Intimate risk, sexual risk behavior among African American college women." *Journal of Black Studies*, 33(5), 637-653.
- Fullilove, M.T., Fullilove, R.E., Haynes, K., & Gross, S. (1990). "Black women and AIDS prevention: A view towards understanding gender roles." *Journal of Sex Research*, 27, 47- 64.
- Gayle, H.D., Keeling, R.P., Garcia-Tunon, M., Kilbourne, B.W., Narkunas, J.P., Ingram, F.R., Rogers, M.F., Curran, J.W. (1990). "Prevalence of the human immunodeficiency virus among university students." *New England Journal of Medicine*, 323(22): 1538.
- Greer, T.M. (2007). "Minority-Related Stressors and Coping Processes Among African American College Students." *Journal of College Student Development*, 48(4). 288-404.
- Georgia Department of Community Health (2002). "HIV/AIDS Among Minorities in Georgia." [http://health.state.ga.us/pdfs/epi/hiv\\_aidsminorityreport.02.pdf](http://health.state.ga.us/pdfs/epi/hiv_aidsminorityreport.02.pdf)
- Hightow L.B., Leone P.A, MacDonald, P.D.M., McCoy S.I., Sampson L.A., & Kaplan A.H. (2006). "Men who have sex with men and women: a unique risk group for HIV transmission on North Carolina college campuses." *Sexual Transmission Disease*, 33 585-593.
- Hutchinson, M.K. & Montgomery, A.J. (2007). "Parent Communication and Sexual Risk Among African Americans." *Western Journal of Nursing Research*, 29, 6. 691-707.
- Jaccard, J., Dittus, P. J., & Gordon, V. (1996). "Maternal correlates of adolescent sexual and contraceptive behavior." *Family Planning Perspectives*, 28, 159-165, 185.



Younge, ET AL.

57

- Jenkins, B., Lamar, V. L., & Thompson-Crumble, J. (1993). "AIDS among African Americans: A Social Epidemic." *Journal of Black Psychology*, 19, 2, 108-122
- Jordan, L. C. (2001). "Protective factors among youth at risk for substance abuse." Paper presented at the Annual Meeting of the *Eastern Psychological Association*, Washington, D.C.
- Jordan, L.C. & Lewis, M.L. (2005). "Paternal Relationship Quality as a Protective Factor: Preventing Alcohol Use Among African American Adolescents." *Journal of Black Psychology*, 31, 2, 152-171.
- Kapner, D.A. (2003). Alcohol and Other Drug Use at Historically Black Colleges and Universities. The Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention.
- Lewis J.E., Malow R.M., & Ireland S.J. (1997). "HIV/AIDS risk in heterosexual college students: A review of a decade of literature." *Journal of American College Health*, 45.147-158.
- Li, X., S. Feigelman, and B. Stanton. 2000. "Perceived parental monitoring and health risk behaviors among urban low-income African-American children and adolescents." *Journal of Adolescent Health* 27: 43-48.
- Mays, V. M., & Cochran, S.D. (1988). "Issues in the perception of AIDS risk and risk reduction activities by Black and Hispanic/Latina Women." *American Psychologist*, 43, 949-957.
- Miller, K., Forehand, R., & Kotchick, B. (1999). "Adolescent sexual risk behavior in two ethnic minority samples: A multi-system perspective delineating targets for prevention." *Adolescence*, 35, 313-331.
- Provasnik, S., & Shafer, L. (2008). "Historically Black Colleges and Universities, 1976 to 2001." *Education Statistics Quarterly*, 6, 3.

- Oswald, D. & Russell, B. (2005). "Perceptions of Sexual Coercion in Heterosexual Dating Relationships: The Role of Aggressor Gender and Tactics." *Journal of Sex Research*, 43(1), 87-95.
- Paul, E. L., McManus, B., & Hayes, A. (2000). "Hookups: Characteristics and Correlates of College Students' Spontaneous and Anonymous Sexual Experiences." *The Journal of Sex Research*, 37(1), 76-88.
- Payne, N. et al. (2006). "Acceptance of HIV Testing among African-American College Students at a Historically Black University in the South." *Journal of the National Medical Association*, 98, 12.
- Peplau, L. A., & Conrad, E. (1989). "Beyond nonsexist research: The perils of feminist methods in psychology." *Psychology of Women Quarterly*, 13, 379-400.
- Peterson, S.H., Wingood, G.W., DiClemente, R.J., Harrington, K., & Davies, S. (2007). "Images of Sexual Stereotypes in Rap Videos and the Health of African American Female Adolescents." *Journal of Women's Studies*, 16, 8. 1157-1164.
- Poppen, P. J. (1995). "Gender and patterns of sexual risk taking in college students." *Sex Roles*, 32, 545-555.
- Quinn T. (1996). "Association of sexually transmitted diseases and infection with the human immunodeficiency virus: biological cofactors and markers of behavioral interventions." *STD and AIDS*, 7(Supplement 2):17-24.
- Russell, B. L., & Oswald, D. L. (2002). "Sexual coercion and victimization of college men: The role of love styles." *Journal of Interpersonal Violence*, 17, 273-285.
- Shrier, L. A., Harris, S. K., Kurland, M., & Knight, J. R. (2003). "Substance use problems and associated psychiatric symptoms among adolescents in primary care." *Pediatrics*, 111, e666-e705.

- St. Lawrence J, Brasfield T, Jefferson K. (1994). "Social support as a factor in African American adolescents' sexual risk behavior." *Journal of Adolescent Research*, 9,292-310.
- Struckman-Johnson, C. (1988). "Forced sex on dates: It happens to men, too." *The Journal of Sex Research*, 24, 234-241.
- Thompson-Robinson, M., Weaver, M., Shegog., Richter, D., Usdan, S., and Sanders R. (2007). "Perceptions of Heterosexual African American Males' High-Risk Sex Behaviors." *International Journal of Men's Health*, 6, 2, 156-166.
- U.S. Census Bureau (April 2003). The Black population in the United States: In Current Population Reports by Jesse McKinnon. Washington, D.C. Online: [www.census.gov/prod/2003pubs/p20-542.pdf](http://www.census.gov/prod/2003pubs/p20-542.pdf) )
- U.S. Department of Health and Human Services (2008). *African Americans Fact Sheet*. SAMHSA
- Voisin, D.R., DiClemente, R.J., Salazar, L.F., Crosby, R.A. & Yarber, W.L. (2006). "Ecological Factors associated with STD risk behaviors among detained female adolescents." *Social Work*, 5(1). 71- 79.
- Winfield, E.B. & Whaley, A.L. (2005). "Relationship Status, Psychological Orientation, and Sexual Risk Taking in a Heterosexual African American College Sample." *Journal of Black Psychology*, 31, 2, 129-204.
- Wingood, G., DiClemente, R. (2000). "Application of the Theory of Gender and Power to Examine HIV-Related Exposures, Risk Factors, and Effective Interventions for Women." *Health Education & Behavior*, 27, 539-565.

- Wright, J. (1997). "African American Males and HIV: The Challenge of the AIDS Epidemic." *Medical Anthropology Quarterly* 11(4). 454-455.
- Younge, S.N. & McAdoo, H.P. (in press). "Home and Family in the Development of a Multicultural Worldview." In J.K. Asamen, M.L. Ellis, & G.L. Berry (Eds.), *Handbook of Child Development, Multiculturalism, and Media*. Sage: Thousand Oaks.

# Promoting HIV Vaccine Research in African American Communities: Does the Theory of Reasoned Action Explain Potential Outcomes of Involvement?

---

Paula M. Frew<sup>1,2,3,4</sup>  
Matthew Archibald<sup>5</sup>  
Nina Martinez<sup>1,3,6</sup>  
Carlos del Rio<sup>1,2,3,6</sup>  
Mark J. Mulligan<sup>1,2,3</sup>

---

## Abstract

The HIV/AIDS pandemic continues to challenge the African American community with disproportionate rates of infection, particularly among young women ages 25 to 34 years. Development of a preventive HIV vaccine may bring a substantial turning point in this health crisis. Engagement of the African American community is necessary to improve awareness of the effort and favorably influence attitudes and referent norms. The Theory of Reasoned Action (TRA) may be a useful framework for exploration of community engagement outcomes including future attendance, community mobilization, and study participation. Within the context of HIV vaccine outreach, we conducted a cross-sectional survey in early 2007 with 175 African-American adults ( $\geq 18$  years). Confirmatory factor analysis and structural equation modeling were performed and the findings support the potential of the model in understanding behavioral intentions toward HIV vaccine research.

---

<sup>1</sup>Emory University School of Medicine, Department of Medicine, Division of Infectious Diseases

<sup>2</sup>Emory Center for AIDS Research

<sup>3</sup>The Hope Clinic of the Emory Vaccine Center

<sup>4</sup>The University of Georgia, College of Public Health, Department of Health Promotion and Behavior

<sup>5</sup>Emory University, Department of Sociology

<sup>6</sup>Emory University, Rollins School of Public Health

## Introduction

In the fifty states and the District of Columbia, the number and proportion of HIV/AIDS cases<sup>1</sup> among African Americans continue to highlight the need for new and effective prevention strategies. Since the inception of the US epidemic through 2005, African Americans encompassed approximately 42% of all AIDS cases. In 2005 alone, African Americans comprised 50% of the AIDS burden (CDC 2007) while making up only 12.8% of the general population (U.S. Census Bureau 2005). The AIDS rate among African American men (95.1/100,000) is eight times higher than that of white men (12.1/100,000) (Kaiser Family Foundation 2007). Among women this difference is even greater. AIDS rates are approximately 23 times higher for African American women (45.5/100,000) than for white women (2.0/100,000) (CDC 2007). An estimated 66% of new AIDS cases in women during 2005 were among Black/African Americans (CDC 2007). Regional HIV/AIDS data shows that the South has the highest proportion of newly reported AIDS cases among African Americans in the country, constituting 56% of all AIDS cases in 2005; as well as over half (51%) of all African Americans living with AIDS in the US (Kaiser Family Foundation 2007). Furthermore, Black females accounted for 72% of HIV/AIDS diagnoses among women in the South (CDC 2006).

With respect to the population of the Southern US, it has been suggested that factors such as poverty, unemployment, inadequate access to healthcare, and sociocultural environmental factors may explain the higher AIDS burden (Reif, Geonnotti, and Whetten 2006; Whetten and Reif 2006). Sociocultural factors that can impact risk behaviors include racial disparities, a lack of access to prevention and education, high levels of poverty and homelessness, suboptimal healthcare, and the inability to obtain adequate health insurance due to low income levels (Southern States AIDS Directors Work Group, National Alliance of State and Territorial AIDS Directors, and CDC Division of HIV/AIDS Prevention in the National Center for HIV/STD/TB Prevention 2003). Issues such as mistrust in the medical system also prevail (Gamble 1997; Whetten et al. 2006), resulting in greater health disparities among minorities. Black/African Americans

---

<sup>1</sup>HIV/AIDS: This term is used to refer to (1) a diagnosis of HIV infection without the presence of AIDS, (2) a diagnosis of HIV infection with a later diagnosis of AIDS, and (3) concurrent diagnoses of HIV infection and AIDS. (CDC definition)

comprise 19% of the population in the South (19 million persons), making this racial/ethnic group much larger in this geographic setting compared to other regions such as the Midwest (6.5 million) (Southern States AIDS Directors Work Group et al. 2003). Black/African Americans who engage in high risk behaviors in the South may experience greater stigmatization with HIV prevention or care service utilization (Southern States AIDS Directors Work Group et al. 2003; Whetten et al. 2006).

HIV counseling and testing, as well as other evidence-based behavioral interventions, are available in many communities, but these measures alone have been unsuccessful in preventing the spread of HIV (Janssen, Holtgrave, and Valdiserri 2001). Inequitable decision-making and compromised power have been identified as primary obstacles to women's ability to negotiate condom use (Aral and Wasserheit 1995; Jemmott, Catan, and Nyamathi 1995; O'Leary and Wingood 2000; Wingood and DiClemente 2002). With respect to condom use as a preventive measure, domestic violence and economic dependency on men have been recognized as key components driving this phenomenon (Aral et al. 1995).

The advent of the female condom provided new barrier options, yet adoption of the new prevention technology has not been widespread in the United States. Since its introduction on the market in 1993, it has not been consistently used as the method of choice by heterosexual women (Choi, Roberts, Gomez et al. 1999; El-Bassel, Krishnan, Schilling et al. 1998; Macaluso, Demand, Artz et al. 2000) and men (Seal and Ehrhardt 1999) given a lack of awareness about the product, inexperience with the device, and other psychosexual factors. As women are vulnerable to HIV infection through heterosexual transmission, and may lack control in condom negotiation, other biomedical prevention options such as a preventive HIV vaccine would be of great benefit.

While most agree that an HIV vaccine may not be available for some years (Solomon 2005; Tonks 2007; Tramont and Johnston 2003), the pipeline of preventive vaccines in clinical trials remains robust with more than 39 candidate vaccines in the testing process worldwide (IAVI 2007). These ongoing clinical trials necessitate the involvement of various groups to ensure social justice aims of the effort are fulfilled, to maintain scientific integrity, and for generalizability of study findings. Therefore, cultivating relationships with the community is critical to the success of HIV vaccine research

and to future vaccine dissemination efforts. This is particularly important among minority populations who are underrepresented in HIV vaccine clinical trials (Djomand, Katzman, di Tommaso et al. 2005) and where research suspicion has been a significant barrier (Corbie-Smith, Thomas, and St. George 2002; Corbie-Smith, Thomas, Williams et al. 1999).

The role of community engagement in HIV vaccine research therefore figures prominently in addressing salient concerns among diverse groups. Previous findings related to clinical trial recruitment of African Americans suggest motivation differences exist among men and women from diverse communities (BeLue, Taylor-Richardson, Lin et al. 2006; Smith, Johnson, Newman et al. 2007). The results suggest the value of a strong researcher-study participant relationship for women in which study volunteers are made to feel comfortable, are treated well, and share rapport and good communication with the study team (BeLue et al. 2006). Moreover, women appreciate notification of research conducted in their locales, and of its importance and relevance to their communities. Researcher involvement in the local community also is a significant motivator in consideration of clinical trial participation (Smith et al. 2007). Men, however, express concern with the “business and profit elements of research” (BeLue, Taylor-Richardson, Lin, et al., 2006, p. 501). This includes issues such as compensation for participation, informed consent, and reputation of the research facility and the researcher. These issues highlight an array of attitudes and beliefs among men and women from African American communities on health research.

Given the ill-fated history of the Tuskegee syphilis study involving African American men, it is not surprising that minorities report lower levels of trust than their Caucasian counterparts in the assessment of health care providers and healthcare systems (Boulware, Cooper, Ratner et al. 2003; Gamble 1997). Moreover, negative experiences and perceived bias in minorities’ healthcare encounters influence trust perception of those in the medical establishment (McAlpine 2002; Saha, Arbalaez, and Cooper 2003). Direct experiences with providers and “social cues” from referent others and the environment (e.g., media), are incorporated in the formation of trust in providers and medical entities (Boulware, Cooper, Ratner et al., 2003, p. 363). Although there are similarities observed across studies, perceptions vary greatly among African



American communities. McAlpine (2002) notes that the variations may be due to socioeconomic status, access to care, health service utilization patterns, insurance provision, and interpersonal dynamics of patients and physicians. With this assemblage of factors, interpersonal and perceived socioenvironmental normative pressures have an influential effect on health decision-making.

With the 1994 NIH mandate specifying inclusion of women and minorities in research, greater emphasis has been placed on recruiting and retaining these populations. Enrollment trends of racial/ethnic minorities in HIV vaccine studies from 1988 to 2002 indicate  $\leq 26\%$  enrollment of these groups in all Phase I and II studies (Djomand et al. 2005). Although minorities are not participating in health research at a level equal to Whites (Caucasians) (Corbie-Smith et al. 2002; Corbie-Smith et al. 1999; Moutsiakis and Chin 2007; Smith et al. 2007), it is important to recognize that knowledge of and access to health research activities may have a favorable impact on willingness to participate in health research (Wendler, Kington, Madans et al. 2006). In a large scale review study of 70,000 persons, minorities were found to be more willing to participate in clinical and surgical studies than Whites (Wendler et al. 2006). These findings indicate that little difference is seen in enrollment patterns when minorities are invited to participate in health research studies (Wendler et al. 2006). With these differences taken into account, the authors conclude that underrepresentation in health research is likely due to other factors.

Recent evidence on minority participation in health research indicate a desire for information of the research activity in the community, greater demand to understand the relevance of the research efforts in addressing medical problems, and occasions to learn about clinical research entities and study volunteer participants (Smith et al. 2007; Wendler et al. 2006). Thus, the creation of opportunities to serve these needs is a necessary precursor for effective community engagement with African American communities.

### **Involving Community: Issues affecting Participation**

Community engagement involves multidirectional communication for the overarching purpose of enhancing the public's trust in the effort. Evidence-based methods include consultation, dialogue, and collaboration with communities (MacQueen, McLellan, Metzger et al. 2001) to develop shared understanding and meanings

associated with the research programs (Swartz and Kagee 2006). This process also fosters voice in the research endeavor and a sense of empowerment (Dickert and Sugarman 2005; Strauss, Sengupta, Quinn et al. 2001). These methods are vital in reaching minority communities and women to sustain their involvement in medical research studies (Boulware, Ratner, Cooper et al. 2002; Brown-Peterside, Chiasson, Ren et al. 2000; Brown-Peterside, Rivera, Lucy et al. 2001; Crawley 2001; Djomand et al. 2005), and to promote favorable health outcomes in the population (Miller and Shinn 2005; Sengupta, Strauss, DeVellis et al. 2000). Through the NIH-sponsored Local Partnership Program (LPP) initiative, funding has been provided for the development of local community engagement programs in cities where HIV vaccine research studies are taking place.

The overarching objectives of these efforts include building awareness through effective information dissemination, increasing understanding through facilitation of learning opportunities, and cultivating public support for HIV vaccines (Allen, Liang, Salvia et al. 2005; Frew, del Rio, Clifton et al. 2008). This can be accomplished through synergistic program efforts and the support and involvement of collaborating partner organizations (Frew 2005). In cities across the United States, efforts are underway to reach, educate, and influence the American public on the importance of HIV vaccine research. These foundational efforts may potentially contribute to the realization of any number of outcomes including building sustained dialogue on issues affecting involvement and support for the cause, cultivating community mobilization, building social support, and generating interest in study volunteerism, although the existing evidence is ambiguous as to which of these will be achieved (Koblin, Holte, Lenderking et al. 2000; Swartz et al. 2006).

Previous research on AIDS volunteerism suggests a combination of factors (e.g., gaining knowledge and helping others) fuels participatory motivation (Reeder, Davison, Gipson et al. 2001; Simon, Sturmer, and Steffans 2000). Moreover, identification with an AIDS service organization significantly increases the likelihood of volunteerism (Simon et al. 2000), a finding similar to our own in the role of study site organizational identity in promoting HIV vaccine community involvement (Frew et al. 2008). Additionally, a high degree of individualism among heterosexuals, contrasting with greater collective identity among homosexuals, has been identified

as an important intrapersonal motivation for AIDS volunteerism (Simon et al. 2000).

Earlier survey research with a population comprised primarily of African American women suggests that motivation related to HIV prevention volunteerism stems from concern for the community and a desire for HIV/AIDS knowledge (Reeder et al. 2001). These independent predictors rank above others of personal development, esteem enhancement, and knowing those with HIV/AIDS (Reeder et al. 2001).

It is useful to frame these socioecological issues within a historical perspective. Social networks arising from race and ethnicity powerfully structure the context in which knowledge, information, social experiences, attitude formation and sociopolitical action take place (McPherson, Smith-Lovin, and Cook 2001; Putnam 2000). Solidaristic networks generate a sense of trust and promote civic engagement based on concern for community (Knack 2003). African American communities experience an enhanced sense of social cohesion, at least as measured by participation in local groups aiding in the mobilization of members in lieu of difficult-to-obtain socioeconomic resources (Verba and Nie 1972). Verba and Nie (1972) argue that community membership exerts normative pressures promoting collective action. The salutary effects of African American cohesion on sociopolitical participation may be limited to a specific periods, however, since deeply rooted inequality precludes full community engagement (Chong and Rogers 2005; Putnam 2000; Skocpol, Liazos, and Ganz 2006).

Within the current context of HIV vaccine research, several studies have been conducted that specifically examine “willingness-to-participate” in HIV vaccine trials (Buchbinder, Metch, Holte et al. 2004; Colfax, Buchbinder, Vamshidar et al. 2005; Halpern, Metzger, Berlin et al. 2001; Newman, Duan, Roberts et al. 2006; Priddy, Cheng, Salazar et al. 2006) and HIV “vaccine acceptability” issues (Crosby, Holtgrave, Bryant et al. 2004a; Crosby, Holtgrave, Bryant et al. 2004b; Esparza, Chang, Widdus et al. 2003; Tello, Soong, Hunter et al. 1998). Overall, the HIV vaccine willingness-to-participate and acceptability literature indicate trust, confidentiality, side effects and safety concerns, social stigma, and other factors as barriers to involvement in the effort (Halpern et al. 2001; Hays and Kegeles 1999; Koblin, Heagerty, Sheon et al. 1998; Koblin et al. 2000; Priddy et al. 2006). However, altruistic participatory motives, a desire to

represent the community, the ability to “bring an end to AIDS,” and other health benefits (i.e., free HIV testing, medical care, etc.) counter such impediments (Colfax et al. 2005; Newman et al. 2006). Additional work on social influences related to trial participation decision-making suggests a need for interventions targeting family and friends (Allen et al. 2005; Brown-Peterside et al. 2000; Newman et al. 2006).

### **Conceptual Framework: The Theory of Reasoned Action**

The theory of reasoned action was selected as a useful model of inquiry for analysis of participant behavior. The TRA has been applied to HIV vaccine acceptability (Gagnon and Godin 2000) and other HIV/AIDS prevention studies (Koniak-Griffin 2006; Koniak-Griffin, Lesser, Nyamathi et al. 2003) including condom use (Mclaws 1996; Sneed 1998). More recently it has been applied to pneumococcal vaccination in urban settings (Zimmerman 2005). The TRA model is motivational in nature, with integration of individual (behavioral attitudes) and social (subjective norms) components in the formation of intentions which are predictive of behavioral outcomes of which persons have full volitional control (Ajzen and Fishbein 1980; Ajzen and Madden 1986; Fishbein and Ajzen 1975). This predictive model focuses on antecedent factors that conjoin in operation to explain behavior.

In the current study we utilize an established behavioral theory (TRA) to develop a predictive model of community engagement focusing specifically on the intentions of African Americans, with an emphasis on women. According to the TRA, formation of individual attitude is affected by behavioral beliefs and evaluation of behavioral outcome (Montano and Kasprzyk 2002). The salience of these beliefs (attitude), combine with the social factors - normative beliefs and motivation to comply (subjective norm formation) – and are weighted in relation to each other (Ajzen et al. 1986). The addition of the social component is useful for prediction of health behavior outcomes, particularly as the approval or disapproval of referent others (family, friends, colleagues), and importance afforded to these opinions can be important (counter) persuasive factors. In total, all of these form the basis for intention. As intention increases, the likelihood of realizing the behavioral outcome improves.

## Methods

### Study sample

From April 2007 through June 2007, project staff members approached members of populations attending multiple Atlanta-based events: a Morehouse College health symposium, a Georgia Perimeter College health fair, two “AIDS 101” educational presentations, Atlanta Harm Reduction Center (AHRC) “house parties,” an HIV vaccine awareness day symposium entitled “There’s Hope in Our Soul” at Hopewell Baptist Church, The Atlanta Voice’s health outreach at a local mall, Atlanta Pride Festival, and a small group educational session on HIV vaccines with Americorps volunteers. These activities were organized and sponsored by the research study site (The Hope Clinic of the Emory Vaccine Center) and its community organizational partners with a focus on building HIV vaccine awareness and providing community education on HIV vaccine research.

Recruitment occurred at arbitrary times and days of each week, and throughout the duration of the activities. The recruitment area was limited to Atlanta, Georgia. Persons were eligible for study participation if they were at least 18 years of age and could read and speak English. Study staff made an effort to ensure that surveys were completed only once among attendees. Approximately two hundred people were invited to participate in the study. Of these, 175 were eligible and provided written informed consent (yielding a response rate of nearly 87.5%). A t-shirt or health promotion incentive for participation was provided. The Emory University Institutional Review Board approved the study protocol prior to study implementation.

### Data Collection

Participants completed a 93-item self-administered questionnaire. The study staff and research assistants ensured that participants were provided with a semi-private area, or directed to nearby quiet spots (such as picnic tables) in outdoor locations, to complete the questionnaire. In addition, the staff and research assistants made themselves available to participants in the event that any of the instrument language required clarification.

## Results

### **Participant Characteristics**

The study population (Table 1) was comprised of 175 African Americans of which 70% were female, including one transgender person (male-to-female). Their median age was 37 years. Most were between 18 and 55 years of age (86.8%), single (55.4%), employed (62.3%), and many achieved postsecondary educational status (66.3%). The majority of the respondents indicated heterosexual orientation (84%,  $n = 147$ ), and 12% reporting Gay/Lesbian, Bisexual, Transsexual/Queer/Questioning (GLBTQQ) orientation, with 4% unknown. The annual household income range of participants varied, with most earning  $\leq$  \$40,000 per year (58.3%). Primary motivation for attendance included a desire for more scientific/medical information (34.3%,  $n = 58$ ), an obligation to represent the community (23.1%,  $n = 39$ ), to inquire about volunteer opportunities (10.1%,  $n = 17$ ), to meet others with similar concerns about HIV/AIDS and medical research (12.4%,  $n = 21$ ), and other reasons (21.1%,  $n = 34$ ). Most participants (57.9%,  $n = 99$ ) rated the sponsoring study site as “excellent/outstanding” and “good/very good” (39.8%,  $n = 68$ ) and favorably assessed the community engagement event or activity as exceeding expectations (35.8%,  $n = 59$ ) or meeting expectations (59.4%,  $n = 98$ ).

**Table 1: Selected Participant Characteristics**

Characteristic (n=175)	Frequency	Percent
Gender		
Male	53	30.3
Female	121	69.1
Transgender (Male to Female)	1	0.6
Age (missing =1)		
18 to 25	37	21.3
26 to 35	45	25.9
36 to 45	31	17.8
46 to 55	38	21.8
≥56 years	23	13.2
Education (highest level completed)		
K-8 or high school	59	33.7
Post-secondary education	116	66.3
Sexual Orientation (missing=3)		
Heterosexual	147	85.5
LGBTQ	25	14.5
Motivation for attendance (missing=6)		
Scientific/Medical Information	58	34.3
Volunteer Opportunities	17	10.1
Obligation to Community	39	23.1
Meet Others With Same Concerns	21	12.4
Other reasons, not specified	22	13.0
Multiple reasons, specified	12	7.1
Rating of Study Site (missing=4)		
Excellent/Outstanding	99	57.9
Good/Very Good	68	39.8
Fair/Poor	3	1.8
No opinion	1	0.6
Rating of Event (missing=10)		
Exceeds expectations	59	35.8
Meets expectations	98	59.4
Does not meet expectations	8	4.8

## **Scale Construction**

Theory of reasoned action variables were constructed based on a review of the literature, from existing instruments (Frew et al. 2008; Priddy et al. 2006), and scaling options presented by the TRA progenitors (Ajzen et al. 1980). TRA variables cover volunteers' intentions or willingness to participate in HIV related events, and their subjective norms, attitudes, motivations and beliefs about engaging in HIV-related events.

Intentions. Three outcome variables were used to measure volunteers' willingness to participate in future activities and events, to mobilize others in the cause of HIV vaccine research, and to contact organizers about participating in the vaccine trials. The first outcome option was measured on a 3-point scale. Participants were asked to rate the probability that they would return to HIV vaccine community engagement activities as "very likely," "somewhat likely," or "not likely."

Of the initial 175 surveyed, most responses were captured (98%) with nearly 80% (n=137) who indicated that they were "very likely" to attend a similar event or activity in the future. To account for missing cases (n = 3) and "don't know" responses (n =2), along with other non-response items essential to theoretical assessment, the resulting dataset was reduced to N=126 for structural equation modeling of this outcome. Notably, only one person indicated "not likely" and this response was combined with "somewhat likely" to manage a potentially spurious outlier effect.

The second outcome represents the probability of involving others in the cause (i.e., "community mobilization"). Measured on the same 3-point scale, participants indicated that they would be "very likely" (35.4%, n=62), "somewhat likely" (34.9%, n=61)," or "not likely" (14.9%, n = 26). Although the response rate was 100% for this outcome, some selected "don't know" (14.9%, n = 26) and missing responses to essential items for theoretical analysis were identified. The dataset was subsequently reduced to N = 110 for modeling this outcome of interest.

Finally, the potential for study volunteerism (i.e., contact the study site about clinical trial participation) was investigated as the third outcome of interest. Results indicated that 25.4% (n=44) would be "very likely," 27.2% (n=47) "somewhat likely," and 31.8% "not likely" to contact the study site about clinical trial participation.



Two cases were missing responses, and 15.4% (n = 27) indicated that they were unsure if they would contact the site about participation in a clinical trial. This again resulted in data reduction yielding N = 106 for final modeling analysis with complete responses to all items for those cases. (See Table 2, next page)

**Attitudes.** The influence of attitudes on the three outcome intentions was explored. Communication, particularly persuasive forms (Petty and Cacioppo 1983; Petty, Strathman, Cacioppo et al. 1994), plays a powerful role in attitude formation and alteration. It was therefore hypothesized that favorable responses to attitudinal items would increase intentions. Respondents indicated positive attitudes toward HIV research with statement agreement on 5 items within a scale including “I like to do good for others,” “I like getting involved with HIV vaccine research,” “HIV is a serious concern in my immediate community,” “HIV testing is a benefit of an HIV vaccine study,” and “I would benefit from the medical care associated with an HIV vaccine study.”

**Subjective Norms.** Perceived “social pressure” (Ajzen & Fishbein, 1980, p. 246) to perform a behavior or forego it, is reflected in the “subjective norm” construct. In this study, participants were also asked if they thought people, including family and friends, might respond negatively to ones’ participation. We hypothesized that negative social opinion of research involvement would reduce participatory intention. Influential normative concerns were directly measured through items including “people negatively judge those who participate in HIV vaccine research,” “I think some of my family members would be upset if I participated in an HIV vaccine research study,” and “I think my friends would negatively judge me if I joined in an HIV vaccine study.”

**Table 2: Potential Community Engagement Outcomes**

Characteristic	Frequency	Percent
Likelihood of Attending Future Activity/Event		
Very Likely	98	77.8
Somewhat and Not Likely (1 case)	28	22.2
N=	126	
Likelihood of Involving Others in the Cause		
Very Likely	45	40.9
Somewhat Likely	44	40.0
Not Likely	21	19.1
N=	110	
Likelihood of Contacting Site About Study Participation		
Very Likely	29	27.4
Somewhat Likely	30	28.3
Not Likely	47	44.3
N=	106	

**Behavioral Beliefs.** Several questions measured volunteers' salient beliefs about their role in HIV vaccine research. We hypothesized that beliefs about HIV vaccines and medical research favoring participatory behavior would increase intentions to participate in future activities, generate greater community mobilization, and study volunteerism. Beliefs pertaining to self-interest constituted modal scale 1 and those concerning the benefit to others arising from involvement were included in scale 2. Scale 1 items included "my community would really benefit from an HIV vaccine," "My actions can inspire others to act," and "I benefit from

health science research.” Scale 2 items included “My participation in an HIV vaccine study would be very good,” “My involvement in this cause will result in more ethical research,” “My involvement in this cause will improve my community’s trust in medical research,” and “I would participate in an HIV vaccine research study because it would help to prevent AIDS.”

**Outcome Evaluations.** Consideration of outcomes related to study participation was uniquely assessed to understand negative salient beliefs related to volunteerism. Previous studies indicated logistical, physical, and psychological as barriers with respect to involvement in HIV vaccine research among ethnic minorities (Newman et al. 2006; Priddy et al. 2006). We hypothesized that reduced personal concerns, and decreased concern of negative health and social consequences specifically related to HIV vaccine study participation, would more likely result in greater participatory intention. Items therefore included in the scale were “My participation in an HIV vaccine research study would be more trouble than it’s worth,” “Even if I wanted to participate in an HIV vaccine research study, I just don’t have the time,” “Participating in an HIV vaccine research study seems risky,” “I would participate in an HIV vaccine research study, but I don’t like needles.”

**Normative Beliefs.** Two aspects of normative beliefs were considered. Those connected to beliefs about the effects of research on a community and beliefs about the effects of ones’ own participation in research for the greater good. We hypothesized that these motives would influence subjective norms and participatory intentions. Normative beliefs consisted of six questions based on these two dimensions. They include reference to specific individuals within the social realm who may affect individual decision-making. Items on the 5-point scale therefore included “I think my doctor would approve of my involvement in HIV vaccine research,” “I think my work colleagues would approve of my involvement in this cause,” “My immediate family is supportive of my involvement in HIV vaccine research,” “Most people important to me think my involvement in HIV vaccine research is good,” “Most people important to me usually support my interests,” and “If my pastor supported HIV vaccine research, I would be inclined to get involved.”

**Motivation to Comply.** Lastly, individuals might declare a willingness to participate or reluctance to get involved due to general compliance with referent opinion. The theorized influence of family,

friends, and others on behavioral performance will exert social pressure to act or engage in avoidance. We hypothesized that greater self agency would lead to greater participatory intention. The items measuring this domain therefore include “I tend to be concerned about what people think of me, even if I don’t know them,” “I generally do what my family expects of me,” “I would not want to do something my friends disapproved of,” “If my superiors told me to do something I disagreed with, I would obey their wishes,” “Sometimes I do what my friends say to do, even though I know they are wrong.”

### **Analytic Strategy**

A covariance structure model was used to test the causal relationships between factors implied by the theory of reasoned action. We tested the effects of normative beliefs, outcome evaluations and motivation to comply on attitudes and subjective norms. At the same time, attitudes and subjective norms were used to explain respondents’ intentions with respect to future involvement in HIV research, whether through attending future events, mobilizing others or participating in vaccine trials. A structural equation model is well-suited for this type of analysis because (1) it examines both direct and indirect paths to willingness to participate in an efficient (simultaneous) manner, (2) random measurement error can be taken into account, reducing its effect on parameter estimates, (3) non-random error can be explicitly accounted for, and (4) we can explicitly investigate the fit of these measures to TRA constructs thereby promoting their more general definition.

The basic structural equation model follows Jöreskog and Sörbom (1993):

$$\eta = \beta\eta + \gamma\xi + \zeta$$

where  $\eta$  and  $\xi$  are latent constructs based on vectors of observed variables ( $y$  and  $x$ );  $\beta$  is a matrix of coefficients expressing the mutual effects of endogenous variables;  $\gamma$  represents the effects of latent exogenous on endogenous variables, and  $\zeta$  is a vector of random error. One underlying assumption of the model is that the errors are uncorrelated with latent constructs and uncorrelated among themselves.

Assessing the measurement of constructs is possible within this framework. It is done by incorporating factor analysis into the model. Although there is considerable prior knowledge about the

dimensions of the theory of reasoned action, its application to this health issue may be beneficial to the field. We therefore include a provisional confirmatory factor analysis of measurement fit to establish the components of the factors by estimating the strength of the relationships between indicators and constructs. SPSS' Amos 7 was the software package used to generate maximum likelihood estimates of the parameters (Arbuckle 2006).

### **Factor Analysis**

A preliminary confirmatory factor analysis using maximum likelihood estimation was undertaken to test the adequacy of the model measuring the underlying factors (Table 3). Each latent construct (intentions, attitudes, subjective norms, behavioral beliefs, outcome evaluations and normative beliefs) was identified by its corresponding measured variables. One indicator per construct was fixed to define the scales of the indicators. Results of the factor analysis generally support the validity of the constructs. Three exceptionally low factor loadings were: an outcome evaluation measure of the wish to participate but not liking needles; the attitude measure of HIV being a serious community concern, and, the subjective norm where respondents thought people judge HIV vaccine participants negatively. The GLS  $\chi^2$  was 454.24,  $df=407$ ,  $p>.05$  indicating the model fit reasonably well (the residual mean square error was .087).<sup>2</sup>

---

<sup>2</sup> A generalized least squares  $\chi^2$  was run because Amos does not provide a maximum likelihood chi. Note also that while this model fits the data reasonably well, other measures of fit such as goodness of fit index were disappointingly low and associated with problems with the fit matrix. Increasing the sample size is one possible solution.

**Table 3: Descriptive Item Statistics. Measuring HIV Vaccine Community Engagement**

Variable	n (%)	Mean	SD	Min	Max	Factor Loadings <sup>1</sup>
<b>Dependent Measures<sup>2</sup></b>						
1. Future Attendance: Likelihood of returning to activity or event	172 (98)	1.24	0.53	1.00	4.00	.725
2. Community Mobilization: Likelihood of involving others in the cause	175 (100)	2.09	1.05	1.00	4.00	.817
3. Study Volunteerism: Likelihood of contacting the site about study participation	173 (99)	2.38	1.03	1.00	4.00	.810
<b>Independent Measures<sup>3</sup></b>						
<u>Behavioral Beliefs scale 1 (<math>\alpha = 0.74</math>)</u>						
BB1. My community would really benefit from an HIV vaccine.	168 (96)	1.44	0.74	1.00	5.00	.779
BB2. My actions can inspire other to act.	166 (95)	1.77	0.79	1.00	5.00	.668
BB4. I benefit from health science research	167 (95)	1.66	0.77	1.00	5.00	.735
<u>Behavioral Beliefs scale 2 (<math>\alpha = 0.88</math>)</u>						
BB3. My participation in an HIV vaccine study would be very good	164 (94)	2.07	0.91	1.00	5.00	.782
BB5. My involvement in this cause will result in more ethical research.	167 (95)	2.01	0.92	1.00	5.00	.845
BB6. My involvement in this cause will improve my community's trust in medical research.	167 (95)	2.03	0.93	1.00	5.00	.862
BB7. I would participate in an HIV vaccine research study because it would help to prevent AIDS.	169 (97)	2.20	1.06	1.00	5.00	.725
<u>Outcome Evaluations (<math>\alpha = 0.76</math>)</u>						
OE1. My participation an HIV vaccine research study would be more trouble than it's worth.	170 (97)	3.31	1.21	1.00	5.00	.856
OE2. Even if I wanted to participate in an HIV vaccine research study, I just don't have the time.	165 (94)	3.05	1.18	1.00	5.00	.823

<b>Table 3 (con't):</b>						
Variable	n (%)	Mean	SD	Min	Max	Factor Loadings <sup>1</sup>
OE3. Participating in an HIV vaccine research study seems risky.	165 (94)	2.74	1.22	1.00	5.00	.653
OE4. I would participate in an HIV vaccine research study, but I don't like needles.	163 (93)	3.12	1.26	1.00	5.00	.386
<u>Normative Beliefs</u> ( $\alpha = 0.82$ )						
NB1. I think my doctor would approve of my involvement in HIV vaccine research.	165 (94)	2.38	0.93	1.00	5.00	.635
NB2. I think my work colleagues would approve of my involvement in this cause.	161 (92)	2.39	0.96	1.00	5.00	.634
NB3. My immediate family is supportive of my involvement in HIV vaccine research.	163 (93)	2.61	1.01	1.00	5.00	.738
NB4. Most people important to me think my involvement in HIV vaccine research is good.	161 (92)	2.45	0.92	1.00	5.00	.854
NB5. Most people important to me usually support my interests.	166 (95)	1.90	0.73	1.00	5.00	.612
NB6. If my pastor supported HIV vaccine research, I would be inclined to get involved.	163 (93)	2.50	1.08	1.00	5.00	.595
<u>Motivation to Comply</u> ( $\alpha=0.85$ )						
MC1. I tend to be concerned about what people think of me, even if I don't know them.	166 (95)	3.26	1.33	1.00	5.00	.605
MC2. I generally do what my family expects of me.	167 (95)	2.92	1.21	1.00	5.00	.558
MC3. I would not want to do something my friends disapproved of.	161 (92)	3.41	1.15	1.00	5.00	.691
MC4. If my superiors told me to do something I disagreed with, I would obey their wishes.	167 (95)	3.40	1.19	1.00	5.00	.621
MC5. Sometimes I do what my friends say to do, even though I know they are wrong.	164 (94)	3.74	1.19	1.00	5.00	.735

**Table 3 (con't):**

Variable	n (%)	Mean	SD	Min	Max	Factor Loadings <sup>1</sup>
<u>Attitudes</u> ( $\alpha=0.76$ )						
A1. I like to do good for others.	169 (97)	1.36	0.61	1.00	4.00	.507
A3. I like getting involved with HIV vaccine research.	167 (95)	2.15	0.89	1.00		.792
A4. HIV is a serious concern in my immediate community.	170 (97)	1.52	0.80	1.00	4.00	.427
A5. HIV testing is a benefit of an HIV vaccine study.	171 (98)	1.78	0.83	1.00	4.00	.633
A6. I would benefit from the medical care associated with an HIV vaccine study.	171 (98)	2.04	1.03	1.00	5.00	.742
<u>Subjective Norms</u> ( $\alpha=0.60$ )						
SN1. People negatively judge those who participate in HIV vaccine research.	165 (94)	2.58	1.11	1.00	5.00	.482
SN2. I think some of my family members would be upset if I participated in an HIV vaccine research study.	164 (94)	2.80	1.27	1.00	5.00	.548
SN3. I think my friends would negatively judge me if I joined an HIV vaccine research study.	164 (94)	3.37	1.12	1.00	5.00	.895

The next set of findings refers to the causal model implied by the theory of reasoned action. Table 4 provides estimates of standardized regression coefficients measuring relationships among the theoretical constructs. Standardized coefficients can be interpreted as standard deviation unit changes in the outcome of interest for a unit change in its precursor. They also permit comparisons of the degree to which one variable influences another.



**Table 4: SEM Maximum Likelihood Standardized Regression Coefficients**

Independent Variables	Dependent Variables					
	Future Attendance	Community Mobilization	Study Volunteerism	Attitudes	Subjective Norms	Attitudes
Attitudes	.311 *	.698 ***	.687 ***			
Subjective Norms	-.036	.092	-.087			
Independent Variables						
Behavioral beliefs-other	.346 **	--	--	.347 **	--	.288 *
Behavioral beliefs-self	.667 ***	--	--	.676 ***	--	.723 ***
Outcome evaluations	.020	--	--	.005	--	< .001
Normative beliefs	--	-.186 †	-.185 †	--	-.185 †	--
Motivation to Comply	--	.814 ***	.811 ***	--	.811 ***	--
RMSEA	.077	.077	.079			
CFI	.829	.831	.831			
Chi-square	729.91	731.6	753.23			
N	126	110	106			

Note: † < .10 \* < .05 \*\* < .01 \*\*\* < .001: two-tailed tests.

The pattern of significant and nonsignificant coefficients is similar across the three different measures of intention to engage in action around HIV research. Attitudes but not subjective norms had a positive affect on the likelihood of community mobilization (.698), study volunteerism (.687), and to a lesser extent, future attendance at HIV-related events (.311). Respondents' favorable attitudes about the importance of HIV vaccine trials were in turn shaped by their positive beliefs about their role in HIV research. The strength of the relationship was greater for beliefs linked to how respondents' viewed their own actions (e.g., .667 for the model with future attendance as the intention variable) in contrast to beliefs emphasizing how respondents' viewed the effects of their actions (e.g., .346). Negative beliefs (defined as outcome evaluations) were not related to either attitudes or subjective norms. Normative beliefs and motivations to comply, however, were related to both attitudes and subjective norms.

The effect of respondents' compliance to others wishes in general (e.g., "I would not want to do something my friends disapproved of") was linked to their subjective norms regarding participation in HIV research (e.g., "...my family members would be upset if I participated..."). The low degree of compliance with others' expectations was robust across models (i.e., .814, .811, .818, respectively). Not surprisingly, normative beliefs about doctors' and colleagues' encouragement to participate were less likely to be associated with negative judgments of others (i.e., -.186, -.185, -.188, respectively). Although these construct coefficients contrast, the pathways suggest that independent cognitive appraisal of the HIV vaccine effort has an effect on the formation of subjective norms. However, these are less likely to be influenced by normative beliefs and they are unlikely to shape intentions to participate in HIV research when other beliefs and attitudes are taken into account.

## Discussion

This current study is significant because it utilizes an established behavioral theory (TRA) in predictive modeling of HIV vaccine community engagement. This study specifically focused on intentions of African Americans within the continuum of the decision-making processes about the role of the individual in the endeavor. In this study, special emphasis has been placed on African

American women who are greatly affected by HIV/AIDS, and whose participation is needed in ongoing trials (Djomand et al. 2005; Moutsiakis et al. 2007).

This study also adds to the literature with information gathered among those attending HIV vaccine-related events and activities. As favorable attitudes, perceptions, and beliefs are theorized to be critical predisposing factors influencing future behavioral outcomes (Ajzen 1991; Fishbein et al. 1975; Maiman and Becker 1974), these attendees have the potential, at a minimum, to serve as allies in expanding needed social support for HIV vaccine research (Allen et al. 2005). Our results from this study offer evidence to reinforce this notion. Specifically, this study extends our earlier findings on factors influencing community engagement formation (Frew et al. 2008) with the addition of theory-driven assessment of outcomes anticipated with targeted community approaches.

The goal of the current study was to examine the theory of reasoned action covariates impacting respondents' willingness to participate in events surrounding HIV vaccine research. Overall, the hypotheses were mostly supported, with the exception of subjective norms and outcome evaluations, and the findings suggest the importance of theoretical guidance in predicting community engagement outcomes.

Important relationships materialized among constructs especially those related to self-empowerment beliefs on attitude, and counter-resistance (motivation to comply) to negative normative pressure (subjective norms). In particular, belief in one's participation resulting in positive, tangible outcomes for the community, research, and HIV/AIDS mediated through the attitude construct had a profound impact on the potential to mobilize the community for action (.698) and participate in HIV vaccine trials (.687). Attitude formation clearly is evidenced by the lower coefficient (.311) on future attendance, indicating the critical role of effective communication and community engagement programming in fostering positive attitudes towards the cause. Moreover, the set of self-empowering perceptions (.667) on attitude outweighed more generic beliefs related to involvement (.346) such as "I benefit from health science research."

Our findings support the need to clearly articulate as many concrete outcomes that can be expected from involvement in HIV vaccine research. A key assumption of the value-expectancy theories

(i.e., TRA) is that some end will be achieved through the performance of a behavior. Yet, in the context of HIV vaccine development, it is unclear exactly what end will be met – will the vaccine partially or fully prevent infection? Or, among those living with HIV, will the vaccine reduce viral loads to prevent AIDS-related illness? Although it is likely that one of these outcomes will be achieved, participatory behaviors do not yet have clear consequences. In other words, people do not know what to expect of their involvement. Thus, the findings point to a need for effective communication citing specific examples of the role of African Americans in the realization of ethical oversight (i.e., participation on CABs, IRBs, etc.), improving community trust (e.g., increases in study participation rates), and preventing AIDS (e.g., risk reduction through greater condom use among study enrollees). Communication emphasis should be on individual self-empowerment to affect collective change.

In contrast to previous studies examining willingness-to-participate among predominantly minority populations (Corbie-Smith et al. 1999; Newman et al. 2006; Priddy et al. 2006) and among women (Mills, Nixon, Singh et al. 2006), logistical concerns relating to the formation of community engagement outcomes did not materialize. With respect to inconvenience, time constraints, risk perception, and use of needles in studies, these items as related to the “outcome evaluation” construct, did not impact attitudes. The findings related to outcome evaluation may be indicative of other issues. A lack of thorough consideration may have been afforded to these issues of practical concern given the high first time attendance rate of the majority of respondents (85.4%,  $n=146$ ). Furthermore, the HIV vaccine messages promoted in these situations may have strengthened individuals’ resolve to manage any concerns or logistical issues likely to be encountered in the future.

Obviously, the relationship of subjective norms to intention was not significant in this study population. This finding is consistent with a previous HIV vaccine study that tested TRA effects (Gagnon et al. 2000). The result could be due to a manifestation of measurement issues associated the items designed to measure subjective norms ( $\alpha = .64$ ,  $n = 3$  items) in combination with a small sample size. With consideration given to these shortcomings, the nonsignificant pathways between subjective norms to intention could represent a theoretical deviation. That is, negative normative influences may not causally impact community engagement outcomes. In contrast with

other studies citing social harms (Francis, Heyward, Popovic et al. 2003) and negative social judgments (Koblin et al. 1998) as barriers to participation, our nonsignificant finding suggests the possibility that our participants rejected the negative views of others related to behavioral intention.

Alternatively, the findings suggest the possibility that those who become engaged in HIV vaccine research exhibit a degree of independent thinking to resist counterattitudinal messages. Surprisingly, the strength of the relationship of the (lack of) motivation to comply with subjective norms resulted in powerful pathway effects (.814-future attendance, .811-community mobilization, .818-study volunteerism). Moreover, approval of doctors, family, pastors, work colleagues, and others in HIV vaccine research weakly, but significantly, offset negative opinion on involvement. Thus, it is likely that a degree of social support is valuable in promoting involvement, but not required for the formation of participant initiative.

It merits consideration that the emphasis on issue-relevant thinking (e.g., ending HIV/AIDS) in community engagement activity may result in greater psychological resiliency to withstand counterpersuasive normative thinking. Within this culture-centered context, albeit a supportive situation, it is likely that the conditions favorably predispose individuals to resist negative normative pressure encountered in “real world” conversations with others.

Research pertaining to HIV/AIDS volunteerism, clinical trials participation, and other forms of elective health behavior (i.e., bone marrow donation) suggest the decisional pathways are complex and have a strong affective component (Bagozzi, Lee, and Van Loo 2001; Curbow, Fogarty, McDonnell et al. 2006; Davis and Randhawa 2006; Reeder et al. 2001). In short, the emotional commitment accompanying a health behavior may sufficiently explain the decision to become a health research volunteer or support a cause (Eagly and Chaiken 1993). Others have argued that TRA is compromised in its ability to predict intention and behavior in the face of alternative options (Sheppard, Hartwick, and Warshaw 1988). Thus, the TRA model may have limited explanatory power to understand the complexity of the relationships in the broader socioenvironmental milieu of African American communities. Additionally, our findings would imply that a decision to forego involvement may be highly “rational” based on reasons pertaining to historical violations of trust.

### **Limitations**

Findings are limited by several factors, including the inherent limitations of a cross-sectional study design, the venues where the participants were recruited, and the use of a small purposive sample consisting of primarily African American females. The views of this group may not be representative of others in the diverse African American population.

With the exclusion of cases missing data and uncertainty signals given to outcome responses (e.g., “don’t know”), the resultant datasets may have been limited in their ability to detect pathway effects within this complex model. Additionally, the study design does not allow for causal conclusions to be drawn. The study was solely concerned with relational modeling of various theoretical constructs thereby facilitating covariate evaluation. Although the data were collected at several activities, the study cannot be characterized as longitudinal in design.

An important limitation is that intent may not be strongly associated with future participatory behavior. It should also be noted that participation bias in a study of HIV vaccines and health behaviors is particularly likely (i.e., it is conceivable that people having strong beliefs and attitudes on HIV vaccine research may be the least inclined to complete the study questionnaire). Thus, even though the study achieved a response rate of approximately 88%, participation bias may have affected the results. However, we do not anticipate that these limitations resulted in large or systematic errors in data collection.

### **Summary**

The results from our study indicate the importance of developing favorable attitudes toward HIV vaccine research among African Americans living in Atlanta, Georgia. This construct yielded strong intentions related to community mobilization and study volunteerism intent.

Surprisingly, negative normative pressure had no effect on intentions. Normative concerns related to medical mistreatment are deeply embedded within the culture and therefore may be more resistant to change. Thus, a collective norm of mistrust and suspicion within these communities may be precluding the simultaneous realization of normative shifts within the TRA model. Despite this

finding, there is powerful evidence of self-deterministic thinking (motivation to comply) in relation to these influences. The present research points to the valuable benefit of theory-driven inquiry, yet also highlights its limitations in understanding a complex array of relationships between the individual and the sociocultural context.

**Sources of Support:**

This research was supported by the Emory Center for AIDS Research (P30 AI050409) with additional support for programmatic activities from NIAID Local Partnerships Project (LPP) and Academy for Educational Development (AED).

**Acknowledgements:**

The authors wish to thank our partner organizations and their staff for support of the programmatic activities associated with this work: Action Cycling Atlanta, AIDS Alliance for Faith and Health, AID Atlanta, AID Gwinnett, AIDS Research Consortium of Atlanta, AIDS Survival Project, Atlanta Harm Reduction Center, the Centers for Disease Control and Prevention, Concerned Black Clergy, Emory Center for AIDS Research, Georgia Perimeter College, Hopewell Baptist Church, Humanitarian Endeavors, the Institute for Health Protection, the Interdenominational Theological Center, the Legacy Project, Morehouse College, National AIDS Education and Services for Minorities, and SisterLove, Inc. Special thanks to Bethany Wexler for editorial assistance.

## References

- Ajzen, I. 1991. "The theory of planned behavior." *Organizational Behavior and Human Decision Processes* 50:179-211.
- Ajzen, I. and M. Fishbein. 1980. *Understanding attitudes and predicting social behavior*. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Ajzen, I. and T.J. Madden. 1986. "Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control." *Journal of Experimental Social Psychology* 22:453-474.
- Allen, M, TS Liang, TL Salvia, B Tjugum, RJ Gulakowski, and M Murguia. 2005. "Assessing the attitudes, knowledge, and awareness of HIV vaccine research among adults in the United States." *Journal of Acquired Immune Deficiency Syndrome* 40:617-624.
- Aral, SO and JN Wasserheit. 1995. "Interactions among HIV, other sexually transmitted diseases, socioeconomic status, and poverty in women." Pp. 13-42 in *Women at Risk: Issues in the Primary Prevention of AIDS*, edited by A. O'Leary and L. Jemmott. New York, NY: Plenum Press.
- Arbuckle, J.L. 2006. "*Amos 7.0 User's Guide*." Chicago: SPSS.
- Bagozzi, R.P., K. Lee, and M.F. Van Loo. 2001. "Decisions to donate bone marrow: The role of attitudes and subjective norms across cultures." *Psychology & Health* 16:29-56.
- BeLue, R., K.D. Taylor-Richardson, J. Lin, A.T. Rivera, and D. Grandison. 2006. "African Americans and participation in clinical trials: Differences in beliefs and attitudes by gender." *Contemporary Clinical Trials* 27:498-505.
- Boulware, L.E., L.A. Cooper, L.E. Ratner, Thomas A. LaVeist, and N.R. Powe. 2003. "Race and trust in the health care system." *Public Health Reports* 118:358-365.



- Boulware, LE, LE Ratner, LA Cooper, JA Sosa, Thomas A. LaVeist, and NR Powe. 2002. «Understanding disparities in donor behavior: Race and gender differences in willingness to donate blood and cadaveric organs.» *Med Care* 40:85-95.
- Brown-Peterside, P, M.A. Chiasson, L. Ren, and B.A. Koblin. 2000. “Involving women in HIV vaccine efficacy trials: lessons learned from a vaccine preparedness study in New York City.” *Journal of Urban Health* 77:425-37.
- Brown-Peterside, P, E Rivera, D Lucy, I Slaughter, L Ren, MA Chiasson, and BA Koblin 2001. “Retaining hard-to-reach women in HIV prevention and vaccine trials: Project ACHIEVE.” *American Journal of Public Health* 91:1377-9.
- Buchbinder, SP, B Metch, SE Holte, S Scheer, A Coletti, and E Vittinghoff. 2004. “Determinants of Enrollment in a Preventive HIV Vaccine Trial: Hypothetical Versus Actual Willingness and Barriers to Participation.” *J Acquir Immune Def Syndr* 36:604-612.
- CDC. 2006. “Racial/ethnic disparities in diagnoses of HIV/AIDS--33 states.” *MMWR Morbid Mortal Wkly Rep.* 55:121-125.
- . 2007. “HIV/AIDS Surveillance Report. Rev ed. Atlanta: US Department of Health and Human Services.” 17:1-54.
- Choi, KH, KJ Roberts, C Gomez, and O Grinstead. 1999. “Facilitators and barriers to use of the female condom: Qualitative interviews with women of diverse ethnicity.” *Women & Health* 30:53-70.
- Chong, Dennis and Reuel Rogers. 2005. “Racial Solidarity and Political Participation.” *Political Behavior* 27:347-374.
- Colfax, G, SP Buchbinder, G Vamshidar, C Celum, D McKirnan, J Neidig, BA Koblin, M Gurwith, and B Barholow. 2005. “Motivations for participating in an HIV vaccine efficacy trial.” *J Acquir Immune Def Syndr* 39:359-364.

- Corbie-Smith, G., S.B. Thomas, and D.M. St. George. 2002. "Distrust, race, and research." *Archives of Internal Medicine* 162:2458-2463.
- Corbie-Smith, G., S.B. Thomas, M.V. Williams, and S. Moody-Ayers. 1999. "Attitudes and beliefs of African Americans toward participation in medical research." *Journal of General Internal Medicine* 14:537-546.
- Crawley, LM. 2001. "African American participation in clinical trials: Situating trust and trustworthiness." *Journal of the National Medical Association* 93(14 Suppl):14S-17S.
- Crosby, Richard A., David R. Holtgrave, Lawrence Bryant, and Paula M. Frew. 2004a. "Correlates of negative intent to receive an AIDS vaccine: An exploratory study." *Int J STDs & AIDS* 14:552-557.
- . 2004b. "Factors associated with the acceptance of an AIDS vaccine: an exploratory study." *Preventive Medicine* 39:804-808.
- Curbow, B., L.A. Fogarty, K.A. McDonnell, J. Chill, and L.B. Scott. 2006. "The role of physician characteristics in clinical trial acceptance: Testing pathways of influence." *J Health Communication* 11:199-218.
- Davis, C. and G. Randhawa. 2006. "The influence of religion on organ donation and transplantation among the Black Caribbean and Black African population--a pilot study in the United Kingdom." *Ethn Dis* 16:281-5.
- Dickert, Neal and Jeremy Sugarman. 2005. "Ethical goals of community consultation in research." *American Journal of Public Health* 95:1123-1127.
- Djomand, G, J Katzman, D di Tommaso, MG Hudgens, GW Counts, BA Koblin, and PS. Sullivan. 2005. "Enrollment of racial/ethnic minorities in NIAID-funded networks of HIV vaccine trials in the United States, 1988 to 2002." *Public Health Reports* 120:543-8.

- Eagly, A.H. and S. Chaiken. 1993. *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- El-Bassel, N., S.P. Krishnan, R.F. Schilling, S. Witte, and L. Gilbert. 1998. "Acceptability of the female condom among STD clinic patients." *AIDS Education and Prevention* 10:465-480.
- Esparza, Jose, Marie-Louise Chang, Roy Widdus, Yvette Madrid, Neff Walker, and Peter D. Ghys. 2003. "Estimation of "needs" and "probable uptake" for HIV/AIDS preventive vaccines based on possible policies and likely acceptance (a WHO/UNAIDS/IAVI study)." *Vaccine* 21:2032-2041.
- Fishbein, M. and I. Ajzen. 1975. *Belief, attitude, intention, and behavior*. Menlo Park, CA: Addison-Wesley.
- Francis, D.P., W.L. Heyward, V. Popovic, P. Orozco-Cronin, K. Orelind, C. Gee, A. Hirsch, T. Ippolito, A. Luck, M. Longhi, V. Gulati, N. Winslow, M. Gurwith, F. Sinangil, and P.W. Berman. 2003. "Candidate HIV/AIDS vaccines: Lessons learned from the world's first phase III efficacy trials." *AIDS* 17:147-156.
- Frew, P.M. 2005. "'Real People, Real Progress': Improving HIV vaccine awareness & knowledge through integrated community education." *Health Education & Behavior* 32:8-9.
- Frew, P.M., C. del Rio, S. Clifton, M. Archibald, J. Hormes, and M. J. Mulligan. 2008. "Factors influencing HIV vaccine community engagement in the urban South." *Journal of Community Health*.
- Gagnon, M.P. and G. Godin. 2000. "Young adults and HIV vaccine: Determinants of intention of getting immunized." *Canadian Journal of Public Health* 91:432-434.
- Gamble, VN. 1997. "Under the shadow of Tuskegee: African Americans and health care." *Am J Public Health* 87:1773-78.

- Halpern, SD, DS Metzger, JA Berlin, and PA Ubel. 2001. "Who will enroll? Predicting participation in a phase II AIDS vaccine trial." *Journal of Acquired Immune Deficiency Syndrome* 27:281-288.
- Hays, RB and SM Kegeles. 1999. "Factors related to the willingness of young gay men to participate in preventive HIV vaccine trials." *J Acquir Immune Def Syndr* 20:164-171.
- IAVI. 2007, "Ongoing Trials of preventive AIDS vaccine candidates", Retrieved November 16, 2007, (<http://www.iavireport.org/specials/OngoingTrialsofPreventiveHIVVaccines.pdf>).
- Janssen, R.S., D.R. Holtgrave, and R.O. Valdiserri. 2001. "The serostatus approach to fighting the HIV epidemic: Prevention strategies for infected individuals." *American Journal of Public Health* 91:1019-24.
- Jemmott, LS, V Catan, and A Nyamathi. 1995. "African American women and HIV-risk-reduction issues." Pp. 131-158 in *Women at Risk: Issues in the Primary Prevention of AIDS*, edited by A. O'Leary and L. Jemmott. New York, NY: Plenum Press.
- Kaiser Family Foundation. 2007. "HIV/AIDS Policy Fact Sheet: Black Americans and HIV/AIDS." Washington, D.C.
- Knack, S. 2003. "Groups, growth and trust: Cross-country evidence on the Olson and Putnam hypotheses." *Public Choice* 117:341-355.
- Koblin, B.A., P. Heagerty, A. Sheon, S. Buchbinder, C. Celum, J.M. Douglas, M. Gross, M. Marmor, K. Mayer, D. Metzger, and G. Seage. 1998. "Readiness of high-risk populations in the HIV Network for Prevention Trials to participate in HIV vaccine efficacy trials in the United States." *AIDS* 12:785-93.
- Koblin, B.A., S. Holte, B. Lenderking, and P. Heagerty. 2000. "Readiness for HIV vaccine trials: changes in willingness and knowledge among high-risk populations in the HIV network for prevention trials." *J Acquir Immune Defic Syndr.* 24:451-457.

- Koniak-Griffin, D., & Stein, J.A. 2006. „Predictors of sexual risk behaviors among adolescent mothers in a human immunodeficiency virus prevention program.“ *Journal of Adolescent Health* 38:297.e1-297.e11.
- Koniak-Griffin, D., J. Lesser, A. Nyamathi, G. Uman, J.A. Stein, and W.G. Cumberland. 2003. “Project CHARM: An HIV prevention program for adolescent mothers.” *Family Community Health* 26:94-107.
- Macaluso, M., M. Demand, L. Artz, M. Fleenor, L. Robey, J. Kelaghan, R. Cabral, and E.W. Hook. 2000. “Female condom use among women at high risk of sexually transmitted disease.” *Family Planning Perspectives* 32:138-144.
- MacQueen, K.M., E McLellan, D Metzger, SM Kegeles, R. P. Strauss, R. Scotti, L. Blanchard, and R.T. Trotter. 2001. “What is community? An evidence-based definition for participatory public health.” *Am J Public Health* 91:1929-1937.
- Maiman, L. and M.H. Becker. 1974. “The health belief model: Origins and correlates in psychological theory.” *Health Education Monographs* 2:387-408.
- McAlpine, D. 2002. “Race and ethnic differences in patients’ trust of physicians.” *Abstr Acad Health Serv Res Health Policy Meet* 19:4.
- Mclaws, M.L., Irwig, L.M., Oldenburg, B., Mock, P., & Ross, M.W. 1996. “Predicting intentions to use condoms in homosexual men: An application and extension of the theory of reasoned action.” *Psychology & Health* 11:745-755.
- McPherson, M., L. Smith-Lovin, and J. Cook. 2001. “Birds of a feather: homophily in social networks.” *Annual Review of Sociology* 27:415-444.
- Miller, Robin L. and Marybeth Shinn. 2005. “Learning from communities: Overcoming difficulties in dissemination of prevention and promotion efforts.” *Am J Community Psychology* 35:169-183.

- Mills, E., S. Nixon, S. Singh, S. Dolma, A. Nayyar, and S. Kapoor. 2006. "Enrolling women into HIV preventive vaccine trials: An ethical imperative but a logistical challenge." *PLoS Med* 3:e94.
- Montano, D.E. and D. Kasprzyk. 2002. "The theory of reasoned action and the theory of planned behavior." Pp. 67-98 in *Health Behavior and Health Education: Theory, Research, and Practice*, edited by K. Glanz, B. Rimer, and F. Lewis. San Francisco: Jossey-Bass.
- Moutsiakis, Demetrius L. and Nancy P. Chin. 2007. "Why Blacks Do Not Take Part in HIV Vaccine Trials." *Journal of the National Medical Association* 99:254-257.
- Newman, Peter A., Naihua Duan, KJ Roberts, DS Seiden, ET Rudy, D Swendeman, and S Papova. 2006. "HIV vaccine trial participation among ethnic minority communities." *J Acquir Immune Def Syndr* 41:210-217.
- O'Leary, A and GM Wingood. 2000. "Interventions for sexually active heterosexual women." Pp. 179-200 in *Handbook of HIV Prevention*, edited by J. Peterson and R. DiClemente: Kluwer/Plenum Press.
- Petty, Richard E and John T Cacioppo. 1983. "Central and peripheral routes to persuasion: Application to advertising." Pp. 3-23 in *Advertising and Consumer Psychology*, edited by L. P. a. A. Woodside. Lexington, MA: Lexington Books.
- Petty, Richard E. , Alan J. Strathman, John T. Cacioppo, and Joseph R. Priester. 1994. "To think or not to think: Exploring two routes to persuasion." Pp. 113-147 in *Persuasion: Psychological insights and perspectives*, edited by S. Shavitt and T. C. Brock. Boston: Allyn and Bacon.
- Priddy, Frances H., Allen C. Cheng, Laura F. Salazar, and Paula M. Frew. 2006. "Racial and ethnic differences in knowledge and willingness to participate in HIV vaccine trials in an urban population in the Southeastern US." *Int J STDs & AIDS* 17:99-102(4).

Frew, ET AL.

95

Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival Of American Community*. New York: Simon and Schuster.

Reeder, G.D., D.M. Davison, K.I. Gipson, and M.S. Hesson-McInnis. 2001. "Identifying the motivations of African American volunteers working to prevent HIV/AIDS." *AIDS Education and Prevention* 13:343-354.

Reif, S. , K.L. Geonnotti, and K. Whetten. 2006. "HIV infection and AIDS in the Deep South." *Am J Public Health* 96:970-973.

Saha, S., J. Arbalaez, and L.A. Cooper. 2003. "Influence of physician race vs. patient-physician interactions on the experience of health care." in *Abstr Academy Health Meet*, vol. 20.

Seal, D.W. and A.A. Ehrhardt. 1999. "Heterosexual men's attitudes toward the female condom." *AIDS Education and Prevention* 11:93-106.

Sengupta, S., R. P. Strauss, R. DeVellis, S. C. Quinn, B. DeVellis, and W. B. Ware. 2000. "Factors affecting African-American participation in AIDS research." *J Acquir Immune Defic Syndrome* 24:275-284.

Sheppard, B.H., J. Hartwick, and P.R. Warshaw. 1988. "The Theory of Reasoned Action: A meta-analysis of past research with recommendations for modifications and future research." *J. Consumer Research* 15:325-343.

Simon, B., S. Sturmer, and K. Steffans. 2000. "Helping individuals or group members? The role of individual and collective identification in AIDS volunteerism." *Personality and Social Psychology Bulletin* 26:497-506.

Skocpol, Theda, Ariane Liazos, and Marshall Ganz. 2006. *What a Mighty Power We Can Be: African American Fraternal Groups and the Struggle for Racial Equality*. Princeton: Princeton University Press.

- Smith, Y.R., A.M. Johnson, L.A. Newman, A. Greene, T.R.B. Johnson, and J.L. Rogers. 2007. "Perceptions of clinical research participation among African American women." *J. Women's Health* 16:423-505.
- Sneed, C.D., Morisky, D.E. 1998. "Applying the theory of reasoned action to condom use among sex workers." *Social Behavior and Personality* 26:317-27.
- Solomon, J. 2005. "Waiting for an HIV vaccine: Companies lack incentive to make one, some say." in Detroit Free Press. Detroit, MI: Detroit Free Press, Inc.
- Southern States AIDS Directors Work Group, National Alliance of State and Territorial AIDS Directors, and CDC Division of HIV/AIDS Prevention in the National Center for HIV/STD/TB Prevention. 2003. "*Southern States Manifesto. HIV/AIDS and STDs in the South: A Call to Action.*"
- Strauss, R. P., S Sengupta, S. C. Quinn, J. Goepfinger, C. Spaulding, S.M. Kegeles, and G. Millett. 2001. "The role of community advisory boards: Involving communities in the informed consent process." *Am J Public Health* 91:1938-1943.
- Swartz, Leslie and Ashraf Kagee. 2006. "Community participation in AIDS vaccine trials: Empowerment or science?" *Social Science & Medicine* 63:1143-1146.
- Tello, J., S. J. Soong, B. Hunter, R. Meriwether, E. W. Hook, and M. J. Mulligan. 1998. "HIV vaccine acceptance among heterosexual clients of a sexually transmitted diseases clinic." *Am J Med Sci* 315:11-16.
- Tonks, A. 2007. "The quest for an AIDS vaccine." *British Medical Journal* 334:1346-1348.
- Tramont, EC and MI Johnston. 2003. "Progress in the development of an HIV vaccine." *Expert Opinion on Emerging Drugs* 8:37-45.



Frew, ET AL.

97

U.S. Census Bureau. 2005, "USA State and County QuickFacts", Retrieved July 23, 2007 (<http://quickfacts.census.gov/qfd/states/00000.html>).

Verba, Sidney and Norman Nie. 1972. *Participation in America: Political Democracy and Social Equality*. New York: Harper and Row.

Wendler, D., R. Kington, J. Madans, G.V. Wye, H. Christ-Schmidt, L.A. Pratt, O.W. Brawley, C.P. Gross, and E. Emanuel. 2006. "Are racial and ethnic minorities less willing to participate in health research?" *PLoS Med* 3:e19.

Whetten, K. and S. Reif. 2006. "Overview: HIV/AIDS in the deep south region of the United States." *AIDS Care* 18 Suppl S1-5.

Wingood, GM and RJ DiClemente. 2002. "The theory of gender and power: A social structural theory for guiding public health interventions." Pp. 313-346 in *Emerging theories in public health practice and research*, edited by R. DiClemente, R. Crosby, and M. Kegler. San Francisco, CA: Jossey-Bass Wiley.

Zimmerman, R.K., Tabbarah, M., Nowalk, M.P., Raymund, M., Jewell, H.K., Block, B., & Hall, D.G. 2005. "Predictors of pneumococcal polysaccharide vaccination among patients at three inner-city neighborhood health centers." *The American Journal of Geriatric Pharmacotherapy* 3:149-159.