Perceived Barriers and Benefits of HIV Voluntary Counseling and Testing Among University Students in Nigeria

Clara Egbealele Omogbai

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PERCEIVED BARRIERS AND BENEFITS OF HIV VOLUNTARY COUNSELING AND TESTING AMONG UNIVERSITY STUDENTS IN NIGERIA

By

Clara Egbealele Omogbai

A Dissertation in Partial Fulfillment of the Requirements for the

Degree of Doctor of Public Health in Health Education

June 2011
Each person whose signature appears below certifies that this dissertation, in his/her opinion, is adequate in the scope and quality as a dissertation for the degree of Doctor of Public Health.

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ABSTRACT OF THE DISSERTATION

Perceived Barriers and Benefits of HIV Voluntary Counseling and Testing Among University Students in Nigeria

by

Clara Egbealele Omogbai

Doctor of Public Health Candidate in Health Education
Loma Linda University, 2011
Susanne Montgomery, Chair

Background. Nigeria, the most populous country in Africa is one of the sub-Saharan nations most affected by HIV and AIDS. However, due to stigma most people at risk of infection refuse testing, thereby likely increasing the transmission of HIV. Voluntary counseling and testing (VCT) has been shown to influence behavior change and it is important to explore how to increase rates of VCT in young people who may experiment with sexual activity in this environment that holds increased risks due to nationally elevated rates of HIV.

Purpose. To examine intention to use HIV voluntary counseling and testing (VCT) services among undergraduate students in Nigerian universities.

Methods. A cross-sectional mixed method study was conducted in two phases: six key informant interviews (KIs), and four focus group discussions (FGs) were conducted during the qualitative phase to explore the context of risk taking for these young adults; a survey instrument based on the Theory of Gender and Power and the Health Belief Model
adapted with information from the qualitative phase was then developed, pilot tested and administered to 301 students attending the University of Lagos.

Analysis. Responses generated from KIs and FGs were transcribed verbatim using the software Cool Edit 2000, and coded and analyzed using Grounded Theory Methods. Once collected, entered, and cleaned, the quantitative data was factor analyzed to determine emergent factors using Promax rotation. Demographic variables and theory-based emergent factors were then used to explore their bi-variable relationships with intention to engage in VCT. The significant variables were then entered into a multivariate regression model.

Results. Both qualitative and quantitative data support that these Nigerian university students had reasonably high knowledge about HIV and VCT, reported relatively “easy” access to VCT, and among those who are sexually active, many have responded to this knowledge by using condoms consistently. Many have concerns about the actual protection they get from condom use. Possibly due to this, nearly 50% of the sexually active respondents had engaged in VCT in the past and even among those reporting not being sexually active nearly one third have actually also engaged in VCT. Stigma, confidentiality and error in reporting HIV test results were the biggest barriers to VCT reported. In the final regression only concerns about a potentially risky partner was a significant predictor for intentions to seek VCT in the future.

Conclusion. These findings support that past HIV education and the availability of easy access to VCT has had important positive effects in Nigerian university students in Lagos. In light of these successes the recently proposed World Health Organization (WHO) and Centers for Disease Control (CDC, 2001) guidance to emphasize rapid
testing and forgo culturally sensitive counseling before and after HIV testing should be reconsidered, as VCT may provide a unique “teachable moment” that seems to have worked well for these young adults.
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# ACRONYMS AND DEFINITIONS OF TERMS

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<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
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<tr>
<td>CDC</td>
<td>Center for Disease Control and Prevention</td>
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<td>FHI</td>
<td>Family Health International</td>
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<td>FG</td>
<td>Focus Group Discussion</td>
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<td>HBM</td>
<td>Health Belief Model</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>IRB</td>
<td>Institutional Review Board</td>
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<td>KI</td>
<td>Key Informants Interview</td>
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<td>NGO</td>
<td>Non Governmental Organization</td>
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<td>STD</td>
<td>Sexually transmitted diseases</td>
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<tr>
<td>TGP</td>
<td>Theory of Gender and Power</td>
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<td>UNAIDS</td>
<td>Joint United Nations Programme on HIV/AIDS</td>
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<tr>
<td>UNICEF</td>
<td>United Nation Emergency Children Fund</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>VCT</td>
<td>Voluntary Counseling and Testing</td>
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<td>WHO</td>
<td>World Health Organization</td>
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*Note that voluntary counseling and testing also means HIV testing in the study.*
A. Statement of the Problem

Voluntary counseling and testing (VCT) has shown to be highly effective for human immunodeficiency virus (HIV) control (Nieburg, Cannell & Morrison, 2005 as cited in Rennie & Behets, 2006; U.S. Department of Health and Human Services, 2000) and a major route to positive behavior change (Painter, 2001). One of the objectives of the Department of Health and Human Service (DHHS) Healthy People 2010 guidelines for the prevention of HIV infection is to increase individual's knowledge of their own sero-status (U.S. Department of Health and Human Services, 2000). Young people below the age of 25 account for over half of all HIV infections globally (Merson, 1993). Every 60 seconds, more than five young people are infected with HIV and this is estimated to equal 2.6 million infections in a year (UNAIDS, 1999). A study of HIV in African children finds that more than 80% of the world’s AIDS related deaths have occurred in Africa (Akukwe, 1999). Worldwide, 36 million people are currently living with HIV and over 20 million have already died from the disease, bringing the estimated number of individuals infected with HIV to 56 million (UNAIDS, 2000).

In 1999, the United Nations reported that more than half of all global HIV infections occur in sub-Saharan Africa. However, in most African countries less than 1% of individuals who are sexually active and live in urban areas have been tested for HIV (Kipitu, 2005). Based on household surveys about family planning services conducted in Kenya, Tanzania, and Zimbabwe by the United States Agency for International
Development (USAID) in 2000, Kipitu (2005) reported that 60% of adults in these countries would like to know their HIV status but have not been tested. Access to and cost of these services is reported as the major barrier to utilizing VCT services (Kipitu 2005, Painter, 2001). Other barriers include fear, stigma, quality of care (Yonder, Matinga & Matinga, 2004), and lack of confidentiality (Reis et al., 2005). The same factors that influence VCT seeking also influence barriers to general HIV-related behavior change in most African nations (Glick, 2005).

In Nigeria, the prevalence of the disease is over 5% and has been increasing at a steady rate. Since Nigeria is the most populous country in Africa with over 120 million people, increasing HIV infections will add significantly to Africa’s already staggering AIDS burden (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2001). Studies show that Nigerian university students engage in high-risk behaviors such as the “sugar daddy” phenomenon in which young female students develop sexual relationships with older men for financial security, better grades, increased social status, etc., making them susceptible to HIV infections. Amusa, Joel, Anyamele, Okoro Shobande and Pius (2004) reported that Nigerian youths account for 5.8% of HIV national sero-prevalence due to high-risk behaviors associated with HIV infections. Lack of condom use is a major reason for HIV transmission despite relatively high levels of knowledge among university students (Sunmola, 2001).

A study conducted by Arowojolu, Ilesanmi, Roberts, and Okunola (2002) among 2,388 undergraduate students in Nigeria showed that 87% of the students were sexually active, 17.5% had secretly had abortions, and 66% had more than one lifetime sexual partner. Arowojolu et al. (2002) reported that students had good levels of knowledge
about HIV and AIDS, identifying correctly that condom use protects against HIV infections and that sexual abstinence was the best method of prevention. However, condom use was inconsistent, with 68% of students indicating having sex without a condom especially during “safe periods” with regular partners. Safe periods in this context are times during a female menstrual cycle when conception is least likely to occur.

Heterosexual infection rates continue to increase in Nigeria due to multiple sexual partners, casual sex and the “sugar daddies/mommies” phenomenon mostly common among students at tertiary institutions in Nigeria (Ekanem, Afolabi, Nuga, & Adebajo, 2005). Voluntary counseling and testing (VCT) is seen as a major key to slowing the pace of HIV infection (Rennie & Behets, 2006) especially among Nigerian youths (Amusa et al., 2004). The little available data on VCT services and utilization suggest that university students in Nigeria continue to be vulnerable to HIV because the majority of them are sexually active and condom use is not generally encouraged.

In an attempt to encourage VCT utilization among young people in Nigeria, some private Christian universities in Nigeria are initiating mandatory HIV and pregnancy tests as a way of addressing the spread of HIV and AIDS (personal communication with Dr. Folake Kio-Olayinka a Physician in Nigeria, September, 2007). This is generating a controversial debate among individuals, communities, religious institutions, the Nigerian University Commission (NUC), and state and federal government organizations regarding VCT. The issue of voluntary testing is complicated in Nigeria due to diverse socio-cultural issues. These include the fact that some tribes encourage polygamous marriages while others frown on it (Lawoyin & Larsen, 2002); religious beliefs that God
is the giver of perfect health and not man (Akanji, Ogunniyi & Baiyewu, 2002); and a belief that HIV infected individuals committed sins and should be punished (Caldwell et al., 1993). In addition, policies regarding HIV testing are not consistently implemented, with only some employers requiring HIV testing. For example, often pregnant women registering for antenatal care are tested routinely without counseling or consent. On the other hand, some non-governmental organizations (NGOs) incorporate counseling in their routine HIV testing for both pregnant women and other individuals seeking testing (personal communication with Dr. Folake Kio-Olayinka a Physician in Nigeria, September 2007).

B. Purpose of the Study

There were two main purposes for this study: One was to explore what Nigerian university students know about VCT services such as their availability, location, policies, and procedures. The other identified perceptions about these services and how such perceptions influenced decision to get tested. A conceptual framework that variably incorporates some of the constructs of the health belief model (HBM), the theory of gender and power (TGP), as well as issues surrounding culture in Nigeria guided us to identify why some students used VCT services and others did not.

It was important to examine this topic even though it is difficult to initiate this type of a discussion in Nigeria. Research of this kind is needed to help health educators implement more effective VCT programs as part of a holistic HIV and AIDS prevention strategy for Nigeria.
C. Research Questions

This mixed methods study explored salient issues through qualitative methods which helped guide us to create a culturally relevant survey instrument that was used to explore issues surrounding VCT in Nigerian university students. Specifically, the research questions were:

- What do Nigerian university students know about HIV and AIDS?
- What are student experiences with HIV testing services and how do they describe these services?

Using a variably informed theoretical framework based on the constructs of the HBM, the TGP, and culture, we want to understand Nigerian university students’ intentions to use VCT services. More specifically, we want to explore the following questions:

- What are the perceived gender roles and cultural expectations related to intention to utilize VCT?
- What are the perceived barriers, perceived benefits and perceived self-efficacy related to intention to utilize VCT?
- Does intention regarding VCT differ among male and female students?
- How are the variables of the conceptual framework related to intentions to utilize VCT?

D. Theoretical Justification

There are few theoretically based studies on VCT in Africa. The purpose of this study was to apply a conceptual framework that includes local culture and explores the
constructs of the theory of gender and power (TGP) and the health belief model (HBM). Within each culture, HIV risk perceptions are influenced by gender (Stein & Nyamathi, 2000; Reiss, Kim, Downing, 2001). Gender inequality, lack of resources, and lack of power put women at risk for HIV infection (Sexuality Information and Education Council of the United States, 2002). Women lack the power and decision making ability to negotiate for safer sex. Society often puts inequalities on the way male and female gender roles are shaped. Because of this women frequently report low perceived control or power and self-efficacy to negotiate safer sex and seek VCT. For example, some female university students in Nigeria engage in casual sex with male professors, “sugar daddies”, and older male students for good grades, monetary purposes, and security (Ekanem et al., 2005). The theory of gender and power is a social structural theory that describes imbalance, gender, and sexual inequality (Wingood & DiClemente, 2000) and identifies factors that could play a role in the decision to seek VCT services. This theory sheds light on Nigerian culture, which perceives the female gender in terms of her significance to the male gender. The TGP has three social structures; sexual division of labor, sexual division of power and the structure of cathexis characterizing relationships that exist between women and men. According to Wingood and DiClemente (2000), all three social structures are interrelated and none is independent. The sexual division of labor and power and the structure of cathexis are imbedded in society through cultural beliefs and values that constantly segregate power and social norms for gender determined by roles (Raj, Wingood & DiClemente, 1999; Wingood & DiClemente, 2000).

Societal norms (cathexis) dictate appropriate sexual behavior for women, which is characterized by sexual and emotional attachments women have with men (Wingood &
While division of labor (women assigned to unequal and unpaid positions relative to men) and power (sexual degradation of women by the media to disempower them), inequalities between men and women increase to favor men, women experience poorer health outcomes. For example, taboos that refer to a woman as a “bad girl” for having premarital sex – an acceptable norm for men but not women – increase HIV transmission and discourage VCT utilization. Studies show that women are more likely to utilize VCT services if their male partner tested HIV positive, but men will not utilize VCT even if they perceive themselves at risk or have HIV related symptoms (Paxton et al., 2005; Obermeyer & Osborn, 2007).

The health belief model (HBM) is a value-expectancy theory and has been used for several studies aimed at better understanding behaviors such as screenings for cervical (Gilman, 1991) and breast cancer (Fulton, Buechner, Scott, DeBuono, Feldman, Smith & Kovenock, 1991). It is the most utilized model for behavior interventions, including safer sex practices, HIV prevention, and prenatal care (Steers, 1996) but has not yet been utilized in predicting intentions around HIV testing. Constructs of the HBM that will be used to examine whether or not students will utilize VCT includes perceived susceptibility, perceived threat, perceived benefits, perceived barriers, cues to action and self efficacy.

Research has shown that Nigerian university students tend to perceive lower risk of HIV infections (Sangowawa et al., 2004; Aluede et al., 2005; Arowojolu et al., 2002; Sumola, 2001; Uwakwe, 2000) despite their high risk behaviors (Ekanem et al., 2005; Arowojolu et al., 2002). Thus, perceived risk for HIV has been found to influence the decision to utilize VCT services (Simon et al., 2006). It is important to explore the
perception of susceptibility of Nigerian university students to HIV infection, and how that would impact their decision regarding perceived threat, benefits, barriers and cues to action to utilize VCT or other factors that impact perceived susceptibility.

In some reviews of HBM, perceived benefits and perceived barriers are often the primary determinants of behavior. Thus, the perceived benefits of utilizing VCT were explored along with perceived barriers such as stigma, discrimination and negative beliefs not supportive of HIV were addressed in this study.

The construct of self-efficacy is described as the level of confidence in one’s ability to take action. This was evaluated by looking at how confident Nigerian university students are to utilize or avoid using VCT services. Figure 1.1 shows the operationalized theoretical framework as informed by culture, the TGP and HBM. This study explored how these sets of variables influenced intentions to use VCT.

E. Significance to Health Education

With increasing HIV infection rates and a lack of either curative drugs or vaccinations for AIDS, prevention remains our best response to the HIV and AIDS crisis. Even though AIDS has become a manageable chronic disease in many wealthy countries, access to quality HIV treatment for an average Nigerian can be very difficult, as 48% of HIV medications in circulation are fake or substandard (Peterson & Obileye, 2002). VCT has been identified as an important cornerstone of prevention (Family Health International, 2008) both in the U.S. and in African countries. There is a popular adage which states that “prevention is better than cure”. In this context, VCT has the potential to promote positive behavior change at a teachable moment by - encouraging condom use and the negotiation for safer sex practice through counseling and education. Thus, our
Unequal pay results to economic inequalities and poor health outcomes for women.

Perceived barriers to behavior change
Stigma such as fear of others finding out HIV sero-status; negative beliefs not supportive of HIV.

Perceived self-efficacy
Ability to perform action i.e. utilize VCT services under various situations.

Desired outcome: Intention to use VCT.

Work sites & Schools
Unequal pay results to economic inequalities and poor health outcomes for women.

Media and Health Care
Produces imbalance in control and manifests as inequalities in power for women.

Family & Church
Leads to disparities and certain expectations in norms for women.

Society (cultural norms & values)

Sexual division of labor

Sexual division of power

Societal norms & affective attachments (Cathexis)

Figure 1.1 Theoretical Framework Used to Explore Nigerian University Student’s Intentions to Utilize VCT Based on the Components of the HBM and TGP.
ability to better understand a group that is at risk for HIV (university students) and their intention to use VCT services is critical to designing effective interventions targeted to this important group. The findings from this study contributes to the limited existing literature and provide information that can be used as a basis for health educators to develop and implement culturally appropriate programs that promote VCT utilization and HIV prevention among Nigeria university students.
A. Overview

Acquired immune deficiency syndrome (AIDS), is a deadly disease caused by the human immunodeficiency virus (HIV), and is transmitted through unprotected sexual intercourse (anal, vaginal and oral), mother to child transmission (during pregnancy, delivery and breastfeeding) and contact with infected blood (injection drug use and during blood transfusion).

In many parts of the world, people still do not understand how HIV is transmitted (Caldwell, Orubuloye & Caldwell, 1999). In Nigeria, some people think the disease can be spread by drinking dirty water, sharing plates and cups, sitting on toilet seats, breathing bad air, coughing, and witchcraft (Caldwell et al., 1999). It is often referred to as "slimming disease" or "body shrinker"disease. According to the Centers for Disease Control and Prevention (CDC, 2000), individuals can become infected with HIV and live 7 to 10 years symptom free. Thus, many are at risk of damage to the immune system, and without medication and adequate care HIV infection progresses to AIDS. Symptoms of AIDS include weight loss, severe diarrhea, fatigue, opportunistic infections and night sweats (Medline Plus, 2004). The disease ultimately is fatal.

As with other diseases, early detection provides better options for preventive care, and improved long term prognosis and treatment of HIV and AIDS (Family Health International, 2008). Voluntary counseling and testing (VCT) has been shown to be a highly effective method for HIV prevention, treatment, support, and care (Nieburg,
Cannell & Morrison, 2005). VCT was first made available in the U.S. in 1985 (Montgomery & Ostrow, 1998) and it is an important entry point for life-sustaining health care services for people living with HIV and AIDS and service delivery models for the prevention of sexually transmitted infections (World Health Organization, 2008). VCT is an important component of HIV and AIDS programs and cost effective in facilitating behavior change such as condom use and negotiating safer sex practice (FHI, 2008).

The purpose of this section is to review and discuss intentions about VCT services and utilization among Nigerian university students. However, due to the scarcity of information on VCT, which is relatively new in Nigeria (Atuma, Amobi, Osunkwa & Ibe, 2004), similar populations where VCT has been effective will be examined to explore their relevance in the Nigerian context.

1. **HIV and AIDS Epidemic and Patterns**

   Worldwide, there are 56 million people infected with HIV, making the disease a major threat to public health and other sectors of the society (Joint United Nations Program on HIV and AIDS, 2004; as cited in McBride, Freier, Hopkins, Babikian, Richardson, Helm, Boward, Hopp Marshak & Sector Health Care Affairs, 2005). Although there has been significant reduction in the rate of infection in some parts of the world, sub-Saharan Africa and the Caribbean are still battling with ways to reduce infection rates among their populations (McBride et al., 2005).

   Caldwell, Orubuloye and Caldwell (1999) reported that Africa is most affected by the HIV epidemic. In 1997, more than 4 million people were infected with the virus in sub-Saharan Africa, approximately 14% of which were children. However these are only
reported cases (Reis, Heisler, Amowitz, Moreland, Mafeni, Anyamele & Lacopino, 2005) and true numbers are likely to be much higher. It is extremely difficult to determine the exact number of HIV infections due to the lack of available health care services (shortage of health care professionals, medications, counseling and testing services), and a reluctance of infected individuals to seek care (even if it is available) due to culture (rejection by community and family members) and stigma, and the prevailing sentiment that AIDS is a “white man’s” disease (Amuyunzu-Nyamongo et al., 1999).

In Nigeria, the first AIDS case was reported in 1984 in a 13-year-old (Isiugo-Abanihe, 1994) sex worker from a neighboring country (Kamga, 2001). Since then, the epidemic has been growing at an alarming rate despite efforts to curb its spread. In 1989, 23 patients were diagnosed with AIDS (Federal Ministry of Health & Human Services, 1992; WHO, 1993). The Federal Ministry of Health and Human Services in Nigeria initially estimated that in 1999 there would be 500,000 HIV positive people and approximately 1,000 cases of AIDS in Nigeria (Isiugo-Abanihe, 1994). However, by 2001, there were 170,000 deaths related to AIDS and 3.5 million people were infected with HIV (Nwokoji & Ajuwon, 2004). HIV infection continues to grow at a staggering rate and this poses a national threat to Nigeria and her economy, and the resulting depletion of the labor force is significant (Sunmola, 2001).

It is estimated that by 2010 there will be an increase of between 18 –26% in the prevalence of HIV cases in Nigeria (NIC, 2002). The WHO reports that heterosexual sex is the major mode of transmission, accounting for 71% of all reported cases in Nigeria. Mother-to-child transmission and blood transfusion accounts for 1.4 % and 2.5 % of all HIV cases respectively (Isiugo-Abanihe, 1994). The Nigerian Federal Ministry of Health
reported in 2003 that there were 3,300,000 people infected with HIV, of which 1,900,000 (58%) were women (AVERT, 2006).

This explosive development of the AIDS crises may be due to cultural norms, traditions, beliefs and practices in Nigeria. Women do not have a say when it comes to sex, particularly in marriage. A man can be married to more than two women and still engage in sexual relationships outside his matrimonial home (Isiugo-Abanihe, 1994). In addition, the reasons for high infection rates through heterosexual contact are due to multiple sexual partners, engaging in casual sex or what is known as a “one-night stand” common among commercial sex workers, and the “sugar daddy” phenomenon mostly common among female students in tertiary institutions in Nigeria (Ekanem et al., 2005). Female students in Nigerian universities often engage in casual sex, “one night stand” sex or maintain sexual relationships with long distance lorry drivers, older students, faculty members and businessmen (“sugar daddies”) mainly for survival, security, better grades, monetary gain, and marital purposes. These factors account for increasing rates of HIV infections in Nigeria.

2. Knowledge about and Behavioral Risk Factors for HIV and AIDS in Nigeria

The majority of Nigerian university students know that HIV can be transmitted through oral and vaginal sex (Sangowawa, Owoaje & Faseru, 2004), blood transfusion (Oyo-Ita, Ikepeme, Etokidem, Offor & Okokon, 2005) and mother-to-child transmission (Isiugo-Abanihe, 1994), yet the majority perceive themselves to be at low risk of contracting HIV (Harding, Anadu, Gray & Champeau, 1999) despite their high risk sexual behaviors. Nursing (Uwakwe, 2000) and undergraduate (Aluede, Imhonde,
Maliki & Alutu, 2005) students in Nigerian universities had high levels of HIV and AIDS knowledge (Uwakwe, 2000; Aluede et al., 2005) and 80% of mothers of infants in an AIDS related study believed that HIV infections can be prevented, 79.2% reported monogamy reduces the risk of transmission, and 67.9% agreed that condom use will prevent HIV infection (Kayode, Adeyemo & Omotade, 2002). Even with high knowledge of HIV and AIDS the majority continue to engage in risky sexual behaviors, perceive themselves to be at low risk of getting HIV and are thus less likely to utilize VCT services.

In 2002, some researchers conducted a survey among 2,388 undergraduate students in six Nigerian universities. They found that 87% of the students were sexually active, 17.5% secretly had had abortions and 66% had more than one sexual partner (Arowojolu et al., 2002). Arowojolu and colleagues (2002) concluded that students had good knowledge about HIV and AIDS, identified that condom use protects against HIV infections, and that sexual abstinence was the best method of prevention. Despite this, condom use was not consistent in this group of students, with 68% of the students indicating that they had sex without a condom, especially during what they perceived as “safe periods” with their regular partners. Due to non consistent condom use among university students, the prevalence of HIV among young women and men in Nigeria is between 5.89 and 3.35 percent respectively (Boswell & Baggaley, 2002).

3. Condom Use

Since the primary mode of HIV transmission in Nigeria is heterosexual contact (Isiugo-Abanihe, 1994; Sunmola, 2001), condom use is an effective means of reducing the transmission of HIV and other sexually transmitted infections (STIs) that act
as catalysts to HIV infection (Sumola, Adebayo, Olapegba & Alarape, 2006). In sub-Saharan Africa, most people prefer not to use a condom because it is perceived to interfere with sexual functioning and appetite (Sunmola, 2001) as well as perceptions of decreased sexual pleasure and ability to reach orgasm. In addition, men often refuse to use a condom with their spouses, even though they are involved in extramarital sex, thus increasing their spouse’s risk of HIV infection (Hulton & Falkingham, 1996). Most studies on condom use in Nigeria show that respondents believed that condom use limited sexual satisfaction, made sex boring, reduces one’s sexual urge, makes intercourse messy, and causes partners to have a lack of trust (Sunmola, 2001; Isiugo-Abanihe, 1994; Ekanem, Afolabi, Nuga & Adebajo, 2005; Umar, Adekunle & Bakare, 2001). These are the key barriers to condom use in Nigeria.

Despite this widespread lack of acceptance of condom use, the main focus of HIV prevention in Nigeria has been through condom use advocacy by means of mass media such as billboards, television, and radio (Sunmola, 2001). Most Nigerians understand that condom use is a form of birth control (Caldwell et al., 1992; Esu-Williams, 1995) and also protects against sexual diseases (Sumola, 2001). However, these campaigns have had minimal effect in Nigeria (Kiseka, 1991) due to a failure to address strategies that make condom use acceptable in relationships (Kiseka, 1991; Sumola, 2001) by addressing the key barriers to condom use mentioned above.

Condom use is part of standard VCT and it is established that individuals who receive VCT are more likely to change their behaviors, such as using condoms consistently (Allen, et al., 1992). In a study to evaluate the efficacy of VCT in changing sexual risky behaviors, those who received VCT reported increased condom use over
each period of time when compared to those who did not (Mola, Mercer, Asghar, Gimbel-Sherr, Micek & Gloyd, 2006). To buttress this point, in a study of VCT confidential testing and condom promotion it was reported that VCT was associated with increased condom use among individuals who tested either positive or negative to HIV (Allen et al., 1992).

Therefore, voluntary counseling and testing should be encouraged in Nigeria as a strategy for battling the staggering rates of HIV infection and used as an opportunity to strengthen consistent condom use among Nigerians since condom use advocacy in its current form, through popular mass media, by itself is not effective.

**B. Voluntary Counseling and Testing (VCT)**

The University of California in San Francisco (UCSF) developed the first model for voluntary counseling and testing (VCT) in 1985 (Sheon, 2004). During this period, HIV testing was more oriented towards “crisis management,” as the majority of people testing positive were gay men and little was known about the importance of testing in reducing HIV transmission (Odets, 1998). By 1993, the CDC called for a revised version of VCT guidelines due to poor results obtained when evaluating VCT services in the U.S. (Sheon, 2004). The revised version was developed to be more client-centered and to assist clients negotiating risk reduction on an individual basis (Montgomery & Ostrow, 1998).

In 1995 the World Health Organization defined VCT as communication between a client and health care provider on how to assist a client in making decisions about HIV testing and coping with stress after testing. VCT has been shown to be effective in prevention (UNAIDS, 2001) as it offers teachable moments, is cost effective (Sweat et
and is an opportunity to counsel those testing HIV positive to encourage personal openness about the disease (UNAIDS, 2001) and/or increased responsibility to protect others from infection.

VCT became available in 1995 and evolved into both a primary and secondary preventive measure for HIV infection. In terms of primary prevention, people engaging in high-risk behaviors are given information and education necessary to change behaviors to avoid infection. Secondary prevention is mainly for infected individuals as they are given support, information and education to guide them towards treatment, care and ways to prevent their partners from becoming infected (Goldblum & Marks, 1988; Coates, Stall, Kegeles et al., 1988; Cates & Handsfield, 1988; Center for Disease Control and Prevention, 1994; Rhame & Maki, 1989; Montgomery & Ostrow, 1998).

Montgomery and Ostrow (1998) discussed the three major components of VCT: “the pre-test counseling, which is the risk assessment session, the actual testing process, and the post-test counseling, known as the disclosure session” (p. 26). This post-test session would usually occur 2-3 weeks after the initial blood test due to the lag in obtaining test results (CDC, 2001), requiring patients to come back for the post-test counseling session. In the larger picture of HIV prevention, these three components of VCT overlap with behavioral change communication (BCC) through the media, with counseling and treatment about sexually transmitted infections and peer interventions (Wegbreit et al., 2006). In total they make up most of the universality implemented prevention responses to HIV. In addition, the WHO and the CDC emphasized that VCT services and utilization should be carried out with informed consent. Clients or patients should not be in any way coerced into testing as this is ethically unacceptable under any
circumstances (Schleifer, et al., 2004), and information obtained during VCT sessions is kept strictly confidential (FHI, 2006).

However, since the inception of VCT there has been ongoing debate about the extensive time commitment involved in traditionally implemented VCT, especially the components of consent (USAID, UNAIDS, WHO, UNICEF, 2004; Schleifer et al., 2004). As a result, the WHO and UNAIDS (2004) more recently recommended routine testing with the choice of opting in or out. This routine testing option became necessary as increasingly people living with HIV are tested and counseled in clinical settings when in the advanced clinical stage of the disease (Obermeyer & Osborn, 2007). Patients are given the choice of being tested as part of routine diagnostic procedures or they opt out. Of course this leaves out any type of teachable moment associated with counseling as well as full informed consent, but due to the enormity of cases in global settings it was seen as the only viable option to connect patients to treatment.

In 2006, in light of mounting evidence that the traditional approach (VCT) to testing was inadequate (Walensky, 2007; Bogart, 2008) -- too many individuals remained unaware of their sero-status -- the CDC simplified the suggested process of obtaining consent (CDC, 2006) to incorporate routine opt out testing of individuals between ages 13–64 years. It was decided that individuals who are aware of their sero-status are more likely to seek social services and be referred by health care providers for medical care (CDC, 2003; Branson et al., 2006). Knowledge of sero-status will help individuals reduce their chances of transmission (Creese et al., 2002; Crepaz & Marks, 2002; Bulterys et al., 2004) as well as the risk of infecting others.
Another reason that CDC revised their guidelines for VCT in the US is that it is estimated that over one third of clients do not return for their test results and post-test counseling (Bogart, 2008). Since the advent of rapid HIV tests, the CDC is proposing single-session testing that does not require a return visit for results (CDC, 2006). Rapid testing may be beneficial to some clients who are unlikely to return and do not have an ongoing relationship with the test providers (Bogart, 2008). Although rapid HIV testing is cost effective (Walensky et al., 2007) and feasible (Galvan et al., 2004; Rotheram-Borus et al., 2006), in some settings there may be negative setbacks such as difficulty in linking sero-positive clients to care and provider anxiety due to lack of preparation in delivery sero-positive test results (San Antonio-Gaddy et al., 2006; Bogart, 2008).

Also, the time frame required for conducting pre-test, counseling, testing, documenting, and reporting test results in rapid HIV testing is longer when compared with traditional VCT (Spielberg et al., 2005). Because of this extensive time requirement, the CDC’s latest guidelines on HIV testing in health care settings make counseling advisable but not mandatory (Obermeyer & Osborn, 2007) and pre-test informed consent is streamlined into a standard consent for all medical tests (Koo et al., 2006). Furthermore, Brouwer and colleagues (2000) and several others are advocating that pre-test counseling should be skipped due to its ineffectiveness in reducing HIV transmission and instead focus solely on post-test counseling.

Based on these mixed recommendations it is difficult to determine if pre-test counseling facilitates testing or if it acts as a barrier (Obermeyer & Osborn, 2007). Before a final decision is made to minimize VCT to post-test counseling several researchers are proposing that more evidence and research is needed to inform guidelines and tailor
requirements for specific testing. In addition, the effectiveness of VCT may vary by country and geographic region, making it challenging and difficult to implement U.S. based CDC recommendations or even UNAIDS and WHO recommendations, which are mostly based on expediency and not research. However, while the modalities on how to offer VCT are discussed, everyone agrees that it is imperative to expand VCT in developing nations of the world because of concerns over the gaps between those who are aware of their sero-status and those who are not.

1. **VCT in Africa**

In Africa, data on HIV testing comes primarily from pregnant women, commercial sex workers, and long distance truck drivers. Kipitu (2005) reported that less than 1% of people who are sexually active and living in urban areas in most African countries have been tested. However, in household-survey studies on family planning services conducted in Kenya, Tanzania and Zimbabwe by USAID in 2000 (as cited by Kipitu, 2005), 60% of adults in these countries would like to know their HIV status but access to VCT services is limited or not available. The major barriers to accessing VCT services in many African nations may be attributed to cost of services (Painter, 2005), fear, stigma, quality of care (Yonder, Mattinga & Mattinga, 2004) and lack of confidentiality (Reis et al., 2005). The factors mentioned above also influence barriers to behavior change in most African nations as previously reported by other studies (Atuma et al., 2004).

In a randomized VCT study reported in Kenya and Tanzania (Coates et al., 1998) there was an increase in positive behavior change, reduction in sexually transmitted infections and risky behaviors among individuals who received VCT compared to those
who received health information (Painter, 2001). This is good evidence that VCT can influence behavior change if individuals perceived themselves to be at risk of HIV infection and modify their behaviors (Painter, 2001).

Furthermore, in some African countries such as Uganda (Enosolease & Offor, 2004) and Kenya (Forsyth, Arthur, Ngatia, Mutemi, Odhiambo & Gilks, 2002), the national government witnessed a tremendous reduction in HIV infection after VCT was made an important part of prevention intervention.

2. **VCT in Nigeria**

While some other African nations have been able to reduce HIV transmission through government support, the Nigerian government has yet to admit that HIV infection is escalating and poses a national threat to economic development. In Nigeria, VCT services are used mostly by pregnant women to prevent mother-to-child transmission and in some churches for couples engaged to be married. (Odunukwe & Oruche, 2005). In their study on couples intending to get married in churches in Nigerian’s former capital, Odunukwe and Oruche (2005) reported that 725 people voluntarily agreed to receive counseling and testing after participating in HIV and AIDS health education sessions. They recommended creating awareness among religious institutions (churches, mosques and faith based organizations) about the importance of VCT based on their findings. However, while the authors reported that couples voluntarily agreed to testing, in reality some churches in Nigeria will not perform the marriage ceremony unless they agree to be tested. Thus, having clear guidelines on how to best implement VCT under these conditions is critical.
While churches push forward in requiring testing, stigma and discrimination still causes widespread reluctance to undergo HIV testing. Also, the issue of confidentiality is a major problem in most testing centers in Nigeria. A study on health care professionals’ discriminatory attitudes regarding HIV positive clients in Nigeria found that 57% of health care providers admitted that they would disclose a patient’s sero-status to sexual partners and family members without patient consent and 46% agreed that HIV positive patients should be given a separate ward in hospitals or their charts and beds marked to show their status (Reis, et al., 2005). Such negative attitudes from health professionals deter many from utilizing VCT services for treatment and care of HIV and AIDS in Nigerian hospitals, thus escalating the staggering numbers of HIV infections.

The Heineken Beer Corporation in Nigeria recently conducted “voluntary anonymous HIV testing” to estimate infection rates among its workforce. Testing was not voluntary, as employees who refused testing were threatened with losing their jobs (Kahn, 2003). While some multinational companies in Nigeria have moved to areas with low rates of HIV infection, others see it as in their own best interest to get involved in VCT and have taken responsibility for employee health (Rotheram, Leibowitz & Etzel, 2006), since the Nigerian government has made little effort to control the epidemic, relying instead on the efforts of NGOs, foundations, and other charitable institutions to provide free testing and health education.

In addition, most Nigerians do not fully understand the benefits and importance of VCT, despite large numbers of individuals at risk, and therefore refuse counseling and testing (Caldwell et al., 1999). Enosolease and Offor (2004) reported that among 1,051 women seeking abortion in one large city in western Nigeria, most showed no interest in
VCT services when offered. Because of this the study’s results, authors suggest that the Nigerian federal government work to increase awareness of VCT. In another study conducted in the northern part of Nigeria among pregnant women attending antenatal clinic, 13.0% of participants disapproved of VCT and 6% were undecided. Again, the authors concluded that there was a need to engage in a national campaign on the importance and benefits of VCT (Iliyasu, Kabir, Gakadanci, Abubakar, Aliyu, 2005). However, if this is to occur barriers that hinder behavior change and VCT utilization in the cultural context of Nigeria also need to be addressed.

C. Barriers to Behavior Change

A number of studies suggest that Nigerian university students are knowledgeable about HIV transmission and preventive measures (Caldwell et al., 1992) but there is yet to be significant behavior change as they continue to engage in unsafe sex. According to Atuma et al. (2004), a combination of factors such as religion and superstitious beliefs, culture, stigma, poverty, poor access to health care, poor access to mass media information and lack of governmental support in the battle against HIV all work to act as barriers to positive behavior change in Nigeria. These factors not only hinder the control of HIV but also affect what few behavior change interventions are actually implemented. Gaining a better understanding of these factors is therefore critical.

1. Religion

Religion plays an important role in the lives of Nigerians, with 50% of the total population identifying with the Muslim faith and the remaining 50% identifying as Christians and indigenous believers (40% and 10% respectively) (World Fact Book, 2006). Many adhere to Islamic and Christian doctrines on healing and faith in God, which
will likely affect behavior change interventions (Kamga, 2001). Many believers would rather consult their pastors or imams before visiting the hospital should they experience symptoms of HIV infection. Most indigenous believers are deeply rooted in their cultural values, which shares with the Muslim faith the belief that a man’s sexuality cannot to be confined to one woman, that a man can have many wives and still engage in sexual relationships outside marriage. In a study on resistance to behavior change to reduce HIV infections, Caldwell, Orubuloye and Caldwell (1999) reported that both men and women believed that due to the biological make up, man is created to have sex with more than one woman. Men believe that it is normal to have sex outside of marriage and their wives do not see anything wrong with it. Since some religions encourage and preach polygamy it is challenging for individuals who practice such religious beliefs to engage in behavior change interventions.

2. Culture

In Nigeria and many African countries, cultural norms, values and beliefs are also barriers to behavior change, as females are not allowed to negotiate for safer sex practices. Aniekwu (2002) reported that until recently, most research conducted in Nigeria tended to focus on the reproductive lives of women with little or no attention to differences between male and female realities regarding HIV and AIDS. In one study in Tanzania, when boys were asked their opinions of girls who carry condoms, they referred to them “prostitutes” and “having a disease like AIDS” (Amuyunzu-Nyamongo et al., 1999). In Nigeria, the males of all ethnic groups enjoy many privileges that females do not, such as the ability to exercise sexual freedom and rights over any woman (Kamga, 2001), including the perception that they are not vulnerable to mistakes and diseases
(Nkoli, 2002). It is widely believed the belief that a man’s sexual urge cannot be suppressed and that females are created to satisfy their sexual needs, thus limiting their ability to negotiate safer sex (Kamga, 2001).

Across the diverse cultures in Nigeria, there is the traditional belief that life on earth is temporal. Death is inevitable and can come upon man at any time. Whether a man dies of AIDS or something else it does not matter -- “death is death”. In addition, concoctions known as “herbal remedies” prepared by herbalists (“traditional doctors”) exacerbate resistance to behavior change methods because many believe that these concoctions can cure all kinds of diseases (Kamga, 2001).

3. Myths about HIV and AIDS

Myths and misconceptions about HIV and AIDS are other barriers to behavior change. Early in the epidemic, most African communities believed that AIDS is caused by witchcraft and that witches and sorcerers may decide to afflict people with the disease (Caldwell et al., 1999). In addition, some African men believe that plump women do not have the disease (Nyamongo, 1996; Schoepf, 1988). Therefore, they can engage in unsafe sex with as many plump women as they like, thinking they can never get infected (Kamga, 2001). On the other hand, skinny, slim or thin women are perceived to be HIV infected or having other diseases. Finally Caldwell et al., (1999) reported that 80% of some of these men infected with HIV believe that having sex with a virgin will cure them, thus increasing the staggering number of HIV infected women and children in many African countries.
4. Lack of Government Support for VCT

Early in the epidemic governments of many African nations including Nigeria largely ignored the existence of HIV and AIDS. Reasons for this included the wish to portray “a particular international image” in order to attract tourism and entertainment (Caldwell et al., 1999). Some African countries, such as Uganda and Kenya, have admitted that HIV and AIDS are a major threat to national development (Amuyunzu-Nyamongo et al., 1999). Nigeria, on the other hand, has yet to admit that there is an epidemic, even while infection rates are rising (Press Enterprise, 2005).

However, since August 1997, after the death from AIDS of a famous Nigerian musician, Fela Anikulapo-Kuti, the former Minister of Health, a brother of the deceased, was quick to accept that there was a problem and in his message he described it as a “can of worms” ready to explode in Nigeria if proper measures are not put in place (Kamga, 2001). Even though there are interventions to combat HIV and AIDS in Nigeria, the majority only manage to scratch the surface, without reaching families and individuals affected and infected by the disease due corruption and mismanagement of public funds in high places.

5. Poverty

According to Aigbokhan (2000), most Nigerians continue to live in abject poverty due to authoritarian and corrupt military rule for over 15 years. Aigbokhan (2000) defined poverty “as the inability to achieve a certain minimal standard of living” (p.1). In Nigeria, poverty is higher in rural areas (Aigbokhan, 2000) and HIV and AIDS affect more rural dwellers compared to people living in the cities (Akukwe, 1999). Poverty has been associated with lack of national governmental support in preventing
HIV. In addition, the lack of access to important resources such as health care services, sufficient numbers of health care professionals (nurses, doctors and midwives), transportation infrastructure, and communication networks hinders the dissemination of information to create awareness among the population about HIV and AIDS (Amuyunzu-Nyamongo et al., 1999; Caldwell et al., 1999) and aggravates the impact of HIV and AIDS among rural dwellers increasing infection rates, with rising numbers of HIV and AIDS orphans, and increasing morbidity and mortality. In addition, the epidemic exacerbates prolonged poverty in all areas of life (Piot et al., 2001). For example, if someone in a poor household is infected with HIV, the disease takes a huge portion of the family’s available resources and limits access to food, education and healthcare for the other family members.

6. Stigma and Discrimination

In many Nigerian communities and among health professionals, it is widely believed that people living with HIV behaved immorally by being promiscuous and engaging in unprotected sex, and therefore deserve what happened to them (Reis et al., 2005). As a result of societal apathy and the cultural attitudes of neglect and discrimination against people living with HIV, it is difficult for infected individuals and relatives to openly seek help. Awusabo-Asare (2000) reported that 78.3% of Nigerians indicated that they would not disclose their status should they be confirmed sero-positive and 68.3% said they would be angry if a family member or friend was found to be HIV positive. In addition, relatives will not allow diagnosis of HIV appear on a family member’s death certificate (Kamga, 2001).
Caldwell, et al. (1999) reported that whenever people are encouraged to go for testing, even if they perceived themselves at risk, they wondered why they should be tested and how would testing benefit them. Not surprisingly, most people avoid getting tested even if testing is available. Those who suspect they have contracted HIV tend to be secretive about it, for fear of rejection and discrimination by family members and friends (Kamga 2001). All available data indicate that people living with HIV and AIDS in Nigeria are stigmatized and discriminated against by family members, their communities (Kamga, 2001) and health care providers (Reis et al., 2005).

D. Conclusions

Stigma and discrimination may be attributed to unwillingness to undergo VCT. Also, the issue of confidentiality is a major problem in most testing centers in Nigeria. Fear of rejection by loved ones, violence, loss of job or housing is another factor for people refusing VCT in Nigeria. Since HIV is life threatening, most people believe it is not worth emotionally or physically investing in infected friends or family members who may not be around for long (Sliep, Poggenpoel & Gmeiner, 2001).

There must be perceived benefits to VCT if students are to get tested and for those who test positive, services that make VCT worthwhile, otherwise there is no point in encouraging individuals to be tested. Access to VCT has the potential to inform individuals of their sero-status and will likely lead to substantial reduction in HIV transmission if accompanied by linking HIV-infected individuals to medical care and social services in Nigeria. It is important to tailor and adapt VCT guidelines to specific testing settings, such as services to prevent mother-to-child transmission, family planning and reproductive services, at VCT facilities, or in clinical care.

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There is a need to increase awareness on the importance and benefits of VCT, reduce cost and inconvenience (time taken to get tested, child care, transportation), and reduce stigma. This applies also to Nigerian university students, a group at elevated risk for HIV. Data suggest that Nigerian youths account for 5.8% of HIV national sero-prevalence due to high-risk behaviors associated with HIV infections (Amusa et al., 2004). Although they are knowledgeable about HIV and AIDS, the majority do not practice what they know. A recent study showed that 90% of Nigerian university students are sexually active and 89% under-rate heterosexual sex as a major mode of HIV transmission. Thus, there is the urgent need to promote and encourage VCT utilization among Nigerian university students because they are the work force and future leaders of Nigeria.

Although Nigerian university students do not utilize VCT services and there is limited literature on VCT services and utilization in Nigeria, such services are key to a comprehensive prevention approach in light of an ever increasing burden of HIV and AIDS in Nigeria.
CHAPTER 3

METHOD

A. Study Design

This study utilized a mixed methods approach in two phases: a qualitative phase and a cross-sectional quantitative survey phase. The study was guided by a conceptual framework that is variably informed by constructs of the health belief model (HBM), the theory of gender and power (TGP), and knowledge of the unique Nigerian culture. The target populations were students in two Southern Nigerian universities.

B. Participants

Male and female university undergraduate students were the primary participants in this study. Students were enrolled and registered in core university classes that were identified by the university administration. Two federal universities were selected from southern Nigerian -- Oyo and Lagos states, respectively. Federal universities were selected because they attract students of all ethnic groups in Nigeria.

The University of Ibadan is located in Oyo state. Ibadan is an ancient and slow-paced city. Indigenes of this state are referred to as “pacesetters” because Oyo is the citadel of education in Nigeria. The city of Lagos is a more fast-paced city compared to Ibadan because Lagos was the former Nigerian capital until December 12, 1991 when the federal government moved to Abuja. These two states share boundaries and are an hour and half away from each other by car. Undergraduate students were recruited in each university by word of mouth (convenience sample) to participate in key informant interviews (KIs) and focus group discussions (FGs). Undergraduate students from the
University of Ibadan were unable to participate in the survey instrument phase of the study due to political unrest. Three hundred and one participants between the ages of 18–40 from the University of Lagos responded to the self-administered anonymous survey.

C. Variables and Measurements

1. Dependent Variable

The dependent variable for this study was intention to utilize VCT. University students’ intention to utilize VCT was assessed on a 5-point Likert scale with the question, “how likely is it that you would get HIV testing?”, and their responses were rated on a 5 point Likert scale (1 = Very unlikely to 5 = Very likely).

2. Independent Variables

The independent variables included demographics, sexual history, condom use and variables in line with the conceptual framework: cultural beliefs and societal norms, division of power and labor from the TGP, and from HBM, perceived benefits, perceived barriers, perceived susceptibility, perceived seriousness, and self-efficacy related to HIV and AIDS and VCT utilization. Additional variables were also assessed by themes that emerged from the qualitative phase.

Demographic variables assessed include age, gender (male, female), years of education, ethnicity (from a checklist of common categorical groupings), year at school, program of study, and parents’ residence (urban vs. rural). In addition, descriptive variables such as number of sexual partners in the last year, lifetime and frequency of condom use were assessed.

Health belief model variables include items for the dimensions of perceived benefits, perceived barriers, perceived susceptibility, perceived seriousness and perceived
self-efficacy. In addition, attitudes and beliefs of HIV and AIDS were assessed by an existing validated 5 point Likert scale. This scale contained 4 items for each model dimension, all oriented around the target behavior (VCT) in light of the target disease (HIV and AIDS) and its prevention.

Variables from the theory of gender and power (societal norms, sexual division of labor and power) and all other independent variables such as culturally specific variables to the Nigerian context that emerged from KIs and FGs were measured using an existing validated 5 point Likert scale with several items indicating level of endorsement (5= strongly agree to 1= strongly disagree) regarding the influence of each predictor variables on the outcome variable (intention to utilize VCT).

D. Data Collection and Procedures

1. Phase 1 – Qualitative

Six key informant interviews (three per university) and four confirmatory focus group discussions (two per university) were conducted at two southern universities in Nigeria: the University of Ibadan and University of Lagos. In order to facilitate better disclosure, male and female assistants were trained to conduct gender matched KIs and FGs using standardized methods. All groups and interviews were conducted in English and transcribed verbatim.

a. Recruitment and Sampling. A convenience sample technique using a snowball referral approach was utilized to recruit 39 participants by word of mouth for the key informant interviews and focus groups.

b. Key Informant Interviews (KIs). Participants were asked a series of open ended questions which enabled them to list issues that were likely to influence their
decision about utilizing VCT services. Key informants interviews were one-on-one discussions which lasted 45 minutes and with interviewers following a semi-structured outline based on theoretically pre-specified framework to assure comparability in inquiry. The aim was to explore in depth and respondents’ perceptions surrounding HIV and specifically VCT. The guide to KIs and FGs include: background of study, introduction of facilitator and participants, ground rules and question section. Questions ranged from past to current sexual history, condom use, knowledge of VCT services, HIV, and AIDS transmission.

c. Focus Groups (FGs). In line with grounded theory, FG use was mainly to verify patterns from KIs in a social discussion context. Therefore, facilitator, co-facilitator and an observer/time-keeper were trained to follow a FG outline of “journey questions” that was based on the results (emergent themes) of the KIs. All participants in groups and interviews participated in the active informed consent procedures. The FGs were conducted using a semi-structured outline of 5-6 main questions from which the facilitator asked questions and probed for responses. Each focus group discussion lasted 1.5 hours. Participants were offered refreshments and incentives to thank them for participating. Both the KIs and FG discussions were recorded and transcribed verbatim.

2. Phase 2 — Quantitative

a. Instrument Development and Pilot Testing. Information gathered during the qualitative phase was utilized to develop a self-administered survey which incorporated existing scales from the theories behind our theoretical framework. Besides demographic items, the survey includes items on culture, gender roles, attitudes, barriers to and benefits of VCT among Nigerian university students.
The draft survey was pilot tested among 10 female and 10 male undergraduate students from the University of Lagos. Participants who took part in the qualitative work and pilot testing were excluded from participating in the survey phase of the study. The survey instrument was pilot tested to ensure the survey had clear language, wording of questions were appropriate, and within the reading level and comprehension of students. In addition, the length of time taken to complete the survey was also assessed prior to data collection. A debriefing session was held after the pilot administration to discuss the instrument with respect to clarity, language appropriateness, relevance to intended study aim and time needed. Pilot testing results were utilized to make appropriate revisions to the instrument as needed. The investigator assessed the internal consistency of the survey instrument and examined whether each item evaluated provided a full range of responses. Questions that did not elicit a full range of responses were revised. Experts (Professors from Loma Linda University School of Public Health) in HIV and AIDS examined the content and face validity of survey instrument.

b. Recruitment and Procedures for the Main Survey Administration.
Once the survey was final, it was administered to students at the University of Lagos in core classes selected by university administrators (classes which are taken by nearly all students). All students in attendance who agreed to participate were eligible and participated in the passive informed consent procedures. Participants were allowed to temporarily or permanently discontinue their participation in the survey if they felt uncomfortable. The researcher shared information about the study verbally and answered questions. Participants were then given passive consent forms and guidance on how to complete the survey. A total of 301 surveys were collected.
E. Data Analyses

1. Phase 1 – Qualitative

Responses generated from KIs and FGs was transcribed verbatim using the software Cool Edit 2000 (Cool Edit). Transcribed interviews and FG discussions were analyzed using Grounded Theory methods that include emergent pattern coding and theming. Emergent themes were analyzed by strata which were initially used to identify participants through theoretical sampling and triangulation. Transcripts were reviewed twice by experts to validate data, ensure accuracy, and delete any information that would identify participants by name. Codes (pseudonyms) were used to represent participants to avoid confusion in data analysis. Qualitative data analysis was conducted in five steps according to a method outlined by Chug (1999): organize data; generate themes; test emerging hypothesis against data; search for alternative data explanation; and write report. A summary of emerging themes from participants aided in survey development.

2. Phase 2 – Quantitative

Data compiled from self-administered anonymous surveys were entered into Statistical Package for the Social Science (SPSS version 17.0), cleaned and checked for missing values and outliers before analysis. Analyses were performed using SAS, version 9.2 (SAS Inst. Inc., Cary, NC). Descriptive statistics such as mean, frequencies, and percentages were used to describe demographics, relationship status, and sexual history and condom use behavior was assessed for lifetime, past year, and current/last sexual encounter.

Factor analysis with Promax rotation was performed on the total sample. In determining the number of factors to be distinguished, the eigenvalues, explained
variance, intercorrelations and the scree test were visually inspected. The total explained variance was expected to be over 80%. Reliability for each factor (group variables) was evaluated using Cronbach’s alpha as indicator for internal consistency, with coefficients above 0.50 considered acceptable. Spearman’s rank correlation coefficient was used to analyze each factor and the dependent variable (intention to use VCT). Mann-Whitney, Kruskal Wallis and simple linear regression were used to evaluate the relationship between each variable of demographic, sexual history, and factor analysis component with intention to use VCT.

Finally, a multivariable linear regression analysis of two models with intention to use VCT was conducted. The first model represents our actual model with only significant demographic, sexual history and model factors in addition to significant demographic and sexual history variables. For this we analyzed the data overall and by gender. The second model contained all originally hypothesized conceptual framework variables whether or not they were found to be statistically significant in the bi-variable analyses. P-values less than 0.05 were considered statistically significant.

F. Strengths and Limitations

This study provides important background information to issues surrounding VCT, HIV, and AIDS among university undergraduate students in Nigeria and helped guide the quest for more standardized and culturally acceptable procedures for VCT in Nigerian universities. In addition, the mixed method analyses strengthened the design and enabled us to better understand the complexity of Nigerian culture, its potential impact on VCT, and allowed us to identify salient beliefs among Nigerian university students which are different from other populations. Thus, this study was not primarily based on existing
instruments, but used the qualitative phase to contextualize, explore, and adapt new measures that assessed underlying constructs of interest. Through this study, barriers that hinder VCT utilization among Nigerian university students were identified and we hope ultimately will be reduced.

Despite its strengths, there are some limitations to this study due to study design and limited resources. It was impossible to determine causality due to the cross-sectional nature of the study. For example, it is not known if reason for testing was a precursor or consequence of sexual activity. Since response was based on self-reports, data gathered from surveys is open to threats to internal validity such as biased recall or reporting, especially on sensitive issues. Biases may have occurred as a result of social desirability which was difficult to minimize due to the emotionally charged nature of the variables that needed to be examined in this study. However, focusing on last or most recent sexual relationship minimized recall errors and anonymity of responses was emphasized in the quantitative phase of this study to help address this concern. Since this was an exploratory study that required convenience sampling, the nonrandom sampling technique utilized limited generalization of results.

**G. Research Ethics**

This study adheres to the guidelines and principles of respect for persons, beneficence and justice as outlined by the Belmont Report (The Belmont Report, 1979). Each student’s participation was voluntary and the researcher ensured that participants were not coerced in any form to participate. The researcher sought approval from the Loma Linda University Institutional Review Board (IRB) at the onset of the study. In addition, approval to conduct this study in the University of Ibadan and University of
Lagos were given by each university. Participants signed the written informed consent before they were allowed to participate in key informant interviews and confirmatory focus groups. Active informed consent from all participants was obtained including a verbal overview of the study intent and all study procedures explained by the investigator. Passive informed consent was obtained from students who completed the survey instrument. Consent was written in clear and easily understandable English so that all participants could comprehend the information. Confidentiality was upheld and emphasized to participants that information collected would not be used against them or disclosed to university authorities. The researcher emphasized that data and information obtained during the course of the study would be stored in a secured locked file cabinet at the Loma Linda University School of Public Health in the U.S. In addition, the investigator trained research assistants on the importance of confidentiality during key informant interviews (KIs) and focus groups (FGs) to avoid breach of confidentiality.

Participants were exposed to minimal risks which did not involve an intervention of deprivation of health services. Minor discomfort may have occurred as a result of the sensitive and personal nature of some questions. There was no direct benefit to participants but it is hoped that this study will enable students to think about some aspects of their lives that they have never thought of before.
CHAPTER 4

FIRST PUBLISHABLE PAPER

Nigerian University Students’ Knowledge and Experiences of HIV Testing

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Key words: HIV testing, Nigeria, University students, sexual behavior, knowledge, experience.
ABSTRACT

HIV testing and counseling is part of a comprehensive approach to HIV prevention and education. We analyzed qualitative data about Nigerian undergraduate students’ knowledge of HIV testing and their experiences with HIV testing services based on the Health Belief Model and the constructs of Theory of Gender and Power. We conducted six key informant interviews and four confirmatory focus group discussions with a total of 39 students at the universities of Ibadan and Lagos in Nigeria. Students reported good access to HIV testing centers, high knowledge about HIV; its mode of transmission, and the process of testing. While the majority shared positive experiences about HIV testing services, many were very skeptical about the issues of privacy, confidentiality and error in reporting test results.
INTRODUCTION

Human immune deficiency virus (HIV) testing and counseling is a cornerstone of a comprehensive approach to HIV prevention and education, and is seen as highly effective for HIV (Nieburg, Cannell & Morrison, 2005) and a major route to positive behavior change (Painter, 2001). With advances in the treatment of HIV early diagnosis is an important step toward managing the disease and controlling further spread. One of the objectives of Healthy People 2010 for the prevention of HIV infection is to increase an individual's knowledge of their own sero-status (United States Department of Health and Human Services [USDHHS], 2000). Regardless of culture and geographic location, college students tend to engage in higher levels of risky sexual behavior than in most phases of their lives (American College Health Association, 2002). In a study on the impact of voluntary HIV counseling and testing (VCT) on university students' sexual beliefs and behaviors, researchers concluded that testing effectively served the dual purpose of HIV prevention education at a "teachable moment" as well as the determination of HIV status (Glick, 2005; Mattson, 2002) thereby referring them for early treatment, if necessary. Few studies however, have examined barriers to testing in Africa where HIV rates are the highest in the world.

In 2008, it was estimated that more than half of all global HIV infections occurred in sub-Saharan Africa and over 5.4 million young people below age 25 were infected (United Nations, 1999; UNICEF, 2008). However, in most African countries less than 1% of individuals who are sexually active and living in urban areas have been tested for HIV (Kipitu, 2005). Based on household surveys about family planning services conducted in Kenya, Tanzania, and Zimbabwe (Kipitu, 2005) 60% of adults in these
countries would like to know their HIV status but have not been tested. Access and cost are reported as the major barriers to broader testing (Kipitu 2005; Painter, 2001). Other barriers include fear, stigma, quality of care (Yonder, Matinga & Matinga, 2004), and lack of confidentiality (Reis et al., 2005). The same factors that influence HIV testing also influence barriers to general HIV-related behavior change in most African nations (Glick, 2005).

In Nigeria, the prevalence of the disease is 5.8% and has been rising steadily (USAID, 2002). Since Nigeria is the most populous country in Africa with over 120 million people, this infection rate, while lower than other African countries’, adds significantly to Africa’s already staggering AIDS burden (USAID, 2002).

Studies show that Nigerian university students engage in high-risk behaviors for HIV, have a high prevalence of untreated sexually transmitted infections (STIs) and are often in denial about HIV, making them susceptible to the continuous spread of HIV infections (USAID, 2002). In addition, several researchers reported that students do not engage in consistent condom use, a key HIV prevention behavior despite relatively high levels of knowledge about HIV and its mode of transmission (Reis et al., 2005; Arowojolu et al., 2002; Sunmola, 2001).

In a study conducted by Arowojolu, Ilesanmi, Roberts and Okunola (2002) among 2,388 undergraduate students in Nigeria, 87% of the students were sexually active and 66% reported having had more than one lifetime sexual partner. While students had knowledge of HIV and AIDS, understood that condom use protects against HIV infections and that sexual abstinence was the best method of prevention, levels of condom use were inconsistent, with 68% of students indicating having sex without a
condom, especially during what they believe to be “safe periods” with regular partners. Safe periods in this context are times during the menstrual cycle when conception is least likely to occur. This shows that there is a critical need to direct more attention to this population, with specific focus on HIV testing and counseling.

Clearly young Nigerian adults engage in behaviors that put them at risk for HIV in an environment where levels of the virus are high enough to pose a significant risk of infection. Because of this, voluntary counseling and testing (VCT) is seen as a major key to slowing the pace of HIV transmission (Rennie & Behets, 2006), especially among Nigerian youths (Amusa et al., 2004).

In an attempt to encourage VCT utilization among young people in Nigeria, some private Christian universities in Nigeria have initiated compulsory HIV testing, raising fears about privacy and confidentiality (personal communication with Dr. Folake Kio-Olayinka a Physician in Nigeria, September, 2007). This has generated a debate among individuals, communities, religious institutions, the Nigerian University Commission (NUC), and state and federal government organizations regarding VCT. The issue of voluntary testing is complicated in Nigeria due to a variety of socio-cultural issues. These include polygamous marriage practices among some tribes (Lawoyin & Larsen, 2002); religious beliefs that God is the giver of perfect health and not man (Akanji, Ogunniyi & Baiyewu, 2002); and a belief that HIV infected individuals committed sins and should be punished (Caldwell et al., 1993). In addition, policies regarding HIV testing are not consistently applied. For instance, pregnant women receiving antenatal care are routinely tested without counseling or consent. On the other hand, some non-governmental organizations (NGOs) incorporate counseling in their routine HIV testing for both
pregnant women and other individuals seeking testing (personal communication with Dr. Folake Kio-Olayinka a physician in Nigeria, September 2007).

The purpose of this research was to examine knowledge and experiences of HIV testing among undergraduate students in two Nigerian universities. Research is needed to understand the predictors of knowledge and experiences of HIV testing in order to examine why Nigerian undergraduate students choose to get tested or avoid testing.

The health belief model (HBM) and theory of gender and power (TGP) were used as the theoretical framework for this study. The HBM is useful for predicting HIV preventive behavior (Steers, Elliot, Nemiro, Ditman, & Oskamp, 1996), and to explain, predict, and develop interventions to influence a variety of health behaviors (Glanz, Rimer, & Lewis, 2002). When combined with TGP constructs – societal norms, sexual division of power and labor – this framework is well suited to systematically explore these issues taking into account the unique Nigerian culture.

METHODS

This paper used exploratory, descriptive qualitative research methods to elicit information from university students about their knowledge, perceptions, and utilization of available VCT services using a systematic triangulation approach. The study sample included 39 undergraduate students from two southern universities in Nigeria – the University of Ibadan and the University of Lagos. Six key informant interviews (KIs) and four confirmatory focus group (FGs) discussions were conducted with male and female students from the two universities. A convenience sample technique using snowball referral to fill target strata (age, gender) was utilized to recruit 39 participants by word of mouth. To facilitate better disclosure, a male and female assistant were trained to conduct
gender matched KI and FG discussions using standardized methods. All groups and interviews were conducted in English and transcribed verbatim.

**Key Informant Interviews (KIs)**

A total of six participants (four males and two females) participated in KIs. Participants were asked a series of open ended-questions to explore issues around HIV testing services and utilization. Key informant interviews lasted approximately 45 minutes and were based on a theoretically pre-specified framework. The aim was to explore in depth and from personal perspectives respondents’ perceptions surrounding HIV, specifically HIV testing. Questions covered past and current sexual history, condom use, HIV testing experience and attitudes and knowledge about HIV and AIDS.

**Focus Groups (FGs)**

In line with grounded theory, FGs were used to verify emerging themes from KIs in a social discussion context. Therefore, a local facilitator, co-facilitator and an observer/time-keeper were trained to conduct focus groups. A semi-structured set of “journey questions,” based on the emergent themes of the KIs, were used to guide the discussion. Each focus group lasted 1.5 hours. All participants (n = 33) gave active informed consent after study purposes and procedures were explained. The study received institutional approval from both Loma Linda University and each participating Nigerian university.

**ANALYSIS**

Responses generated from KIs and FGs were transcribed verbatim using the software Cool Edit 2000 (Cool Edit, 2000). Transcribed interviews and FG discussions were analyzed using Grounded Theory methods that include codebook development with
two initial interviews and emergent pattern coding and theming. Emergent themes were analyzed by strata initially used to identify participants through theoretical sampling and triangulation. Transcripts were reviewed twice by experts to validate data, ensure accuracy, and delete any identifying information. Codes (pseudonyms) were used to represent participants to avoid confusion in data analysis. Analysis followed the steps outlined by Chug (1999): organize data; generate themes; test emerging hypothesis against data; search for alternative data explanation; and write report. In addition to a contextual analysis of the results, concepts from these identified themes were also used to aid in a quantitative survey development.

RESULTS

Participant’s Characteristics

The majority of students were males (56.4%), Christian (82%) and belonged to the Yoruba (69.2 %) tribe. The majority of the male participants engage in multiple partner dating patterns as it is the general belief in Nigeria – “In Africa, it is a man’s world”. Many of them attested to this during the interview and focus group discussion.

“You are considered strong if you can boast of your several sexual conquests with girls among your peers, otherwise you are referred to as a weak man” (Male participant)

Emerging Themes

Theme 1: Knowledge and Attitudes about Testing

Unlike what is found in the published literature, the Nigerian university students who participated in the KIs and FGs were confident in their ability to access HIV testing. Many are tested every 3 – 6 months and are knowledgeable about the testing
process. Students reported that they found the experience of HIV testing educative and informative, helping to reduce fear of utilizing VCT services. VCT counselors are perceived to be well trained and patient in delivering test results and through the teachable moments in VCT, fears about HIV have been reduced and knowledge levels increased, although confidentiality is still perceived by students to be a major issue at some of the VCT centers.

"I think HIV testing clinic is a place you can go in and get tested for HIV virus. When you get there people are trained to talk to you about HIV causes and how it is transmitted..." (Male participant).

**Theme 2: Concerns about Lack of Confidentiality**

Students reported that most mobile HIV testing units are crowded and students fear that their concerns will be revealed just by their presence at the testing center or by the emotions they may express when receiving their test results.

"There are usually lots of people in (the) school area when the HIV testing mobile unit comes on campus. If you are tested positive there is no way you can hide your emotions as you emerge from the mobile testing unit. Everybody will know your status because you have a sad face. People will start to say he be like say this one don get am o! (Which means - this one tested positive)." (Female participant)

Both universities had testing sites as part of the NGO-funded health centers on campus and many students reported having positive experiences with HIV testing at these centers. Students believe the testing experience is more private at such centers, because the clinic is not in a busy school area and HIV testing is only available by appointment.
Most undergraduate male students prefer the student health center to the mobile HIV testing unit.

"...it requires only the doctor or HIV testing counselor and you. Besides it is isolated from the busy school area and nobody knows your business."

(Male participant)

**Theme 3: Gender Differences**

HIV testing patterns differ among our sample (N=39) of male and female undergraduate students in Nigerian universities. Female undergraduate students preferred to get tested at the HIV mobile testing unit in the school area because they could go with their friends in groups, making it unclear which girl had been tested, further adding to their sense of confidentiality. In addition, the same issue that makes the student health center more attractive for male students -- the physical distance from campus -- leads female students to prefer the HIV mobile testing unit since the unit is regularly stationed near the residence halls and classrooms, making it easy to access. In addition, results are given immediately at the HIV mobile unit, without the agony of a long wait and the need for a repeat appointment.

"Most people go for the New Hall HIV testing because your friends encourage you to go and you receive your test results immediately. As per the health center, you have to go there and request for testing and go back for your test. Then you have to think about walking down to the health center and that's not encouraging...." (Female participant)
Theme 4: Availability of Test Site and Testing Experiences

Students have access to free HIV testing services on campus through the student health center and the HIV testing mobile unit that comes on campus every 3 to 6 months. Nigerian university students report having had good experiences at HIV testing services and with counselors. They found counselors well trained and patient in listening and sensitive in delivering test results. The students reported that counselors do not just perform the HIV test, but also counsel the students about condom use and ways of reducing risky sexual behaviors. Students appreciate having someone who can help them with issues of follow up care and other considerations if found to be HIV positive and also take the time to review their sexual risk and emotional and behavioral challenges if they turn out to be HIV negative.

"...if unfortunately the person is positive, there is someone to talk to and help the person. If the person is negative, there is someone to help the person stay and maintain their negative status". (Female participant)

Theme 5: Barriers to HIV Testing

Confidentiality, error in reporting HIV test results and stigma were major barriers to testing reported by students. Since most HIV mobile testing unit sites are crowded, it results in challenges to privacy since everyone present can perceive one’s test result by their demeanor when told their test results. In addition, stories about errors such as mixed up blood samples or misread test results can be devastating. This is one of the reason some students avoid getting tested because they are not sure if the test results are accurate as blood sample can sometimes be mixed up or test results misread.
"......they sometimes mix up blood samples and give you a diagnosis that is not yours. Once told you have HIV it is very difficult to erase that from your mind! You have to live with it for the rest of your life." (Male participant)

As easy as it is to get an HIV test, stigma continues to be a barrier to HIV testing in Nigeria as students reported an overwhelming feeling of shame about a sero-positive status, thus leading to social stigma and isolation. Stigma is not only limited to the infected individual but it also extends to family members.

"......family members are stigmatize, making it difficult for such family to sometimes interact with the community." (Male participant)

"In Nigeria we are bound by strong family ties. What affects one affects all and this sometimes becomes very difficult in a family with an HIV sibling or parent to get some to marry because people will always refer to the issue that someone is infected with HIV or died from the disease." (Female Participant)

**Theme 6: Condom Use**

Condom use continues to be a challenge to many Nigerian university students despite their relatively high knowledge of HIV and AIDS transmission and the need to use condoms consistently. In addition to high levels of knowledge about condom use, condoms are widely made available to students. They can be obtained for free at the student health center, HIV mobile units, and various campaigns promoting condom use as a way of preventing HIV transmission and other sexually transmitted infections on campus. In addition, condoms can be bought at the pharmacy stores for a minimal fee.
Most male participants identify and embrace condom use as a way of preventing HIV, sexually transmitted infections, and pregnancy. But many do not necessarily use condoms because they prefer skin-to-skin contact during sexual intercourse; others are inexperienced in using condoms, are embarrassed and as a result fail to use them properly, and then blame the girl for getting pregnant.

"Some of these guys on campus who say they use condoms in reality do not. Often times they don’t know how to properly use a condom and when something happens they blame it on the girl." (Male Participant)

Religion and culture continue to have a strong influence, particularly on girls. Many of them stress the need for abstinence and tend to have a negative attitude towards condom use. They note that abstinence is the best method for preventing HIV and other sexually transmitted infections and note that condoms can break or even cause allergic reactions.

".......and it has been proven that condoms are not 100% safe to prevent infections and cause allergic reactions to the skin.” (Female Participant)

Despite all this, many students reported being in a sexual relationship and due to pressures by their partners, engaging in unprotected sex which they know increases their chances of being infected with HIV or other sexually transmitted diseases.

DISCUSSION

This is one of the first contextual qualitative studies to examine undergraduate Nigerian university students’ HIV testing experience and behaviors. Our qualitative results showed that Nigerian university students report surprisingly good access to VCT sites, generally positive experiences with these sites and high levels of knowledge about HIV transmission and HIV testing. In contrast to previous research, our studies showed
Nigerian university students are confident about getting HIV testing, have access to HIV testing centers and report that they go for HIV testing every 3-6 months. There are clear gender preferences where students prefer to be HIV tested. Testing is more of a social issue for female students and as a result they are more likely to go for HIV testing in the protection of a group when encouraged by their peers. Some even start out by simply going with the group while others are tested, with the understanding that simply being in the group does not mean that one is getting tested, which provided some sense of privacy for females. Male students, on the other hand, prefer to go alone to a more isolated HIV testing site, without their friends ever knowing that they went for testing, even when these venues do not provide rapid testing and require returning for test results.

Despite these encouraging trends it is troubling that participants seem to get tested every 3-6 months, possibly to monitor their risky sexual behaviors: less than half of our sample reported that they did not use condoms at their last sexual encounter and most men reported having multiple sexual partners. Future interventions should continue to encourage testing, address the consistent use of condoms in light of multiple partners and stress stigma reduction for the population at large.

Our results also show that HIV testing counselors are perceived to be well trained and patient in delivering test results. Through the teachable moments created by the VCT experience, students’ fears about HIV have been reduced and knowledge levels increased. Despite this, students continue to stress how stigmatized testing and especially the possible outcome of a positive HIV result continue to be. Great shame would come to their families and many fear “losing it all” if they were found to be HIV positive. Despite this, males continue to engage in sex with multiple partners since it is a way for them to
prove their manhood and female students, while more conservative, agree to sex as a means of finding a man to marry. Culturally, few have been able to align the risk, stigma and pressure to be sexually active to be recognized and respected or get married, they don’t associate it with the behavior of their friends and fellow students. VCT needs to address this issue head on and go beyond the knowledge and issues about risk and follow up since the real need generally lies in this gap and not in lack of access or lack of knowledge.

These findings emphasize the importance of providing culturally sensitive counseling before and after HIV testing, as opposed to recent recommendations by the WHO and the CDC (2001) to provide rapid testing without counseling. The teachable moments created by the counseling portion of the testing experience seems to be effective in initiating a more open discussion about HIV, thus increasing knowledge and encouraging more people to consider testing and become aware of their sero-status.

The WHO and CDC should consider region, geography, and culture of each specific country before advocating and changing the face of HIV testing to rapid testing across the globe.

STRENGTHS AND LIMITATIONS

While many of our findings are not surprising and are validated in already published quantitative studies, this study provides important contextual cultural information to VCT, HIV and AIDS among university undergraduate students in Nigeria. The use of our conceptual framework strengthened the design and enabled us to better understand the depth and complexity of Nigerian culture and its potential impact on VCT, and allowed us to identify salient beliefs among Nigerian university students, which are
different from other populations. Through this study, barriers that hinder VCT utilization among Nigerian university students were identified and might be reduced in the future.

Despite the strengths of this study which lies in our ability to obtain more in depth thought about issues from participants, our qualitative approach was not based on a random selection of students and thus the findings may not be representative of Nigerian students at large. Additionally, self-selection biased the results, because a number of students were solicited to participate in the study while they were visiting their school health center. Such students, if they were visiting the student health center for reproductive or sexual health concerns, may conceivably have a higher level of HIV prevention awareness.

Findings from this research will contribute to the limited existing literature on VCT in Nigeria, most especially among university students. In addition, this study provides valuable information about the state of HIV testing services in Nigerian universities and efforts should be focused on reducing overcrowding at HIV mobile testing units on campus, to make testing more attractive to this population.
Table 4.1 Demographics of Key Informants and Focus Group Participants (N=39)

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REFERENCES


CHAPTER 5
SECOND PUBLISHABLE PAPER

Factors Influencing Intention to Utilize HIV Voluntary Counseling and Testing among Nigerian Undergraduate Students

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ABSTRACT

HIV testing and counseling remains a cornerstone to a comprehensive approach to HIV prevention and education. This article examines intention to use HIV voluntary counseling and testing (VCT) services among undergraduate students in Nigerian universities, a country where HIV rates are continuing to rise. Using a framework informed by the health belief model and the theory of gender and power constructs, a cross-sectional survey was administered to students at the University of Lagos, Nigeria. Among the 39% of respondents (N=116) that had obtained HIV testing, the most common primary reasons for testing were having sex with a new sexual partner and having "unprotected sex". Among those who never tested, "I am not at risk for HIV infection" (69.4%) was the most common barrier. Multiple regression analyses revealed "belief in personal invulnerability", "partner related intention to use VCT", and "gender roles/cultural expectation" were statistically significant ($p < 0.05$) correlates of intention to use VCT. Emphasizing these reasons in HIV education campaigns will likely increase testing rates for this population.

Key words: HIV testing, Nigeria, university students, sexual behavior, knowledge, experience.
ACKNOWLEDGEMENTS

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INTRODUCTION

Worldwide, 31.3 million adults and 2.1 million children live with HIV, clearly making it a major threat to public health (Joint United Nations Program on HIV and AIDS [UNAIDS], 2008). Sub-Saharan Africa continues to be the most affected by the AIDS epidemic, with over 67% of the world’s HIV infected individuals living in the region and a total of 22.4 million infected people by the end of 2008 (UNAIDS, 2008). The proportion of individuals living with HIV has slightly diminished, mainly due to the numbers of deaths from AIDS exceeding the number of new HIV infections. However, the total number of people living with HIV continues to rise due to overall population growth (WHO, 2008).

Since the diagnoses of the first case in Nigeria in 1984 (Kamga, 2001) the epidemic has been growing at an alarming rate, despite efforts to curb its spread. By 2009, there were 220,000 deaths related to AIDS and 2.9 million people were infected with HIV (World Fact book, 2010). HIV infection continues to grow at a staggering rate and this poses a national threat to Nigeria; the impact on the economy and the resulting depletion of the labor force is significant (Sunmola, 2001).

It was estimated that by 2010 there will be an increase of between 18 –26 percent in the prevalence of HIV cases in Nigeria (Nigerian Federal Ministry of Health, 2006). Heterosexual sex continues to be the major mode of transmission due to lack of broadly available information about sexual health and HIV, low levels of condom use, and high levels of sexually transmitted diseases, which make it easier for the virus to be transmitted (WHO, 2008). Furthermore, women accounted for 58 percent of all adults
aged 15 and above living with HIV in Nigeria (Averting HIV and AIDS [AVERT], 2010).

It is suggested (Nwokoji & Ajuwon, 2004) that these increases in AIDS infections may be due to cultural norms, traditions, beliefs and practices in Nigeria. Women have little autonomy when it comes to sex, particularly in marriage. A man can be married to more than two women and still engage in sexual relationships outside his matrimonial home (Isiugo-Abanihe, 1994). Additionally, the practice of multiple sexual partners, men engaging in casual sex or what is known as “one-night stands” and the “sugar daddies” phenomenon in which struggling female students have sex with long older students, faculty members and businessmen mainly for survival, security, better grades, monetary gain and marital purposes is somewhat common in tertiary institutions in Nigeria (Ekanem, Afolabi, Nuga & Adebajo, 2005). All are seen as culturally accepted or at least tolerated practices that continue to perpetuate the transmission of the HIV virus.

The majority of Nigerian university students have high knowledge levels about HIV, including knowledge about oral and vaginal sex (Sangowawa, Owoaje & Faseru, 2004), blood transfusion (Oyo-Ita, Ikepeme, Etokidem, Offor & Okokon, 2005), mother-to-child transmission (Isiugo-Abanihe, 1994), and a majority (68%) report understanding the importance of condom use (Aluede, Imhonde, Maliki & Alutu, 2005; Kayode, Adeyemo & Omotade, 2002). However, Arowojolu and colleagues (2002) found that condom use was not consistent in this group of students, with 68% reporting sex without a condom in the past month. Despite this, the majority of college students
perceive themselves to be at low risk of contracting HIV (Harding, Anadu, Gray & Champeau, 1999).

To address this, many suggest that voluntary counseling and testing (VCT) needs to be used as a method to help at risk individuals to monitor risk but at the same time use this testing experience as a teachable moment to reiterate personal risk. VCT for HIV is a process by which an individual undergoes confidential counseling that enables him/her to make an informed choice about learning his or her HIV sero-status and to take appropriate action (Montgomery & Ostrow, 1998). Counseling for VCT consists of pre-test, post-test and follow-up counseling (Family Health International [FHI], 2008). The client-centered nature of counseling enables trust between the counselor and client so that there is an opportunity for in-depth discussion of HIV, including how to prevent HIV (Montgomery & Ostrow, 1998). Counseling helps people identify the implications of a negative or positive result, and helps them think through practical strategies for coping with the test result (FHI, 2008) as well as encouraging the infected individual toward protecting others.

It is well established that VCT is effective in facilitating behavior change for HIV prevention and as an entry point for early care, treatment options and support for those infected with HIV (CDC, 2006). It is also seen as holding the key to reducing stigma and discrimination, especially among Nigerian youths (Amusa, Joel, Anyamele, Okoro, Shobande & Pius, 2004)

Condom use is part of standard VCT and it well documented that individuals who receive VCT are more likely to change their behaviors, i.e., use condoms more often to prevent HIV (Allen, Serufilira, Bogaerts, Van de Perre, Nsengumuremyi, Lindan, Carael,
& Wolf, 1992; Mola, Mercer, Asghar, Gimbel-Sherr, Micek & Gloyd, 2006) regardless if they tested either positive or negative (Allen et al., 1992).

Unfortunately the WHO has recently suggested forgoing formal VCT due to cost (WHO, 2005), but many feel that removing VCT with its teachable moments and reiteration of a need for condom use in the context of Nigeria would further lead to increases in infections given a cultural environment that tolerates and at times even encourages risks.

The purpose of this research was to explore factors that will influence intention to use VCT among Nigerian university students. The college years serve as both an entry and opportune time for young adults to cultivate and experience romantic and sexual dating relationships. Research is needed to understand how the dynamics of culture and other factors impact HIV risk and subsequent intentions for VCT.

**METHODS**

A cross-sectional, mixed method study was conducted to identify factors that may influence intention to use VCT among Nigerian undergraduate students attending the University of Lagos. The study was conducted in two phases using qualitative data (six key informant interviews and four confirmatory focus groups) to inform the development of a more contextualized questionnaire.

A convenience sample of 301 participants completed a self–administered anonymous questionnaire. Participants were enrolled and registered in core university classes (classes taken by nearly all students) identified by the university administration. At the time of class all students in attendance who agreed to participate were eligible and participated in the passive informed consent procedures. Participants were allowed to
temporarily or permanently discontinue their participation in the survey if they felt uncomfortable. Prior to data collection, the Institutional Review Board (IRB) at Loma Linda University approved the research study.

The survey instrument was constructed based on a theoretical framework that was informed by the health belief model and theory of gender and power. It consisted of seven sections that included inquiries about the respondent’s demographics such as age (categorical), gender, religion (Christian, Muslim, other), program of study, current year of enrollment in school (1st-5th year), dating (current, age at first dating, sex during first date, type of person one prefers to date) and sexual history (sexual intercourse defined as oral, vaginal or anal penetration), including age at first sex, number of lifetime and last year sex partners, age at first intercourse, sex with multiple partners, usual types of contraception, condom use at last sex, frequency of condom use, history of STDs, general concern about becoming HIV infected, and personal perceived HIV risk. The study outcome variable was intention to intention to use VCT, assessed by a 5 point Likert scale ranging from very unlikely to very likely. Variables examining the study’s conceptual framework were a set of statements using a Likert scaled response pattern ranging from 1 to 5 (strongly disagree to strongly agree), which were factor analyzed, alpha levels determined for fit, and then used as scale scores for co-variables. They included: variables from the health belief model (perceived self-efficacy, perceived benefits, and perceived barriers regarding VCT) and theory of gender and power (gender roles and cultural expectations). HIV knowledge was assessed using DiClemente’s AIDS Knowledge scale (DiClemente, Brown, Beausoleil, & Ludico, 1993), a 12-item tool with
a dichotomous response option of “yes” or “no” to various statements on prevention and transmission of the AIDS virus (DiClemente, et al., 1993).

The survey was pilot tested among student volunteers with similar backgrounds to the target population, for reading level appropriateness, comprehension, clarity, and the length of time it took to complete the survey.

Based on the distributions of responses, some independent variables such as age, age at first sexual intercourse, age at first date, number of sexual partners, and program of study were collapsed into three or more categories. In addition, based on frequencies of responses intention to utilize VCT, the main dependent variable of this study, was collapsed from five categories into two categories (likely and unlikely to use VCT).

**Statistical Analysis**

Data compiled from the self-administered anonymous survey were analyzed using SAS, version 9.2 (SAS Institute, Inc., Cary, NC). Descriptive statistics such as mean, frequencies and percentages were used to describe demographic, relationship status, sexual history and condom use behavior was assessed for lifetime, past year, and current/last sex.

Factor analysis with Promax rotation was performed on the total sample. In determining the number of factors to be distinguished, the eigenvalues, explained variance, intercorrelations and the scree test were visually inspected. The total explained variance was expected to be over 80%. Reliability for each factor (group variables) was evaluated using Cronbach’s alpha as indicator for internal consistency, with coefficients above 0.60 considered acceptable. As a model building strategy we first evaluated bi-variable relationships with the outcome and the correlate variables. Spearman’s rank
correlation coefficient was used to analyze each factor and the dependent variable (intention to use VCT). Mann-Whitney, Kruskal Wallis and simple linear regression were used to evaluate the relationship between each variable of demographic, sexual history and factor analysis component with intention to use VCT.

Finally, a multivariable linear regression analysis to investigate intention to use VCT was analyzed with only variables found to be statistically significant in the bi-variable analyses. For this we analyzed the data overall and by gender. P-values less than 0.05 were considered statistically significant.

RESULTS

Participants Characteristics

A total of 301 undergraduate students from the University of Lagos, Nigeria, participated in the study. The majority of students were males (55%), Christian (80.4%), in their fourth year of school (37%), mostly in the faculty of Social Sciences (42%), belonged to the Yoruba (65%) tribe and had a mean age of 23 years (Mean "M" =22.8) (Table 5.1).

More than half (68.5%) of male and 77% of female respondents reported currently being in a relationship. When asked about their current relationship most female noted it as committed with one partner 49% while 12.2% of males reported having sex with multiple sexual partners. Age at sexual intercourse was younger for males with 21% reporting having sex by age 15 (1.5% females (Table 5.2).

Male respondents reported more than three sexual partners (M= 3.03) in their lifetime and approximately an astonishing 73% reported using a condom at last sexual intercourse. Sexually active females reported even higher condom use rates at 80%. Both
men and women agreed that mostly both agreed to use condoms (55% vs. 64% respectively). Among sexually active respondents, only 7% of female and 22% of male respondents believe they are at risk for HIV infection while those who were not sexually active reported slightly higher perceived risk for HV (19% of males and 22% of females felt at risk for HIV). Less than half of sexually active respondents (46.3% for males and 41.0% for female) believe condom prevents against HIV infection and even fewer of those who are not sexually active. (Table 5.2).

**HIV Knowledge**

As Table 5.2 illustrates, the mean score (range: 0-12) for male and female participants regardless of sexual activity status was similar with females having slightly higher scores. Most incorrect answers on the following four items “AIDS is not at all serious; it is like having the common cold”, “There is no cure for AIDS”, “A person can get HIV from a blood test” and “People between ages 15-40 get infected with HIV” (Table 5.2).

**HIV Voluntary Counseling and Testing**

Overall about 45% of sexually active respondents (44% of males and 47% of females) reported ever having an HIV test, while 55% had never been tested. Among those who had been tested, 13.6% had more than two HIV tests in their lifetime. Primary reasons for HIV testing were “had sex with new sexual partner” (14%) and “unprotected sex” (13%). Nine percent of those tested received their most recent HIV test at a private doctor, followed by the student health center on campus (7%) and HIV mobile testing van (6.3%). Among those who had never had an HIV test, the most frequent responses for not getting tested were, “I am not at risk for HIV infection” (69.4%).

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Some of the key barriers to VCT utilization among this population were “lack of confidentiality at HIV testing centers” (54.8%), “lack of access to medical treatment if HIV positive” (43%) and “if I test positive, it is an unbearable stigma” (49.2%).

Table 5.2 describes the results of our factor analyses including the Cronbach’s alpha for the scale (overall and by male and female) and the mean score of the items. We had originally hypothesized that our health belief model (HBM) variables, e.g., perceived benefits, perceived barriers and perceived self-efficacy and theory of gender and power (TGP) variables, e.g., sexual division of labor, sexual division of power and societal norms & affective attachments would predict intention to use VCT. After conducting factor analysis some of the hypothesized variables did not load under the hypothesized HBM and TGP constructs. Therefore, new categories were created based on the factor analyses results (i.e. how variables loaded in each category). All statements were first recoded for directionality (low to high on dimension). Nine scales with good internal consistency (.61-.75) emerged. Inspection for gender differences in the internal consistency indicated that all Cronbach’s alphas remained in the acceptable range overall and by gender. While most scales were similar for males and females, perceived seriousness had higher internal consistency for males, while perceived self efficacy for testing and partner related intention to use VCT was higher in females.

Exploring Intentions to Use VCT

Bi-variable linear regression analyses revealed that only “belief in personal invulnerability”, “partner related intention to use VCT”, “gender roles/cultural expectation”, program of study, having been sexually active during the past year, and current sexual relationship status were statistically significant ($p = < 0.05$) in predicting
intention to use VCT (Table 5.5). We then explored this set of variables in the multivariate model (see Table 5.6). Only partner-related intention to use VCT remained significant overall and for both genders, accounting for 19% of variance for males and 60% of variance for females.

DISCUSSION

This is one of the first studies to examine intention to use HIV voluntary counseling and testing among undergraduate students in Nigerian universities. Young adulthood and, most especially the college years, is a crucial time for the development of lifetime habits and risks (Robison, 2000). This study allowed us to examine predictors of intention to use VCT among Nigerian university students in light of factors such as perceived benefits and perceived barriers to testing, as well as sexual behaviors, gender roles, and cultural expectations.

Our results show that despite that with over half (66.8%) of our respondents in a relationship, most reported condom use at last intercourse; the majority (69.3%) did not perceive themselves to be at risk for HIV infection. While this supports several Nigerian context studies about respondents not perceiving themselves to be susceptible to HIV infection the high condoms use rates suggest that HIV prevention efforts worked at least for this group of Nigerian college students (Aluede et al., 2005; Kayode et al., 2002; Arowojolu et al., 2002; Sumola, 2001).

This is further supported by our participants being quite knowledgeable about HIV and AIDS and its mode of transmission. Clearly, education about HIV in light of a decade of increasing HIV rates in the country and aligned continuous education seemed to have had an effect in this group of young adults.
Approximately 43.3% of sexually active students in this sample had a history of testing, citing having sex with a new sexual partner and unprotected sex as the primary reasons to seek HIV voluntary counseling and testing. Low risk for HIV infection was frequently noted by majority as reason why they had never utilized VCT. A 2002 study among university students in four African countries reported 17.3% had been tested for HIV (Peltzer, Mpofu, Baguma & Lawal, 2002). Another 2010 study, conducted among medical students at the University of Jos, Nigeria, showed that roughly half of these students have had VCT (Comfort, Daniyam, Agaba & Agaba, 2010). Our study showed a testing rate of 39% for undergraduate students at the University of Lagos with testing rates increasing for those who are sexually active (around 50%) similar to that of past studies. What was surprising are the relatively high testing rates for the sexually inactive respondents. (44% of males and 26% of females). It seems that while they report that they do not have sex, they engage in behaviors that make them at least worry enough about HIV to get tested, given the high rates of HIV in the country.

The reasons cited for utilizing VCT in this study were markedly different from previous research on university students. In previous research, the most common influential factors leading to testing were external influences such as “friends/peers” and “routine check-ups”. Unprotected sex was cited in this study as one of the primary reasons for VCT utilization, which is in line with key recommendations for HIV screening by health care providers and the Centers for Disease Control (CDC). Having sex with a new partner was the second highest named reason for VCT testing intentions in this study sample. Given that heterosexual contact is the main risk factor for HIV infection among university students in Nigeria, this may reflect an increasing sense of
personal responsibility when it comes to assessing personal assessment of HIV risk. It seems that Nigerian undergraduate students are aware of universally present HIV risks and are therefore concerned about risks associated with a new sex partner. So the good news is that the “knowledge” about how risk is acquired is leading to increased intentions for testing.

As for those who are sexually active but had never had tested, their main reason cited was that they feel that they are “not at risk for HIV infection” (87.1%). Previous studies on Nigerian students’ perceived susceptibility to HIV revealed that fear of how one’s family and community may react to an HIV positive person was significantly associated with perceived susceptibility (Comfort et al., 2010). Thus, in Nigerian culture, where the importance of bringing honor and avoiding shame to the family is strongly upheld, individuals may not be as willing to seek VCT even though they may feel at risk.

Bi-variable analyses revealed that “belief in personal invulnerability”, “partner related intention to use VCT”, “gender roles/cultural expectations”, as well as having had sex and the type of sexual relationship (multiple vs. steady partner) and overall perceived risk for HIV were significantly \( p = < 0.05 \) related to predicting intention to use VCT. However, only partner-related intentions to use VCT remained significant correlates – for both men and women in this study. Only if one’s sexual partners are seen as ‘risky’ i.e., if the person feels that a test may be necessary (regardless of the result) or if one’s friends feel that one “really should” do the testing does the concern independently predict intention to test.
Implications for Health Education

With increasing HIV infection rates and a lack of either curative drugs or vaccinations for HIV, prevention remains our best response to the AIDS crisis. Even though AIDS has become a manageable chronic disease in many wealthy countries, access to quality HIV treatment for an average Nigerian can be very difficult, as 48% of HIV medications in circulation are fake or substandard (Peterson & Obileye, 2002). VCT has been identified as an important cornerstone of prevention (FHI, 2008) both in the U.S. and in African countries. There is a popular adage which states that “prevention is better than cure”. In this context, VCT has the potential to promote positive behavior change at a teachable moment by encouraging condom use and the negotiation for safer sex practices through counseling and education. Thus, our ability to better understand a group that is at risk for HIV (university students) and their intention to use VCT services is critical to designing effective interventions targeted to this important group. The findings from this study contributes to the limited existing literature and provide information that can be used as a basis for health educators to develop and implement culturally appropriate programs that promote VCT utilization and HIV prevention among Nigerian university students. In addition, interventions to increase HIV voluntary counseling and testing use among university students while taking into account the unique Nigerian culture, benefits, and barriers to VCT utilization are needed.

Suggestions for Future Research

While this study sheds light on how cultural expectations, perceived benefits, and barriers may impact intention to use VCT among Nigerian university students, more research is needed to improve our understanding of these predictors. We need to examine
what are the most important indicators that this population would feel comfortable utilizing when inquiring about HIV testing. More attention can also be focused on exploring how Nigerian university students conceptualize “partner related intention” and its impact on intention to use VCT.

Limitations

There are limitations to this research based in part on the selected study design and sampling. Despite the limitations, a feature of the study that strengthened the design and contributes to the literature was the disaggregation of data by focusing on one specific target population, which is needed to advance health research agenda among Nigerian students. Since this was a cross-sectional design, it was not possible to determine causality. For example, it is not known if history of HIV testing led to a student’s selection of a sexual partner. This was an exploratory study that required the use of purposive and convenience sampling, therefore, the nonrandom sampling technique limits the generalizability of the results. Self-selection may also have biased the results because students who visited the health center may have been more concerned about their health status and may also have higher levels of HIV prevention awareness if they see a healthcare provider about reproductive and sexual health concerns.

Data gathered from the questionnaire were based on self-reports, which involves recall biases and other limitations. Self-reports may have also been prone to social desirability bias, though it is nearly impossible to obtain information any other way given the multitude of variables that were examined.
REFERENCES


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Table 5.1 Demographics of Survey Respondents (N=301)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
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</tr>
<tr>
<td>Male</td>
<td>165</td>
<td>54.8</td>
</tr>
<tr>
<td>Female</td>
<td>132</td>
<td>43.9</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 -19</td>
<td>51</td>
<td>16.9</td>
</tr>
<tr>
<td>20 -24</td>
<td>134</td>
<td>44.5</td>
</tr>
<tr>
<td>25 -29</td>
<td>68</td>
<td>22.6</td>
</tr>
<tr>
<td>30+</td>
<td>13</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
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<td>80.4</td>
</tr>
<tr>
<td>Muslim</td>
<td>58</td>
<td>18.6</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
</tr>
<tr>
<td>Hausa</td>
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<td>5</td>
</tr>
<tr>
<td>Ibo</td>
<td>63</td>
<td>20.9</td>
</tr>
<tr>
<td>Yoruba</td>
<td>195</td>
<td>64.8</td>
</tr>
<tr>
<td>Other</td>
<td>26</td>
<td>8.6</td>
</tr>
<tr>
<td><strong>Program of Study</strong></td>
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<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>126</td>
<td>41.9</td>
</tr>
<tr>
<td>Natural Science</td>
<td>92</td>
<td>30.6</td>
</tr>
<tr>
<td><strong>Year at School</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st year</td>
<td>84</td>
<td>27.9</td>
</tr>
<tr>
<td>2nd year</td>
<td>34</td>
<td>11.3</td>
</tr>
<tr>
<td>3rd year</td>
<td>60</td>
<td>19.9</td>
</tr>
<tr>
<td>4th year</td>
<td>110</td>
<td>36.5</td>
</tr>
<tr>
<td>5th year</td>
<td>10</td>
<td>3.3</td>
</tr>
</tbody>
</table>
Table 5.2 Relationship Status, Sexual History and Condom Use (N=301)

<table>
<thead>
<tr>
<th>Percentage%</th>
<th>Male (n=159)</th>
<th>Female (n=125)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you in a relationship (% Yes)</td>
<td>100 (68.5)</td>
<td>.95 (76.6)</td>
</tr>
<tr>
<td>Status of current relationship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One casual partner with sexual activity</td>
<td>21 (15.1)</td>
<td>7 (6.0)</td>
</tr>
<tr>
<td>One committed partner with sexual activity</td>
<td>44 (31.7)</td>
<td>57 (49.1)</td>
</tr>
<tr>
<td>Multiple partners with sexual activity</td>
<td>17 (12.2)</td>
<td>1 (0.9)</td>
</tr>
<tr>
<td>Age at First Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 -13</td>
<td>16 (12.9)</td>
<td>3 (2.9)</td>
</tr>
<tr>
<td>14 -19</td>
<td>81 (65.3)</td>
<td>65 (53.1)</td>
</tr>
<tr>
<td>20+</td>
<td>27 (21.8)</td>
<td>35 (34.0)</td>
</tr>
<tr>
<td>Age at First Intercourse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 -15</td>
<td>20 (21.1)</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>16 -20</td>
<td>54 (56.8)</td>
<td>33 (50.8)</td>
</tr>
<tr>
<td>21+</td>
<td>21 (22.1)</td>
<td>31 (47.7)</td>
</tr>
<tr>
<td>Number of Sexual Partners last year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Risk: 0-1 Partner</td>
<td>44 (57.9)</td>
<td>45 (93.8)</td>
</tr>
<tr>
<td>High Risk: 2 or more Partners</td>
<td>32 (42.1)</td>
<td>3 (6.2)</td>
</tr>
<tr>
<td>Number of Sexual Partners in lifetime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Risk: 0-1 Partner</td>
<td>28 (32.9)</td>
<td>37 (53.6)</td>
</tr>
<tr>
<td>High Risk: 2 or more Partners</td>
<td>57 (67.1)</td>
<td>32 (46.4)</td>
</tr>
<tr>
<td>Did you use condom at last sexual intercourse (% Yes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexually active</td>
<td>54 (73.0)</td>
<td>45 (80.4)</td>
</tr>
<tr>
<td>Not Sexually active</td>
<td>14 (40.0)</td>
<td>8 (42.1)</td>
</tr>
<tr>
<td>Who usually initiates condom use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My partner initiates condom use</td>
<td>9 (8.8)</td>
<td>3 (4.1)</td>
</tr>
<tr>
<td>I initiate condom use</td>
<td>27 (26.5)</td>
<td>12 (16.4)</td>
</tr>
<tr>
<td>We both agree to use condom</td>
<td>56 (54.9)</td>
<td>47 (64.4)</td>
</tr>
<tr>
<td>Condom use prevents HIV infection (% Yes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexually active</td>
<td>37 (46.3)</td>
<td>25 (41.0)</td>
</tr>
<tr>
<td>Not Sexually active</td>
<td>29 (36.7)</td>
<td>14 (21.9)</td>
</tr>
<tr>
<td>Are you at risk for HIV infection (% Yes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexually active</td>
<td>17 (21.5)</td>
<td>4 (6.6)</td>
</tr>
<tr>
<td>Not Sexually active</td>
<td>14 (18.9)</td>
<td>6 (10.5)</td>
</tr>
<tr>
<td>Knowledge of HIV and AIDS (range 0-12) (Mean±SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexually active</td>
<td>9.24±2.02</td>
<td>9.41±1.71</td>
</tr>
<tr>
<td>Not Sexually active</td>
<td>9.18±2.21</td>
<td>9.39±1.22</td>
</tr>
<tr>
<td>Have you ever tested for HIV (% Yes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexually active</td>
<td>44 (55.0)</td>
<td>28 (46.7)</td>
</tr>
<tr>
<td>Not Sexually active</td>
<td>32 (44.4)</td>
<td>14 (25.9)</td>
</tr>
</tbody>
</table>
Table 5.3 Factors, Means and Cronbach Alpha (N=301)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cronbach Alpha (α)</th>
<th>Mean</th>
<th>Cronbach Alpha (α)</th>
<th>Cronbach Alpha (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief in personal invulnerability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People with HIV should not be allowed to live around uninfected individuals</td>
<td>0.61</td>
<td>3.41</td>
<td>.62</td>
<td>.60</td>
</tr>
<tr>
<td>People like me do not get HIV infections *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My body can fight off HIV infections because I am healthy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived susceptibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People of my age do not get infected with HIV</td>
<td>0.61</td>
<td>4.26</td>
<td>.64</td>
<td>.63</td>
</tr>
<tr>
<td>Only slim girls have HIV *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is likely that I will get HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived seriousness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that HIV infection is very serious</td>
<td>0.69</td>
<td>1.74</td>
<td>.58</td>
<td>.72</td>
</tr>
<tr>
<td>I believe that HIV infection has serious negative consequences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe HIV infection is life threatening *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Self-Efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am confident that I can get HIV testing *</td>
<td>0.72</td>
<td>2.14</td>
<td>.76</td>
<td>.68</td>
</tr>
<tr>
<td>I am confident that I know where to go for HIV test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am confident that I can get through the process of HIV testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner related intention to use VCT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How likely is it that you will encourage your partner to get HIV test</td>
<td>0.81</td>
<td>3.41</td>
<td>.85</td>
<td>.77</td>
</tr>
<tr>
<td>How likely are you to get HIV test if your partner tested negative*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How likely are you to get HIV test if your partner tested positive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How likely is it that you will get HIV test if friends encourage you</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am confident that getting HIV test will reduce HIV transmission</td>
<td>0.69</td>
<td>2.04</td>
<td>.69</td>
<td>.69</td>
</tr>
<tr>
<td>Taking HIV test would give me a sense of security*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to know if I have HIV, in order not to infect someone else</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel HIV testing will reduce risky behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling before and after HIV testing is beneficial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender roles/cultural Expectation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men should be given preference over women in being hired or promoted</td>
<td>0.75</td>
<td>3.46</td>
<td>.68</td>
<td>.72</td>
</tr>
<tr>
<td>Women are created to sexually please their spouses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The intellectual leadership of a community should be largely in the hands of men*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Since a man is the household provider he should make all sexual decisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.3 (Continued) Factors, Means and Cronbach Alpha (N=301)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cronbach Alpha (α)</th>
<th>Mean</th>
<th>Cronbach Alpha (α)</th>
<th>Cronbach Alpha (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td><strong>Perceived Barriers</strong></td>
<td>0.71</td>
<td>4.39</td>
<td>.73</td>
<td>.70</td>
</tr>
<tr>
<td>In general what are the barriers to HIV voluntary counseling and testing for you_Loss of privacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general what are the barriers to HIV voluntary counseling and testing for you_Fear of knowing my status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general what are the barriers to HIV voluntary counseling and testing for you_Stigma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general what are the barriers to HIV voluntary counseling and testing for you_Loss of job*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are your reasons for refusing HIV voluntary counseling and testing_Abandonment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Attitude towards VCT utilization and worth</strong></td>
<td>0.72</td>
<td>4.01</td>
<td>.71</td>
<td>.71</td>
</tr>
<tr>
<td>Please indicate your reasons for getting HIV_test_Have/had HIV positive partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please indicate your reasons for getting HIV test_Asked by partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please indicate your reasons for getting HIV_test_Marriage purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please indicate your reasons for getting HIV test_My Pastor/Imam encouraged me*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please indicate your reasons for getting HIV test_Influenced by family members</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge of HIV and AIDS (range 0-12)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIDS is not at all serious; it is like having common cold</td>
<td>9.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIDS is a disease which destroys the body's immunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is no cure for AIDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIDS is caused by a virus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A person can get HIV from sharing needles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A person can get HIV from blood test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A person can get HIV from unprotected sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A person can get HIV from sharing plates and spoons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People between ages 15-40 get infected with HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only gay men get HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both male and female can get HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A pregnant woman who has HIV can infect her unborn child</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Variable with greatest impact if deleted from cluster and explains variance in model.

** Significant at p value < 0.05
<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>p-value</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief in personal invulnerability</td>
<td>0.32</td>
<td>0.00**</td>
<td>0.15</td>
<td>0.49</td>
</tr>
<tr>
<td>Perceived susceptibility</td>
<td>0.15</td>
<td>0.16</td>
<td>-0.06</td>
<td>0.35</td>
</tr>
<tr>
<td>Perceived seriousness</td>
<td>0.07</td>
<td>0.48</td>
<td>-0.13</td>
<td>0.28</td>
</tr>
<tr>
<td>Perceived self-efficacy</td>
<td>-0.11</td>
<td>0.28</td>
<td>-0.32</td>
<td>0.09</td>
</tr>
<tr>
<td>Attitude towards VCT utilization and worth</td>
<td>0.20</td>
<td>0.27</td>
<td>-0.16</td>
<td>0.55</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>-0.22</td>
<td>0.10</td>
<td>-0.47</td>
<td>0.04</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>0.08</td>
<td>0.46</td>
<td>-0.13</td>
<td>0.29</td>
</tr>
<tr>
<td>Partner related intention to use VCT</td>
<td>0.67</td>
<td>&lt;.0001**</td>
<td>0.54</td>
<td>0.79</td>
</tr>
<tr>
<td>Gender roles/cultural expectation</td>
<td>0.25</td>
<td>0.00**</td>
<td>0.07</td>
<td>0.43</td>
</tr>
<tr>
<td>Knowledge of HIV and AIDS (range 0-12)</td>
<td>-0.01</td>
<td>0.72</td>
<td>-0.10</td>
<td>0.07</td>
</tr>
</tbody>
</table>

**Significant at p value < 0.05
**Table 5.5** Non-Parametric Table for Demographics, Sexual History and Intention to Use VCT (N=301)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 -19</td>
<td>51</td>
<td>0.43</td>
</tr>
<tr>
<td>20 -24</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>25 -29</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>30+</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>158</td>
<td>0.20</td>
</tr>
<tr>
<td>Female</td>
<td>126</td>
<td></td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>233</td>
<td>0.20</td>
</tr>
<tr>
<td>Muslim</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hausa</td>
<td>15</td>
<td>0.49</td>
</tr>
<tr>
<td>Ibo</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Yoruba</td>
<td>186</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td><strong>Year at school</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st year</td>
<td>78</td>
<td>0.45</td>
</tr>
<tr>
<td>2nd year</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>3rd year</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>4th year</td>
<td>107</td>
<td></td>
</tr>
<tr>
<td>5th year</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Program of Study</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>119</td>
<td>0.00**</td>
</tr>
<tr>
<td>Natural Science</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td><strong>Where do your parents live</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban/City</td>
<td>253</td>
<td>0.99</td>
</tr>
<tr>
<td>Rural/Village</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td><strong>Have you been in a relationship in the last 12 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>193</td>
<td>0.63</td>
</tr>
<tr>
<td>No</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td><strong>Did you have sex during your first date</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>57</td>
<td>0.42</td>
</tr>
<tr>
<td>No</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td><strong>Age at first intercourse</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-15 Years</td>
<td>21</td>
<td>0.46</td>
</tr>
<tr>
<td>16-20 years</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>21+ years</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td><strong>Have you had sex within the past year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>140</td>
<td>0.02**</td>
</tr>
<tr>
<td>No</td>
<td>135</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.5 (Continued) Non-Parametric Table for Demographics, Sexual History and Intention to Use VCT (N=301)

<table>
<thead>
<tr>
<th>Current sexual relationship status</th>
<th>N</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship with no sexual activity</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>One casual partner with sexual activity</td>
<td>27</td>
<td>0.02**</td>
</tr>
<tr>
<td>One committed partner with sexual activity</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Multiple partners with sexual activity</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condom is a contraceptive of choice</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>147</td>
<td>0.17</td>
</tr>
<tr>
<td>No</td>
<td>140</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Used condom at last sexual intercourse</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>122</td>
<td>0.27</td>
</tr>
<tr>
<td>No</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Don’t remember</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have you ever had a sexually transmitted disease</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I have never been tested</td>
<td>116</td>
<td>0.08</td>
</tr>
<tr>
<td>No - I have been tested and it was negative</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>148</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Are you at risk for HIV</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>201</td>
<td>0.00**</td>
</tr>
<tr>
<td>Do not know</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>I am not sure</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

+ Significant tests were Mann-Whitney for dichotomous variables & Kruskal Wallis for more than two categories variables.

**Significant at p value < 0.05
Table 5.6 FIRST: Model 1 (Reduced Model) Significant Variables Predicting Intention to Use VCT by Gender (N=301)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>p-value</td>
<td>β</td>
</tr>
<tr>
<td>Overall reduced model</td>
<td>0.26</td>
<td>0.25</td>
<td>0.11523</td>
</tr>
<tr>
<td>Have you had sex within the past year</td>
<td>0.03</td>
<td>0.78</td>
<td>-0.00536</td>
</tr>
<tr>
<td>Status of current relationship</td>
<td>0.03</td>
<td>0.78</td>
<td>-0.00536</td>
</tr>
<tr>
<td>Are you at risk for HIV</td>
<td>-0.08</td>
<td>0.62</td>
<td>-0.03859</td>
</tr>
<tr>
<td>Program of Study</td>
<td>-0.07</td>
<td>0.22</td>
<td>-0.04466</td>
</tr>
<tr>
<td>Belief in personal invulnerability</td>
<td>0.20</td>
<td>0.64</td>
<td>-0.01569</td>
</tr>
<tr>
<td>Partner related intention to use VCT</td>
<td>0.58</td>
<td>&lt;0.001**</td>
<td>0.44845</td>
</tr>
<tr>
<td>Gender roles/cultural expectation</td>
<td>-0.03</td>
<td>0.79</td>
<td>0.05079</td>
</tr>
<tr>
<td>Age</td>
<td>0.03</td>
<td>0.81</td>
<td>0.13221</td>
</tr>
<tr>
<td>Gender</td>
<td>0.31</td>
<td>0.11</td>
<td>0.19</td>
</tr>
<tr>
<td>Religion</td>
<td>-0.01</td>
<td>0.96</td>
<td>-0.10361</td>
</tr>
<tr>
<td>R square</td>
<td>.32</td>
<td>&lt;0.0001</td>
<td>0.19</td>
</tr>
</tbody>
</table>

**Significant at p value < 0.05**
CHAPTER 6
CONCLUSIONS & RECOMMENDATIONS

A. Summary and Implication of Findings

Unlike what is found in published literature, Nigerian university students from the universities of Ibadan and Lagos who participated in this study were confident in their ability to access HIV testing. Among these students, approximately 37% have had an HIV test. The primary reasons cited as decision to obtain an HIV testing were “had sex with a new sexual partner” and “had unprotected sexual intercourse.” As reported in the focus group discussions and key informant interviews, students go for HIV testing every 3 to 6 months and 75% of these students found the experience of HIV testing informative and educative. This has helped reduce fear of utilizing VCT services. Highlighting some of the reasons participants cited for not being tested for HIV are “low levels of perceived susceptibility”, “lack of confidentiality at HIV testing centers,” “stigma”, and “lack of access to medical treatment if HIV positive.”

Individual behavior change interventions by themselves may be a less effective strategy in reaching this population because of the collective nature of sub-cultures in Nigeria. Therefore, community-level interventions that address the stigma and other culturally-rooted cultural values and norms should be considered. Promoting the importance, availability, and accessibility of HIV testing services by offering it as part of other health services (e.g., physicals, HPV vaccine, pap smears, STD testing) that can be obtained on campus will also help to institutionalize HIV testing as a routine procedure.
The majority (51%) of the undergraduate students in this study reported being in a sexual relationship with one committed sexual partner. However, male students were more likely to be in a multiple sexual relationship when compared to female students because it is the general belief that —“in Africa, it is a man’s world”. According to these students, the more a male can boast of their several sexual conquests with girls, the more he gains respect among his peers. Although condom use is the most frequent method of contraception used among sexually active students, condom use continues to pose a challenge as majority of these students prefer “skin-to-skin” contact, are inexperienced in using condoms, are embarrassed to ask for instruction and as a result fail to use condoms during intercourse.

B. Implications for Health Education

HIV and the AIDS epidemic is one of the most pressing public health issues affecting the world today. The recent noted decrease in overall prevalence sent an encouraging message that prevention and intervention efforts may make an impact in eradicating the disease. Health disparities in HIV and AIDS demand that we approach this disease creatively in our diverse society, a testament to Dr. Nyswander’s “open society.” This is even more critical because HIV/AIDS is a highly politicized health issue.

This dissertation is focused on undergraduate students in Nigerian universities because they are often times overlooked as at low risk for HIV infection – many parents believing that their children or wards are not sexually active. However, with increasing HIV infection rates and a lack of either curative drugs or vaccinations for AIDS, prevention remains the best response to the HIV crisis in Nigeria. Even though AIDS has become a manageable chronic disease in many wealthy countries, access to quality HIV
treatment for the average Nigerian can be very difficult, as 48% of HIV medications in circulation are fake or substandard (Peterson & Obileye, 2002). Voluntary counseling and testing remains the most important cornerstone for HIV prevention (FHI, 2008) both in the U.S. and in African countries. VCT has the potential to promote positive behavior change at a teachable moment by encouraging condom use and communication between partners regarding safer sex practices. Thus, our ability to better understand a group that is at risk for HIV (university students) and their intention to use VCT services is critical to designing effective interventions targeted to this important group. The findings from this study contribute to the limited existing literature and provide information that can be used as a basis for health educators to develop and implement culturally appropriate programs that promote VCT utilization and HIV prevention among Nigeria university students. In addition, interventions to increase HIV voluntary counseling and testing use among university students while taking into account the unique Nigerian culture, benefits and barriers to VCT utilization are needed.

C. Suggestions for Future Research

While this study sheds light on how cultural expectations, perceived benefits, and barriers may impact intention to use VCT among Nigerian university students, more research is needed to improve our understanding of these predictors. We need to examine ways to make this population feel comfortable inquiring about HIV testing. More attention can also be focused on exploring how Nigerian university students conceptualize “partner related intention” and its impact on intention to use VCT.
In addition, despite preparations taken in conducting research among undergraduate students in Nigeria universities, a number of unforeseen challenges emerged that are noteworthy for other researchers to consider in future studies.

Recruitment of participants for dissertation research is often very challenging due to limited funding, which does not allow for the luxury of hiring research assistants to support data collection. The experience and challenges in data collection for this research demonstrates that a different approach must be considered to ensure a representative and sufficient sample size. Although one-on-one campus outreach approach was very laborious and time-consuming, it accounted for the majority of participants recruited.

Having the support of key school administrators at each participating university was important to the success of the research because they are the gatekeepers and provide leadership on campus. Due to unrest at the University of Ibadan, the researcher was unable to surveys at that institution.

D. Limitations

There are limitations to this research based in part on the selected study design and sampling. Despite the limitations, a feature of the study that strengthened the design and contributes to the literature was the disaggregation of data by focusing on one specific target population, which is needed to advance health research agenda among Nigerian students. Since this was a cross-sectional design, it was not possible to determine causality. For example, it is not known if a history of HIV testing led to a student’s selection of a sexual partner. This was an exploratory study that required the use of a purposive convenience sampling, therefore, the nonrandom sampling technique limits the generalizability of the results. Self-selection may also have biased the results.
because students who visited the health center may have been more concerned about their health status and may have had higher levels of HIV prevention awareness.

Data gathered from the questionnaire were based on self-reports, which involves recall biases and other limitations. Self-reports may have also been prone to social desirability bias, though it is nearly impossible to obtain information any other way given the multitude of variables that were examined.
REFERENCES


APPENDIX A

IRB APPROVAL

INSTITUTIONAL REVIEW BOARD
Initial Approval Notice - Expedited Review
OFFICE OF SPONSORED RESEARCH • 11186 Anderson Street • Loma Linda, CA 92350
(909) 558-1931 (voice) • (909) 558-6131 (fax)

To: Montgomery, Susanne B
Department: Health Promotion & Education
Protocol: Perceived barriers and benefits of HIV voluntary counseling and testing among university students in Nigeria

This study was reviewed and approved administratively on behalf of the IRB. This decision includes the following determinations:

Risk to research subjects: Minimal
Approval period begins: 01-Dec-2008
Stipulations of approval: 30-Nov-2009
Letters of cooperation from the universities of Ibadan and Lagos are required prior to subject recruitment and enrollment.

Consent Form
Unless IRB has given a specific waiver of informed consent (as documented in the approval stipulations above) the IRB-approved and stamped consent form accompanies this letter. This now becomes the official master consent form for making copies to provide to study participants.

Adverse Events / Protocol Changes
The IRB should be notified in writing of any modifications to the approved research protocol. Adverse effects must be reported to the IRB in accordance with institutional policy. If sponsor or contractual adverse event reporting requirements differ from requirements for reporting to IRB, all reporting requirements must still be met.

Protocol Review
Your protocol is tentatively scheduled for review and renewal at least two weeks prior to the approval end-date indicated above. To assure uninterrupted approval of this project, you will be sent a report form to request renewal by completing and timely returning to Office of Sponsored Research. Anticipate the approval expiration so your study does not lapse; contact IRB for assistance if necessary. In addition to reporting the requested renewal status information, you may also use the form to close the study at that time, if applicable.

Records
All records relating to this project, including signed consent forms, must be kept on file for three years following completion of the study. Please note the PI's name and the IRB number assigned to this IRB protocol (as indicated above) on any future communications with the IRB. Direct all communications to the IRB c/o the Office of Sponsored Research. Thank you for your cooperation in LLU's shared responsibility for the ethical use of human subjects in research.

Signature of IRB Chair/Designee: [Signature]

Loma Linda University Adventist Health Sciences Center holds Federalwide Assurance (FWA) No. 6447 with the U.S. Office for Human Research Protections, and the IRB registration no. is IORG026. This Assurance applies to the following institutions: Loma Linda University, Loma Linda University Medical Center (including Loma Linda University Children's Hospital, LLU Community Medical Center), Loma Linda University Behavioral Medicine, and affiliated medical practice groups.

IRB Chair: Rhodes L. Rigby, M.D.
Department of Medicine
(909) 558-2341, rrigby@ahs.lluc.edu

IRB Administrator: Linda G. Halseoad, M.A., Director
Office of Sponsored Research
Ext 43570, Fax 80131, halseoad@univ.llu.edu

IRB Specialists:
Mark Testerman
Office of Sponsored Research
Ext 43042, Fax 80131, mtesterman@llu.edu

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APPENDIX B

INFORMED CONSENT TO PARTICIPATE IN FOCUS GROUP DISCUSSION

STUDY TITLE: PERCEIVED BARRIERS AND BENEFITS OF HIV VOLUNTARY COUNSELING AND TESTING AMONG UNIVERSITY STUDENTS IN NIGERIA

PURPOSE AND PROCEDURES
You are invited to participate in a research study conducted by a doctoral student from the Loma Linda University School of Public Health, as part of her dissertation research. The study will look at the attitude of Nigerian university students towards the use of voluntary counseling and testing of HIV. If you agree to participate in this study, you will be asked to complete a questionnaire and participate in a group discussion. The purpose of the questionnaire is to learn some general facts about the type of individuals participating. The group discussion itself will last approximately one and a half hours, and involve discussion with your peers about campus relationships, condom use, HIV testing, knowledge of HIV and AIDS.

RISK
You may experience minor discomfort in responding to some of the questions due to the sensitive and personal nature of the topics discussed. You do not have to answer questions that make you feel uncomfortable during the focus group, or asked about in the questionnaire.

BENEFITS
You will not benefit personally from the study, but we hope that it will be a positive experience that will allow you to think about aspects of your life which you have not thought about before. Your participation will help us improve our understanding of gender, cultural and other factors that Nigerian university students face around voluntary counseling and testing.

RIGHT TO REFUSE OR WITHDRAWAL
Participation in the study is completely voluntary. You may refuse to participate without any penalty or loss of benefits at the university you are attending. You may choose to discontinue participation at any time without penalty.

CONFIDENTIALITY
We will strongly uphold the confidentiality of the information you provide. No record of your participation in this focus group will be disclosed. This session will be audio-recorded to ensure that we produce accurate, verbatim notes to help us analyze the results. Any personal information that may identify you by name will be removed and replaced with pseudonyms. No one but the researchers involved will have access to your personal information. The audio-recordings will be destroyed after the data are analyzed.
COST AND REIMBURSEMENT
To thank you for your time for participating, we will provide you with lunch and a thank you gift. The gift will be given out at the end of the focus group session. There are no additional costs to participating in the study beyond the time involved to participate.

CONTACT INFORMATION
Should you have any questions about the research and research subjects’ rights, please feel free to contact the student researcher, Clara Omogbai, Loma Linda University, School of Public Health at egbealele@yahoo.com. You may also contact Dr. Susanne Montgomery, Loma Linda University School of Public Health at smontgomery@llu.edu, or by telephone at (909) 558-8745. If you wish to contact an impartial third party not associated with this study regarding any question or complaint about the study, you may contact Dr. Andrew Okwilagwe, University of Ibadan, Department of Library and Archival Studies, Ibadan, Nigeria, (phone) 08023519154 or at andrewokwilagwe@yahoo.com for information and assistance.

Print Signature ______________________
Print Name _______________________
Date ____________________________
APPENDIX C

PRE-FOCUS GROUP QUESTIONNAIRE

Purpose
Thank you for taking time out today, to share your thoughts and feelings. We are interested in learning about the participants of today’s focus group. Please complete this pre-focus group questionnaire below and remember your responses are confidential.

University
☐ University of Ibadan            ☐ University of Lagos

1. Age __

2. Place of birth ___________________________

3. What is your year in school?
   ____1st year
   ____2nd Year
   ____3rd Year
   ____4th year
   ____5th year

4. Which of the following best describes you?
   ____Heterosexual
   ____Gay/ Lesbian
   ____Bisexual
   ____Transgender
   ____Unisure

5. Are you currently sexually active or have had sex within the past year?
   ____Yes
   ____No

6. Have you ever been tested for HIV?
   ____Yes
   ____No

7. How concerned are you personally about becoming infected with HIV?
   ____Very concerned
   ____Somewhat concerned
   ____Not too concerned
   ____Not at all concerned
   ____Don’t know/ no response

Thank you for your participation.
APPENDIX D

FOCUS GROUP RECRUITMENT FLYER

PARTICIPATE IN A RESEARCH STUDY ON UNDERGRADUATE STUDENTS BELIEFS ABOUT HIV VOLUNTARY COUNSELING AND TESTING

Are you:

- Passive
- Aggressive
- Lazy
- Hardworking
- Obedient
- Persistence
- Shy
- Exotic
- Accommodating
- Promiscuous
- Submissive
- Religious

WE SIMPLY DON'T KNOW.

MAKE YOUR VOICES HEARD

Please e-mail Clara Omogbai at egbealele@yahoo.com or contact your hall Warden at the Porters lodge for further information

ALL PARTICIPANTS WILL RECEIVE A SMALL THANK YOU GIFT FOR PARTICIPATING
APPENDIX E

INFORMED CONSENT FOR QUESTIONNAIRE

STUDY TITLE: PERCEIVED BARRIERS AND BENEFITS OF HIV VOLUNTARY COUNSELING AND TESTING AMONG UNIVERSITY STUDENTS IN NIGERIA

Dear Student:

My name is Clara Omogbai and I am a graduate student at Loma Linda University, School of Public Health. You are invited to participate in a research study to examine campus relationships, condom use, HIV testing, knowledge of HIV and AIDS among Nigerian university students. If you agree to participate, you will be given a questionnaire that will take approximately 20 minutes to complete. Please keep in mind that:

- This questionnaire is completely voluntary.
- This questionnaire is completely anonymous. Your name and contact information will not be linked to your responses.
- You may refuse to participate or discontinue participation without any penalty or loss of benefits.

You may experience minor discomfort in responding to some of the questions due to the sensitive and personal nature of the topics discussed. You do not have to answer questions that make you feel uncomfortable.

You will not benefit personally from the study, but we hope that it will be a positive experience that will allow you to think about aspects of your life which you have not thought about before. Your participation will help us improve our understanding of gender, cultural and other factors that Nigerian university students face around voluntary counseling and testing. The results of this study may be published for scientific purposes but will not have your name or any identifiable references to you.

We recognize that your participation in this research is an investment of your time, we are providing you with a small thank you gift. This gift will be given out when you have completed the questionnaire.

Should you have any questions about the research and research subjects' rights, please feel free to contact the student researcher, Clara Omogbai, Loma Linda University, School of Public Health at egbealele@yahoo.com. You may also contact Dr. Susanne Montgomery, Loma Linda University School of Public Health at smontgomery@llu.edu, or by telephone at (909) 558-8745. If you wish to contact an impartial third party not associated with this study regarding any question or complaint about the study, you may contact Dr. Andrew Okwilagwe, University of Ibadan, Department of Library and Archival Studies, Ibadan, Nigeria, (phone) 08023519154 or at andrewokwilagwe@yahoo.com for information and assistance.

By completing the attached survey, you are giving us permission to use your answers in our study.

Thank you for your time.
APPENDIX F

QUESTIONNAIRE

I am interested in learning about your ideas on HIV Voluntary Counseling and Testing. Answer each question on the questionnaire honestly and to the best of your ability. If you are unsure about an answer it is okay to guess. **DO NOT leave any question/statement blank.**

Your answers will provide useful information about what Nigerian University students think or know about HIV Voluntary Counseling and Testing.

Your response will be kept confidential and **WILL NOT** be seen by your professors and school authorities.

**DO NOT PUT YOUR NAME ON THE QUESTIONNAIRE**
**YOUR ANSWERS WILL BE KEPT CONFIDENTIAL**
SECTION A: Demographics

1. Which university are you currently attending?
   □ 1 University of Ibadan
   □ 2 University of Lagos

2. Sex: □ 1 Male □ 2 Female
   Other (Specify) ____________

3. Religion:
   □ 1 Christian □ 2 Muslim
   □ 3 Other (Specify) ____________

4. How do you best describe your ethnic identity? (Check one)
   □ 1 Hausa
   □ 2 Ibo
   □ 3 Yoruba
   □ 4 Other (Specify) ____________

5. How old are you? ________ years

6. What is your year in school?
   □ 1 1st year
   □ 2 2nd year
   □ 3 3rd year
   □ 4 4th year
   □ 5 5th year

7. What program of study are you in? ________________

8. Where do your parents live?
   □ 1 Urban/City
   □ 2 Rural/ Village

SECTION B

9. Have you been in a relationship in the last 12 months? (If No, skip to #12)
   □ 1 Yes □ 2 No

10. What was your age when you first dated? ________ years

11. Did you have sex during your first date? □ 1 Yes □ 2 No

12. What kind of person do you generally prefer to date? (Check one)
    □ 1 Older student
    □ 2 Classmate
    □ 3 University Faculty
    □ 4 University Staff
    □ 5 Someone from my culture/religion
    □ 6 Others (Specify) ____________

13. At what age did you first have sexual intercourse? Sexual intercourse is defined as oral, virginal or anal penetration.
    □ 1 Never
    □ 2 Please specify age ________ years

14. How many sexual partners have you had?
    a) In the last year? ________
    b) In your life? ________

15. Have you had sex within the past year?
    □ 1 Yes □ 2 No

16. How would you describe the status of your current or most recent sexual relationship? (If response is 1, skip to # 21)
    □ 1 Relationship with no sexual activity
    □ 2 One causal partner with sexual activity
    □ 3 One committed partner with sexual activity
    □ 4 Multiple partners with sexual activity
    □ 5 Other (Specify) ____________
17. Which contraceptive method(s) do you usually use when you have sexual intercourse? *(Check all that apply)*
- Condom □
- Oral contraceptives □
- Diaphragm □
- Withdrawal/Natural Method □
- Sponge □
- Patch □
- Spermicide □
- I don’t use any contraception □
- Other (Specify) ________

18. Did you or your partner use condom the last time you had sexual intercourse?
- Yes □
- No □
- Don’t remember □

19. Who usually initiates condom use?
- My partner initiates condom use □
- I initiate condom use □
- We both agree to use condom □
- Other (Specify) ________

20. Condom use protects against which of the following conditions? *(Check all that apply)*
- Pregnancy □
- Sexually transmitted infections □
- HIV □
- Other (Specify) ________

21. Have you ever been diagnosed with a sexually transmitted disease? *(Such as gonorrhea, chlamydia, genital warts, syphilis or other).*
- I have never been tested □
- No - I have been tested and it was negative □
- Yes (Specify what the disease was) ________

22. How concerned are you about your partner(s) becoming infected with HIV?
- Very concerned □
- Somewhat concerned □
- Not too concerned □
- Not at all concerned □
- Don’t know/ no response □

23. Do you think you are at risk for HIV infection?
- Yes □
- No □
- Do not know □
- I am not sure □
SECTION C: The following questions are about HIV and AIDS

Please select one response for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. AIDS is not at all serious; it is like having common cold.</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>25. AIDS is a disease which destroys the body’s immunity.</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>26. There is no cure for AIDS.</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>27. AIDS is caused by a virus</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>28. A person can get HIV from sharing needles</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>29. A person can get HIV from blood test</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>30. A person can get HIV from unprotected sex</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>31. A person can get HIV from sharing plates and spoons</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>32. People between ages 15 - 40 get infected with HIV</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>33. Only gay men get HIV</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>34. Both male and female can get HIV</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
<tr>
<td>35. A pregnant woman who has HIV virus can infect her unborn Child</td>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
</tr>
</tbody>
</table>

Please, indicate whether you agree or disagree with the following statements. Select one response for each statement.

36. People with HIV should not be allowed to live around uninfected individuals. | Strongly □₁ agree | Agree □₂ | Neutral □₃ | Disagree □₄ | Strongly □₅ Disagree |
37. People who have multiple sexual partners usually get HIV. | Strongly □₁ agree | Agree □₂ | Neutral □₃ | Disagree □₄ | Strongly □₅ Disagree |
38. HIV infected individuals committed sin and should be punished. | Strongly □₁ agree | Agree □₂ | Neutral □₃ | Disagree □₄ | Strongly □₅ Disagree |
39. HIV infected individuals need care and should be treated with respect. | Strongly □₁ agree | Agree □₂ | Neutral □₃ | Disagree □₄ | Strongly □₅ Disagree |
SECTION D: The following questions are about your thoughts and opinions about HIV and AIDS.

Please, indicate whether you agree or disagree with the following statements. Select one response for each statement.

40. People like me do not get HIV infections
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

41. My body can fight off HIV infections because I am healthy.
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

42. I am not worried that I might become infected with HIV virus.
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

43. People of my age do not get infected with HIV
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

44. Only Slim girls have HIV
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

45. I believe that HIV infection is very serious
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

46. I believe that HIV infection has serious negative consequences.
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

47. I believe HIV infection is life threatening
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

48. It is likely that I will get HIV
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree

49. I believe that people who get HIV will die
   Strongly □  Agree □  Neutral □  Disagree □  Strongly □  Disagree
   agree          agree          agree          agree          agree
SECTION E: In this section we would like to know your thoughts about HIV testing. Select one response for each statement.

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>50. I am confident that I can get HIV testing</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>51. I am confident that I know where to go for HIV test</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>52. I am confident that I can get through the process of HIV testing</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>53. I am able to discuss HIV testing with my partner</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>54. I am confident that getting HIV test will reduce HIV transmission</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>55. Taking HIV test would give me a sense of security</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>56. Getting HIV test before sex tells my partner I care about my and her/his health</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>57. If I had HIV, I would rather not know about it</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>58. It is not important to know if I have HIV, because fate will decide if I live or die</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>59. I want to know if I have HIV, in order not to infect someone else</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>60. I am afraid to get HIV test because I am worried about the needle used at a testing site</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
</tbody>
</table>
61. If I test positive, it is an unbearable stigma

<table>
<thead>
<tr>
<th>Strongly □</th>
<th>Agree □</th>
<th>Neutral □</th>
<th>Disagree □</th>
<th>Strongly □</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td></td>
<td></td>
<td></td>
<td>disagree</td>
</tr>
</tbody>
</table>

62. Lack of confidentiality is an issue at HIV testing centers

<table>
<thead>
<tr>
<th>Strongly □</th>
<th>Agree □</th>
<th>Neutral □</th>
<th>Disagree □</th>
<th>Strongly □</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td></td>
<td></td>
<td></td>
<td>disagree</td>
</tr>
</tbody>
</table>

63. My partner may accuse me of infidelity if I get HIV testing

<table>
<thead>
<tr>
<th>Strongly □</th>
<th>Agree □</th>
<th>Neutral □</th>
<th>Disagree □</th>
<th>Strongly □</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td></td>
<td></td>
<td></td>
<td>disagree</td>
</tr>
</tbody>
</table>

64. Lack of access to medical treatment if I test positive is a barrier to HIV testing

<table>
<thead>
<tr>
<th>Strongly □</th>
<th>Agree □</th>
<th>Neutral □</th>
<th>Disagree □</th>
<th>Strongly □</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td></td>
<td></td>
<td></td>
<td>disagree</td>
</tr>
</tbody>
</table>

65. In general what are the barriers to HIV voluntary counseling and testing for you. (Check all that apply).

- □₁ Loss of privacy
- □₂ Fear of knowing my status
- □₃ Error in reporting HIV test results
- □₄ Rejection by family and friends
- □₅ Stigma
- □₆ Loss of job
- □₇ Accused of infidelity
- □₈ Other (Specify) _____________________

66. Have you ever been tested for HIV? (If No, skip to question # 70)

□₁ Yes □₂ No

67. How many HIV tests have you taken in your lifetime?

□₁ 1 □₂ 2 □₃ 3 □₄ 4 or more

68. Where did you go for your last HIV test?

- □₁ University health center
- □₂ Public clinic
- □₃ Private doctor
- □₄ General/Teaching hospital
- □₅ HIV testing mobile clinic/van
- □₆ Other (Specify) _____________________

69. Please, indicate your reasons for getting HIV test. Primary reason Secondary reason

A. Had sex with a new partner □₁ □₂
B. Had unprotected oral, anal and/or vaginal sex □₁ □₂
A. Influenced by friends □₁ □₂
B. Have/ had HIV positive partner □₁ □₂
C. Asked by partner □₁ □₂
F. As a result of illness □₁ □₂
G. Marriage purpose □₁ □₂
H. My Pastor/Imam encouraged me □₁ □₂
I. Influenced by family members □₁ □₂

70. What are your reasons for refusing HIV voluntary counseling and testing. (Check all that apply).
□₁ Testing may increase incidence of AIDS rather than reducing it
□₂ HIV and AIDS has no cure
□₃ Fear of confidants spreading the news of sero-status
□₄ Victimization
□₅ Abandonment
□₆ Lack of confidentiality at HIV testing centers
□₇ Fear of getting HIV from needles used at HIV testing centers
□₈ Other (Specify) ______________________

Please, indicate whether you agree or disagree with the following statements. Select one response for each statement.

71. I feel that HIV test should be made mandatory for all students in Nigerian Universities
       Strongly □₁ Agree □₂ Neutral □₃ Disagree □₄ Strongly □₅ Disagree
       agree

72. I feel comfortable that HIV testing is private and confidential
       Strongly □₁ Agree □₂ Neutral □₃ Disagree □₄ Strongly □₅ Disagree
       agree

73. I feel HIV testing will reduce risky behaviors
       Strongly □₁ Agree □₂ Neutral □₃ Disagree □₄ Strongly □₅ Disagree
       agree

74. Counseling before and after HIV testing is beneficial
       Strongly □₁ Agree □₂ Neutral □₃ Disagree □₄ Strongly □₅ Disagree
       agree

75. I feel going to a test center and going back for the result could be frustrating
       Strongly □₁ Agree □₂ Neutral □₃ Disagree □₄ Strongly □₅ Disagree
       agree
SECTION F

Please, select one response for each statement.

76. How likely is it that you would get HIV test?

- Very □₁
- Unlikely □₂
- Neutral □₃
- Likely □₄
- Very □₅

Unlikely

77. How likely is it that you will encourage your partner to get HIV test?

- Very □₁
- Unlikely □₂
- Neutral □₃
- Likely □₄
- Very □₅

Unlikely

78. How likely are you to get HIV test if your partner tested negative?

- Very □₁
- Unlikely □₂
- Neutral □₃
- Likely □₄
- Very □₅

Unlikely

79. How likely are you to get HIV test if your partner tested positive?

- Very □₁
- Unlikely □₂
- Neutral □₃
- Likely □₄
- Very □₅

Unlikely

80. How likely is it that you will get HIV test if your friends encourage you to get tested?

- Very □₁
- Unlikely □₂
- Neutral □₃
- Likely □₄
- Very □₅

Unlikely

SECTION G

The statements listed below describe attitudes towards gender roles in the society which different people have. There are no right or wrong answers, only opinions. Please, select one response for each statement.

81. Men need to have more than one sexual partner.

- Strongly □₁ agree
- Agree □₂
- Neutral □₃
- Disagree □₄
- Strongly □₅ Disagree

82. Girls who have multiple sexual partners are not respected.

- Strongly □₁ agree
- Agree □₂
- Neutral □₃
- Disagree □₄
- Strongly □₅ Disagree

83. A man feels proud if he has multiple sex partners.

- Strongly □₁ agree
- Agree □₂
- Neutral □₃
- Disagree □₄
- Strongly □₅ Disagree
84. A woman should be free as a man to propose marriage.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

85. A woman should worry less about their rights and more about becoming good wives and mothers.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

86. Under modern economic conditions with women being active outside the home, men should share in household task such as washing dishes and doing laundry.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

87. Men should be given preference over women in being hired or promoted in many professions.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

88. Women are created to sexually please their spouses.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

89. The intellectual leadership of a community should be largely in the hands of men.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

90. Since a man is the household provider he should make all sexual decisions about condom use or contraceptives.

   Strongly □₁  Agree □₂  Neutral □₃  Disagree □₄  Strongly □₅
   agree

Thank you for your time in filling out this questionnaire. Kindly give completed questionnaire to student investigator-Clara Omogbai.

Thank you.
December 23, 2008

To whom it may concern:

This letter is to authorize Clara Egbealele Omogbai conduct her study on “Perceived Benefits and Barriers of HIV Voluntary Counseling and Testing among Nigerian University Students” at the University of Lagos, Akoka, Nigeria.

University of Lagos authorities are willing to assist Ms. Omogbai to ensure that this study is carried out in an effective manner. We know that a research as such is needed on our campus and we look forward to having information from Ms. Omogbai’s study because it will be beneficial to the University of Lagos community.

We are happy to have Ms. Omogbai conduct her study with us.

Yours Faithfully,

A. A., Adebisi

23/12/08
APPENDIX H

LETTER OF APPROVAL- UNIVERSITY OF IBADAN

UNIVERSITY OF IBADAN, IBADAN, NIGERIA
DEPARTMENT OF GUIDANCE & COUNSELLING

DR. AJIBOLA O. FALAYE
B.A., M.Ed., Ph.D. (IBADAN)
Acting Head of Department

E-mail: jibfalaye@yahoo.com, ao.falaye@mail.ui.edu.ng

TELEPHONE: 2348102073 Ext. 2283
234-008135269258, 234-08023343777, 028133565

PROFESSORS:
JULIUS OLANRINDE AKINBO
HELEN O. NWAGWU
C.B.U. UWAKWE

December 30, 2008

Loma Linda University
School of Public Health
Loma Linda, California.

RE: Ms. CLARA EGBEALELE OMOGBAI

The above named person has been authorized to conduct her research on “Perceived Benefits and Barriers of HIV Voluntary Counseling and Testing among Nigerian University Students” at the University of Ibadan, Oyo State, Nigeria.

Ms. Omogbai was once a student at this prestigious university and we are proud of her accomplishments so far. We are willing to assist her in any way we can to ensure that her research is conducted and we know that the results will be beneficial to the Nigerian university students.

We look forward to working with Ms. Omogbai in the future because we believe that issues such as HIV testing need to be addressed within the university community.

Please, do not hesitate to contact me for further information.

Yours Sincerely,

Charles B.U. Uwakwe, Ph.D.
Professor of Counseling/Health Psychology
234-(0)27517204 (Direct line)
E-mail: uwakwebldr@yahoo.com

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