WALDEN UNIVERSITY
A higher degree. A higher purpose.

Walden University
ScholarWorks

Walden Dissertations and Doctoral Studies

Walden Dissertations and Doctoral Studies Collection

2016

HIV Knowledge, Intoxication, Risky Behaviors, and Sexual Communication among Nigeria University Students

JohnPaul Chukwuemeka Ezeonyido
Walden University

Follow this and additional works at: https://scholarworks.waldenu.edu/dissertations

Part of the Public Health Education and Promotion Commons

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

John-Paul Ezeonyido

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Shari Jorissen, Committee Chairperson, Human Services Faculty
Dr. Richard Jimenez, Committee Member, Human Services Faculty
Dr. Kimberly Farris, University Reviewer, Human Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2015

Abstract

HIV Knowledge, Intoxication, Risky Behaviors, and Sexual Communication

among Nigeria University Students

by

JohnPaul Chukwuemeka Ezeonyido

MSW, University of Georgia, 2011

MA, Mt. St. Mary's University, 2003

BA, Bigard Memorial Seminary, 1997

Dissertation Submitted in Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Philosophy

Human Services

Walden University

December 2015

Abstract

Poor sexual communication among Nigerian youth can create problems for health

workers, medical practitioners, and the government in determining what is and is not

working in their attempts to reduce sexually-related diseases. This quantitative study used

self-administered questionnaires among 107 Nigerian university students, aged 18 to 35,

to determine if a statistically significant predictive relationship existed between: (a)

beliefs about alcohol, (b) HIV knowledge, (c) risk behaviors, (d) age, (e) religion, (f)

gender, (g) sexual activity status, (h) dating status, (i) language, (j) sexual orientation, and

(k) tribes of Nigerian university students and their sexual communication with partners.

Previous studies did not use the AIDS risk reduction model (ARRM) as a theoretical

framework to identify frequent risk factors in this population. This study was guided by

the ARRM and used the Sexual Risk Survey (SRS), the HIV-KQ-18, the Revised

Alcohol Expectancy Questionnaire (AEQ-3), and the Dyadic Sexual Communication

Scale (DSC) to assess the participants. Independent-sample t tests were used to analyze

the correlation of study variables and the results showed statistically significant

differences only in tribal affiliation ($p = .022$), gender ($p < .001$; $p = .016$), dating status ($p

= .017$), age ($p = .006$), and sexual activity status ($p = .001$). Linear regression analyses

results showed no statistically significant predictive relationship, $R = .322$, $R^2 = .103$, $F

(12, 94) = 0.904$, $p = .546$, between HIV knowledge, beliefs about alcohol and risk

behaviors of Nigerian students, and their ability to communicate sexually. These findings

justify the need for more culturally sensitive studies and gender/age appropriate HIV

intervention strategies in Nigeria.

HIV Knowledge, Intoxication, Risky Behaviors, and Sexual Communication

among Nigeria University Students

by

JohnPaul Chukwuemeka Ezeonyido

MSW, University of Georgia, 2011

MA, Mt. St. Mary's University, 2003

BA, Bigard Memorial Seminary, 1997

Dissertation Submitted in Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Philosophy

Human Services

Walden University

December 2015

Dedication

This dissertation is dedicated to my brother, Mr. Onyeka Peter Ezeonyido, who passed away on the early hours of June 13, 2015, for being a wonderful brother, an exemplary husband, a humble and generous father, and a contagious lover of people.

Acknowledgements

I acknowledge and give thanks to God who made this project possible. My very special thanks also go to my committee members. To Dr. Shari Jorrisen, thanks for your support, guidance, dedication, encouragement, and for being a wonderful committee chair. To Dr. Richard Jimenez, I thank you for being a great and supportive team player. To Dr. Kimberly Farris, thanks for being a unique and committed reviewer. I sincerely express my gratitude to Mrs. Jacqui Rago who read and criticized every single paper I wrote in this program for almost 5 years it lasted. You are awesome!

I appreciate my family members especially my mother, Mrs. Theresa Tumancha Ezeonyido, for their spiritual and emotional support and for being part of my early academic foundations that brought me this far. I am grateful to all my friends especially Rev. Dr. James Okafor, Rev. Dr. Emmanuel Umezinwa, Rev. Emmanuel Ihemedu, etc, for their fraternal support and suggestions while this tough journey lasted. To the dean of students' affairs at Nnamdi Azikiwe University Awka, Prof. Kenn Nwosu, and all the students who volunteered to participate in my survey, I say thank you very much.

Sr. Chidi Onyedibe, the supportive and advisory role you played in this project will always remain fresh in my memory. Thank you! I also thank my parishioners at Christ Our Hope Catholic Church, Lithonia where I serve as the Parish Priest; and the members of the Nigeria Igbo Catholic Community of Atlanta, where I serve as the Chaplain.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

With the infection rate of three people per minute, 263 people per hour and 6,300

people per day, human immune deficiency syndrome/acquired immune deficiency

syndrome (HIV/AIDS) poses one of the most serious contemporary health challenges

(UNAIDS, 2013). It is estimated that out of about 69 million to 89 million people who

have been infected by HIV/AIDS, approximately 30 million to 42 million have died,

which is a 43% to 47% mortality rate (Doran, 2009; UNAIDS Global Fact Sheet, 2013).

Of those living with the disease, 40% are between the ages of 15 and 24 (UNAIDS

Global Report, 2013; United Nations Population Fund, 2013).

It is estimated that 25 million of those living with HIV/AIDS disease reside in

Sub-Sahara Africa (Bryant, Braithwaite, Nelson, Scott, & Deidra, 2010; UNAIDS, 2013).

According to the United Nations Global Reports on AIDS (2013), the AIDS epidemic in

Sub-Saharan Africa is a major problem in achieving health equality as this area has 70%

of global HIV incidence. Globally, over three million of world HIV/AIDS cases were

traced back to Nigeria as of 2013, bringing HIV/AIDS prevalence in Nigeria to 4.1% of

the entire population (Federal Ministry of Health, 2013; Olowookere, Fatiregu &

Adewole, 2012; UNAIDS 2014).

The three populations adversely affected by the HIV/AIDS epidemic in Nigeria

are women, children, and college aged students. The increase in incidence and prevalence

of HIV/AIDS in Nigeria was attributed to increased sexual activity among Nigerian

teenagers and college aged students (Fawole, Asuzu, Oduntan, & Brieger, 1999). The

major causes of rapid transmission of HIV in Nigeria are having unprotected or unsafe

vaginal (or anal) sex with an infected individual. Other causes include transfusion of contaminated blood, donations of HIV-infected semen, skin grafts or organ transplants taken from an infected person and sharing of unsterilized injection equipment. The roles poverty and corruption play in the spread of this disease have also been noted (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek, et al., 2013; Okulate, Jones & Olarunda, 2008; Omokbodion, Kayode, Ojanen, & Barengo, 2007; Schneider, Chersich, Neuman & Parry, 2012).

One of the potential social change implications of this study is that it could assist those creating HIV/AIDS interventions and policymakers. It could improve knowledge of how sexual communication is associated with HIV/AIDS knowledge, sexual risk behaviors and alcohol use among Nigerian youth. This is important because empirical evidence is needed as a basis for policy decision and to design appropriate programs targeted at behavior change. Another potential positive social change of this study is that it could reduce HIV/AIDS incidence through behavioral changes and help in the management of HIV/AIDS prevalence among Nigerian university students in particular and Nigerians in general. Consequently, health researchers and HIV/AIDS program managers will be better situated to properly assess and evaluate the HIV/AIDS programs already in place, and be better equipped to combat HIV/AIDS epidemic in Nigeria. This study also has the potential to increase the awareness of some societal norms, traditions, and cultural and religious practices that put college students at risk for HIV/AIDS infections in Nigeria.

The general goal of this study was to provide useful knowledge for program developers, educators, health practitioners, and other researchers working to reduce HIV/AIDS infections and manage the associated stigma and suffering. Another goal of this study was to help reduce bias, discrimination and gender stereotypes that are related to HIV/AIDS in Nigeria. This chapter contains a discussion of the background of this research, the problem statement, and research questions and hypotheses. It also covers the purpose of the study, the theoretical framework, a definition of terms, the limitations, and assumptions of study, as well as the scope of the study and its significance

Background

Ebeniro (2010) used exploratory and descriptive designs (mixed method) to investigate the role of traditional and cultural societal norms on the pattern of behavior of Nigerian university students in their HIV/AIDS awareness. The author found high knowledge and awareness of HIV/AIDS among this population. The researcher concluded that socioeconomic factors, culture, and tradition as well as the impact of gender differences, are significantly important in the Nigerian students' perceptions of HIV/AIDS. There is high knowledge of HIV/AIDS transmission and prevention as well as general acceptance of abstinence as a strategy in fighting HIV/AIDS epidemics among Nigerian students (Oladepo & Fayemi, 2011). Oladepo and Fayemi (2011) identified multiple factors such as non-dating status, non-alcohol use, positive attitude, parental involvement, religion, faith, etc. as major predictors of sexual abstinence among the Nigerian student population.

In 2011, the data from the Botswana AIDS Impact Survey (BAIS) was utilized to investigate the extent to which acquired correct knowledge about HIV/AIDS prevention and transmission is translated into protective sexual behaviors among young people aged 10 to 24 in Botswana (Gobopamang, 2011). The researcher proved that the correct knowledge of HIV/AIDS prevention and transmission methods does not necessarily translate into safer sexual behaviors. He also found that some knowledge of HIV prevention and transmission methods among young people has association with safe sexual behaviors.

According to Bird and Voisin (2013), there are many stigmatizing messages about HIV/AIDS coming from families, church, and gay communities. There are also negative internalized beliefs held by black gay males prior to their own infections. HIV stigma leads to sexual silence which negatively influences the disclosure of HIV status (Bird & Voisin, 2013). In a comparative study on the effects of AIDS Risk Reduction Model (ARRM), Champion and Collins (2012) employed a theory-based cognitive behavioral intervention model and enhanced counseling for the abused ethnic minority adolescent women on the spread of sexually transmitted diseases (STDs). The researchers found that ARRM is essential in capturing the complexity of sexual behaviors of this vulnerable population. This suggests that a cognitive behavioral intervention is more effective than the community-based interventions for the prevention of infection, behavior modification, and subsequent risk reduction among vulnerable minority populations.

Winchester et al. (2013) used longitudinal mixed methods to explore the reasons for the decision to disclose or not disclose HIV/AIDS among those receiving

antiretroviral treatment in Uganda. These researchers revealed that early disclosures were generally done for the purpose of emotional support, friendship, medical access, obligation to sexual partners, and being courageous. The reasons for nondisclosure were attributed to fear of stigma from the community, effort to protect one's privacy, desire not to hurt others' feelings and lack of opportunity to disclose. These findings stress the importance of early disclosure of HIV positive status by those infected. There are nondisclosure laws in the western world that do not exist in sub-Sahara Africa. Not disclosing HIV status to sexual partners prior to sex, as practiced in some states in the USA such as Michigan and California, is ambiguous in resolving controversial issues surrounding HIV disclosure. This ambiguity is cause by some complicated circumstances, intra-relationship power dynamics and other social and economic realities (Aziza & Beri, 2011).

Schneider, Chersich, Neuman, and Parry (2012) the relationship between alcohol and the spread of HIV/AIDS. Their work exposed the adamant refusal of HIV policies, research, and other HIV/AIDS prevention efforts which neglect alcohol as a factor in the spread of HIV/AIDS. These researchers concluded on the relationship between alcohol and the spread of HIV/AIDS and the development of policies and intervention programs is necessary. Since alcohol has multifarious effects on HIV/AIDS disease, strategy implementation studies (which make use of behavioral and pharmacologic methods to lower alcohol consumption rate) is unavoidable (Justice, Sullivan & Feillin, 2010). These authors proposed the use of behavioral and pharmacologic methods to lower the alcohol

consumption rate as a means of lowering the transmission rate of HIV/AIDS and the incidence of HIV/AIDS complications.

Riley and Baah-Odoom (2010) supported the use of social representation theory (SRT) and the ARRM to claim that stigmatizing, blaming, and stereotyping result in a reduced sense of threat which subsequently leads to careless sexual behaviors that increase exposure to HIV/AIDS infections. Preparatory behaviors such as late sexual debut, masculine gender-role identity, attitudes toward having sex and peer norms regarding sex are some key predictors of environmental and cultural effects on adolescent sexual behaviors (Mehrotra et al., 2013). Young college aged students (15 to 24 years) have also been found to be disproportionately affected by HIV/AIDS as a result of increasing pre-marital sexual behaviors and lack of sex education

This study intends to fill a gap in previous research by testing the suitability and efficacy of the ARRM theory among the University population in Nigeria. Alcohol laws vary from across the globe and alcohol drinkers are more likely to engage in indiscriminate and sexual risk behaviors such as poor sexual communication and negotiation (Cooper, 2002). This implies that there may be a difference in the explanatory power for each population and culture while using ARRM theory among the Nigerian population.

Statement of the Problem

In this study, I addressed the problem of poor sexual communication among Nigerian youth that is exacerbated by factors such as alcohol use as well as other cultural, religious, and family issues. These factors create problems for HIV/AIDS workers,

medical practitioners, and the government in determining what is and is not working in their attempts to control this disease. Previous research studies have focused on the Nigerian population to determine their level of HIV/AIDS knowledge, their beliefs, and the cause of transmission. Risk factors are considered most prevalent among the most vulnerable populations, which include soldiers, young people, truck drivers, sex workers, and college students (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate, Jones, & Olarunda, 2008; Omokbodion, Kayode, Ojanen, & Barengo, 2007; Schneider, Chersich, Neuman, & Parry, 2012).

Scholars have also identified risk factors for the transmission of HIV/AIDS that are frequent in this population. These include: unprotected sex with multiple partners, lack of communication with partners about sexual history and disease status, patronage of commercial sex workers, poverty, nondisclosure, extra marital relationships, sexual promiscuity, blood transmission, ignorance, and negative stigma (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate et al., 2008; Omokbodion et al., 2007; Schneider et al., 2012). The use of ARRM as a theoretical model of multifaceted sex risk behavior for the Nigerian population was still lacking and one of the aims of this study was to bridge this gap.

Purpose of the Study

This study quantitatively examined and described the relationship between beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, education level, religion, gender, and age of university students in Nigeria and their sexual communication with their partners. The independent variables in this study were HIV/AIDS knowledge, risky

behavior, alcohol use, gender, age, religion and level of education. Sexual communication was the independent variable.

To know the nature of the relationship that exists among these dependent and independent variables is important because empirical evidence is needed for making polices and designing appropriate programs targeted at behavior change. The results of this study may help health researchers, HIV/AIDS program managers, and policy makers design policies on empirical evidence, properly assess and evaluate the HIV/AIDS program already in place, and help them in their efforts to combat HIV/AIDS epidemic in Nigeria.

Research Question and Hypotheses

Research Question: What is the predictive relationship between the beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, age, religion, gender, dating status, tribal affiliation, sexual orientation and HIV knowledge status of university students in Nigeria and their ability to engage in sexual communication with others?

H1$_0$:   There is no statistically significant predictive relationship between the beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, age, religion, gender, dating status, tribal affiliation, sexual orientation and HIV knowledge status of university students in Nigeria and their ability to engage in sexual communication with others

H1:   There is a statistically significant predictive relationship between the beliefs in alcohol use, HIV/AIDS knowledge, sexual risk behaviors, age, religion, gender,

dating status, tribal affiliation, sexual orientation and HIV knowledge status of university

students in Nigeria and their ability to engage in sexual communication with others

Theoretical Framework

This study was guided by the ARRM) which is an amalgamation of constructs

from different behavioral models such as the health belief model (HBM), (Rosenstock,

Strecher, & Becker, 1994), social cognitive theory (Bandura, 1997), and the theory of

reasoned action (Fishbein, Middlestadt, & Hitchcock, 1994). ARRM was designed to

explore the context of HIV risk behaviors among various populations (Longshore, Stein

& Chin, 2006; Malow & Norman, 2008). Although ARRM utilized and adapted these

previous behavioral models, it differs from them by the use of the word *stage* as "an

important maker in the change process" and these stages "are not unidirectional,

nonreversible, or in variant states" (Catania, Kegeles, & Coates, 1990, p. 55). There are

three stages: (a) recognition and labeling, (b) commitment, and (c) action (Catania,

Kegeles, & Coates, 1990). The keyword in these stages is *knowledge* because it is vital in

both recognizing and labeling one's risky sexual behaviors as high or low, making a

commitment to minimize high risk or maximize low sexual and social risk behaviors

(Bowdre, 2013).

Although many studies have used ARRM to understand the relationship between

contextual and psychological variables and outcomes among many populations

(Kowalewski; Longshore, & Anglin, 1994; Longshore & Anglin, 1995; Longshore, Stein,

& Anglin, 1997; Longshore, Stein, & Chin, 2006; Longshore, Stein, & Conner, 2004;

Longshore, Stein, Kowalewski, & Anglin, 1998; Malow, Corrigan, Cunningham, West,

& Pena, 1993; Malow et al., 1994), only a very few studies have used it among college students (Lewis, Malow & Norman, 2008). Since alcohol laws vary across the globe and alcohol drinkers are more likely to engage in indiscriminate and risky sexual behaviors (Cooper, 2002), there may be a difference in the explanatory power of ARRM theory among the Nigerian population.

Nature of Study

This quantitative study utilized a cross-sectional survey to collect data on beliefs about alcohol use, HIV/AIDS knowledge, education level, religion, gender, age, and sexual risk behaviors of Nigerian university students and their ability to engage in sexual communication with others. As a data collection method, the cross-sectional survey has numerous advantages: (a) it allows the collection of large amount of data from a defined population at one point in time (b) it is cost effective, feasible, and can measure other self-reported information as well as abstract variables whose data are usually hard to measure (c) it allows a researcher to carry out research in a setting that is natural and real while using probability sampling, which increases external validity (Creswell, 2009; Fowler, 2009; Frankfort-Nachmias & Nachmias, 2008).

The choice of survey design for this research was based the assessment of predictive relationships among variables involved. There was no intention of determining either the causation or the nature of the problems that aim at deciding the scope and depth of the survey questions used in this study. The variables in this research were not amenable to experimental investigation as they could not be manipulated due to ethical

concerns. The possibility of making before-and-after comparisons was not appropriate in this study because no intervention was administered.

Like other methods of data collection, survey design has weaknesses. One of such weaknesses in comparison with utilizing interviews is that the researchers do not have the opportunity to probe beyond a given answer in order to clarify ambiguity which is usually common during the data collection process (Frankfort-Nachmias & Nachmias, 2008). This makes any self-reported answer(s) final in a survey. The survey may also contain some questions that may make the participants uncomfortable, such as questions that have to do with illegal, counter-normative, or private behaviors, such as drinking, sexual practices or drug use (Frankfort-Nachmias & Nachmias, 2008). The use of self-administered questionnaires and the presence of questions that participants may deem uncomfortable to answer, as it was evidence on the nature of this research, may present response bias.

I administered the survey to the participants in this study in a face to face environment. The survey was given to the participants in person and was not read to them. The answers remained confidential. After the collection of data, I applied descriptive statistics to analyze the demographic information of the participants and utilized independent t-tests and linear regression to analyze statistical correlation and predictive relationship between the study variables. These analytical methods were fully described in Chapter 3.

Definitions of Terms

This study assessed how the knowledge of HIV/AIDS, consumption of alcohol, and sexual risk behaviors were associated with sexual communication among the Nigerian university students. The following defined terms were used in this study:

ABC approach: An acronym for the globally used HIV prevention strategy which stands for abstinence, faithfulness to sexual partner, and the use of condom for sexual acts (Parikh, 2007).

AIDS: This is the acronym for *acquired immune deficiency syndrome* which is a disease that is the result of late stage of HIV and is characterized by a CD4+ cell count of fewer than 200/µl (Shaw, 2000).

Alcohol use: the frequency with which one consumes uses or depends on alcohol. For the purpose of this study, drinking up to one drink per day for women and up to two drinks per day for men is moderate drinking (National Institute on Alcohol Abuse and Alcoholism, 2014). Binge drinking is drinking up to 4 drinks for women and five drinks for men in about two hours which usually brings blood alcohol concentration level to 0.08. g/dL (NIAAA, 2014). Heavy drinking is defined as drinking five or more drinks on the same occasion on each of 5 or more days in the past 30 days (Substance Abuse and mental Health Services Administration, 2014).

Condom use: The Centers for Disease Control and Prevention(CDC) (2011) defined condom use as the act of using condom by male or female during heterosexual or homosexual activities for the purpose of blocking the transmission of HIV and other sexually transmitted disease between partners.

Condom use self-efficacy: The act of believing that one is capable and will likely use condom when engaging in sexual activities that involves penetration (Farmer & Meston, 2006).

Cultural factors: Factors, such as chronic poverty, gender inequality, and labor migration that are capable of encouraging inequality between genders and justify men's extramarital affairs and increase women's vulnerability to HIV (Ogunjuyigbe et al. 2005). Such factors often lead to separation of spouses, male privilege, female sexual passivity, and domestic violence (Parikh, 2007).

Faithfulness: The act of being faithful in marriage and maintaining a monogamous relationship at all times (Silverberg, 2006).

HIV: HIV is the acronym for *human immunodeficiency virus*, the retrovirus capable of leading to AIDS. HIV damages the immune system and interferes with the body's ability to fight the organisms that cause disease by infecting and gradually destroying the CD4+ cells or T-helper cells that are responsible for aiding the body in fighting off diseases and infections. HIV is of two types: HIV-1, which is the most common in the USA, and HIV-2, which is the most common in Africa (Shaw, 2000).

HIV sero-status: The determination by test, that one is HIV negative or positive (CDC, 2006).

HIV knowledge: Any knowledge that is HIV-related and is relevant for awareness of sexual risk behavior, informed decisions, and behavior change (Carey & Schroder, 2002).

HIV-KQ-18: A self-administered HIV knowledge questionnaire created to assess HIV knowledge in a brief and reliable way for high-risk population (Carey & Schroder, 2002).

HIV risk behaviors: Behaviors capable of exposing one to HIV infections such as: having multiple sexual partners, engaging in dangerous sexual activities, lack of condom use, use of injection drugs or crack cocaine, exposure to sexually transmitted diseases, etc. (Gerbert et al., 1998).

Moral stigma: The social disgrace associated with extramarital sex. Married people in some culture such as Nigeria who are caught in extramarital sex are portrayed as weak, immoral, and ignorant (Parikh, 2007)

Nigerian college students: For the purposes of this study, this will be defined as any unmarried male or female Nigerian undergraduate student between the ages of 18 and 35.

Safer sex practice: Any behavioral practice that promotes sexual abstinence, consistent use of condoms during sexual intercourse, or monogamous relationships between two HIV sero-negative partners (Paranjape, 2006).

Sexual Communication: the ability to verbally discuss and negotiate safer sex with a sexual partner or potential sexual partner (Noar, 2007).

Sociocultural norms: Sets of cultural practices and belief systems that are characteristic of a group that are sanctioned, shared, and passed on from one generation to the other (Smith, 2007).

STD: Acronym for *sexually transmitted diseases*, which, according to Paranjape, Castleman, Milner, and Rylander (2007) are diseases of the sexual organs communicated through sexual contact between two people via the exchange of semen, blood, and other bodily fluids.

Assumptions

This study was limited to the undergraduate students in a Nigerian university located in eastern Nigeria who were between the ages of 18 and 35. One major assumption was that the student volunteer participants would willingly complete and answer all the questions in the questionnaires truthfully, and that the questionnaires gave accurate account of the respondents' HIV knowledge, beliefs about alcohol use, sexual risk behaviors, and sexual communication. I also assumed that the burden of reducing the rate of HIV/AIDS infections in Nigeria rested on the individual (Ebeniro, 2010).

Due to poverty and peer pressure, this study also assumed that many young female college students in Nigeria were more sexually vulnerable than their male counterparts, and that equipping them with the right tools would result in making them less likely engage in certain sexual risk behaviors, prefer monogamous sexual relationships to having multiple sexual partners (Adibe, 2013). It was also assumed that gender and economic inequalities created an environment that was not favorable for many young Nigerian college students and that the Nigerian society expect equaled sexual morality for all regardless of gender (Adibe, 2013; Enewereji, 2008; Kakietek, et al., 2013).

Scope of Study

This study was based on the analyses of primary data collected from the students of Nnamdi Azikiwe University Awka (NAU). NAU is one of the federal universities in Nigeria. The data was collected from interested and qualified volunteers after one of the daily lectures and not as a regular education curriculum. The questionnaire instruments did not contain culturally-cued instructions and questions aimed at determining HIV knowledge, risky behaviors, beliefs alcohol use, and sexual communication tendencies of the participants. The questions were not aimed at determining the HIV sero-status of the participants.

The data collected from the participants were analyzed and the results were used to determine the association of HIV knowledge, beliefs in alcohol consumption, and sexual risk behaviors with sexual communication among the study population. Since the participants answered questions about the patterns of their sexual behaviors, sexual communication skills, HIV knowledge and alcohol use, I identified the implications of the study findings for researchers, practitioners, educators, and policy-makers. These implications may be relevant in making recommendations on combating HIV epidemic and improving the general health of Nigerians through culturally sensitive strategies capable of reducing further spread of HIV/AIDS.

Limitations

The results of this study were limited to the young college students in Nigeria. Therefore, the results cannot be generalized to other populations outside Nigeria including Nigerian youth living abroad. The findings of this study also cannot be

generalized to college dropouts or those not enrolled in college. Although the reliability and validity of the HIV Knowledge Questionnaire (HIV-KQ-18) and Alcohol Expectancy Questionnaire (AEQ) have been successfully tested and verified, they have not previously been used among the Nigerian population (Center for AIDS Prevention Studies, CAPS, 2012).

One of the major goals of quantitative studies is to take a sample, study it and generalize the result to a broader population. Since the participants in this study were taken from one university out of many universities in Nigeria, there is possibility that the diverse socioeconomic, religious, and ethnic complexities in Nigeria may have affected the generalization power of the findings in this research. As a cross-sectional study using a convenience sample, there may be no randomization of the sample. Consequently, one major limitation in this research is that the samples may not have been a proper representation of the population studied.

Since this research did not have a control group, the lack of randomization in the choosing of participants could have placed a constraint on the internal and external validity of this study (Creswell, 2013). As a result, the findings of this research may be most true only to the study group and less applicable to the general Nigerian population. All the assessment tools used in this study were self-administered and the inability to validate self-reported data was another limitation (Frankfort-Nachmias & Nachmias, 2008).

Significance

The purpose of this study was to examine the relationship between beliefs about alcohol consumption, HIV/AIDS knowledge, and sexual risk behaviors among Nigerian University students and their ability to openly discuss their sexual lives. The results of this study may help health researchers, HIV/AIDS program managers, and policy makers to base their policies on empirical evidence, properly assess and evaluate the HIV/AIDS program already in place, and help their efforts to combat HIV/AIDS epidemic in Nigeria.

The United Nations (UN), in its Millennium Declaration in 2000, acknowledged the importance of, making global coordinated efforts and effectively responding to the HIV/AIDS epidemic (UNAIDS, 2013). This sense of urgency initiated many health targets among which was the Millennium Development Goals (MDGs) aimed at taking unprecedented action to halt the HIV/AIDS epidemic. This effort was renewed and strengthened eleven years later with the UN Political Declaration on HIV and AIDS, which placed HIV prevention at the cornerstone of the HIV urgent responses contained in MDGs (UNAIDS, 2013). These initiatives, among other things, called for the inclusion of strategic combinations of behavioral, biomedical, and structural programming and approaches in the HIV prevention agenda (UNAIDS, 2013). Changes in sexual behavior, such as delayed sexual debut, protected sexual acts, reductions in multiple sex partners became important focus point for reducing HIV/AIDS infections in high prevalence countries (UNAIDS, 2013).

Nigeria has no laws that either restrict the sale of alcohol to minors or mandate disclosure of HIV/AIDS status to sexual partners. According to Gregson et al. (2010) and Halperin et al. (2011), behavioral shifts, such as a reduction in multiple sexual partners, accounted for the decline in new HIV infections in Zimbabwe. Based on this trend, the outcome of this study could also aid health workers and teachers in convincing young Nigerians that behavioral shifts such as responsible use of alcohol and less sexual risky behaviors are effective means of fighting HIV/AIDS infections (UNAIDS, 2013).

Summary

The global impact of HIV/AIDS has been devastating and sub-Sahara Africa is disproportionally affected by this epidemic. Young people, women, and the poor have also been the most vulnerable HIV/AIDS population worldwide. The infection rates for this deadly disease have been on the rise among these groups. In this study, I examined how HIV/AIDS knowledge, beliefs about alcohol use, and sexual risk behaviors were associated with sexual communication between sexual partners in a Nigerian University. This chapter specifically focused on the global impacts of HIV disease , how the sub-Sahara Africa is disproportionally impacted by this epidemic, how Nigeria, as a country, is directly affected, and the need to do more in order to help combat the growing spread of HIV/AIDS epidemic in Nigeria.

Although many studies emphasize the importance of behavior change in reducing HIV/AIDS infections, factors such as knowledge of HIV/AIDS, sexual risk behaviors, substance abuse/dependency, and assertiveness in negotiating sexual activities are influential in the achievement of this goal. The promotion of culturally sensitive health

education, and creating awareness of sociocultural norms that place young people especially women at increased risk of contracting HIV are also at the center of reducing the continued spread of HIV/AIDS infections (Adibe, 2013). Grounded in ARRM, the primary data collected in this study was analyzed with the hope that the results may be beneficial to AIDS workers and policy-makers in Nigeria.

Chapter 2 includes a review of the previously published literature on HIV/AIDS knowledge, alcohol use, sexual risk behaviors, and sexual communication - identifying gaps that offered opportunities for further investigation. I specifically examined: (a) HIV/AIDS in Sub-Sahara African regions, (b) history of HIV/AIDS in Nigeria, (c) the sociocultural factors affecting the spread of HIV/AIDS in Nigeria, (d) the HIV related bias, stigma, and discrimination in Nigeria, (e) HIV knowledge and attitude of Nigerian students, (f) HIV risky behaviors, and (g) sexual communication among young people in Nigeria.

Chapter 2: Literature Review

Overview

Although Nigerian university students are known to be relatively knowledgeable about HIV/AIDS disease and its dangers (Durojaiye, 2011; Ebeniro, 2010), such knowledge is often limited to the level of awareness of the existence of the disease instead of knowledge of disease transmission and prevention (Klomegah, 2011). Poor sexual communication and HIV/AIDS related risk behaviors among Nigerian college students are often exacerbated by factors such as alcohol use and other sociocultural, religious, and family issues (Iliyasu, Aliyu, Abubakar, & Galadanci, 2012; Schneider, Chersich, Neuman & Parry, 2012). These factors create problems for HIV/AIDS workers, medical practitioners, and the government in determining what is and is not working in their attempts to control the spread of HIV/AIDS (Ebeniro, 2010). I examined the relationship between beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, education level, religion, gender, and age of university students in Nigeria and their sexual communication with their partners.

Many studies have focused on Nigerians in order to determine their level of HIV/AIDS knowledge, beliefs, causes of HIV infections, and risk factors especially among the most vulnerable segment of the population such as women, soldiers, young people, truck drivers, sex workers, and college students (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate et al., 2008; Omokbodion et al., 2007; Schneider et al., 2012). Researchers have identified that the frequent risk factors among Nigerians are: (a) unprotected sex with multiple partners, (b) lack of communication with

partners about sexual history and disease status, (c) patronage of commercial sex workers, (d) poverty, (e) nondisclosure of sexually transmitted diseases (STD) status, (f) extra-marital relationships, (g) sexual promiscuity, (h) blood transmission, (i) ignorance, and (j) negative stigma (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate et al., 2008; Omokbodion et al., 2007; Schneider et al., 2012). Ebeniro (2010) also identified major causes of HIV/AIDS transmission in Nigeria as: (a) having unprotected vaginal or anal sex with an affected individual,(b) injection or transfusion of contaminated blood products; (c) donations of semen (artificial insemination), (d) skin grafts (e) organ transplants taken from an infected person, and (f) sharing of unsterilized injection equipment that has previously been used by an infected person.

In this chapter, I present a detailed review of pertinent literature on the issues of HIV/AIDS knowledge, alcohol use, sexual communication, HIV/AIDS attitude of students, disclosure of HIV/AIDS status, sexual risk behaviors, Nigerian historical overview, university students, and theories relevant in this research. The major sections include HIV/AIDS as a global problem and as an epidemic in sub-Sahara Africa, the history of Nigeria from political, geographical, economical and epidemiological viewpoints, HIV/AIDS knowledge and attitude of Nigerian university students. Other are sociocultural and religious factors affecting the spread and perception of HIV/AIDS in Nigeria, and the HIV/AIDS risk behaviors prevalent among Nigerian students.

Search Strategy

SocINDEX, PubMed, ERIC, Google Scholar and PsycINFO were the primary library databases and search engines that I searched for literature related to this study.

The key search terms utilized in the search were *HIV/AIDS knowledge, HIV/AIDS behavior, risk behavior, alcohol use, sexual communication, sex communication, Nigerian university students, alcohol consumption, poverty, gender, sexual inequality, HIV/AIDS attitude, health belief model, AIDS risk reduction model, theory of reasoned action, theory of planned behavior, HIV Stigma, HIV/AIDS disclosure, HIV/AIDS risk factors, corruption in Nigeria, and sexually transmitted diseases*. I limited my search for peer reviewed articles published in the last five years – from 2010 to 2014.

Year of publication was not considered in certain topics such as the history of Nigeria, previous studies used to substantiate or contrast current findings, and information on the related theoretical foundations. In comparison with other keywords, the results of the search of peer reviewed articles showed minimal result in sexual communication, alcohol use, and corruption in Nigeria. Information was also sought through the use of books and conventional readings on Nigerian history, customs, beliefs, religions, HIV/AIDS behavior, attitudes, risk factors associated with stigma, culture, perception of HIV, and HIV/AIDS knowledge.

Theoretical Framework

One of the critical components of the global efforts in HIV/AIDS prevention and education is an effective communication strategy grounded in a sound theory (Airhihenbuwa & Obregon, 2000). The theoretical models of behavior change that guide health communication programs are often the same ones that are used to inform health promotion programs such as health belief model (HBM), theory of reasoned action (TRA), social learning theory (SLT), cognitive theory (CT), diffusion of innovation (DI),

and social marketing (SM),(Glanz & Rimer, 1995). For instance, the idea that communication is a learned behavior which can develop over a period of time through practice and observation was based on social learning theory of interpersonal communication and social skills development (Bandura, 1977). Therefore, sexual communication falls in the category of health behavior theoretical frameworks (Fishbein & Ajzen, 2010).

One of the assumptions of self-socialization theories is that adolescents are active information seekers who view the behaviors of others and broader social norms as they regulate their own behaviors (Brown, 2000). According to Powell and Segrin (2004), young people will likely discuss vital sexual health issues and topics with their significant others or dating partners, if they gain sexual knowledge from other sources or have the chance to engage in sexual health discussions. Crosby et al. (2002) and Ryan et al. (2007) also found correlation between frequent communication of adolescents and the greater likelihood of discussing sexual issues with their romantic partners. Open sexual communication between parents and their adolescent children has been found to be a protective predictor of delayed sexual debut, reduced sexual risk behavior and frequent use of contraceptives (Commendador, 2010). These findings support the view that parents of young people can play pivotal roles in the sexual communication of their children (Epstein & Ward, 2007; Sprecher, Harris, & Meyers, 2008).

The TRA, HBM and information processing theory (IPT) are not only the pillars of sexual communication theories, but are also vital in understanding sexual communication among young people. While HBM focuses on the general understanding

of reducing the likelihood of endangering health through the benefits of knowledge that comes from engaging in health-related behaviors (Janz & Becker, 1984), TRA emphasizes the importance of allowing attitudes towards behavioral propensities to play major role in decision-making (Fishbein, Middlestadt, & Hitchcock, 1994), IPT focuses on the cultural considerations in sexual communication (McGuire, 1984). Because college age is a particularly vulnerable time for communication, communication researchers emphasize the importance of sexual communication among adolescents (Brown, 2000). Sexual communication theories are vital in doing this.

This study was guided by the explanatory theory of ARRM, which can help health practitioners and researchers to understand how individuals, groups, and organizations in Nigeria behave and change. This knowledge could be of great importance for them in designing effective HIV/AIDS programs suitable for Nigerians in particular and Africa in general.

AIDS Risk Reduction Model

ARRM theory is an amalgamation of constructs from different behavioral models such as the HBM, (Rosenstock, Strecher, & Becker, 1994), SCT (Bandura, 1997), and TRA (Fishbein, Middlestadt, & Hitchcock, 1994). This theory was designed to explore the context of HIV risk behaviors among various populations (Malow & Norman, 2008; Longshore, Stein & Chin, 2006). Although ARRM utilized and adapted these previous behavioral models, it differs from them by the use of the word *stage* as "an important maker in the change process" and these stages "are not unidirectional, nonreversible, or in variant states" (Catania, Kegeles, & Coates, 1990, p. 55). These stages are (a)

recognition and labeling of one's behavior as high risk (b) making a commitment to

reduce high-risk sexual contacts and to increase low-risk activities commitment and (c)

taking action (Catania, Kegeles, & Coates, 1990). Figure 2 shows the change process

from Stage 1, recognition/labeling, through Stage 2, commitment to Stage 3, taking

action (enactment).
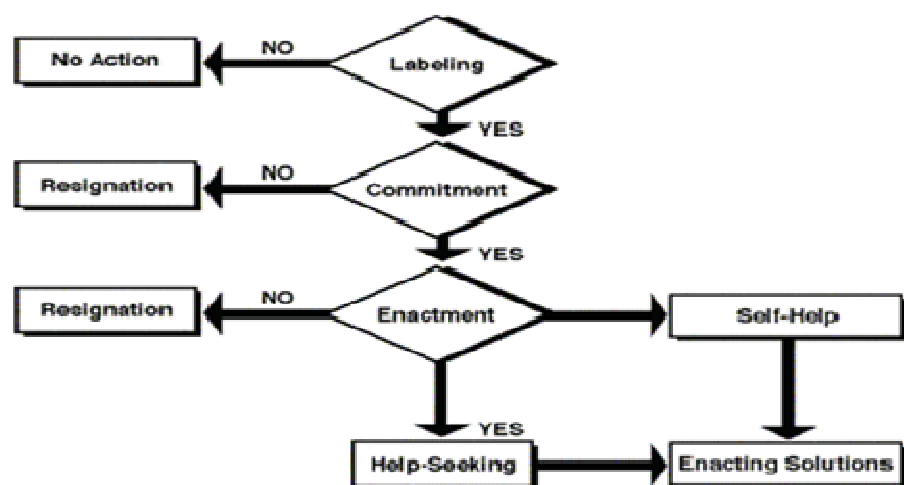
Figure 1. The ARRM. From "Towards an understanding of risk behavior: An AIDS risk reduction model (ARRM)," by J.A. Catania, S.M. Kegeles & T.J. Coates, 1990, *Health Education Quarterly, 17*(1), p. 54. Reprinted with permission

The keyword in these stages is *knowledge* because it is vital in all these stages to

recognize and label's risky sexual behaviors as high or low, make a commitment to

minimize high risk or maximize low risk sexual and social behaviors and take required

actions (Bowdre, 2013). If an individual lacks the general knowledge required about the

transmission of HIV, such an individual will most likely not be able to classify or label

behaviors as high risk or perceive himself or herself as being in the high risk category

(Stage 1). To determine the outcomes of condom use and cost versus benefit of

modifying sexual practices, the knowledge of the effectiveness of such is important and

presumed (Stage 2). Similarly, the outcomes of the action taken by an individual in the
enactment stage are influenced by knowledge (Stage 3). Therefore, these three stages
require not only knowledge of the available social networks and resources, but also
support system.

The previous research studies indicated that ARRM has been used as a theoretical
model to assess the multifaceted sexual risk behaviors for the Nigerian University
students. This theory was chosen for this research study because it presented an
opportunity to test its suitability and efficacy among this population.

HIV/AIDS in the Sub-Sahara African Region

Few studies have focused on the natural history of HIV infections among African
populations (Darby, Ewart, Giangrande, Spooner, & Rizza, 1996; Morgan, Mahe,
Mayanja, Okongo, Lubega, & Whitworth, 2002; Jaffar, Grant, Whitworth, Smith, &
Whittle, 2004), and these have traced the disease in Africa back to the 1970s (UNAIDS,
2000). This gap in the recorded history of HIV in Africa has been attributed to lack of
large number of individuals willing to provide blood samples repeatedly and their
unwillingness to be under surveillance for the required minimum of ten years for the date
of seroconversion to be identified (Jaffar, Grant, Whitworth, Smith, & Whittle, 2004).

It was estimated in 1998 that 11 people were infected of HIV per minute globally
(UNAIDS, 2000). By 2013, this figure reached 263 people per minute (UNAIDS Report,
2014). Among the estimated 24.7 million people living with HIV in sub-Sahara Africa in
2013, 58% of them were women (UNAIDS, 2014). As of the year 2000, over 14 million
people had died of AIDS and about 34.3 million people were living with the disease

globally with over two-thirds of them having residence in the sub-Sahara Africa, which has only a tenth of world's population (UNAIDS, 2000; WHO, 2000). In 2005 alone, about two million Africans lost their lives to AIDS and the life expectancies in the most affected countries were reduced to their pre-1970 levels (U.S. Census Bureau, 2005). In 2007, Sub-Saharan Africa was the global epicenter of the AIDS pandemic when HIV/AIDS prevalence in that region reached 5.0% among individuals aged 15 to 49 (UNAIDS, 2007; WHO, 2007). HIV/AIDS in some areas in sub-Sahara Africa was so prevalent that a substantial portion of prime-age adults perished threatening economic stability and growth (Fortson, 2011). Rodney, Ndjakani, Ceesay, and Wilson (2009) attributed the increase in HIV/AIDS infections to poverty, poor healthcare systems, and limited resources for prevention and care.

In spite of these high HIV/AIDS infection rates and disproportionate infection statistics in the sub-Sahara Africa in comparison with the other regions, many improvements have also been recorded (UNAIDS Report, 2014). This is especially true with the Millennium Development Goals (MDGs) initiative aimed at taking unprecedented action to halt the HIV/AIDS epidemic by 2015 (UNAIDS 2000). There is empirical evidence that this initiative has worked well not only globally, but also in the sub-Sahara Africa (UNAIDS Report, 2014). According to UNAIDS Fact Sheet (2014), the estimated new HIV infections in the sub-Sahara Africa in 2013 was 1.5 million with about 1.1 million AIDS-related mortality rate in that same year. These figures reflect a decline of 33% in new HIV infections and 39% of AIDS-related deaths in sub-Sahara Africa between 2005 and 2013. This drop in HIV/AIDS infections is led by the countries

with the largest epidemics in Africa, such as Cote d'Ivoire, Ethiopia, Nigeria, South Africa, Zambia and Zimbabwe (UNAIDS, 2010). The percentage of children infected by HIV has also declined by 43% in 21 African countries that are part of the Global Plan (UNAIDS Fact Sheet, 2014).

The treatment of people living with HIV in the sub-Sahara African continent has also increased to 37% between 2005 and 2013(UNIAIDS Fact Sheet, 2014). However, 67% percent of men and 57% of women who are living with HIV/AIDS are not still receiving antiretroviral treatment(ART), (UNAIDS Fact Sheet, 20140). Three out of four people on ART live in sub-Sahara Africa while in Nigeria 80% of those living with the disease do not have access to treatment (UNAIDS, 2014).

There are many studies on the vulnerability of women and children to the spread of HIV/AIDS in the sub-Sahara African region (Gupta, 2002; Higgins, Hoffman, & Dworkin, 2010; Krishnan et al., 2008; Ojikuku & Stone, 2005; Rodney, Ndjakani, Ceesay, & Wilson, 2010). This vulnerability has been blamed on their social roles and other biological and cultural factors which include their societal place in many African traditions, their inability to negotiate safe sexual encounters due to gender role stereotypes, unequal sexual power, sexual violence or coercion against them by men, forced early marriages with older men, etc. (Higgins, Hoffman, & Wilson, 2010; Rodney, Ndjakani, Ceesay, & Wilson, 2009). Some women living with HIV/AIDS often take the blame as the primary sources of the disease and are ostracized even when the source of transmission was their husband (Rodney, Ndjakani, Ceesay, & Wilson, 2009). Social norms in many sub-Saharan African contexts encourage social inequality between men

and women. The engagement of men in multiple partner sex and dominance in sexual decision-making are encouraged by some social norms in many sub-Sahara African contexts including Nigeria (Gillespie, Kadiyala, & Greener, 2007; Gupta, 2000).

Apart from this physiological and social vulnerability to HIV/AIDS infections, women also take additional responsibilities of caring for sick family members, loss of property if widowed or infected, and violence against them if their HIV status were discovered (The Henry J. Kaiser Family Foundation, 2007). Because women and children are seen as victims in the spread of HIV/AIDS more than men (Gupta, 2002; Higgins, Hoffman, & Dworkin, 2010; Krishnan et al., 2008; Ojikuku & Stone, 2005), it has resulted in an unintended consequence of giving less attention to men in HIV prevention and treatment programs in Africa (Exner, Gardos, Seal, & Ehrhardrt, 1999; Higgins, Hoffman, & Dworkin, 2010). Hence, men are underrepresented in HIV testing and care (Hawkins et al., 2011, Ochieng-Ooko, et al., 2010).

Contrary to the African trends that seem to exclude many men in addressing HIV/AIDS issues, Cohen, Shaw, McMichael, and Haynes (2011) argued that engaging men in HIV treatment in Africa would be beneficial for primary prevention of vertical transmission. This is important considering men's perception of masculinity that drive multiple partners, sexual violence against women as well as substance abuse and homophobia which are central in transmitting HIV/AIDS to women (Dworkin, Dunbar, Krishnan, Hatcher, & Sawires, 2011). According to Mills, Beyrer, Birungi, and Dybul (2012), HIV/AIDS program coordinators and health practitioners ought to maintain a balanced approach to gender programming in order to involve both men and women in

the treatment and prevention of HIV/AIDS at equal proportion. It is also important that HIV/AIDS programs increase: gender equity, address male norms, reduce violence, sexual coercion; increase income generation for both women and girls, and ensure legal protection and property rights (Office of the Global AIDS Coordinator [OGAC], 2007).

El Sadr and Hoos (2008) recommended the strengthening of the social and economic systems in the sub-Sahara Africa in order to alleviate women's HIV/AIDS vulnerability. There is also need to link HIV/AIDS treatment with reproductive health in order to meet the needs of women infected with HIV/AIDS in Africa (Septulveda et al., 2007). In a research conducted by Anand et al. (2009) in Kenya and Malawi, it was observed that although almost three thirds of women living with HIV were indisposed to have more children, only 32% in Kenya and 20% in Malawi had access to contraceptives. The percentile of unintended pregnancy among HIV-positive women in Cote d'Ivoire, Rwanda, South Africa, and Uganda was 51% to 91% (Wilcher & Cates, 2010).

Klomegah (2011) comparatively analyzed the sexual behavior of males from Swaziland and Niger considered to be high risk and low risk HIV/AIDS populations respectively. The results showed that the people from these two countries were highly knowledgeable and aware of key behaviors capable of preventing or reducing the chances of transmitting HIV/AIDS. In support of other researches, however, this author maintained that the knowledge or awareness of HIV/AIDS does not necessarily translate into practice. This attitudinal behavior is pervasive in the sub-Sahara Africa and the reasons include cultural factors such as: male traditional mindset, cost and benefit of health risk, as well as the traditional belief systems that seem to condone risky sexual

behaviors. Place of residence, education, age at first intercourse, work and marital status were the vital social predictors of social behaviors in these two countries. There were equally statistically significant differences between men's sexual behaviors illustrated in their engagement in multiple sexual partners and lack of condom use (Klomegah, 2011).

Nigeria and HIV/AIDS Epidemic: A Historical Approach

Geographically, Nigeria is situated in the West African region covering 356,669 square miles which is roughly twice the size of California and three times the size of the United Kingdom in land mass (Obi, 2010). To the south of Nigeria is Bights of Benin which are on the Gulf of Guinea in the Atlantic Ocean. Benin borders Nigeria on the west, Cameroon on the east while Lake Chad separates it from the country of Chad on the Northeast. Nigeria stretches roughly 700 miles from west to east and about 650 miles from south to north, covering an area between 3 and 15°E longitude and between 4 and 14°N latitude (Falola & Heaton, 2010).

Nigeria, with an estimated population of 162 million, a total fertility rate (TFR) of 5.7 and the annual growth rate of approximately 2.6%, is the most populous country in Africa (NACA, 2012). Although the borders of Nigeria were officially established 97 years ago by British colonizers, the histories of the people that make up the Nigeria go back many centuries. As in many African countries, Nigeria is a conglomeration of hundreds of ethnic groups, many of which straddle these arbitrary borders which date only from the twentieth century (Falola & Heaton, 2010). Consequently, Nigeria's large population is very diverse consisting of over 250 ethno-linguistic groups with over 500 vernaculars (Falola & Heaton, 2010; NACA, 2012).

The three major ethnic groups in Nigeria are Hausa in the northern savannas, Yoruba in the southwest and Igbo in the southeastern part of the country. These major ethnic groups account for about 58% of the population with the Hausa and Yoruba populations estimated at about 21% and 20% respectively while the Igbos account for about 17% of the population. The remaining 42% of the population are other ethnic groups scattered throughout the country (Falola & Heaton, 2010). While some of these minority ethnic groups account for large numbers of the population, others are very small. Among the relatively larger Nigerian ethnic minorities are the pastoral Fulani of the savannas, the Ijaw of the Niger delta region, the Kanuri of the Lake Chad region, the Ibibio in and around Calabar in the southeast, and the Nupe and Tiv of the middle belt. Irrespective of her diversity, Nigeria has successfully adapted English as her *lingua franca* and additionally developed Pidgin English as a result of hundreds of years of contact with the British traders and colonial authorities. Pidgin English is a combination of indigenous languages and English (Falola & Heaton, 2010).

Nigerian's vast population and ethnicity are also reflected in the religious affiliations of the people. Muslims account for about 50% of the population, Christians make up about 40% while indigenous religions account for approximately 10%. Although Nigeria has 36 states, the two largest cities are Lagos in the southwest with a population estimated at over 9.2 million, and Kano in the north with a population estimated at over 3.8 million (World Gazetteer, 2009). Ibadan, Onitsha, Abuja, Aba, Jos, Ilorin, Port Harcourt, Enugu, Kaduna, Maiduguri, Sokoto and Yola are other major cities in Nigeria with relatively larger populations (Falola & Heaton, 2010). Approximately 50% of the

Nigerian population lives in urban areas with the rate of urbanization estimated at 3.5% annual rate of change (NACA, 2012).

The Nigerian economic story changed with the discovery of large deposits of petroleum products mainly in the Niger Delta in the 1970s. As such, petroleum has become the most important single commodity in the Nigerian economy for over 40 years and sale of it constitutes over 90% of the country's export earnings, and over 75% of public revenues (Forrest, 1995). Although agriculture remains the main activity of the rural population, its contribution as a percentage of GDP has declined since the expansion of the oil economy. In spite of many years of a favorable oil boom and high prices on the world market, progress in the Nigerian economy is still undermined by corruption and mismanagement, which has increased poverty. The oil industry has also produced many unwanted side effects especially as it regards environmental pollution and health hazards (Falola & Heaton, 2010).

Politically, various Nigerian ethnic groups ruled themselves as independent states prior to the amalgamation of 1914 that officially established Nigerian borders and united them as one republic (Heaton, 2010) Amalgamation negatively impacted the political system of Nigeria and is blamed for the discord in Nigeria that made governance difficult. Larger ethnic groups were divided into Caliphate, which still remained strong in their respective regions and ruled themselves independently (Falola & Heaton). Other smaller ethnic groups governed themselves via decentralized political structures of chiefs, igwes, ezes and other local councils and elites.

These political structures that lacked a single central administration appropriately served all the ethnic groups that comprise what is today called the Federal Republic of Nigeria. When the British came in the late nineteenth and early twentieth centuries, they forced these ethnic groups to undergo colonial rule and went about adapting local political institutions to meet the needs of British government (Falola & Heaton, 2010). This method of governance was tagged "indirect rule", a system that allowed the British to govern the people through indigenous political institutions by making the local chiefs and elites submit to the authority of a central apparatus of British colonial administrators while still maintaining their local authority to their subjects (Falola & Heaton, 2010). This did not work well and led to series of coup d'état that ushered in military rule that lasted for over two decades before the reestablishment of democracy in 1995. It was during the military rule in 1986 that HIV was first discovered and little or no attention was given to the HIV/AIDS preventing efforts. The insignificant effort that was made during this time was done through local and autonomous non-governmental organizations, NGOs, (UNDP, 2006).

With life expectancies of men and women in Nigeria currently at 51 and 52 years respectively (UNAIDS, 2014), the Nigerian population is fairly young. It is estimated that the average population growth rate in Nigeria is about 2.5% which means that the ratio of young to middle-aged and older persons continues to go up (United Nations Population Division [UNDP], 2008). For instance, six years ago, 64.7 million out of a population of 158 million Nigerians were under the age of 24 while those above age 65 accounted for only 2.9% of the population (Falola & Heaton, 2010). The immigration of young people

from the rural areas to the urban areas in search of better education and lucrative

employment and business opportunities is rampant in Nigeria and accounts for the rapid

growth of Nigerian cities. Poverty, malnutrition, corruption and lack of basic healthcare

and services have been fingered as the major causes of low life expectancy of Nigerians

(UNDP, 2011).

Two decades ago, the majority of deaths in Nigeria occurred during childbirth,

from auto crashes as a result of bad roads, from ethnic violence and lack of security

caused by corruption (Falola & Heaton, 2010). All these changed beginning with the

emergence of HIV/AIDS roughly 30 years ago. Durojaye and Dalogun (2010) observed

that after the first reported case of HIV in Nigeria, the Nigeria government was in denial

and lost the opportunity to control the spread of the epidemic. The reaction by Nigerians

at the time was given to moralizing and stigmatizing those infected as unclean, immoral,

and dangerous to the community which culminated in a near state of inaction on the part

of the government. (Kirby, 2004). The situation was also worsened throughout the 13

years successive military governance with no clear-cut policies or programs to address

the HIV/AIDS epidemic. As a result, the HIV/AIDS pandemic continued to ravage the

country during four decades (Durojaye & Dalogun, 2010).

With approximately 3.5 million people currently infected with HIV/AIDS disease,

Nigeria carries the second heaviest burden of this epidemic in Africa, and the third

heaviest burden in the world, next to only South Africa and India (National Agency for

Control of AIDS, NACA, 2012). According to the United Nations Development Fund

(2012), 57% of HIV positive people in Nigeria are women and as the number of HIV

infected women increases, so does the number of HIV infected children. An estimated 2.2 million children are orphans as a result of AIDS-related deaths (UNAIDS, 2012). Hence, women, children and the poor are the most vulnerable to the HIV/AIDS pandemic (Ebeniro, 2010; NACA, 2014), and the prevalence varies by states with Rivers and Ekiti states carrying the highest and lowest prevalence respectively (NACA, 2014).

A good example of the impact of HIV/AIDS on Nigeria is the reduction in life expectancy from 53.8 years for women and 52.6 years for men in 1991 to 46 and 47 years respectively in 2007 (WHO, 2008). During these time frame, there was also increase in the prevalence of HIV/AIDS (UNAIDS, 2001). This is consistent with other African countries that saw increase in HIV/AIDS prevalence before its subsequent decrease. This is also supported by the fact that the present life expectancy in Nigeria is 51.81 for men and 52.42 for women - an indication of the progress made so far in prolonging the life of PLWHA through antiretroviral therapy (Salami, Fadeyi, Ogunmodede, & Desalu, 2011). Irrespective of the reduction in HIV/AIDS prevalence and current increase in the life expectancy of Nigeria in the recent years, the number of PLWHA has witnessed an increase. Table 1 compares the epidemiological prevalence of HIV/AIDS in Nigeria between 2008 and 2012.

Table 1

Epidemiological Key Facts of HIV/AIDS Prevalence in Nigeria Between 2008 and 2012

	2008	2012
National Median HIV Prevalence	4.6%	4.1%
Brothel Based Female Sex Workers	37.4%	27.4%
Non-Brothel Based Female Sex	30.2%	21.7%
Workers	13.5%	17.2%
Men Who Have Sex With Men (MSM)	5.6%	4.2%
Injection Drug Users (IDU)		
Estimated Number of PLWHA	2,980,000	3,459,363
Annual AIDS Death	192,000	217,148
Number requiring Antiretroviral	857,455	1,449,166
Therapy		
New HIV Infections	336,379	388,864
Total Number of AIDS Orphans	2,175,760	2,193,745

*Adapted from 2012 National Agency for the Control of AIDS in Nigeria.

Eighty percent of this increase has been attributed to heterosexual sex and only

10% to mother-to-child transmission and blood transfusion (NACA, 2012). According to

the NARHS 2012 data, the HIV prevalence was highest among 35-39 age groups with a

prevalence of 4.4 while 40-44 and 15-19 age groups had the lowest prevalence of 2.9%.

Low personal risk perception, multiple concurrent sexual partnerships, intense

transactional and inter-generational sex, ineffective and inefficient services for sexually

transmitted infections, inadequate access to and poor quality of health services are some

behavioral factors helping the spread of this deadly virus (NACA Plus, 2012).

Beside affecting the general quality of life and generating fear, the high

prevalence of HIV/AIDS in Nigeria has also affected all sectors of the economy and all

geo-political segments of the population in many other ways (Ezejiofor, 2012). However,

the present government of Nigeria and other civil society organizations are engaged

continuously in confronting HIV/AIDS. Their efforts have also encountered some human

elements and other sociocultural factors such as gender inequality and inequities, poverty, stigma, and discrimination that are the key drivers of this epidemic in Nigeria and constitute dangerous barriers to effective prevention and control (NACA, 2012; Obijiofor, 2010).

Sociocultural Factors Affecting the Spread of HIV/AIDS in Nigeria

An increasing body of research has shown that different ethnic and sociocultural groups have different health disparities worldwide (Glanz & Rimer, 2005; Kreuter & Skinner, 2000; USDHHS, 2005). It is vital that health practitioners understand the characteristics of diverse and ethnic population such as their culture, ethnicity, socioeconomic status, gender, age, and geographical location (USDHHS, 2005). Culture and ethnicity, according to USDHHS (2005) are critical in considering the use of health treatments and interventions among a given population because (a) the differences in the morbidity and mortality rates of different diseases vary by race and ethnicity; (b) there are differences in the prevalence of risk behaviors among different ethnic groups and (c) the determinants of health behaviors often vary across racial and ethnic groups.

These facts emphasize the need to understand the cultural backgrounds and life experiences of community members in dealing with their health issues. This could be done through targeting or tailoring. Targeting involves using information about shared characteristics of a population subgroup to create a single intervention approach for that group (Kreuter & Skinner, 2000). Tailoring is a process of assessment that derives information on a specific person and subsequently offers change or information strategies according to such a person's unique characteristics (Kreuter & Skinner, 2000). According

to Kreuter and Skinner (2000), knowing when and under what circumstances to apply targeted or tailored health communications in order to meet sociocultural needs of a diverse population is still unknown.

Culture is the core of human behavior and defines the human belief system, values, attitudes, nature of the universe, experiences, concepts of time and nature of language of a people (Obijiofor, 2010; Samovar, Porter, & Jain, 1981). Culture is a vital element that defines, not only the attitude of the people towards a disease but also their reactions and responses to any disease preventive initiatives (Obijiofor, 2010). Considering the ethnic make-up and the population of Nigeria, the sociocultural factors or practices capable of increasing HIV/AIDS transmission abound: patriarchal family system, gender differentiation, early marriage, polygamy, marital instability, domestic violence, prostitution, scarification, skin piercing practices, incision or cutting operations such as circumcision, and other culturally imposed traditions and norms (Isiugo-Abanihe, 2006). These sociocultural factors constitute major obstacles to combating, preventing, and curtailing the spread of HIV/AIDS among Nigerians and influence media reporting, disclosure, testing, and other behaviors and attitude of Nigerians on HIV/AIDS related issues (Obijiofor, 2010).

Obijiofor (2010) systematically analyzed the online versions of three major Nigerian newspapers with the intention of examining the sociocultural factors capable of preventing public information campaigns against the spread of HIV/AIDS in Nigeria. They found the newspaper coverage of HIV/AIDS in Nigeria as episodic due to lack of sustained and regular coverage of health problems. The use of language of fear and panic,

mostly official governmental sources and numerous sociocultural barriers in the report of HIV/AIDS-related news were also concluded to be fundamentally problematic.

Gender, Sexuality, and HIV/AIDS

Gender role socialization is a universal issue, but it varies depending on one's cultural background. Approximately, 95% of the world population believes that girls are pretty, emotional, soft and submissive while boys are strong, brave, tough and dominant (Zastrow & Kirst-Ashman, 2010). From the moment they are born, boys and girls are treated differently. Girls are wrapped in pink blankets, and parents are told that they now have a beautiful little girl or princess (Zastrow & Kirst-Ashman, 2010). Boys are wrapped in blue blankets, and parents are told that they now are the proud parents of a bouncing baby boy (Zastrow & Kirst-Ashman, 2010). According to Zastrow and Kirst-Ashman (2010) these statements and examples above express some of the traditional gender stereotypes about male and female that continues through childhood, adolescence and adulthood.

Although gender roles are changing in some countries, Nigeria has one of the most conservative and traditional views of gender roles which generally put women at disadvantage (Obijiofor, 2010). Traditional Nigerian families are patriarchal with position and respect determined by gender, age, generation and status (Obi, 2010). Birth position and gender are associated with duties and privileges. Male children are more highly valued than female children. Family lineage is passed through males while females are completely absorbed into the families of their husbands (Zastrow & Kirst-Ashman, 2010). Land is acquired by inheritance and women are excluded from such

inheritance. The first-born son is the most valued child and receives preferential treatment although with more familial responsibilities. The prescriptive roles for daughters were less rewarding. In almost all religious denominations, men do not cover their heads in the church while it is a requirement for women. Certain economic crops are also forbidden to women (Zastrow & Kirst-Ashman, 2010).

Gender inequalities in Nigeria put women at disadvantaged positions and force them to have less entitlement to assets and deny them ownership of their bodies (Durojaye & Balogun, 2010). Albertyn (2000) observed that such gender-related differences also lead to the violation of the reproductive and sexual rights which makes women vulnerable to the HIV/AIDS epidemic. Durojaye and Balogun (2010) concluded that gender inequality, as practiced in Nigeria, violates the fundamental human rights of women because it limits their sex communication and negotiation. Consequently, this compromises their sexual and reproductive rights and at the same time exposes them to HIV/AIDS infections. The conservative gender roles in Nigeria which prohibits women from questioning their husbands' behavior is a disaster and have resulted in many faithful women being infected with HIV and other STDs by their husbands. Phiri (2003) observed that majority of women living with HIV/AIDS have received little or no support or spiritual care from their church leaders.

Ezejiofor (2012), in a research conducted at the Nwafor Orizu College of Education Nsugbe in Anambra state of Nigeria, examined the role of cultural marginalization and obsequious treatment of women in the spread of HIV/AIDS. It was concluded that power and authority are disproportionately held by men in comparison

with women who are often subjugated and relegated by men to roles that are secondary in the sociocultural and socioeconomic matrix of Nigerians. This problem often leads to marginalization and discrimination that often result to multiple heterosexual marriage arrangements such as polygamy, surrogate husband/wife, widowhood practices, wife inheritance and concubines. Ezejiofor concluded that cultural taboos which prevent the ability of women to make decisions about themselves especially in their reproductive health and those of their children play vital role in the transmission of HIV/AIDS among women.

There are also other sociocultural and biological factors that account for the disproportionate number of women living with HIV/AIDS in comparison to men in Nigeria such as poverty, illiteracy, corruption, and culture. Dibua (2010) studied the sociocultural factors associated with the spread of HIV/AIDS among commercial sex workers, single parents, long-distance truck drivers, street children and students in the Eastern part of Nigeria. The results showed polygamy/concubinage, marriage for the dead, and surrogate marriage of women to women as the major sociocultural factors responsible for the vulnerability of women to having clandestine sex, which subsequently expose them to STDs including HIV/AIDS. Additionally, poverty, illiteracy, corruption, economic-driven migration, and unemployment were also identified as the other major socioeconomic factors driving the spread of HIV/AIDS among this vulnerable population.

Community Cultural Standards, Beliefs, and HIV/AIDS Perceptions

There are many conflicting community cultural values and practices among Nigerians that aid in the spread of HIV/AIDS. According to Obijiofor (2010), in the Nigerian family system, people belong to families, villages, communities, and groups. This family system supports the culture of shame which reaches beyond the affected family member and applies to the entire family. As such, whatever happens to an individual has consequences for all the family members, village, and the community alike. With this mindset, an HIV/AIDS diagnosis for one family member automatically affects every member of the person's family, village, or community. To identify an HIV/AIDS sufferer publicly, therefore, means condemning and exposing the person and his or her family members to ridicule and discrimination (Obijiofor, 2010). This belief system makes it possible for an HIV/AIDS virus carrier and his or her family to be perceived as sources of shame to the entire village or community.

The Nigerian community cultural belief also prohibits open or public discussion on sex and sexually transmitted disease (Obijiofor, 2010). For example, in 2002, the Advertising Practitioners Council of Nigeria (APCON) banned as immoral and too explicit an advertisement calling the attention of young people on the implications of unsafe sex (APCON, 2002). Public perception of sex-related illness as evidence of waywardness is another Nigerian cultural belief capable of undermining the efforts to curtain and prevent the spread of HIV/AIDS (Obijiofor, 2010). Some Nigerians also believe in the conspiracy theory of HIV/AIDS which projects the disease as imported and unreal or western myth (Obijiofor, 2001).

Religion and HIV/AIDS

The social institution of religion in Nigeria has a pervasive influence on people's lives, attitudes and behavior at both the individual and group level (Smith 2004). Religious values are capable of playing vital behavioral and health roles in the lives of members such as delaying their sexual debut, reducing the numbers of sexual partners and ensuring fidelity (Green, 2003; Josephine et al. 2001; Oladepo et al., 1999; Orubuloye et al.,1994; Ucheaga & Hartwig, 2010). In most West African countries, religion is such a powerful value and influence that many members of an organized religion rely heavily on their religious leaders for their health-related information, sexuality, and morality (Ucheaga & Hartwig, 2010). Oladepo et al. (1999) argued that religious leaders often possess great potential for influencing the sexual risk behavior of their members. Since more than half of the Nigeria population identify themselves as either Christians or Muslims, religious institutions and leaders are poised to play roles that influence HIV/AIDS prevention and care (Ucheaga & Hartwig, 2010). A good example is the research of Orubuloye et al. (1994) that found intense Christianization to have drastically reduced the HIV/AIDS risk factor of polygamous practice in the southern part of Nigeria.

According to the review of 43 studies (from 1998 to 2003) conducted by Rew and Wong (2006) on the relationships between religion/spirituality and adolescent health attitudes and behaviors, 84% of the studies reviewed showed that measures of religion/spirituality had positive effects on health attitudes and behaviors of the adolescent. Obiechina et al. (2002) surveyed 983 female Nigerian high school students

from two schools in Onitsha and found a very high level of awareness of HIV infection (93.6%). The majority of the respondents attributed their high knowledge of HIV awareness to the media (80% from television and 73.1% from radio) and school. This study interestingly found also that 17.8% of the students believed that poison/witchcraft caused STDs (including HIV) and 30.3% identified prayer houses as remedy for STDs. Findings similar to these were also made by the researcher in their earlier studies in 2001where respondents relied on remedies from prayer houses, herbs and natural medicines as treatments for STDs. Although the use of condom is one of the key arms in the ABC (Abstinence, Be Faithful, Condom use) model of HIV/AIDS prevention, the result from this study shows that it is not yet a widely acceptable means of preventing HIV/AIDS among these students as the use of condom scored least (54.8%) in the HIV/AIDS prevention method identified by them with abstinence (67.4%) being highest followed by mutual fidelity (56.7%).

Abstinence and faithfulness are also the primary HIV message shared by major religions in Nigeria and the religious leaders unanimously believe that HIV would not be an issue, if the followers of these religions practice the basic teachings of both the Bible and the Koran (Ucheaga & Hartwig, 2010). Of all the six religious institutions surveyed by Ucheaga and Hartwig (2010) only the Roman Catholic Church (RCC) and the Redeemed Christian Church of God (RCCG) had an HIV/AIDS policy document meant to guide leaders at various levels of the institution. None of the major religions in Nigeria promotes the use of condom for HIV prevention because of the common believe that condom promotes promiscuity, although there is always varied and nuanced individual

attitudes towards condoms in general (Ucheaga & Hartwig, 2010).While religion or spirituality can be a positive influence on people, it can also hinder the discussion of disease and treatment/prevention depending on how that disease is spread.

Parker and Birdsall (2005) found that judgmental attitude among Pentecostal and Evangelical religions inhibit behavior change among People Living with HIV/AIDS (PLWHA). Some of these judgmental attitudes which produce counterproductive messages are very common from the pulpit in Pentecostal religions more than in Orthodox religions (Nzioka, 2000; Harwig et al., 2006). According to a study conducted by Orubuloye et al. (1994) 54% of Christian leaders believed AIDS to be sent by God as a punishment for sexual promiscuity while 20% believed it to be a divine punishment. This perception was not limited to the Christian religious leaders as 68% of Muslim leaders believed HIV/AIDS was a divine punishment. The impact of these wrong perceptions and misconceptions is that they constitute barriers to sexual behavioral change especially for some deeply religious people who believe strongly in predestination since faith or fate will always guide the path of such believers and allow God to determine their health status (Liebowitz, 2002). Tolley (2006) found that some deeply religious people believed that their faith is capable of curing HIV/AIDS, if they become infected. This is dangerous because an individual can take little or no responsibility for his or her own behavior (Liebowitz, 2002).

In spite of the fact that many faith-based organizations (FBO) in Nigeria are involved in HIV/AIDS prevention and care services funded by many bilateral and multilateral institutions, there is little or no information on the opportunities and obstacles

facing FBO in such efforts and their HIV/AIDS-related activities are not well-known or documented (Ucheaga & Hartwig, 2010). Ucheaga and Hartwing (2010) conducted a case study to identify and highlight the differences in HIV/AIDS messages between six religious institutions in Cross River State Nigeria. While the results show agreement in their core messages of preventing HIV/AIDS transmission via abstinence outside marriage and faithfulness through marriage, Pentecostal churches had more messages of punishment and condemnation for PLWHA than other denominations. The churches and mosques in the urban areas had more HIV/AIDS resources and programs than the churches in the rural areas and there was no agreement on what the role of religious institution should be in the promotion of condom. Based on these findings, this study concluded that religious institutions in Nigeria are already playing a role in HIV/AIDS prevention but without unanimous or uniform voices. This is similar to findings made by Agadjania and Sen (2007) in Mozambique between mainstream and Pentecostal denominations.

In Nigeria, education on sexuality within the church for the youth is not a popular trend and this is something that needs more attention to decrease HIV/AIDS infection rates. There is also need to maximize the social contacts and networks that religious institutions have with their adherents in order to promote multiple health messages and programs (WCC, 2005). Many religious leaders in Nigeria may be willing to collaborate with the government, but they are resolute to their beliefs that prohibit the promotion of any intervention strategy that undermines their teachings on sexuality (Essiet-Gibson, 2008; Ucheaga & Hartwig, 2010).

Poverty

In 1990, the World Bank estimated that about 1.3 billion people were living in poverty (Estes, 1997). According to Chandy and Gertz (2011) the global poverty rate between 2005 and 2010 fell by nearly half a billion, from over 1.3 billion in 2005 to under 900 million in 2010. Although poverty affects all nations and races, women and children suffer the greatest casualties due to the problem of gender role stereotypes, inequalities and the nature of social systems (Morris-Bilotti, 1992). Poverty is also associated with some socioeconomic problems such as lack of access to quality health care which directly or indirectly increases the risk of HIV infection (CDC, 2008).

Poverty creates a context that increases the likelihood and possibility for a vulnerable individual to engage in HIV-related risk behaviors (Phatlane, 2003; Smith, 2003). Poverty plays a strong role in migration, is a factor in the spread of deadly diseases such as HIV/AIDS, is linked to drug production and use, and is the direct cause of street children, homelessness, child labor, and malnutrition (Healy, 2006). Many studies have successfully established the connection between poverty and the transmission of HIV/AIDS (Aniekwe, 2002; Ainsworth & Waranaya, 2000; Gillies, Tolley & Wolstenholme, 1996; Lamptey, 2002; Pates & Johnson, 2005; Udoh, 2006; UNDP, 2006; Zwi & Cabral, 1991).

Poverty is a common problem in sub-Saharan African countries known for corrupt leadership. It is likely that people, especially young students in severe economic situations, in these regions may opt to engage in risky behaviors as a means of meeting their economic needs (Ebeniro, 2010; Ijadunola, Abiona, Balgun & Aderounmu, 2011).

In Nigeria, it is very common for older men to seek out young women and adolescent girls for sexual favors in exchange for their school fees, food and other highly sought consumer goods such as electronic gadgets (Ebeniro, 2010). Among college students in Nigeria, poverty may force vulnerable individuals to make sexual choices they may not have made in better economic conditions (Ebeniro, 2010). These decisions made out of frustration caused by poverty lead to risky sexual behaviors capable of endangering the sexual health of Nigerian students and exposing them to HIV/AIDS infections.

Corruption

Any meaningful HIV/AIDS prevention program presupposes a strong commitment from local, national and international leaders (Urdaneta, 2004). Nigeria is faced with complicated economic, social, and political challenges to development necessitated by the effects of a civil war from 1966 to 1970, prolonged and disruptive military dictatorships, ethnic and religious conflicts, corruption, economic mismanagement and the decay of educational and health infrastructures (Davis & Kalu-Nwiwu, 2001; Ekeanyawu, Loremikan, & Ikubaje, 2004). Nigeria is currently the second largest country with PLWHA in the sub-Sahara Africa and third to the world. The continued spread of HIV/AIDS epidemic in Nigeria is a threat to the rest of the continent because of the size of Nigeria and its political and economic influence in the African continent (Ile & Akukwe, 2005). To reduce HIV/AIDS infections in Nigeria; committed leadership is necessary (Reis et al., 2005). Unfortunately, both the historical and geographical factors in Nigeria make committed leadership very complex, challenging and cumbersome (Udoh, Stammen, & Mantell, 2008).

The 1914 amalgamation of formerly independent, thriving and competing ethnic societies and kingdoms into one single entity called Nigeria resulted in the creation of artificial entity that presents complex leadership challenges (Emerson, 1961). As Africa's most populous and culturally diverse country with over 250 different ethnic and linguistic groups, Nigeria lacks a cohesive national identity and this contributes immensely to her leadership challenges (Anyawnu, 1982; Udonwa et al., 2004). Per Udoh, Stammen and Mantell (2008), the crisis of leadership in Nigeria is a stumbling block to efforts to forge a coordinated and effective national response to HIV/AIDS because each ethnic group is only committed to interventions that helps its own community. The prolonged military government regime that defeated the first republic paid little or no attention to the HIV/AIDS preventing efforts and the little efforts made during this time was done via local and autonomous NGOs (UNDP, 2006). The effort in combating HIV/AIDS changed, however, during the presidency of Olusegun Obasanjo who was elected into power in 1999 and by 2004 was part of the African Union Summit that declared state of emergency for Africa over HIV/AIDS epidemic (Pennington, 2005; Piot & Collseck, 2001).

According to Ekeanyawu et al. (2004), corruption in Nigeria is endemic and pervasive. Although Nigeria is the sixth oil producing nation in the world, little of the oil revenue has been applied towards alleviating the pervasive poverty among Nigerians due to mismanagement and corruption (UNDP, 2006). Consequently, the productive efforts to combat HIV/AIDS in Nigeria are not without management and transparency challenges given the country's reputation as a highly corrupt nation (Udoh, Stammen, & Mantell,

2008). The corruption in the Nigerian health sector, for example, has forced some religious leaders to mandate couples preparing for church weddings to obtain the required HIV/AIDS tests from designated hospitals for fear the laboratory technicians in other hospitals could easily be manipulated through bribe to change or to tamper with the result (Umeh & Ejike, 2004). Criminalizing nondisclosure of HIV/AIDS to sexual partners may not also work in Nigeria because offenders can easily bribe their ways through to avoid prison sentences or bribe their ways out of prison in case of a conviction without much ado. These are few examples of the impacts of corruption in Nigeria and how corrupt could affect her health sector by directly or indirectly spreading HIV/AIDS disease among Nigerians.

HIV/AIDS Related Bias, Stigma, and Discrimination in Nigeria

Bias is a particular tendency or inclination that prevents unprejudiced consideration of a thing or a person (Taylor, 2011). Bias, stereotype, prejudice and discrimination are closely related words and most of the times show negative connotations (Gale, 2010). Generally, HIV/AIDS-related stigma, bias, and discrimination are capable of creating barriers to testing, prevention programs, condom use, and willingness to disclose HIV status to sexual partners (Saller & Somda, 2011). Bird and Voisin (2013) used in-depth interviews to explore the themes associated with HIV/AIDS-related stigma and the basic messages HIV-positive gay black men receive about their status. The results show that there are many stigmatizing messages about HIV/AIDS stemming from families, church, gay communities as well as some negative internalized beliefs held by HIV-positive gay black males prior to their own infections. The claim that

HIV stigma leads to sexual silence which negatively influences the disclosure of HIV

status was also supported.

In Nigeria, HIV/AIDS is a stigmatized and misunderstood disease which often

results in unprecedented bias and discrimination-induced suffering for the carriers of the

virus (Obijiofor, 2010). Such stigma and misconception are often so serious that even

some media reporters are reluctant to speak to individuals with HIV/AIDS for fear of

contacting the disease by getting closer to them (Obijiofor, 2010). In addition, the

majority of individuals with HIV/AIDS disease are unwilling to identify themselves or

disclose their HIV/AIDS status for fear of being stigmatized or discriminated against

(Sallar & Somda, 2011). This often create barriers to testing, restrict utilization of

prevention programs and condom use, and promote the failure to disclose HIV status to

sexual partners by those infected by the disease (Sallar & Somda, 2011).

Testing and Disclosure of HIV/AIDS Status

Testing and disclosure are two essential tools in the prevention of HIV/AIDS

disease. People who are aware of their infections are more likely to reduce their risk

behaviors and engage in preventative measures to reduce the risk of others contracting

the disease (CDC, 2006). Once individuals know that they have HIV/AIDS, they can then

access available treatment, care and support services, if they are aware of their statuses

(Ijadunola, Abiona, Balogun & Aderounmu, 2011). Studies have shown that knowing

one's status has the potential to motivate and enhance behavior change (Cleary et al.,

1991; Denison et al., 2008), while ignoring one's status has grave consequences such as

the continued spread of the disease to unsuspecting or careless individuals (Marks,

Grepaz, Senterfitt, & Janssen, 2005). Programs that positively impact HIV/AIDS

prevention include testing and disclosure of status to sexual partners, family members,

and potentially colleagues (Salami, Fadeyi, Ogunmodede, & Desalu, 2011).

Nigeria does not have much participation in HIV disclosure and testing. Salami,

Fadeyi, Ogunmodede, and Desalu (2011) surveyed 253 patients on HAART treatment

through semi-structured interview at the University of Ilorin Teaching Hospital (UITH)

in Nigeria to determine the rate of disclosure of HIV status among PLWHA. The results

indicated a low rate of disclosure (39.5%); and the majority of the disclosure was made to

relatives or colleagues (20.6%) with only 18.6% made to spouses. In this study, high

disclosure rates correlated well with female sex, intact family and monogamy. These

results support the findings from the previous research studies on the barriers to

disclosure (Deribe, Woldenmichael, Wondafrash, Haile, & Amberbir, 2008; Hays, Turner

& Coates, 1992; Salami, Aroye, & Adamu, 2006; Waddell & Messeri, 2006), but differ

on whom the majority of the disclosure was made to. While some studies found that the

majority of the disclosures made by PLWHA were to their spouses (Salami, Araoye, &

Adamu, 2006). Wong et al. (2009) found that PLWHA disclosed more to their relatives,

colleagues or co-workers instead of their spouses (MacNeil, Mberesero, & Kilonzo,1999;

Salami, Fadeyi, Ogunmodede, & Desalu, 2011).

In Nigeria, the barriers for not getting tested have been found to be stigma,

discrimination associated with the disease, and lack of access to testing and counseling

(UNDP, 2004). The traditional approach of Voluntary Counselling and Testing (VCT)

requires pre and post-test counseling and written informed consent (Ijadunola, Abiona,

Balgun & Aderonunmu, 2011). VCT have been proven to be instrumental for the control

of HIV/AIDS transmission and spread (Salami, Fadeyi, Ogunmodede, & Desalu, 2011).

VCT has also been associated with the reduction in the risky behaviors capable of

promoting the transmission of HIV/AIDS, help in the early detection and management of

HIV/AIDS incidence, and satisfactory control of the virus (Group, 2000). However, there

are still many missed opportunities with VCT strategies (Nakanjo et al., 2007). The

change in the HIV/AIDS demographic make-up of Nigerians calls for a change in the

strategies of HIV/AIDS testing.

Provider-initiated HIV testing and counseling (PITC), which have been

introduced in many African countries (CDC, 2008) have been proven to be reasonable

alternatives in Nigeria as well. Research was conducted by Ijadunola, Abiona, Balogun

and Aderounmu (2011) to access the feasibility and uptake of PITC among 252 Nigerian

university undergraduate students. They also explored the reasons why Nigerian students

may be reluctant to test for HIV/AIDS and other potential testing barriers. The results

show that overwhelming number of Nigerian students (99.2%) accepted the offer to be

tested via PITC and the major reason for accepting to be tested was the desire to know

HIV status (93.2%). Among those who accepted to be tested, only 9.5% of them had

previously been tested for HIV while 93.5% were first time testers. The reasons for not

testing were lack of knowledge about testing centers (25%), fear of testing positive (24%)

and perception of being unlikely exposed to HIV (18%).

Gaiter et al. (2013) recommended the use of multiple recruitment strategies such

as targeted outreach, alternate venue testing, and social networks to locate people with

different HIV risk profiles and encourage them to test. Aziza and Beri (2011) argued that

disclosing one's HIV/AIDS status could lead to increased opportunities for social

support, improved access to vital medical care, implementation and discussion of HIV

risk reduction with partners and planning for the future. These researchers also examined

the criminalization of non-disclosure of HIV status to sexual partners prior to sex as

practiced in some states in the USA such as Michigan and California. They found that

the laws that criminalize non-disclosure of HIV/AIDS status are ambiguous in resolving

controversial issues due to some complicated circumstances, intra-relationship power

dynamics and other social and economic realities. The main issue with mandated and

criminalization of disclosure is what the role of law should be in governing and

regulating sexual behaviors. The problem in resolving this issue lies on the fact that

disclosure laws have some grave unintended consequences as they further alienate the

vulnerable individuals already living with the disease (Aziza & Beri, 2011).

Dej and Kilty (2012) observed that the laws that criminalize nondisclosure

reinforce HIV/AIDS-related stigmas and neglect the shifting subjectivities, socio-

historical contexts, and other social conditions that constitute seropositivity. Some of

these laws are also not applied evenly, thereby resulting in discrimination, ongoing police

presence in some vulnerable communities or among racial and ethnic minorities, and

biased interpretation by judges (Aziza & Beri, 2011). A good example is in the state of

California (USA) which mandates HIV/AIDS testing for individuals convicted of

prostitution. A prostitute who tests HIV/AIDS positive in this state is entered into the sex

offender registry as a punishment. This inclusion invariably limits such an individual's

ability to live, work or be hired in a certain environment. Thus, the legal regime surrounding the disclosure laws fails to consider each circumstance in the manner necessary and consequently undermines greater public health (Aziza & Beri, 2011). These controversies surrounding disclosure laws do not compromise its importance.

HIV/AIDS Knowledge and Attitude of Nigerian Students

In spite of the documented high knowledge of HIV/AIDS awareness among the Nigerian population (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate et al., 2008; Omokbodion et al., 2007; Schneider et al, 2012), many are still not listening to the message about the dangers of HIV/AIDS and its prevention (Obijiofor, 2010). People still receive the HIV/AIDS message with skepticism, doubt and sense of denial (Obijiofor, 2010).

Gobopamang (2011) used the data from Botswana AIDS Impact Survey (BAIS) to investigate the extent to which acquired correct knowledge about HIV/AIDS prevention and transmission is translated into protective sexual behaviors among young people ages 10 to 24 in Botswana. The findings also concluded that like in Nigeria, the accurate knowledge of HIV/AIDS prevention and transmission methods does not necessarily translate into safe sexual behaviors. Nevertheless, this author also found that some knowledge of HIV prevention and transmission methods among young people is associated with safe sexual behaviors as well as evidence of other predictors of safe sexual behaviors.

Nigerian Students and HIV/AIDS Risk Behavior

Many research studies support the claim that both cognitive and behavioral risks are often responsible for HIV/AIDS infection and transmission (Lauby et al., 2008; Paniagua & O'Boyle, 2008). Behavioral risks include having unprotected sex, use of illicit drugs or needle sharing, having sex with multiple partners, and lack of sex negotiation, alcohol use and lack of condom use during sex (Cooperman, Arnsten, & Klein, 2007; Paniagua & O'Boyle, 2008). According to Ebeniro (2010), Nigerian university students are most likely to experience economic, physical, and social exposures to the HIV/AIDS. While economic exposure involves financial and material needs of the students, physical exposure includes sexual violence, coerced sex, intimate partner abuse or rape. Social exposure, on the other hand, includes some cultural norms and factors capable of increasing the transmission of HIV/AIDS such as polygamous practice or some gender-role stereotypes that undermine sexual communication or negotiation of women.

To examine the extent of Nigerian University students' knowledge of HIV/AIDS and the risk factors associated with the epidemic, Ebeniro (2010) surveyed 48 students at three Nigerian universities. The result revealed that non-use of condom and alcohol use (37%) was the highest risk factor engaged by the students in the tertiary institution in Nigeria. The second risk factor was having multiple sexual partners (31.7%), followed by the engagement in sexual acts with multiple partners (24.8%). The use of drugs (4.5%) and unsterilized equipment (5.6%) was found to pose the lowest transmission risks. These

results support the claim that despite the high knowledge of HIV/AIDS, Nigerian students are still willing to engage in risky sexual behaviors for numerous reasons.

Alcohol Use

Although the documentation of alcohol consumption is poor in the sub-Sahara African nations, there is still evidence of excessive alcohol drinking in many West African countries (Clausen, Rossow, Naidoo, & Kowal, 2009; WHO, 2014). Studies have linked heavy alcohol use to non-adherence to highly active antiretroviral therapy, HAART, (Braithwaite et al., 2007; Chesney, 2000; Howard, Arnsten, & Lo, 2002; Samet, Horton, Meli, Freedberg, & Palepu, 2004). According to Schneider, Chersich, Neuman and Parry (2012), regions with lower alcohol use have been proven to have lower HIV rates. These authors argue that alcohol has some neglected interface with HIV/AIDS. A good example is South Africa which as of 2011, has the largest number of HIV infected people on earth and is among the highest consumption of alcohol per drinker globally (United Nations, 2011).

Alcohol is also a depressant capable of decreasing sexual activity (Schneider et al., 2012) but is also an inhibition suppressor capable of enhancing sexual activity (Morojele et al., 2006). Many alcohol psychoactive effects such as altered cognition and alcohol myopia, have also been proven to encourage sexual encounters (Schneider et al., 2012). According to Owen & Fincham (2011), higher alcohol use is related to the new trend of friends-with-benefits (FWBR) relationships, which is a form of typical friendship between two individuals but with occasional sexual acts (Bisson & Levine, 2009). Considering the association of alcohol with less safe sex discussion (Goldstein, Barnett,

Pedlow, & Murphy, 2007). Poor sexual communications in FWBR relationships is also anticipated (Owen & Fincham, 2011).

High-risk sex has been linked to the use of alcohol among those already infected with HIV/AIDS (Shuper, Joharchi, Irving, & Rehm, 2009) and yet 70% of this population remain sexually active after their HIV diagnosis and approximately a third have unprotected sex and do not disclose their HIV status to their partners (Crepaz & Marks, 2002; Shuper, Joharchi, Irving, & Rehm, 2009). Only a handful of HIV policies and HIV prevention services (or research projects) adequately address alcohol-HIV harms or include alcohol use as an HIV risk factor (Bryant, Braithwaite, Nelson, Scott, & Deidra, 2010).

Jacuet et al. (2010) investigated the association between alcohol use and treatment adherence with 2,920 patients in eight adult HIV treatment centers in Benin Republic, Cote d'Ivore and Mali. The results supported the claim that alcohol use and hazardous drinking are associated with non-adherence to HAART among HIV/AIDS-infected patients in West Africa (Jacuet et al., 2011). These findings are consistent with the conclusion made by Marcellin et al. (2008) associating binge drinking with unplanned HAART interruptions in a research conducted with 533 HIV-infected patients in Cameroun.

In spite of the high HIV/AIDS infection rates among young people in Nigeria, little research has focused on the likely roles of alcohol and nondisclosure laws in HIV risk behaviors among this population (Ikeotuonye, 2012). This creates the gap in the lack of attention given to the roles of poor sexual communication among Nigerian youths

necessitated by factors such as alcohol and lack of safer sexual laws (or negotiations) such as criminalization of nondisclosure of HIV status to sexual partners. This creates problems for AIDS workers, medical practitioners, and the government in determining the actual factors responsible for the continued spread of HIV/AIDS among young people in Nigeria irrespective of proven high knowledge of HIV/AIDS in this population (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek, et al., 2013; Okulate, Jones & Olarunda, 2008; Omokbodion, Kayode, Ojanen, & Barengo, 2007; Schneider, Chersich, Neuman & Parry, 2012).

Sexual Communication

Sexual communication is the ability to verbally discuss and negotiate safer sex with a sexual partner or potential sexual partner (Noar, 2007). Previous research illustrates that communicating openly about sexual health issues with a partner promotes safer sexual decision-making and may be a key factor in translating intentions such as condom use into action (Noar, Carlyle, & Cole, 2006; Sheeran, Abraham, & Orbell, 1999; Widman, Golin, & Noar, 2014). Individuals who are resolved or have stronger intentions to communicate with their sexual partners about general sexual health topics such as STD, HIV, sexual histories, etc., have also been found to be more open and willing to practice safe sex (Catania et al., 1992; Crosby et al., 2002; Noar et al., 2006; Sheeran et al., 1999; Widman et al., 2006). Sheeran et al. (1999) investigated and meta-analyzed over 40 psychological factors and concluded that sexual communication was a stronger predictor of safer sex behavior. Sexual attitude, self-efficacy and other barriers to condom use were trailing sexual communication in the meta-analysis. Widman, Golin,

and Noar (2013) also found that sexual communication is a crucial intervening variable in the relationship between condom use intentions and safer sex behavior.

Many studies support the assumption that there is delayed sexual debut and consistent condom use in young people who engage in more frequent sexual communication with their dating partners (Crosby et al., 2003; Guzma´n et al., 2003; Noar et al., 2006; Tschann & Adler, 1997). Condom use, HIV/AIDS, contraceptives, birth control, STDs, pregnancy, abstinence, delayed sexual debut or activity are some critical topics relevant to adolescent sexual health which could be achieved through genuine sexual communication between young people, their parents, friends and dating partners (Crosby et al., 2002; DiClemente et al., 2001; Sales et al., 2012). Unfortunately, sexual communication is not common in many sexual relationships irrespective of these proven merits and importance (Milhausen et al., 2007; Ryan, Franzetta, Manlove, & Holcombe, 2007; Widman, Welsh, McNulty, & Little, 2006). This lack may result in risky and unsafe sexual practice and behavior capable of helping the spread of HIV/AIDS especially among young people.

Sexual Communication in College aged students

It is crucial to prevent risky sexual behavior in adolescents by providing effective intervention programs because there is a better chance of preventing high-risk sexual behavior at that stage (Lou, Chen, Yu, Lin & Li, 2010; Pfeiffer, 2009). To do this successfully, sexual communication is an important determinant factor because it has been shown to be a good predictor of risky sexual behavior and plays vital role in the sexual health of college age students (Atienzo, Walker, Campero, Lamadrid-Fiqueroa, &

Gutirrez, 2009; Beckett et al., 2010; Ogle, Glasier & Riley, 2008; Widman, Welsh,

McNulty & Little, 2006). Because communication is the core of varied relevant cultural

practices, there is also a great need to include communication models and take

interdisciplinary approaches in the study of STD prevention among college students

(Rouner & Lindsey, 2006).

Sexual self-concepts and self-worth, safer sex practices, and HIV/STD prevention

skills have been recognized as important determinants and predictors of sexual

communication in young college students (DiClemente, Wingood, Rose, Sales & Crosby,

2010). Sexual cognitive variables are also important predictors of sexual communication

in this population (Lou et al., 2010). For example, Widman et al (2014) utilized the

sample of 603 young people to conduct the assessment of their sexual communication

and the communication differences with their dating partners, parents and friends. The

major aim of these researchers was to emphasize the importance of comprehending the

broader family and peer context of decision-making of adolescent. Six sexual health

topics of condoms, birth control, STDs, HIV/AIDS, pregnancy and abstinence/waiting

were selected as the yardstick in this research. The results show very poor sexual

communication among this population as many fell short of discussing any of the

selected sexual topics with their dating partners (54%), parents (29%) or best friends

(20%). Although participants who were female, African Americans, sexually active and

older were found to have communicated more frequently sexually than others, the

communication and interaction with parents and friends associated more with increased

communication with dating partners. Hence, there is serious need to understand the role of friends in assigning meaning to sexual behaviors and beliefs.

The quality of communication between an adolescent and a parent is generally better with mothers than fathers and better with friends than parents (Dilorio et al., 1999; Lefkowitz et al., 2004). According to Feldman and Rosenthal (2000), sexual dangers and safety, dating and sexual behaviors, abstinence, pregnancy and menstruation are most commonly discussed topics between children and their mothers while wet dreams, solitary sexual activity, and birth control are the least discussed topics. However, communication about issues surrounding sex and sexuality are more comfortably discussed with friends than parents (Dilorio et al., 1999; Lefkowitz et al., 2004). Communication with peers and friends was found by Dilorio et al. (1999) to have association with much liberal sexual attitude than communication with parents. Dating, behaviors, feelings and reproductive health are discussed more than HIV, rape and abstinence among friends (Leficowitz et al, 2004).

Improving communication about sex and between parents, friends and sexual partners is important in decreasing sexually transmitted diseases among college age students (Lu et al., 2010). The existence of more frequently communication between friends in sex-related topics also shows the importance of understanding the role of friends in assigning meaning to sexual behaviors and beliefs among college age students (Lefkowitz & Espinoso-Hernandez, 2007).

Sexual Communication in Nigerian culture

Openly discussing sex, sexual behaviors, and attitudes about sex are not culturally acceptable in Nigeria because such behaviors or discussions are viewed as acts of immorality and waywardness (Oladepo & Fayemi, 2011). According to Iliyasu, Aliyu, Abubakar, and Galadanci (2012), Nigerian parents and religious bodies oppose the introduction of sex education in the school curriculum arguing it is dangerous and capable of making the young ones curious which could lead to experimentation with premarital sex. It is important to note that the traditional norms in most Nigerian culture uphold sexual abstinence before marriage (Oladepo & Fayemi, 2011).

Communication and education about sexual and reproductive health issues in Nigeria is considered the responsibility of the parents who are believed to be the primary agents of socialization and the initial character formatters (Emelumadu et al., 2014; Wamoyi, Fenwick, Urassa, Zaba, & Stones, 2010). Dilworth (2009) argued that parents especially mothers influence sexual attitudes, beliefs, and behaviors of their adolescents through modelling, maintaining a warm and close relationship capable of facilitating open communication, monitoring adolescent activities, and encouraging religious beliefs and practices that influence their moral and sexual behaviors. However, such communication is limited to developmental changes such as menstruation, relationship, maternity care and other impersonal facets of sexuality such as biological aspects of reproduction, morality, and dangers of premarital sex (Ancheta, Hynes, & Shrier, 2005; Wamoyi, Fenwick, Urassa, Zaba, & Stones, 2010). This implies that majority of the Nigerian parents may purposely avoid discussions about condoms and contraceptives use

with their children because they fear it would encourage sexual promiscuity (Iliyasu, Aliyu, Abubakar, & Galadanci, 2012).

Other aspects of sexual communication such as: (a) nature of sexuality, (b) condom use, (c) contraception and (d) safe sex negotiation are neglected among this population. They are, consequently, left to primarily rely on uninformed peers and the media for information on these sexual topics and issues (Ademola, 2003). This exposes them to variety of negative sexual and reproductive health outcomes such as early and unwanted pregnancies, unsafe abortions, and numerous STDs, including HIV/AIDS (Izughara, 2005). The level of sexual communication of parents with their children have also been found to be geographically different in Nigeria due to cultural differences, literacy level, attitude, communication skills and so on (Iliyasu, Aliyu, Abubakar, & Galadanci, 2012).

Opinions vary on the appropriate timing for such a discussion to be initiated between parent and child as well as the involvement of the external factors such school and the media in the sex education of young people (Emelumadu, 2014). Ojo, et al. (2011) reported that majority of the parents in Anambra State, Nigeria believed that sexual communication between parents and their children should start during or after puberty and that children should only start having sex after marriage. However, Opara, Eke and Akani (2010) found in the southern Nigerian city of Port-Harcourt that 41% of mothers favored the starting of sexual communication between parents and their children prior to puberty. The common trend in sub-Sahara Africa, however, is that parents tend to wait until they suspect that their children are becoming sexually active or are involved in

a relationship that might jeopardize their sexual health before a sexual conversation is initiated (Bastein, Kajula, & Muhwezi, 2011).

Initiating sexual communication prior to sexual debut has been found to be effective and protective of young people and is capable of accelerating behavior change in adolescents already sexually active (Bastein, Kajula, & Muhwezi, 2011; Oladepo & Fayemi, 2011). The danger of parents delaying the initiation of discussion of sexuality with children is the unintended exposure to conflicting sexual information or values from other sources such as the media and their peers (Dilworth, 2009; Werner-Wilson, Fitzharris, & Morrissey, 2004; Epstein & Ward, 2008).

Summary

This chapter has so far argued that Sub-Sahara Africa is the region with the people most affected by HIV/AIDS disease to the extent the continent is the global epicenter of the AIDS pandemic (UNAIDS, 2014). Women, youth and children are disproportionally affected by HIV/AIDS disease in Nigeria due to some cultural contexts and conflicts in these regions (Fortson, 2011; UNAIDS, 2014). Although there is no known cure for HIV/AIDS, the discovery of antiretroviral therapy is a great breakthrough in reducing the number of HIV/AIDS-related deaths and in helping those infected by the disease to live longer and normal life (Salami, Fadeyi, Ogunmodede, & Desalu, 2011).

In conjunction with antiretroviral therapy, HIV/AIDS researchers recommend alteration of human behaviors essential to transmission of HIV. These behaviors include but are not limited to being knowledgeable about the disease, negotiating for safer sex

through sexual communication, and minimizing addiction to substances (Ebeniro, 2010; Lauby et al., 2008; Paniagua & O'Boyle, 2008). The TRA, HBM and IPT are instrumental in the progress made so far by HIV/AIDS experts in developing behavioral guidelines aimed at curtaining the spread of this epidemic through behavioral changes, and have been very crucial in understanding sexual communication among young people (Airhihenbuwa & Obregon, 2000; Fishbein & Ajzen, 2010; Glanz & Rimer, 1995).

Despite the ongoing global and continental government and health agencies' efforts, the alarming rate of increased HIV prevalence among the youth who engage in high risk behaviors especially in the sub-Sahara Africa still shows that there is need for continued assessments and research in all sectors to increase the knowledge and improve the attitudes, and sexual practices of college age students who fall most victim to HIV/AIDS infections. This move is necessary because early HIV testing and detection could be beneficial in reducing the disparities in HIV/AIDS diagnoses; hence, the need for an increase in effective strategies capable of boosting HIV testing (Herbst et al., 2012). In lieu of this, Gaiter, Johnson, Taylor, and Thadiparthi et al. (2013), recommended the use of multiple recruitment strategies such as targeted outreach, alternate venue testing, and social networks to locate people with different HIV risk profiles and encourage them to test. While laws mandating testing and criminalizing willingly transmitting or exposing others to HIV/AIDS play vital role in preventing the disease, such laws have also marginalized vulnerable communities, individuals, and minorities further.

Nigeria is the second largest country with PLWHIA due to numerous sociocultural factors such as bias, stigma, gender, sexuality, religion and ethnicity as well as the initial lackadaisical attitude from the military government to curtain HIV/AIDS when the disease was discovered three decades ago. High level of corruption and artificial poverty created by bad governance in Nigeria are also major factors. Nigerian students are at high risk of being infected by HIV/AIDS due to poverty which often forces them to make choices they would not have ordinarily made. It is important to identify the specific sexual topics that are most likely to attract the youth for discussion.

Although communication between parents and their children is vital for their well-being and reduction of sexual risk-taking behaviors, there is no consensus agreement on when parents should initiate communication with their children. Most teens want their parents to talk to them. Unfortunately, communication around issues of sexuality can be uncomfortable for many parents. This could be a reflection of the socialization process experienced by the mothers earlier in life and cultural similarities regarding chastity and the need to preserve family honor.

In this review, I have identified: (a) unprotected sex with multiple partners, (b) lack of communication with partners about sexual history and disease status, (c) patronage of commercial sex workers, (d) poverty, (e) nondisclosure, (f) extramarital relationships, (g) sexual promiscuity, (f) blood transmission, (g) ignorance, and (f) negative stigma as the major HIV/AIDS risk factors among college aged Nigerians. I did not find studies where ARRM has been assessed as the theoretical model of multifaceted sexual risk behavior for the young Nigerian population. This study presents an

opportunity to test the suitability and efficacy of the ARRM theory among the University

population in Nigeria..

Chapter 3: Research Method

Overview

It is estimated that 25 million of those living with HIV/AIDS disease worldwide reside in Sub-Sahara Africa (Bryant, Braithwaite, Nelson, Scott, & Deidra, 2010; United Nations Global Reports on AIDS, 2013). Therefore, the AIDS epidemic in Sub-Saharan Africa is a major problem as 70% of global HIV incidence is traced back to this area (UNAIDS, 2012). In 2013, over three million of world HIV/AIDS cases were traced back to Nigeria bringing the Nigerian HIV/AIDS prevalence to 4.1% (Federal Ministry of Health, 2013; Olowookere, Fatiregu & Adewole, 2012; UNAIDS 2014). According to UNAIDS (2012) the key at-risk HIV/AIDS groups in Nigeria are brothel-based female sex workers (27.4%), non-brothel based female sex workers (21.7%), and men-who-have-sex-with-men (17.2%). In Nigeria, sex is traditionally considered too private a subject to discuss with teenagers (AVERT, 2012). Research has also shown that religious and cultural leaders often act as barriers to sexual communication among young people. These factors put young college students at a disadvantage and make them more vulnerable than other populations to HIV/AIDS (Ebeniro, 2010).

This research addressed the problem of poor sexual communication, and risky sexual behavior among Nigerian college students which can be exacerbated by factors such as alcohol use, as well as cultural, religious, and socioeconomic issues (Ebeniro, 2010). These factors create problems for HIV/AIDS workers, medical practitioners, and the government in determining what is and is not working in the attempts to control HIV/AIDS (Adibe, 2013).

Researchers have shown that personal behavior is one of the determinants that place individuals at risk for HIV infections, and that "knowledge is a key component of HIV risk reduction programs" (Carey & Schroder, 2002, p. 172). Thus, knowledge of HIV/AIDS among Nigerian students could be the foundation for making sound and informed decisions regarding behavior and provide useful insights to those creating HIV/AIDS interventions. In this chapter, I addressed the methodology, population and sample, instrumentation, and procedures. There is also an overview and rationale of the research design used with this study and an explanation of how the rights of the participant population were protected.

Methodology

I used a cross-sectional survey in this research to collect data that was used to measure if there is a predictive relationship between Nigerian university student's beliefs about alcohol use, HIV/AIDS knowledge, education level, religion, gender, age, and sexually risky behaviors, and their ability to engage in sexual communication with others. Social scientists use a cross-sectional design to describe the patterns of relationship between variables and express them with numbers (Frankfort-Nachmias & Nachmias, 2008; Rudestam & Newton, 2007). I collected data through paper/pencil face-to-face questionnaires. The choice of this design was necessitated by the fact that the aim of this study was to describe the association of the independent and dependent variables and not to test a theory (Brink & Wood, 1998). Additionally, it was the most appropriate design for this study and the most convenient in determining the predictive relationship between

HIV knowledge and sexual communication among college aged students in Nigeria considering some culturally sensitive health education issues (Adibe, 2013).

As a data collection method, the cross-sectional survey has numerous advantages as: (a) it allows the collection of large amount of data from a defined population at one point in time (b) it is cost effective, feasible, and can measure other self-reported information as well as abstract variables whose data are usually hard to measure; and (c) it allows a researcher to carry out research in a setting that is natural and real while using probability sampling, which increases external validity (Creswell, 2009; Fowler, 2009; Frankfort-Nachmias & Nachmias, 2008). The choice of survey design as the preferred method of data collection in this research is based on these merits and on the fact that the assessment of predictive relationships among variables is involved.

This research did not determine either the causation or the nature of the problems aimed at deciding the scope and depth of the survey questions (Frankfort-Nachmias & Nachmias, 2008). Furthermore, the variables that were studied in this research were not amenable to experimental investigation – the independent variables were not manipulated, and there was no possibility of making before-and-after comparisons (Creswell, 2009). One of the weaknesses of survey design is that the researcher may not be able to gather clarifications on answers provided by the participants (Frankfort-Nachmias & Nachmias, 2008). The survey questionnaires in this research may have contained some questions that the participants may not have felt comfortable answering such as questions about their drinking behavior, sexual practices, and health status

(Frankfort-Nachmias & Nachmias, 2008). This scenario may have presented the problem of response bias whereby participants denied or underreported such behavior.

Research Questions and Hypotheses

Research Question: What is the predictive relationship between the beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, age, religion, gender, dating status, tribal affiliation, sexual orientation and HIV knowledge status of university students in Nigeria and their ability to engage in sexual communication with others?

$H1_0$: There is no statistically significant predictive relationship between the beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, age, religion, gender, dating status, tribal affiliation, sexual orientation and HIV knowledge status of university students in Nigeria and their ability to engage in sexual communication with others

H1: There is statistically significant predictive relationship between the beliefs about alcohol use, HIV/AIDS knowledge, sexual risk behaviors, age, religion, gender, dating status, tribal affiliation, sexual orientation and HIV knowledge status of university students in Nigeria and their ability to engage in sexual communication with others

Population and Sample

I used convenience sampling method to invite both male and female undergraduate students between the ages of 18 and 35 from NAU to participate in this study. I did not have any formal relationship with the NAU prior to surveying the students but the institution is situated in an area that I knew very well. I recruited these student participants by word of mouth and with the help of the dean of student affairs and

the head of the department of behavioral sciences. I obtained a letter of cooperation from the dean of the student affairs. I surveyed the students in the departments of Religion and Music where I have an informal relationship with the instructors.

My choice of these population and sample sites were based on the large young adult student population in the selected departments at NAU. As of the time of this study, there were as many as 8,000 students at NAU in this age bracket. Stratified probability sampling and convenience nonprobability sampling were closely considered in this research initially, but nonprobability convenience sampling method was chosen over stratified probability sampling because the criteria for the stratified sampling method required that stratification be related to the variables under consideration (Frankfort-Nachmias & Nachmias, 2008).

My initial plan in this research was to stratify the study sample by surveying male and female participants who represented the four major Nigerian ethnic groups and who were knowledgeable about HIV disease, drink alcohol, and were sexually active. However, some cultural factors such as finding enough participants to represent the four major Nigerian ethnic groups only in the eastern part of the country where NAU is located and getting students who would be willing to openly admit being sexually active made it very cumbersome and unrealistic. I settled with the choice of nonprobability convenience sampling method because of the sensitive nature of the subject matter, feasibility of the project, affordability, and the cultural background of the participants which could interfere with or hinder the reality of face-to-face interviews (Catania, McDermott, & Pollack, 1986; Gott & Hinchliff, 2003).

According to Frankfort-Nachmias and Nachmias (2008) statistical power increases with the sample size; and a very large sample size may result in a false statistical significance result. To avoid this problem and to get the appropriate sample size in this study, I used G*Power software with the medium effect size of .15 at 80% power and .05 alpha to calculate the sample size. I chose the sample size of 109 participants produced by the f test linear multiple regressions: fixed effect with R^2 deviation from zero because that was the largest possible sample size result from both f and *t apriori* linear multiple regressions.

Instrumentation

I used HIV-KQ-18, Revised Alcohol Expectancy Questionnaire (AEQ-3), Sexual Risk Survey (SRS) and the Dyadic Sexual Communication Scale (DSC) instruments to collect data from the participants in this study on their belief in the effects of alcohol, HIV knowledge, sexual risk behaviors and sexual communication. These instruments and the items they contain are listed in appendices A, B, C, and D.

HIV-KQ-18

HIV-KQ-18 is a self-administered instrument of 18-item scale (true-false-don't know) questions that was developed using formative work, item, and factor analyses to assess knowledge needed for HIV prevention (Carey, Morrison-Beedy, & Johnson, 1997). Generally, the questions in HIV-KQ-18 focus on basic HIV transmission and prevention and are summed up to form an index of overall HIV knowledge ranging from 0 (lowest knowledge of HIV) to 18 (highest knowledge of HIV). Unanswered questions

and those answered with "I don't know" are categorized and coded as incorrect answers (Wagenaar, Sullivan, & Stephenson, 2012).

Carey and Schroder (2002) used a brief self-report measure of HIV-related knowledge among low-income men and women. They conducted item and test statistics (internal consistency, distribution characteristics), correlations between long and short versions of HIV-KQ-18, the stability over time in the control groups, and the sensitivity for change. The result shows that HIV-KQ-18 is internally consistent, stable, sensitive to change-related interventions, and suitable for use with low-literacy populations in the United States.

The validity and reliability of this instrument has not been established with the Nigerian population. I conducted some statistical analyses as part of this research to ensure that the instrument maintained its reliability and validity among Nigerian population. Based on the use of this instrument among the African-Americans in the United States, the validity and reliability of this instrument was estimated to be moderately valid and reliable.

Revised Alcohol Expectancy Questionnaire (AEQ-3)

AEQ-3 is a 40-item, six-point scale questionnaire with 1 indicating strongest agreement and 6 indicating strongest disagreement on each question. The statements on AEQ-3 focus on one's belief about alcohol and not on one's actual alcohol consumption and are summed up to the total index of 40 to 240 with 40 indicating the strongest belief and 240 showing the strongest disbelief. In this study, The AEQ-3 was scored and

inputted into SPSS in a revised form so that lower scores indicate stronger disbelief and higher scores indicate strongest belief.

The history of AEQ-3 is traced back to the original Alcohol Expectancy Questionnaire (AEQ), an empirically derived self-report form developed by Brown, Goldman, and Christiansen (1980) to assess anticipated experiences among diverse groups based on their use of alcohol (Brown, Christiansen, & Goldman, 1987). AEQ has both adolescent and adult versions. The adult version contains 120 statements taken from adult men and women between the ages of 15 and 60 years with diverse ethnic backgrounds and drinking histories (Brown, Christaiansen, & Godlman, 1987). AEQ has six factor-analytically derived subscales: positive global changes in experience, sexual enhancement, social and physical pleasure, assertiveness, relaxation/tension reduction, and arousal/interpersonal power (Brown, Christiansen, & Goldman, 1987).

Past clinical and non-clinical evaluations of AEQ show high prediction power of both current and future drinking practices of individuals (McCarthy, Kroll, & Smith, 2001). Brown et al. (1987) used data bearing on the psychometric property and clinical and research utility of AEQ to test its reliability and validity. The results indicated consistency in the relationship between alcohol expectancies, alcohol consumption, alcohol abuse and behavior while drinking. Test-retest and internal consistency were measures of the reliability used while the measures of validity derived were content, criterion (predictive, concurrent, postdictive).

Rohsenow (1983), retaining the original 6 subscales in AEQ, modified it to create a 40-item (true or false) Alcohol Effects Questionnaire (AEQ-2) with the addition of two

negative subscales (carless unconcern and cognitive/physical impairment) and the replacement of "I don't know" with a ten-point scale dichotomous response format to emphasize the strength of one's belief with 1 indicating midlist belief and 10 indicating strongest belief. AEQ-2 is brief, easier to administer/score; and provides multifactorial assessment across a range of expectancy subthemes (Rohsenow, 1983). By subsuming the original six positive AEQ factors while adding two negative subscales, AEQ-2 retains high level of comparability with the numerous AEQ studies (George et al., 1995).

While retaining both the positive and negative subscales in AEQ-2 and adding two more subscales, George et al. (1995) replaced the dichotomous response format of the AEQ-2 with a six-point scale to create AEQ-3 with the aim of evaluating the AEQ-3 for factor structure confirmation and invariance across gender and face subgroups. The 8 subscale in AEQ-3 are global positive changes, social and physical pleasure, social expressiveness, social enhancement, power and aggression, tension reduction and relaxation, cognitive and physical impairment and careless unconcern. The result suggested that in addition to the advantages of AEQ and AEQ-2, AEQ-3 makes the distributional properties and reliabilities of the subscales stronger, confirmed the correlation of the eight-factor subscales structure to be largely invariant across race and gender; is more generalizable across a broader population than previously demonstrated (George et al., 1995).

George et al. (1995) recommended the use of AEQ-3 (revised AEQ-2) as a measure of alcohol expectancies. Consequently, I utilized it to collect data on the beliefs of the participants about drinking and how it impacts global positiviness, cognitive and

physical impairment, social or physical pleasure, assertiveness to decision-making, sexual behavior, power, social expressions and tension reduction. The use of AEQ-3 for research-related purposes is free and written request to the authors is not required for obtaining copies but acknowledgement of the source is required. The discriminant validity of the subscales in AEQ, AEQ-2, and AEQ-3 is still subject of concern

Sexual Risk Survey (SRS)

The SRS is a 23 item with dichotomous response format with five factors developed by Turchik and Garske (2009) to assess the frequency of sexual risk behaviors among college students over a six months period. The SRS was originally composed of 37 items taken from past surveys of sexual risk behaviors and from suggestions in the literature. However, using descriptive and principal components analyses with varimax rotation, the developers reduced SRS into 23-item ordinal series of categories to reduce the variability and skewness in the totals of the raw score. They eliminated 14 items with low numbers of responses (<10%), low item-total correlations (<.40), communalities (<.40) and low factor loadings (<.40) were eliminated (Fisher, Davis, Yarber, & Davis, 2011).

They classified the raw numbers such that each item has different frequency value and was recoded into five ordinal categories of 0 to 4 with the code for "0" including only the frequencies of 0 with the remaining frequencies treated as representing 100% of the frequencies (Fisher, Davis, Yarber & Davis, 2011). The same coding will be used in this study to score the data. In all the items, "0" will stand for "0" in all the places the participants answered 0 about their either their number of partners or number of times

they have engaged in a risky behavior, However, in scoring the items with questions about the number of partners such as item 1 will represent having 1-2 partners; 2= 3-4 partners; 3 = 5-9 partners and 4 will represent having 10+ partners. Items with questions about the number of times participants engaged in a risky behavior such as item 9, will be coded as follow: 1 = 1–3 times, 2 = 4–14 times, 3 = 15–50 times and 4 = 51 + times.

The reliability and validity of SRS have also tested (Turchik & Garske, 2009; Fisher, Davis, Yarber, & Davis, 2011). The result of these tests found SRS to be multifactorial with its five factors: sexual risk taking with uncommitted partners, risky sex acts, impulsive sexual behaviors, intent to engage in risky sexual behaviors and anal sex acts; to have good internal consistency and test-retest reliability (Turchik & Garske, 2008; Fisher et al., 2011). By its relationships with reported number of sexual partners and history of infidelity, sensation seeking, sexual desire, substance use, sexual excitation, inhibition and health consequences, SRS was also found to demonstrate evidence of psychometric properties as well as convergent and concurrent validity. The validity and reliability of SRS have been established among college students. I chose this instrument because it was specifically designed to provide a broad and psychometrically sound measure of sexual risk taking among college students (Turchik & Garske, 2008). SRS was also designed to include a glossary of terms that might not be familiar to some participants.

Dyadic Sexual Communication Scale (DSC)

The DSC is a 13-item Likert scale that measures and assesses the respondent's perception of the communication process encompassing sexual relationships and

discussion on sexual matters (CAPS, 2012). The DSC in its original version created leeway for classifying people who reported experiences of sexual problems in the questionnaire from those not report sexual problem experiences (Catania, 1986). The shortened and modified DSC identified significant differences in disclosure of extramarital sex (Choi, Catania, & Dolcini, 1994) and incidences of multiple partners (Dolcini, Coates, Catania, Kegeles, & Hauck, 1995). DSC is rated on a six-point scale with 1 = Disagree Strongly and 6 = Agree Strongly. Modified version of DSC is preferable when frequent evaluations are desired. I used the shortened and modified version of DSC because sexual interaction with multiple partners is an important variable in this research.

Data Collection Procedures

In this study, I used convenience sampling method to select 107 participants aged 18 to 35 years from NAU, Nigeria, and surveyed them through face-to-face administered English language questionnaires. NAU was selected because I had an informal relationship with two of the instructors there. NAU is a federal university in Nigeria located about 20 miles away from Igbo-Ukwu, my home town. Since I did not have any formal relationship with the school, the procedure was professionally done through the university's research center with the required letter of cooperation.

The instructors of the surveyed participants, with the authorization of the designated school authority as indicated in the letter of cooperation, gave me access to the students after lectures. This gave me the opportunity to address the class and introduce my studies and the purpose of my visit. My brief introductory speech (cf.

Appendix F) was followed by question and answer session and the discussion on informed consent. The survey questionnaires were made available for the interested participants to pick, go home with, complete, and return the next three days. In addition to age and gender of the interested participants, the survey also contained provision for the collection of participant's ethnicity, marital status, sexual orientation, tribe, state of origin, religion, dating status, and knowledge of HIV status

Considering the fact that the surveyed participants had their domicile in Nigeria, internet, house drop-off, telephone, and mail surveys were the least appropriate options for this study due to: (a) poor internet connection and availability in Nigeria, (b) low response rate (usually associated with mail surveys), (c) high cost of making international telephone calls, and (d) the potential difficulties in locating participants (Adibe, 2013). My choice of group face-to-face administered questionnaires was based on these foreseeable problems and limitations associated with other method. Although group face-to-face survey method in this research was expensive in comparison with internet survey because of the high travel cost involved, it was more feasible and practical as it availed me the opportunity to bring together a desired sample of respondents needed to answer a structured sequence of questions. High response rate as well as better organization, management, and interaction, were some of the strengths of group face-to-face survey method of data collection that motivated me to settle with it.

Variables to be Analyzed

To test the hypotheses in this study, the various statistical tests used to analyze both the independent and dependent variables and their different levels or scales of measurement are listed in Table 2.

Table 2

List of Variables Statistically analyzed to Determine the Relationship between Independent and Dependent Variables

Variable Type	Variable Name	Code	Variable Level/Scale	Measurement Type
Independent Variables	HIV Knowledge	HIVKQ	Nominal (True/False)	Instrument (HIV-KQ-18)
	Alcohol Use	AlcUse	Ordinal (Likert)	Instrument (AEQ-3)
	Risky Sexual Behavior	SexRiskBeh	Ordinal (Likert	Instrument (SRS)
	Gender	GENDER	Nominal (M/F)	Questionnaire
	Religion	REL	Nominal	Questionnaire
	Age	AGE	Nominal	Questionnaire
	Parent's Education	PEDU	Nominal	Questionnaire
Dependent Variable	Sexual Communication	SexCom	Ordinal (Likert)	Instrument(DSCS)

Data Analyses

I used the Statistical Package for Social Sciences (SPSS) software version 21 to analyze the data collected from the participants in this research. According to Frankfort-Nachmias and Nachmias (2008), data cleaning entails the proofreading of data with the aim of catching and correcting human errors and inconsistent codes. Data editing and cleaning are crucial steps in data processing and should always precede data analysis in social scientific research (Frankfort-Nachmias & Nachmias, 2008). Measurement errors interfere with validity and validity is concerned with the assurance that researchers are measuring the correct thing (Patton, 2002).

To assure validity, I reviewed and edited all data prior to analysis by checking for errors and omissions. This ensured maximum accuracy possible. I also went through all the data meticulously to make sure that only the questionnaires from participants who fall within the parameters of the study were included in the final analysis. All the completed and returned questionnaires were also reviewed for missing and inconsistent responses. All unanswered or blank questions in the questionnaire were coded as incorrect. Wild codes were checked by the use of frequency distribution of data.

Statistical Analyses

I used descriptive statistics to analyze the participant's demographic information to find the mean, mode, median, frequencies and percentages of the participants who responded to the survey. The demographic variables that were utilized in calculating these were gender, age, religion, dating status, Knowledge of HIV status, sexual orientation, tribal affiliation, sexual activity status and language. I also used linear

regressions to calculate and compute the predictive relationship between sexual communication (dependent variable) and HIV knowledge, beliefs about alcohol use, and risky sexual behaviors (independent variables). I set the critical *P* value significance at *.05* and used this value to calculate and assess whether the relationship between these variables were statistically significant.

Threats to Validity

Reliability means that a measure or a questionnaire should consistently reflect the construct that it is measuring (Field, 2014). At peripheral level, the results of these measurements may appear to be valid and reliable when they are in fact not. This may have presented a face validity issue in this study. Although this study presented the opportunity to test these instruments among Nigerian students, the use of these instruments among this population was also a limitation that threatened both the validity and reliability of this study.

Content validity was addressed in this study by involving experts in the field of social sciences to review the test results. I also ensured that the evidence supported the interpretations of the data collected as well as ensuring that the data was accurate and their use in drawing conclusions logical and appropriate. Cronbach's alpha analysis was applied to measure the reliability in order to ensure that the errors associated with these measuring instruments among the study population were put in check and were properly evaluated and managed. Cronbach's alpha was chosen over split-half reliability test for feasibility purposes.

Protection of Participants' Rights

Ethical oversight of research involving human subjects is essential to ensure that the values of respect for persons, beneficence, and social justice are maintained (United States Department of Health & Human Services, 1978; NIH, 2013). Considering the sensitive nature of the subject matter in this study, I took many steps to protect the rights of the participants. The first step I took was to be sure the participants were not denied of their rights to full and truthful information about their participation in the research. To maintain 100 percent confidentiality, I told them the true purpose of the study and allowed them to exercise their rights to be or not be part of the survey. I made sure nothing jeopardizing their well-being was used and that they willingly agreed to be part of the research by giving their informed consent. The informed consent form were included with the questionnaires and emphasized, in addition to the spoken announcement, that participation was strictly voluntary without any repercussions whatsoever. I also clearly stated on the informed consent that the only expected risk was the possibility of discomfort due to the personal nature of some of the questions on the questionnaire.

Because this research involved many individuals, viz, the: participants, copyright holders, stakeholders, and myself (Endicott, 2010), I sought and obtained Walden University IRB approval to ensure that: (a) there was equitable selection of participants, (2) that the informed consent was used appropriately, and (c) that risks were minimized and (d) reasonable/perceived coercion to participate were minimized (Endicott, 2010). To assure confidentiality, I stored the raw data in a fireproof safe before and after entering

them into SPSS software. The questionnaires were also anonymous in nature. There was no kind of identification in the form of names or initials. As required by the federal law and research guidelines, I will continue to retain the raw data for a period of three years.

Summary

This project used cross-sectional survey to measure if there were any predictive relationship between beliefs about alcohol use, HIV/AIDS knowledge, gender, age, religion, dating status, Knowledge of HIV status, sexual orientation, tribal affiliation, sexual activity status and language of Nigerian university students and their ability to engage in sexual communication with their sexual partners. As a data collection method, the cross-sectional survey has numerous advantages such as the ability to collect abstract variables whose data are usually hard to measure and increasing the external validity by allowing a researcher to carry out research in a setting that is natural and real while using probability sampling (Creswell, 2009; Fowler, 2009; Frankfort-Nachmias & Nachmias, 2008). My choice of cross-sectional survey as the preferred method of data collection in this research was based on these merits and because my study involved the assessment of predictive relationships among variables.

The variables I studied in this research were neither amenable to experimental investigation nor manipulated for before-and-after comparisons (Creswell, 2009). SPSS version 21 was used to run multifarious statistical tests to determine any possible predictive relationship that may have existed among the aforementioned study variables. The next chapter that follows focused on the results and conclusions drawn from the analyses of the data collected in this research. Guided by the research questions and

hypotheses, I expounded and provided the results based on the SPSS analyses of the participants' responses to the questionnaire. The outcome of the various statistical tests that determine both the statistical or non-statistical significance among the study variables was also outlined.

Chapter 4: Results

Introduction

The purpose of this study was to address the problem of poor sexual communication among Nigerian college students exacerbated by certain factors such as beliefs about the impact of alcohol consumption, sexual risk behavior and other cultural, religious, and socioeconomic issues. Data analyses were used to determine if a statistically significant relationship existed between HIV knowledge, sexual risk behavior and the belief about alcohol use of Nigerian college students in their ability to engage in sexual communication with their partners. In this chapter, I first present the description of the data collection and analyses, the explanation of the participant's demographics, and the data analysis results and an overall summary.

Data Collection

Email, phone, WhatsApp and Skype correspondence between the Dean of Student Affairs at Nnamdi Azikiwe University (NAU) and I started a year prior to conducting this study. During that time, I presented general information about the research together with the request to have access to NAU students for survey. A letter of cooperation was obtained from the institution in January 2015 and data collection occurred on campus in mid-July 2015 for a period of four days. The Dean of Student Affairs was contacted upon arrival to Nigeria and he indicated a specific day that data collection would need to take place. The return of the completed questionnaire took place for three consecutive days.

Participant Recruitment

Undergraduate instructors gave access to the students at the end of the lecture. I made a brief introductory speech (see Appendix F) during which I introduced myself, my study, its purpose and relevance; the required age, and marital status of the participants. Instructions about informed consent forms were discussed and participants were reminded of their rights to leave or decline participation at any time. They were also given ample opportunities to ask questions. The potential participants were informed that completed questionnaires could be returned to me in the school library for the following three days. The packets containing the questionnaires and informed consent were kept close to the exit door where qualified and interested students took them home on their way out. On each collection day, I requested the class representatives to make an announcement at the end of the class to remind the participants about the on-going collection of the questionnaires. I gave a "thank you" gift of two tablets of original Irish Spring soap worth N1000 ($5) to each participant who returned his or her completed questionnaire.

Response Rate

A total of 150 packets were left at the exit doors of the two classes involved after my meeting with the students for the qualified and interested participants. The participants from these departments picked up a total of 130 packages. Out of these, 44 of them returned their completed questionnaires on the first collection day, 68 returned theirs on the second collection day, and 18 returned theirs on the final collection day. Only ten students who picked up the package failed to return their questionnaires. This

yielded a response rate of 92.30% (*N*=120). Of all the 120 participants, six participants (5%) did not complete AEQ-3 and another three participants (2.5%) did not complete the DSCS questionnaire.

Although qualified participants were to be unmarried undergraduate students between the ages of 18 and 35, I included the questionnaires completed by three married participants and excluded the questionnaires from the six participants who did not complete the AEQ-3 and the three participants who did not complete the DSCS. This reduced the initial number of data for analysis to 111. The major reason I added the married participants was to increase my chances of reaching the targeted sample size of 109.

Data Cleaning

While coding the data into SPSS, I made more adjustments on the number of variables to be analyzed, as outlined initially in Chapter 3. Prior to assessing the assumptions, the 111 data coded into SPSS were screened for missing items, univariate, and multivariate outliers. I investigated the missing data using frequency counts and found four cases of missing data and removed them. This further reduced the valid sample size to 107 participants (*n*=107). Univariate outliers were screened by transforming raw scores to *z*-scores and comparing *z*-scores to a critical value of +/- 3.29, *p* < .001 (Tabachnick & Fidell, 2007). The Z-scores that exceed this critical value were more than three standard deviations away from the mean and thus represented outliers. I evaluated the distributions and found no cases with univariate outliers.

For the regression analyses, I used Mahalanobis distance to evaluate multiple outliers (Field, 2013). I computed Mahalanobis distances for each variable and compared the scores to a critical value from the chi-square distribution table and the Mahalanobis distance for twelve predictor variables indicated a critical value of 32.91 and I found no cases were this value were exceeded.

Data Analyses

I used the Statistical Package for the Social Sciences (SPSS) IBM version 21 to code and tabulate the scores collected from the survey. The summarized values including the mean, central tendency, variance, and standard deviation were provided where applicable. Linear regression analysis was applied to evaluate the data for each variable in relation to the null hypothesis. Descriptive statistics were applied to determine and evaluate the demographics of the survey participants. Next, I conducted the exploratory independent-samples t-tests to determine if statistically significant differences in either the participants' HIV Knowledge, risky sexual behaviors, beliefs about the impact of alcohol, or their ability to engage in sexual communication with others existed between any of the 12 demographic variables. Prior to conducting regression analyses, I used an analytic strategy to evaluate each variable for reliability, normality, linearity, homoscedasticity, and multicollinearity. Finally, I applied linear multiple regression analysis to determine if any statistically significant predictive relationships existed between all the variables of interest. The variables and statistical tests used to evaluate the exploratory analyses and research question are displayed in Table 3.

Table 3

Summary of Variables and Statistical Tests used to evaluate the Exploratory Analyses and Research Question

Analysis	Independent Variable	Dependent (Predictor) Variable	Statistical Tests
Demographics	SexCom	Age, Gender, Religious Affiliation, Sexual Orientation, Dating Status, Marital Status, Sexual Activity Status, HIV Status, Language, and Tribe	Descriptive Statistics to determine demographic characteristics
Exploratory Analyses	SexCom	Age, Gender, Religious Affiliation, Sexual Orientation, Dating Status, Marital Status, Sexual Activity Status, HIV Status, Language, and Tribe	Independent-Samples *t*-tests to determine if demographic variables correlate
Research Question	SexCom	Knowledge of HIV Status, Sexual Risk Behavior, Belief about Alcohol, Age, Gender, Religious Affiliation, Sexual Orientation, Dating Status, Marital Status, Sexual Activity Status, HIV Status, Language, and Tribe	Linear Regression analysis to determine if there are predictive relationships between the dependent and independent variables

Participants' Demographics

The overall demographics show that 58 participants were male (54.2%) and 49 were female (45.8%) and their ages ranged between 18 and 35 with an average age of 22.8 years old ($SD = 2.84$). Table 4 displays the frequency and percent statistics of participants' age by years.

Table 4

Frequency and Percent Statistics of Participants' Age in Years (N=107)

Age (years)	Frequency (*n*)	Percent (%)
18 years	5	4.7
19 years	4	3.7
20 years	12	11.2
21 years	12	11.2
22 years	14	13.1
23 years	22	20.6
24 years	19	17.8
25 years	10	9.3
26 years	2	1.9
28 years	2	1.9
29 years	1	0.9
30 years	1	0.9
31 years	1	0.9
32 years	1	0.9
35 years	1	0.9
Total	107	100.0

The vast majority of the participants were heterosexual (76.6%, *n* = 82) and all of them were Christian (100.0%, *n* = 107). Fifty-nine survey respondents were dating (55.1%) while 48 were not dating (44.9%). Almost all the participants (97.2%, *n*=104) were single and 66 were sexually active (61.7%). Over 98% identified themselves as Igbos (*n*=105) with less than 2% combined were identified as Hausas (*n*=1) and Yorubas (*n*=1). Although the majority of the participants were from the Igbo tribe (98.1%), only 79.4% identified themselves as Igbo language speakers. Table 5 contains frequency and percent statistics of participant demographics.

Table 5

Frequency and Percent Statistics of Participants' Demographics (N=107)

Demographics	Frequency (n)	Percent (%)
Gender		
Male	58	54.2
Female	49	45.8
Sexual Orientation		
Heterosexual	82	76.6
Homosexual	4	3.7
Bi-Sexual	3	2.8
Prefer not to Answer	18	16.8
Religious Affiliation		
Christianity	107	100.0
Dating Status		
Dating	59	55.1
Not Dating	48	44.9
Marital Status		
Single	104	97.2
Married	3	2.8
Sexual Activity Status		
Sexually Active	66	61.7
Not Sexually Active	41	38.3
Knowledge of HIV Status		
Known	69	64.5
Not Known	38	
Other Languages Spoken		
Igbo	85	79.4
Hausa	7	6.5
Yoruba	7	6.5
Efik	1	.09
Ibibio	3	2.8
Others	4	3.7
Tribal Affiliation		
Igbo	105	98.1
Yoruba	1	.09
Hausa	1	.09

Sexual Communication Results

Parametric assumptions including normality and homogeneity of variance were tested prior to conducting the independent-sample *t*-tests. Results indicated that no distributions violated the assumption of normality, as defined in the research question. Homogeneity of variance was tested using Levene's test for equality of variance and the results also indicated that no independent variable distributions violated the assumption ($p > .05$). Displayed in Table 6 are the summary statistics of the Levene's tests conducted for the exploratory analysis of sexual communication.

Table 6

Model Summary of Levene's Tests Conducted for the Exploratory Analysis of Sexual Communication (N=107)

Predictor Variable	F	df	Sig. (*p*)
Age	0.151	105	0.698
Gender	0.002	105	0.965
Sexual Orientation	2.759	105	0.100
Dating Status	2.701	105	0.103
Marital Status	1.810	105	0.181
Sexual Activity Status	0.307	105	0.580
HIV Status	1.987	105	0.162
Other Languages Spoken	0.320	105	0.573
Tribe	2.691	105	0.104

Note
*Statistically significant difference ($p < .05$)
**Statistically significant difference (p<.01)

An exploratory analysis was conducted using independent-samples t-tests to determine if statistically significant differences in participants' ability to engage in sexual communication with others existed between the nine demographic variables. The dependent variable was participants' ability to engage in sexual communication with

others, as defined in the research question and measured by DSCS. The nine independent demographic variables included age, gender, sexual orientation, dating status, marital status, sexual activity status, HIV status, language spoken, and tribal affiliation. However, for age, participants were placed into two age groups including 18 to 24 years ($n = 88$) old and 25 to 35 years old ($n = 19$).

Additionally, for variables with more than two groups (sexual orientation, language spoken, and tribal affiliation), the categories were condensed into two groups. Specifically, the condensed groups for the three predictor variables included sexual orientation (heterosexual $n = 82$, other $n = 25$), language spoken (Igbo $n = 85$, other $n = 22$) and tribe affiliation (Igbo $n = 105$, other $n = 2$)—see Appendix K for the condensed and uncondensed group breakdowns. Lastly, Table 7 shows the descriptive statistics of participants' sexual communication scores by demographic variable groups.

Table 7

Descriptive Statistics of Participants' Sexual Communication Scores by Levels of the Nine Demographic Variables (N=107)

Sexual Communication Scores by Demographic Variables	*n*	Mean	Std. Deviation	Std. Error Mean
Age Groups				
18 - 24 years	88	42.530	7.173	0.765
25 - 35 years	19	39.740	7.809	1.792
Gender				
Male	58	42.160	7.058	0.927
Female	49	41.900	7.712	1.102
Sexual Orientation				
Heterosexual	82	42.070	6.716	0.742
Other	25	41.920	9.224	1.845
Dating Status				
Dating	59	42.590	7.938	1.033
Not dating	48	41.350	6.525	0.942
Marital Status				
Single	104	42.130	7.401	0.726
Married	3	38.670	3.055	1.764
Sexual Activity Status				
Sexually active	66	42.290	7.333	0.903
Not sexually active	41	41.630	7.399	1.155
Knowledge of HIV Status				
Known	69	42.510	7.728	0.930
Not Known	38	41.180	6.559	1.064
Language Spoken				
Igbo	85	42.110	7.214	0.783
Others	22	41.770	7.934	1.692
Tribe Affiliation				
Igbo	105	42.030	7.400	0.722
Others	2	42.500	0.707	0.500

The results of the independent-samples t-tests conducted between the nine demographic variables (age, gender, sexual orientation, dating status, marital status, sexual activity status, HIV status, language spoken, and tribal affiliation), showed no statistically significant difference ($p > .05$) in the participants' ability to engage in sexual communication with others. Table 8 shows the summary statistics of the independent-samples *t*-tests conducted for the exploratory analysis of sexual communication.

Table 8

Summary of Results from the Independent-samples t-tests Conducted for the Exploratory Analysis of Sexual Communication (N=107)

Predictor Variable	T	df	Sig. (*p*)	Mean Diff.	Std. Error Difference	95% C.I. of the Diff.	
						Lower	Upper
Age	1.518	105	0.132	2.797	1.843	-0.857	6.452
Gender	0.180	105	0.857	0.257	1.429	-2.576	3.090
Sexual Orient.	0.091	105	0.928	0.153	1.683	-3.183	3.489
Dating Status	0.869	105	0.387	1.239	1.427	-1.589	4.068
Marital Status	0.807	105	0.422	3.468	4.300	-5.058	11.994
Sexual Act. Status	0.447	105	0.656	0.654	1.463	-2.247	3.555
Kn2 of HIV Status	0.893	105	0.374	1.323	1.482	-1.616	4.262
Language	0.189	105	0.850	0.333	1.761	-3.160	3.826
Tribe	-0.090	105	0.929	-0.471	5.257	-10.895	9.953

Note. Independent variable = sexual communications;

Knowledge of HIV Results

Parametric assumptions including normality and homogeneity of variance were also tested before the independent-sample *t*-tests were conducted. Results indicated that no distributions violated the assumption of normality, as defined in the research question. However, the result of the homogeneity of variance tested using Levene's test for

equality of variance indicated that one demographic variable (Knowledge of HIV status =

p= .038) violated the assumption. Thus, equal variance was not assumed and the

appropriate *t*-test was conducted. The remaining demographic variables did not violate

the assumption of homogeneity of variance. Displayed in Table 9 are the summary

statistics of the Levene's tests conducted for the exploratory analysis of participants'

knowledge of HIV.

Table 9

Model Summary of Levene's Tests Conducted for the Exploratory Analysis of Knowledge of HIV (N=107)

Demographic Variable	F	df	Sig. (*p*)
Age	1.599	105	0.209
Gender	0.210	105	0.648
Sexual Orientation	1.243	105	0.267
Dating Status	0.901	105	0.345
Marital Status	0.005	105	0.945
Sexual Activity Status	0.018	105	0.894
HIV Status	4.416	105	0.038*
Other Languages Spoken	0.179	105	0.673
Tribe	1.844	105	0.177

*Note. *p* < .05*

To determine if any statistically significant differences in participants' knowledge

of HIV existed between the nine demographic variables, exploratory independent-sample

t-tests were also conducted. The dependent variable was participants' knowledge of HIV,

as defined in the research question. The nine demographic variables remained the same:

age (18-24 years, 25-35 years), gender (male, female), sexual orientation (heterosexual,

other), dating status (dating, not dating), marital status (single, married), sexual activity

status (sexually active, not sexually active), HIV status (known, not known), language

spoken (Igbo, other), and tribal affiliation (Igbo, other). Table 10 has more details

Table 10

Descriptive Statistics of Participants' Knowledge of HIV Scores by Levels of the Nine Demographic Variables (N=107)

Knowledge of HIV Scores by Demographic Variables	*n*	Mean	Std. Deviation	Std. Error Mean
Age Groups				
18 - 24 years	88	6.260	1.991	0.212
25 - 35 years	19	6.890	1.729	0.397
Gender				
Male	58	6.430	2.010	0.264
Female	49	6.310	1.906	0.272
Sexual Orientation				
Heterosexual	82	6.280	1.996	0.220
Other	25	6.680	1.819	0.364
Dating Status				
Dating	59	6.080	1.832	0.238
Not dating	48	6.730	2.060	0.297
Marital Status				
Single	104	6.340	1.949	0.191
Married	3	7.670	2.082	1.202
Sexual Activity Status				
Sexually active	66	6.360	1.927	0.237
Not sexually active	41	6.390	2.023	0.316
Knowledge of HIV Status				
Known	69	6.290	1.775	0.214
Not Known	38	6.530	2.263	0.367
Language Spoken				
Igbo	85	6.380	2.000	0.217
Others	22	6.360	1.814	0.387
Tribe Affiliation				
Igbo	105	6.310*	1.923	0.188
Others	2	9.500*	0.707	0.500

Note. $*p < .05$

The result of the Independent-sample *t*-tests conducted to determine if statistically significant differences in participants' knowledge of HIV scores existed between nine demographic variables (age, gender, sexual orientation, dating status, marital status, sexual activity status, HIV status, language spoken, and tribal affiliation) showed a statistically significant difference only in one demographic variable (tribal affiliation, $p =$ .022). This implies that Igbo participants had statistically significant lower HIV knowledge scores ($M = 6.310$, $SD = 1.923$) compared to the participants from other tribes ($M = 9.500$, $SD = 0.707$). There were no other statistically significant differences between the rest of the demographic variables ($p > .05$). Table 11 displays the summary statistics of the independent-sample *t*-tests conducted for the exploratory analysis of knowledge of HIV.

Table 11

Summary of Results from the Independent-samples t-tests Conducted for the Exploratory Analysis of Knowledge of HIV (N=107)

Demographic Variable	t	df	Sig. (*p*)	Mean Dff..	Std. Error Diff.	95% C.I. of the Difference	
						Lower	Upper
Age	-1.285	105	0.202	-0.633	0.493	-1.611	0.344
Gender	0.328	105	0.744	0.125	0.381	-0.630	0.880
Sexual Orient.	-0.894	105	0.374	-0.400	0.447	-1.286	0.487
Dating Status	-1.711	105	0.090	-0.644	0.377	-1.391	0.102
Marital Status	-1.164	105	0.247	-1.330	1.143	-3.596	0.936
Sexual Act. Status	-0.068	105	0.946	-0.027	0.391	-0.801	0.748
HIV Status	-0.557	105	0.580	-0.236	0.425	-1.085	0.612
Language	0.027	105	0.978	0.013	0.470	-0.919	0.944
Tribe	-2.330	105	0.022*	-3.186	1.367	-5.896	-0.475

Note. *$p < .05$

Belief about Alcohol Results

Parametric assumptions including normality and homogeneity of variance were tested before the independent-sample *t*-tests were conducted. The results indicated that no distributions violated the assumption of normality, as defined in the research question. Similarly, the results of the homogeneity of variance using Levene's test for equality of variance indicated no independent variable distributions violated the assumption ($p >$ .05). Table 12 shows the summary statistics of the Levene's tests conducted for the exploratory analysis of participants' belief about alcohol.

Table 12

Model Summary of Levene's Tests Conducted for the Exploratory Analysis of Belief about Alcohol (N=107)

Demographic Variable	F	df	Sig. (*p*)
Age	0.373	105	0.543
Gender	2.962	105	0.088
Sexual Orientation	1.721	105	0.192
Dating Status	0.000	105	0.986
Marital Status	0.223	105	0.638
Sexual Activity Status	2.315	105	0.131
HIV Status	0.246	105	0.621
Other Languages Spoken	0.029	105	0.864
Tribe	1.535	105	0.218

Note. *$p < .05$ ** p<.01

With the same nine demographic variables (age, gender, sexual orientation, dating status, marital status, sexual activity status, HIV status, language spoken, and tribal affiliation), I also conducted an exploratory analysis using independent-samples t-tests to determine if any statistically significant differences in participants' belief about alcohol

existed between them. In this test, the dependent variable was the scores of the

participants' belief about alcohol, as defined in the research question. Displayed in Table

13 are the descriptive statistics of scores of the participants' belief about alcohol by

demographic variable groups.

Table 13

Descriptive Statistics of Participants' Belief about Alcohol Scores by Levels of the Nine Demographic Variables (N=107)

Believe about Alcohol by Scores by Demographic Variables	*n*	Mean	Std. Deviation	Std. Error Mean
Age Groups				
18 - 24 years	88	149.740	37.131	3.958
25 - 35 years	19	126.680	32.285	7.407
Gender				
Male	58	134.020**	31.780	4.173
Female	49	159.410**	38.817	5.545
Sexual Orientation				
Heterosexual	82	142.990	35.890	3.963
Other	25	154.360	40.929	8.186
Dating Status				
Dating	59	153.340*	36.525	4.755
Not dating	48	136.190*	36.277	5.236
Marital Status				
Single	104	144.940	36.961	3.624
Married	3	170.000	47.318	27.319
Sexual Activity Status				
Sexually active	66	143.860	35.359	4.352
Not sexually active	41	148.510	40.375	6.305
Knowledge of HIV Status				
Known	69	147.420	38.865	4.679
Not Known	38	142.420	34.363	5.574
Language Spoken				
Igbo	85	146.670	37.215	4.037
Others	22	141.680	37.950	8.091
Tribe Affiliation				
Igbo	105	145.720	37.571	3.667
Others	2	141.500	13.435	9.500

Note. *$p < .05$, **$p < .01$

Independent-sample *t*-tests were conducted to determine if statistically significant differences in participants' belief about alcohol scores existed between any of the afore-mentioned nine demographic variables The results indicated there were statistically significant differences in participants' belief about alcohol scores between two demographic variables (gender *p* = .001 and dating status *p* = .017). Consequently, male participants had statistically significant lower scores in their belief about alcohol (*M* = 134.020, *SD* = 31.780) than their female counterparts (*M* = 159.410, *SD* = 38.817); and the participants who were dating had statistically significant lower scores in their belief about alcohol (*M* = 136.190, *SD* = 36.277) than those were not dating (*M* = 153.340, *SD* = 36.525). There were no other statistically significant differences found between any of the demographic variables (*p* > .05). Displayed in Table 14 are the summary statistics of the independent-samples t-tests conducted for the exploratory analysis of participants' scores on their belief about alcohol.

Table 14

Summary of Results from the Independent-samples t-tests Conducted for the Exploratory Analysis of Belief about Alcohol (N=107)

Demographic Variables	t	df	Sig. (*p*)	Mean Diff.	Std. Error Diff.	95% C.I. of the Difference	
						Lower	Upper
Age	2.507	105	0.014	23.054	9.195	4.823	41.286
Gender	-3.720	105	< .001**	-25.391	6.825	-38.923	-11.859
Sexual	-1.342	105	0.183	-11.372	8.476	-28.179	5.435
Dating Status	2.423	105	0.017*	17.151	7.078	3.117	31.186
Marital Status	-1.151	105	0.252	-25.058	21.776	-68.236	18.120
Sexual Act Status	-0.626	105	0.533	-4.649	7.427	-19.375	10.078
Kn2 of HIV Status	0.663	105	0.509	4.999	7.543	-9.958	19.956
Language	0.558	105	0.578	4.989	8.938	-12.733	22.710
Tribal Affiliation	0.158	105	0.875	4.224	26.707	-48.730	57.178

Note. *p* < .05, ***p* < .01

Sexual Risk Behavior Results

The result of normality conducted prior to the independent-sample *t*-tests showed no violation of normality assumptions as defined in the research question. However, the results of the homogeneity of variance conducted with Levene's test for equality of variance indicated that one demographic variable distribution (sexual activity status, *p* = .032) violated the assumption. As such, equal variance was not assumed and the appropriate *t*-test was conducted. None of the remaining demographic variables violated the assumption of homogeneity of variance. Table 15 shows the summary statistics of the Levene's tests conducted for the exploratory analysis of participants' sexual risk behavior.

Table 15

Model Summary of Levene's Tests Conducted for the Exploratory Analysis of Sexual Risk Behavior (N=107)

Demographic Variable	F	df	Sig. (*p*)
Age	0.080	105	0.777
Gender	0.020	105	0.887
Sexual Orientation	0.474	105	0.493
Dating Status	2.776	105	0.099
Marital Status	0.714	105	0.400
Sexual Activity Status	4.710	105	0.032*
HIV Status	0.098	105	0.755
Other Languages Spoken	0.910	105	0.342
Tribe	0.409	105	0.524

Note. *p* < .05

An exploratory analysis was also conducted using independent-sample *t*-tests to determine if any statistically significant differences in the scores of the participants'

sexual risk behavior existed between any of the nine demographic variables. The

dependent variable was participants' sexual risk behavior, as defined in the research

question and as in the previous independent sample *t*-tests, the same nine demographic

variables and their categories were retained. Displayed in Table 16 are the descriptive

statistics of participants' sexual risk behavior scores by demographic variable groups.

Table 16

Descriptive Statistics of Participants' Sexual Risk Behavior Scores by Levels of the Nine Demographic Variables (N=107)

Sexual Risk Behavior Scores by Demographic Variables	*n*	Mean	Std. Deviation	Std. Error Mean
Age Groups				
18 - 24 years	88	7.580**	6.160	0.657
25 - 35 years	19	12.000**	6.675	1.531
Gender				
Male	58	9.740*	6.390	0.839
Female	49	6.730*	6.194	0.885
Sexual Orientation				
Heterosexual	82	8.270	6.373	0.704
Other	25	8.680	6.817	1.363
Dating Status				
Dating	59	8.540	6.882	0.896
Not dating	48	8.150	5.939	0.857
Marital Status				
Single	104	8.390	6.411	0.629
Married	3	7.330	9.292	5.364
Sexual Activity Status				
Sexually active	66	9.850**	6.664	0.820
Not sexually active	41	5.980**	5.346	0.835
Knowledge of HIV Status				
Known	69	8.800	6.592	0.794
Not Known	38	7.580	6.189	1.004
Language Spoken				
Igbo	85	8.590	6.576	0.713
Others	22	7.500	5.998	1.279
Tribe Affiliation				
Igbo	105	8.310	6.428	0.627
Others	2	11.000	9.899	7.000

Note. $*p < .05, **p < .01$

The independent-sample *t*-tests conducted to determine if significant differences

in participants' sexual risk behavior scores existed between the nine demographic

variables showed there were statistically significant differences in the scores of the

participants' sexual risk behavior between three demographic variables (age, *p* = .006,

gender, *p* = .016, and sexual activity status, *p* = .001). These imply that participants who

were between 18 and 25 years old had significantly lower sexual risk behavior scores (*M*

= 7.580, *SD* = 6.160) in comparison with older participants (*M* = 12.000, *SD* = 6.675).

Female participants were also found to have significantly lower sexual risk behavior

scores (*M* = 6.730, *SD* = 6.194) than their male counterparts (*M* = 9.740, *SD* = 6.390).

Table 17 has the summary statistics of the independent-sample *t*-tests.

Table 17

Summary of Results from the Independent-samples t-tests Conducted for the Exploratory Analysis of Sexual Risk Behavior (N=107)

Demographic Variable	t	df	Sig. (*p*)	Mean Diff.	Std. Error Difference	95% C.I. of the Difference	
						Lower	Upper
Age	-2.795	105	0.006**	-4.420	1.581	-7.556	-1.285
Gender	2.459	105	0.016*	3.007	1.223	0.582	5.431
Sexual Orientation	-0.278	105	0.781	-0.412	1.480	-3.346	2.523
Dating Status	0.315	105	0.753	0.397	1.259	-2.100	2.893
Marital Status	0.280	105	0.780	1.061	3.793	-6.461	8.582
Sexual Act. Status	3.309	105	0.001**	3.873	1.170	1.550	6.195
HIV Status	0.934	105	0.352	1.218	1.304	-1.367	3.803
Language Spoken	0.704	105	0.483	1.088	1.546	-1.978	4.154
Tribal Affiliation	-0.582	105	0.562	-2.686	4.618	-11.842	6.471

Note. Criterion variable = sexual risk behavior; **p* < .05, ***p* < .01

Furthermore, participants that were not sexually active had significantly lower

sexual risk behavior scores (*M* = 5.980, *SD* = 5.346) compared to participants who were

sexually active (*M* = 9.850, *SD* = 6.664). No other statistically significant differences

were found between any of the six remaining demographic variables (*p* > .05).

Linear Regression Analyses

Reliability

Prior to running linear regression analyses, I ran the reliability analysis to

determine if sexual communication (criterion variable) and knowledge of HIV, sexual

risk behavior, and belief about alcohol (predictor variables) were sufficiently reliable.

Reliability analysis allows researchers to study the properties of measurement scales and

the items that compose the scales (Tabachnick & Fidell, 2007). Cronbach's alpha (α)

reliability analysis procedure calculates a reliability coefficient that ranges between 0 and

1. The reliability coefficient is based on the average inter-item correlation. Scale

reliability is assumed if the coefficient is $\geq$ .60. Results from the tests indicated that two

variable constructs were not sufficiently reliable (sexual communication α = .562,

knowledge of HIV α = .400). Displayed in Table 18 are summary statistics from the

reliability analyses.

Table 18

Summary Statistics from the Reliability Analyses of the Criterion and Predictor Variables
(N=107)

Variable	# of Items	Cronbach's Alpha (α)
Sexual Communication	13	.562
Knowledge of HIV	18	.400
Sexual Risk Behavior	23	.901
Belief about Alcohol	40	.922

Although, the two variables violated the assumption, no survey items increased

Cronbach's alpha by either reversing or removing the item. Based on this, I took no

action(s) in this regard and considered this violation of reliability a limitation of the

study. The remaining variable constructs (sexual risk behavior and belief about alcohol)

did not violate the assumption of reliability (α = .901 and .922, respectively).

Normality

For both the independent (criterion) variable (sexual communication) and the

dependent or interval-scaled predictor variables (knowledge of HIV, sexual risk behavior,

and belief about alcohol), I tested the assumptions of normality, linearity, and

homoscedasticity. Scatterplots were used to analyze linearity and homoscedasticity

scatterplots and the distributions met the assumptions. Using Tabachnick and Fidell

(2007)'s recommendation, I tested if the distributions were normally distributed by

dividing the skew and kurtosis coefficients by the skew/kurtosis standard errors, resulting

in z-skew/z-kurtosis coefficients. Specifically, z-skew/z-kurtosis coefficients exceeding

the critical range between -3.29 and +3.29 (p < .001) may indicate non-normality. Based

on the evaluation of the z-skew/z-kurtosis coefficients, I found no variables exceeding the

critical range and this meant that normality was assumed for all distributions. Table 19

shows the skewness and kurtosis statistics of the dependent and independent variables

used to evaluate the research question.

Table 19

Skewness and Kurtosis Statistics of the Independent and Dependent Variables (N=107)

Variable	Skewness	Std. Error	z-skew	Kurtosis	Std. Error	z-kurtosis
Sexual Communication	0.292	0.234	1.248	0.251	0.463	0.542
Knowledge of HIV	0.278	0.234	1.188	-0.498	0.463	-1.076
Sexual Risk Behavior	0.465	0.234	1.987	-0.877	0.463	-1.894
Belief about Alcohol	0.573	0.234	2.449	0.175	0.463	0.378

Multicollinearity

The assumption of multicollinearity was also tested by calculating correlations between the dependent or predictor variables (knowledge of HIV, sexual risk behavior, belief about alcohol, gender, sexual orientation, dating status, marital status, sexual activity status, HIV status, language spoken, and tribe) and collinearity statistics (tolerance and variance inflation factor). Results indicated that correlations between predictor variables did not exceed the critical value of .80. I calculated the tolerance using the formula $T = 1 – R^2$ and variance inflation factor (VIF) was the inverse of Tolerance (i.e. 1 divided by T). Commonly used cut-off points for determining the presence of multicollinearity are T < .10 and VIF > 10 (Field, 2013). The results from these analyses indicated that the predictor variables did not exceed the critical values. Thus, since the correlation, tolerance, and VIF coefficients did not exceed their critical values, the presence of multicollinearity was not assumed. Appendix I has the summary details of the correlations between the predictor (independent) variables used to evaluate the research question.

DSCS Scores

The research question in this study was evaluated using three linear regression analyses to determine if any statistically significantly predictive relationships existed between participants' ability to engage in sexual communication with others and their knowledge of HIV/AIDS, sexual risk behavior, belief about alcohol. Specifically, the criterion or dependent variable was participants' ability to engage in sexual communication with others and was measured by 13 items on the Dyadic Sexual Communication Scale (DSC). Response parameters were measured on a 6-point Likert-type score where 1 = *agree strongly* and 6 = *disagree strongly*. Composite scores were calculated by summing case scores across the 13 items resulting in a possible range of scores between 13 and 78. That is, higher scores indicated greater difficulty engaging in sexual communication with others. Table 20 shows the frequency and percent statistics for all 13 items on the DSCS.

Table 20

Frequency and Percent Statistics of Participants' Scores on all 13-items of the DSC (N=107)

Sex Com	Strongly disagree (1)		Disagree (2)		Slightly Disagree (3)		Slightly Agree (4)		Agree (5)		Strongly Agree (6)	
	n	%	n	%	n	%	n	%	n	%	n	%
Q1	24	22.4	14	13.1	30	28	13	12.1	26	24.3	26	24.3
Q2	24	22.4	27	25.2	20	18.7	15	14	21	19.6	21	19.6
Q3	23	21.5	24	22.4	28	26.2	9	8.4	23	21.5	23	21.5
Q4	17	15.9	21	19.6	32	29.9	12	11.2	25	23.4	25	23.4
Q5	23	21.5	18	16.8	21	19.6	17	15.9	28	26.2	28	26.2
Q6	13	12.1	19	17.8	27	25.2	19	17.8	29	27.1	29	27.1
Q7	19	17.8	11	10.3	20	18.7	15	14.0	42	39.3	42	39.3
Q8	19	17.8	11	10.3	16	15.0	22	20.6	39	36.4	39	36.4
Q9	9	8.4	15	14.0	31	29.0	20	18.7	32	29.9	32	29.9
Q10	15	14.0	9	8.4	34	31.8	25	23.4	24	22.4	24	22.4
Q11	6	5.6	6	5.6	26	24.3	30	28.0	39	36.4	39	36.4
Q12	22	20.6	16	15.0	26	24.3	19	17.8	24	22.4	24	22.4
Q13	23	21.5	12	11.2	22	20.6	18	16.8	32	29.9	32	29.9

HIV-KQ-18 Scores

The predictor variables used in the linear regression analyses were students'
knowledge of HIV/AIDS, sexual risk behavior, belief about alcohol, age, gender,
religious affiliation, sexual orientation, dating status, marital status, sexual activity status,
HIV status, language spoken, and tribe. Participants' knowledge of HIV was measured
by 18 items on the HIV Knowledge Questionnaire (HIV-KQ-18). I measured the
response parameters on a 2-point scale where 0 = *incorrect or don't know* and 1 =
correct. I calculated the composite scores by summing case scores across the 18 items
resulting in a possible range of scores between 0 (lowest knowledge of HIV) to 18
(highest knowledge of HIV). Table 21 shows the frequency and percent of the items.

Table 21

Frequency and Percent Statistics of Participants' Scores on all 18-items of the HIV-KQ-18 (N=107)

	Incorrect (0)			Correct (1)	
Knowledge of HIV	*n*	*%*		*n*	*%*
Q1	91	85.0		16	15.0
Q2	96	89.7		11	10.3
Q3	89	83.2		18	16.8
Q4	39	36.4		68	63.6
Q5	99	92.5		8	7.5
Q6	90	84.1		17	15.9
Q7	95	88.8		12	11.2
Q8	95	88.8		12	11.2
Q9	58	54.2		49	45.8
Q10	101	94.4		6	5.6
Q11	37	34.6		70	65.4
Q12	13	12.1		94	87.9
Q13	98	91.6		9	8.4
Q14	97	90.7		10	9.3
Q15	80	74.8		27	25.2
Q16	5	4.7		102	95.3
Q17	59	55.1		48	44.9
Q18	97	90.7		10	9.3

SRS Scores

The participants' sexual risk behavior was measured by 23 items on the Sexual

Risk Survey (SRS) where response parameters were measured on two similar 4-point

type scales. Specifically, for questions regarding the number of partners, such as item 1,

response parameters were 0 = *none*, 1 = *2 partners*, 2 = *3-4 partners*, 3 = *5-9 partners*

and 4 = *10+ partners*. Items regarding the number of times participants engaged in a

risky behavior such as item 9, response parameters were 0 = *none*, 1 = *1–3 times*, 2 = *4–*

14 times, 3 = *15–50 times* and 4 = *51+ times*. In this scale, I calculated the composite

scores by summing case scores across the 23 items resulting in a possible range of scores

between 0 to 92 where higher scores indicated greater frequencies of sexual risk

behaviors. Table 22 displays the frequency and percent for all 23 items.

Table 22

Frequency and Percent Statistics of Participants' Scores on all 23-items of the SRB (N=107)

Sexual Risk Behaviors	None (0)		2 partners/ 1-3 times (1)		3- 4partners/ 4-14 times (2)		5-9 partners/ 15-50 times (3)		10+ partners/ 51+ times (4)	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Q1	29	27.1	74	69.2	2	1.9	1	0.9	1	0.9
Q2	75	70.1	32	29.9	0	0.0	0	0.0	0	0.0
Q3	72	67.3	35	32.7	0	0.0	0	0.0	0	0.0
Q4	76	71.0	29	27.1	2	1.9	0	0.0	0	0.0
Q5	53	49.5	50	46.7	2	1.9	1	0.9	1	0.9
Q6	54	50.5	53	49.5	0	0.0	0	0.0	0	0.0
Q7	52	48.6	55	51.4	0	0.0	0	0.0	0	0.0
Q8	40	37.4	64	59.8	0	0.0	3	2.8	0	0.0
Q9	69	64.5	33	30.8	3	2.8	2	1.9	0	0.0
Q10	68	63.6	38	35.5	1	0.9	0	0.0	0	0.0
Q11	89	83.2	17	15.9	1	0.9	0	0.0	0	0.0
Q12	92	86.0	14	13.1	0	0.0	1	0.9	0	0.0
Q13	92	86.0	15	14.0	0	0.0	0	0.0	0	0.0
Q14	88	82.2	18	16.8	0	0.0	1	0.9	0	0.0
Q15	95	88.8	11	10.3	1	0.9	0	0.0	0	0.0
Q16	69	64.5	37	34.6	1	0.9	0	0.0	0	0.0
Q17	75	70.1	32	29.9	0	0.0	0	0.0	0	0.0
Q18	70	65.4	36	33.6	1	0.9	0	0.0	0	0.0
Q19	73	68.2	34	31.8	0	0.0	0	0.0	0	0.0
Q20	67	62.6	39	36.4	1	0.9	0	0.0	0	0.0
Q21	69	64.5	38	35.5	0	0.0	0	0.0	0	0.0
Q22	58	54.2	49	45.8	0	0.0	0	0.0	0	0.0
Q23	80	74.8	27	25.2	0	0.0	0	0.0	0	0.0

AEQ-3 Scores

The participant's' beliefs on the impacts of alcohol consumption was measured

with Alcohol Expectancy Questionnaire (AEQ-3). A 6-point Likert type scale where 1 =

strongly belief and 6 = *strongly disbelief* was used to measure the response parameter.

Composite scores were calculated by summing case scores across the 40 items resulting

in a possible range of scores between 40 and 240. That is, higher scores indicated

stronger disbelief in the expectations of alcohol. See Table 23 for frequency and percent

for all 40 items on the AEQ-3.

Table 23

Frequency and Percent Statistics of Participants' Scores on all 40-items of the AEQ-3 (N=107)

Alc. Beliefs	Strongly Believe (1)		Moderately Believe (2)		Slightly Believe (3)		Slightly Disbelieve (4)		Moderately Disbelieve (5)		Strongly Disbelieve (6)	
	N	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Q1	29	27.1	16	15.0	11	10.3	7	6.5	11	10.3	33	30.8
Q2	33	30.8	21	19.6	17	15.9	4	3.7	9	8.4	23	21.5
Q3	38	35.5	16	15.0	14	13.1	9	8.4	9	8.4	21	19.6
Q4	43	40.2	17	15.9	10	9.3	10	9.3	12	11.2	15	14.0
Q5	20	18.7	17	15.9	16	15.0	9	8.4	14	13.1	31	29.0
Q6	13	12.1	16	15.0	19	17.8	18	16.8	16	15.0	25	23.4
Q7	21	19.6	11	10.3	18	16.8	7	6.5	20	18.7	30	28.0
Q8	11	10.3	5	4.7	6	5.6	13	12.1	19	17.8	53	49.5
Q9	17	15.9	20	18.7	18	16.8	14	13.1	10	9.3	28	26.2
Q10	26	24.3	12	11.2	21	19.6	9	8.4	14	13.1	25	23.4
Q11	20	18.7	14	13.1	12	11.2	14	13.1	15	14.0	32	29.9
Q12	20	18.7	11	10.3	17	15.9	9	8.4	16	15.0	34	31.8
Q13	24	22.4	17	15.9	20	18.7	12	11.2	10	9.3	24	22.4
Q14	21	19.6	18	16.8	13	12.1	17	15.9	11	10.3	27	25.2
Q15	31	29.0	19	17.8	17	15.9	11	10.3	6	5.6	23	21.5
Q16	12	11.2	8	7.5	15	14.0	9	8.4	22	20.6	41	38.3
Q17	18	16.8	8	7.5	8	7.5	17	15.9	19	17.8	37	34.6
Q18	29	27.1	13	12.1	18	16.8	8	7.5	15	14.0	24	22.4
Q19	13	12.1	10	9.3	10	9.3	17	15.9	20	18.7	37	34.6
Q20	35	32.7	23	21.5	14	13.1	7	6.5	10	9.3	18	16.8
Q21	37	34.6	20	18.7	19	17.8	9	8.4	6	5.6	16	15.0
Q22	21	19.6	21	19.6	14	13.1	12	11.2	10	9.3	29	27.1
Q23	13	12.1	8	7.5	17	15.9	17	15.9	19	17.8	33	30.8
Q24	33	30.8	19	17.8	15	14.0	9	8.4	7	6.5	24	22.4
Q25	28	26.2	25	23.4	15	14.0	10	9.3	6	5.6	23	21.5
Q26	26	24.3	11	10.3	19	17.8	10	9.3	23	21.5	18	16.8
Q27	27	25.2	19	17.8	17	15.9	10	9.3	7	6.5	27	25.2

Q28	32	29.9	15	14.0	15	14.0	8	7.5	12	11.2	25	23.4
Q29	6	5.6	10	9.3	16	15.0	14	13.1	17	15.9	44	41.1
Q30	15	14.0	16	15.0	14	13.1	12	11.2	19	17.8	31	29.0
Q31	20	18.7	11	10.3	14	13.1	10	9.3	11	10.3	41	38.3
Q32	18	16.8	14	13.1	18	16.8	13	12.1	18	16.8	26	24.3
Q33	15	14.0	16	15.0	22	20.6	13	12.1	11	10.3	30	28.0
Q34	28	26.2	15	14.0	14	13.1	13	12.1	8	7.5	29	27.1
Q35	17	15.9	17	15.9	17	15.9	8	7.5	12	11.2	36	33.6
Q36	16	15.0	8	7.5	16	15.0	3	2.8	13	12.1	51	47.7
Q37	14	13.1	6	5.6	8	7.5	14	13.1	16	15.0	49	45.8
Q38	20	18.7	15	14.0	13	12.1	9	8.4	15	14.0	35	32.7
Q39	27	25.2	16	15.0	16	15.0	8	7.5	12	11.2	28	26.2
Q40	17	15.9	12	11.2	14	13.1	13	12.1	19	17.8	32	29.9

Results of the Linear Regression Analyses

Using IBM SPSS 20.1, linear regression analysis was conducted to determine if any statistically significant predictive relationships existed between participants' ability to engage in sexual communication with others and their knowledge of HIV/AIDS. The results from the analysis indicated there was no statistically significant predictive relationship between participants' scores on sexual communication and knowledge of HIV, $R = .001$, $R^2 < .001$, $F (1, 105) < .001$, $p = .992$. This means that less than 0.1% ($R^2 < .001$) of the variance observed in the criterion variable (sexual communication) was due to the predictor variable (knowledge of HIV). Table 24 displays a model summary of the linear regression analysis between survey respondent's HIV knowledge and sexual communication scores.

Table 24

Model Summary of the Linear Regression Analysis between Participants' Knowledge of HIV and Sexual Communication Scores (N=107)

Source	R	R^2	Std Error	F	df1	df2	Sig. (*p*)
Omnibus	0.001	<.001	7.365	< .001	1	105	0.992

Source	Unstandardized Coefficients			Standardized Coefficients			
	B	Std. Error		Beta	t	Sig. (*p*)	Part Correlation
(Constant)	42.061	2.439			17.246	<.001	
Knowledge of HIV	-0.004	0.366		-0.001	-0.010	0.992	-0.001

Note. Criterion variable = sexual communication*; *p < .001*

Another linear regression analysis to determine if any statistically significant predictive relationships existed between participants' ability to engage in sexual communication with others and their belief about alcohol was conducted. The results indicated there was no statistically significant predictive relationship between the scores of participants' on the sexual communication and their alcohol belief scales, $R = .001$, $R^2 < .001$, $F (1, 105) < .001$, $p = .992$. Thus, less than 0.1% ($R^2 < .001$) of the variance observed in the criterion variable (sexual communication) was due to the predictor variable (belief about alcohol). Table 25 displays a model summary of the linear regression analysis between these two variables.

Table 25

Model Summary of the Regression Analysis between Participants' Belief about Alcohol and Sexual Communication Scores (N=107)

Source	R	R²	Std Error	F	df1	df2	Sig. (p)
Omnibus	0.001	<.001	7.365	< .001	1	105	0.992

Source	Unstandardized Coefficients			Standardized Coefficients			Part Correlation
	B	Std. Error		Beta	t	Sig. (p)	
(Constant)	42.008	2.887			14.552	< .001	
Belief about Alcohol	< .001	0.019		0.001	0.010	0.992	0.001

Note. Criterion variable = sexual communication*; *p < .001*

I also conducted a linear regression analysis to determine if any statistically significant predictive relationships existed between the ability of the participants to engage in sexual communication with others and their sexual risk behavior. The result also shows no statistically significant predictive relationship between participants' sexual communication and sexual risk behaviors scores, $R = .035$, $R^2 = .001$, $F(1, 105) = 0.130$, $p = .719$. That is, 0.1% ($R^2 = .001$) of the variance observed in the criterion variable (sexual communication) was due to the predictor variable (sexual risk behavior). Table 26 displays a model summary of the regression analysis.

Table 26

Model Summary of Regression Analysis between Participants' Sexual Risk Behavior and Sexual Communication Scores (N=107)

Source	*R*	*R²*	Std Error	F		df1	df2	Sig. (*p*)
Omnibus	0.035	0.001	7.361	0.130		1	105	0.719

Source	Unstandardized Coefficients			Standardized Coefficients				
	B	Std. Error		Beta	t	Sig. (*p*)	Part Correlation
(Constant)	42.372	1.169			36.252	< .001	
Sexual Risk Behavior	-0.040	0.111		-0.035	-0.361	0.719	-0.035

Note. Independent variable = sexual communication; *N* = 107 *$p < .001$

Based on these results, the null hypothesis that there is no statistically significant predictive relationship between belief in the impacts of alcohol, HIV/AIDS knowledge, sexual risk behaviors, age, gender, sexual orientation, dating status, marital status, sexual activity status, HIV status, language spoken, and tribal affiliation of university student in Nigeria and their ability to engage in sexual communication with other was retained over the alternative hypothesis.

Summary

The purpose of this research was to determine if a statistically significant predictive relationship existed between the beliefs about the impacts of alcohol use, HIV knowledge, and risky sexual behavior of Nigerian college students in their ability to engage in sexual communication with their partners. This study is vital because the variables and factors involved in it create problems for the Nigerian HIV/AIDS workers, medical practitioners, and government in determining what is and is not working in their attempts to control HIV/AIDS disease. To do this, I drew the study sample from 130

college students in one of the universities in eastern Nigeria. Responses from nine

participants were discarded because they did not either complete one or two of the survey

questionnaires for various reasons. I also removed three responses during data cleaning as

a result of missing data. This left valid sample to 107 participants (N=107).

The results of the exploratory analyses between the criterion variable (sexual

communication) and nine demographic variables showed no statistically significant

differences. However, there were statistically significant differences in a few

demographic variables in the results of the independent-sample t-tests exploratory

analysis between the participants' score on all the three independent variables (HIV

knowledge, belief about alcohol, sexual risk behavior) and the nine demographic

variables.

The reliability analysis, basic paramedic assumptions, and the assumption of

multicollinearity for both dependent and independent variables were tested prior to

conducting linear regression analyses. The results of the linear regression analysis

supported the null hypothesis concluding that neither the participants' knowledge of HIV,

belief about alcohol, sexual risk behavior, age, gender, sexual orientation, dating status,

marital status, sexual activity status, HIV status, language or tribe is statistically

significant, $R = .322$, $R^2 = .103$, $F (12, 94) = 0.904$, $p = .546$, in predicting their ability to

communicate sexually with one another. In the next chapter, I will focus on comparing

these findings with what already exist in the discipline as well as confirming,

disconfirming, and extending the existing knowledge in the field. I will also address the

limitations of this study, recommendations, implications, and conclusion.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to address the problem of poor sexual communication among Nigerian college students exacerbated by certain factors such as beliefs on the impact of alcohol consumption, sexual risk behaviors and HIV/AIDS knowledge. Analyses were completed to determine if a statistically significant relationship existed between the beliefs about alcohol use, HIV knowledge, and sexual risk behaviors of Nigerian college students in their ability to engage in sexual communication with their partners. This study was guided by the theory of the ARRM, which is a unification of constructs from different behavioral models such as the HBM, (Rosenstock, Strecher, & Becker, 1994), SCT (Bandura, 1997), and TRA (Fishbein, Middlestadt, & Hitchcock, 1994) designed to help explain HIV risk behaviors among various populations (Longshore, Stein & Chin, 2006; Malow & Norman, 2008).

The rationale for this study was anchored in the idea that the study variables create problems for HIV/AIDS workers, medical practitioners, and the government in determining what is and is not working in their attempts to control HIV/AIDS (Kakietek et al., 2013). Sexual risk behaviors and lack of HIV/AIDS knowledge among the Nigerian population could be a setback to the efforts of the Nigerian government in reducing high incidence of HIV/AIDS infections and mortality rate (Olowookere, Fatiregu & Adewole, 2012). Furthermore, many sociocultural norms still put young Nigerians at risk of contracting HIV/AIDS despite the benefits of conventional health education (Adibe, 2011). The findings in this study could provide useful knowledge for

the program developers, policy-makers, and other researchers who seek to improve the sexual health of Nigerians.

Four exploratory analyses were conducted using independent sample t-tests to determine if statistically significant differences existed between the criterion variable, predictive variables, and the nine demographic variables. The first exploratory analysis showed no statistically significant differences in NUA students' ability to engage in sexual communication with others between nine demographic variables ($p > .05$). The second exploratory analysis indicated there was a statistically significant difference in participants' knowledge of HIV scores between one demographic variable (tribal affiliation, $p = .022$). Igbo participants had statistically significant lower knowledge of HIV scores compared to participants from other tribes. The third exploratory analysis indicated there were statistically significant differences in participants' belief about alcohol scores between two demographic variables (gender, $p < .001$ and dating status, $p = .017$). Male participants had statistically significant lower belief about alcohol scores compared to female participants.

Participants who were dating had statistically significant lower belief about alcohol scores compared to non-dating participants. The fourth exploratory analysis results indicated there were statistically significant differences in participants' sexual risk behavior scores between three demographic variables (age, $p = .006$; gender, $p = .016$, and sexual activity status, $p = .001$). This implies that the participants between the ages of 18-25 years old had statistically significant lower sexual risk behavior scores compared to other age groups. In addition, female participants had statistically

significant lower sexual risk behavior scores compared to male participants and the participants that were not sexually active had statistically significant lower sexual risk behavior scores compared to sexually active participants.

The research question was evaluated using three linear regression analyses to determine if any significantly significant predictive relationships existed between NUA students' ability to engage in sexual communication with others and their knowledge of HIV/AIDS, belief about alcohol, and sexual risk behavior. The criterion or dependent variable was participants' ability to engage in sexual communication with others and was measured by 13 items on the DSCS. Results from the linear regression analyses indicated there was no statistically significant predictive relationship between students' sexual communication and knowledge of HIV, belief about alcohol consumption and sexual risk behavior scores, $(p > .05)$.

Interpretation of Findings

In 2000, the United Nations acknowledged the importance of developing a global coordinated effort toward fighting the HIV and AIDS epidemic (UNAIDS, 2013). Part of this effort included the MDGs, which was aimed at taking action to halt the HIV/AIDS epidemic. This effort was renewed and strengthened eleven years later with the UN Political Declaration on HIV and AIDS (UNAIDS, 2013). These initiatives called for the inclusion of strategic combinations of behavioral, biomedical, and structural programming and approaches in the HIV prevention agenda (UNAIDS, 2013). Changes in sexual behavior, such as delayed sexual debut, protected sexual acts, reductions in multiple sex partners became important in reducing HIV/AIDS infections in high

prevalence countries (UNAIDS, 2013). This study was designed to support these efforts

and initiatives, and has contributed in achieving the goals of these declarations by adding

to the existing knowledge to the advantage of HIV/AIDS workers, practitioners and

governments in Nigeria.

Previous researchers illustrated that communicating openly about sexual health

issues with a partner promotes safer sexual decision-making and may be a key factor in

translating intentions such as condom use into action (Noar, Carlyle, & Cole, 2006;

Sheeran, Abraham, & Orbell, 1999; Widman, Golin, & Noar, 2014). Individuals who

have stronger intentions to communicate with their sexual partners about general sexual

health topics (STDs, HIV status,, sexual histories, etc.), have been found to be more

willing to practice safe sex (Catania et al., 1992; Crosby et al., 2002; Noar et al., 2006;

Sheeran et al., 1999; Widman et al., 2006). Sheeran et al. (1999) investigated and meta-

analyzed over 40 psychological factors and concluded that sexual communication was a

stronger predictor of safer sex behavior. Sexual attitude, self-efficacy, and other barriers

to condom use were trailing sexual communication in the meta-analysis. Widman, Golin,

and Noar (2013) found that sexual communication was a crucial intervening variable in

the relationship between condom use intentions and safer sex behavior.

Knowledge of HIV, attitudes about alcohol use, and sexual risk behaviors were

not found to be statistically significant to sexual communication among the Nigerian

population. As such, this study does not support findings posited by Catania et al. (1992,

Crosby et al. (2002), Noar et al., (2006), Sheeran et al., (1999) and Widman et al., (2006)

which stated otherwise. One of the reasons for the discrepancy between the findings of

this study and what was found by other researchers (Catania et al., 1992; Crosby et al., 2002; Glanz & Rimer, 2005, Noar et al., 2006; Sheeran et al., 1999; Widman et al., 2006; USDHHS, 2005) could be the population studied. Other researchers have not studied the Nigerian population, and the socio-cultural differences between their study participants and the participants in this study could be a significant factor accounting for lack of support from the finding in this study

Many scholars (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate et al., 2008; Omokbodion et al., 2007; Schneider et al, 2012) concluded that there was high knowledge of HIV/AIDS among the Nigerian college students. To examine the extent of Nigerian University students' knowledge of HIV/AIDS and the risk factors associated with the epidemic, Ebeniro (2010) surveyed 48 students at three Nigerian universities. They found that non-use of condom and alcohol use (37%) was the highest risk factor engaged by the students in the tertiary institution in Nigeria. The second risk factor was having multiple sexual partners (31.7%), followed by the engagement in sexual acts with multiple partners (24.8%). The use of drugs (4.5%) and unsterilized equipment (5.6%) was found to pose the lowest transmission risks. Ebeniro's findings supported the claim that despite the high knowledge of HIV/AIDS, Nigerian students were still willing to engage in risky sexual behaviors for numerous reasons.

While this study supports the claim that Nigerian university students are willing to engage in risky sexual behaviors for numerous reasons, it does not support the claim that Nigerian university students have high knowledge of HIV/AIDS. Among 107 participants surveyed, only 5.6% of the participants (*n*=6) knew "a woman can contract HIV/AIDS, if

she has sex during her period" while 94.4% (*n*=101) were not aware of this fact. Ninety-two percent of the participants (*n*=99) believed that "showering or washing one's genitals/private parts after sex keeps a person from getting HIV" which is misinformation. Appendix H contains detailed frequency and percent statistics of participants' scores on all 18-items of the HIV-KQ-18.

This study also presented an opportunity to test the suitability and efficacy of the ARRM theory among the University population in Nigeria. The scope of this study was unable to test the suitability of ARRM since the participants in this study were found to be lacking in HIV/AIDS knowledge. Gobopamang (2011) concluded that the accurate knowledge of HIV/AIDS prevention and transmission methods does not necessarily translate into safe sexual behaviors - as some knowledge of HIV prevention and transmission methods among young people have been associated with safe sexual behaviors and have served as evidence of other predictors of safe sexual behaviors.

Limitations of the Study

Since participants in this study recruited at one university out of many universities in Nigeria, were comprised of one religious denomination (*n*=107) and almost all were from the Igbo tribe (*n*=105), there is possibility that the comparison and generalization of the results from this group may not apply well to the diverse socioeconomic, religious, and ethnic complexities in Nigeria. I also focused on students between the ages of 18 to 35 years old who were currently enrolled in one tertiary institution in Nigeria and are pursuing their undergraduate degrees. Other young people who were not actively enrolled in the university or other institutions of higher learning were not within the scope of this

study. Consequently, the findings in this study may not be generalized to the young

people within the specified age group who are not undergraduate students but face similar

problems and challenges.

As a cross-sectional study using a convenience sampling, representation may have

been strictly limited to the sampling frame. Since participants were not randomly

assigned to groups, findings in this study may have also been limited to a correlational

and predictive relationship which is non-causal (Creswell, 2013). Furthermore, the

assessment tools used in the survey questionnaires utilized in collecting the data for this

study were self-administered with no way to validate accuracy of self-reported data

(Frankfort-Nachmias & Nachmias, 2008). Prior to conducting this research, G Power

software was used to estimate the sample size and the suggested sample size was 109 but

I used 107 after cleaning the data. The sample size may have been too small in this study

and this could have impacted the findings.

Recommendations

One of the merits of this study is the demonstration of the need for action to

reduce new cases of HIV/AIDS infections and change the mortality rate through behavior

modifications and knowledge. Since the highest HIV/AIDS infection rate in Nigeria is

among young people between the ages of 15 and 24 (UNAIDS Global Report, 2013;

United Nations Population Fund, 2013), I recommend the use of a more proactive,

culturally sensitive approach to reach more young people to increase their HIV/AIDS

knowledge. This could invariably have significant effects on their sexual behaviors and

improve their sexual communication (Oladepo & Fayemi, 2011). The impact of

sociocultural norms on promiscuous behavior is needed to combat the HIV/AIDS

epidemic in Nigeria but lack of knowledge may hinder the effects of such factors, so

education in this area is imperative.

I recommend that this study be replicated using a larger sample with similar

participants to determine if the findings will be different or similar. I also recommend

that the survey questionnaires to be used in such studies be more culturally sensitive so as

to improve the understanding of the content. There is also need to conduct a qualitative

study to gain a deeper understanding of how communication may be related to sexual

behavior in the sampling frame. I also recommend that Nigerian scholars may engage in

more studies that can socially, psychologically, structurally, economically, religiously

and culturally address sex roles, inequality, corruption, and health access. These

recommendations are important because sexual communication in the Nigerian context

could be hindered by certain traditional, cultural, and religious beliefs. Unlike in the

western world, it is considered an act of promiscuity in Nigeria for a young person to

discuss his or her sexual life openly and such a behavior will be viewed with utmost

concern capable of stigmatizing an individual. If further studies in this area put all these

factors into consideration, the result may be different.

Igbo participants had statistically significant lower HIV knowledge scores

compared to participants from other tribes and female participants had statistically

significant lower sexual risk behavioral scores compared to their male counterpart. This

implies that Igbo participants are less knowledgeable about HIV/AIDS disease and the

male participants engage in more sexual risk behaviors than their female counterparts. I

recommend the development of tribal and cultural sensitive programs to reach those that do not have sufficient knowledge of HIV/AIDS and which will target the male population more than they currently are being targeted. Since this study excluded young people who were not enrolled as undergraduate students in the university, I recommend that future studies may also include people of the same age limit but with all educational backgrounds for better generalization purposes.

Implications

Nigeria has the most rapidly increasing rate of new cases of HIV/AIDS in West Africa (USAID Nigeria, 2005). Over three million HIV/AIDS cases were traced back to Nigeria as of 2013, bringing HIV/AIDS prevalence in Nigeria to 4.1% of the entire population (Fatiregu & Adewole, 2012; Federal Ministry of Health, 2013; Olowookere, UNAIDS, 2014). To know the nature of the relationship that exists among these variables is necessary because empirical evidence is needed for making policies and designing appropriate programs targeting behavior change. Study findings in this research did not support previous researchers who suggested that sexual communication and sexual risk behavior are related (Noar, Carlyle, & Cole, 2006; Sheeran, Abraham, & Orbell, 1999; Widman, Golin, & Noar, 2014). However, the results and outcomes suggested that health researchers, HIV/AIDS program managers, and policy makers should be cautious about basing their decisions and policies on previous empirical evidence when evaluating HIV/AIDS programs already in place as well as in their future efforts to combat HIV/AIDS epidemic in Nigeria.

The findings in this study expose the importance of embarking on more studies that consider the awareness of some societal norms, traditions, sociocultural and religious practices that put college students at risk for HIV/AIDS infections in Nigeria. Such studies will be instrumental in the reduction of HIV/AIDS incidence through behavioral changes, and help in the management of high HIV/AIDS prevalence already in Nigeria and other sub-Saharan African countries. Furthermore, Nigeria currently has no law that either restricts the sale of alcohol to minors or mandates disclosure or criminalizes nondisclosure of HIV/AIDS status to sexual partners. Although the findings in this study did not prove any statistically significant relationship between sexual communication and beliefs about alcohol consumption, one of the unintended consequences is that they are beneficial to Nigerian law and policy-makers in their fight to reduce HIV/AIDS infections through policy changes.

According to Gregson et al. (2010) and Halperin et al. (2011), behavioral shifts, such as a reduction in multiple sexual partners, accounted for the decline in HIV new infections in Zimbabwe. Even though no statistically significant relationship was found in this study between sexual communication and sexual risk behavior, replicating this study could aid health workers and teachers in convincing young Nigerians that behavioral shifts such as responsible use of alcohol and less sexual risk behaviors are effective means of fighting HIV/AIDS infections (UNAIDS, 2013). The awareness created by this study can also reduce the biases, stigmas, discrimination, and gender-role stereotypes that are HIV/AIDS-related in Nigeria. Catania, Kegeles, and Coates (1990) developed ARRM which has successfully and effectively used constructs of various other behavior change

models and the study of people's efforts to prevent HIV transmission through sexual intercourse in many population in the USA but not in Nigeria. This study bridged this gap but poor knowledge of HIV/AIDS found among Nigerian college students limited the scope of this study to verify the suitability of ARRM among Nigerians.

Conclusion

I demonstrated that gender, tribal affiliation, dating status, and sexual activity status are somewhat statistically significant factors of HIV/AIDS knowledge, sexual risk behavior, and beliefs about alcohol consumption of Nigerian college students and their ability to communicate sexually with their partners. However, neither HIV/AIDS knowledge, sexual risk behavior nor alcohol consumption had a statistically significant predictive relationship with sexual communication of Nigerian college students. Contrary to the conclusion of the previous studies that Nigerian students are highly knowledgeable about HIV/AIDS disease (Durojaiye, 2011; Ebeniro, 2010; Enewereji, 2008; Kakietek et al., 2013; Okulate et al., 2008; Omokbodion et al., 2007; Schneider et al, 2012), the findings in this study proved otherwise - over 85% of the study population surveyed demonstrated lack of accurate knowledge of HIV/AIDS. These findings justify the need for more research and HIV/AIDS interventions that are culturally and religiously sensitive as well as age and gender appropriate; increase HIV/AIDS knowledge, and aim at the modification of sexual risk behaviors among this population.

References

Ademola, K. (2003). Source of sexual knowledge among Nigerian Youth. *Studies in Humanities*, *2*, 13–19.

Adibe, J. (2013). *HIV/STI Assessment among High School Females in Enugu Nigeria*. Ann Arbor, MI: ProQuest Publications

Agadjanian, V., & Sen, S. (2007). Promises and challenges of faith-based AIDS care and support in Mozambique. *American Journal of Public Health, 97* (2), 362-366.

Ainsworth, M., & Waranya, T. (2000). Breaking the silence: setting realistic priorities for AIDS control in less-developed countries. *Lancet, 356,* 55–60.

Airhihenbuwa, C. O., & Obregon, R. (2000). A critical assessment of theories/models used in health communication for HIV/AIDS. *Journal of Health Communication, 5*, 5 – 15.

Albertyn, C. (2000). 'Using rights and the law to reduce women's vulnerability to HIV', *Canadian HIV/AIDS Policy and Law Review, 5,* 72–79

Alexander, R. (2010). The impact of poverty on African American children in the child welfare and juvenile justice systems. *Forum on Public Policy, 4,* 1-18.

Anand, A., Ray, W. S., Bunnell, R. E., Jacobs, K., Solehdin, N., Abdul, A. S., Marum, L. H., Muttunga, H. N, Kamoto, K., Aberle-Grasse, J. M., & Diaz T (2009). Knowledge of HIV status, sexual risk behaviors, and contraceptive need among people living with HIV in Kenya and Malawi. *AIDS, 23*, 1565–1573.

Ancheta, R., Hynes, C., & Shrier, L. A. (2005). Reproductive health education and sexual

risk

among high risk female adolescents and young adults. *Journal of Pediatric and*

Adolescent Gynecology, 18, 105–111.

Aniekwu, N. I. (2002). Gender and human rights dimensions of HIV/ AIDS in Nigeria.

African Journal of Reproductive Health, 6, 30–7.

Anochie, I., & Ikepeme, E. (2003). AIDS awareness and knowledge among primary

school children in Port Harcourt metropolis. *Nigeria Journal of Medicine, 12,* 27

31.

Anyanwu, K. C. (1982). The bases of political instability in Nigeria. *Journal of Black*

Study, 13, 101–17.

Atienzo, E. E., Walker, D. M., Campero, L., Lamadrid-Fiqueroa, H., & Gutirrez, J.P.

(2008). Parent-adolescent communication about sex in Morelos, Mexico: Does it

impact sexual behavior? European Journal of Contraception and Reproductive

Health Care, 14(2), 111 -119.

AVERT (2014). HIV/AIDS in Nigeria. Retrieved from

http://www.avert.org/professionals/hiv-around-world/sub-saharan-

africa/nigeria#footnote13_33rzb6t

Aziza, A. & Beri, H. (2011). Sex and HIV disclosure. *Human Rights, 38*(2), 11 -13.

Azjen, I. & Driver, B. L. (1991). Prediction of leisure participation from behavioral,

normative, and control beliefs: an application of the theory of planned behavior.

Leisure Science, 13, 185–204.

Babbie, E. (1990). *Survey research methods (2ⁿᵈ ed.).* Belmont, CA: Wadsworth.

Bandura, A. (1997). *Self-efficacy: The essence of control.* New York: W. H. Freeman

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bastein, S., Kajula, I. J., & Muhwezi, W. W. (2011). A review of studies of
parent-child communication about sexuality and HIV/AIDS in sub-Saharan
African. *Journal of Reproductive Health, 8*(25), 125-135.

Beckett, M. K., Elliott, M. N., Martino, S., Kanouse, D. E., Corona, R., Klein, D. J., et al.
(2010). Timing of parent and child communication about sexuality relative to children's
sexual behaviors. *Pediatrics, 125*(2), 34 -42.

Bird, J P. D & Voisin, D. R. (2013). "You're an open target to be abused": A qualitative
study of stigma and HIV self-disclosure among black men who have sex with
men. *American Journal of Public Health, 103*(12), 2193 – 2199.

Bisson, M. A., & Levine, T. R. (2009). Negotiating in a friend with benefits relationship.
Archives of Sexual Behavior, 38, 66–73.

Bowdre, T. (2013). *HIV general knowledge and risk behaviors in the African American
older adult population.* Ann Arbor, Michigan: Dissertation Publishing.

Braithwaite, R. S., Conigliaro, J., Roverst, M. S., Shechter, S., Shaefer, A., McGirnnis,
K., et al. (2007). Estimating the impact of alcohol consumption on survival of
HIV+ individuals. *AIDS Care, 19*, 459 – 466.

Brink, P. J., & Wood, M. J. (1998). *Advanced design in nursing research* (2nd ed.).
Thousand Oaks, CA: Sage Publications.

Brown, J. D. (2000). Adolescents' sexual media diets. *Journal of Adolescent Health,
27*(1), 35-40

Brown, S.A., Christiansen, B.A. & Goldman, M.S. (1987). The Alcohol Expectancy Questionnaire: An instrument for the assessment of adolescent and adult alcohol expectancies. *Journal of Studies on Alcohol, 48,* 483-491.

Bryant, K. J., Braithwaite, B., Nelson, S., Scott, R., & Deidra, R. (2010). Integrating HIV/AIDS and alcohol research. *Alcohol HIV/AIDS, 33,* 167–78.

Bryant, C., & Kappaz, C. (2005). *Reducing poverty building peace*. Bloomfield, CT: Kumarian Press.

Campbell, D. T., & Fiske, D. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56,* 81 − 105.

Carey, M. P., Morrison-Beedy, D., & Johnson, B. T. (1997). The HIV-Knowledge Questionnaire: Development and evaluation of a reliable, valid and practical self-administered questionnaire. *AIDS and Behavior, 1,* 61-74.

Carey, M. P., & Schroder, K. E. (2002). Development and psychometric evaluation of the brief HIV Knowledge Questionnaire. *AIDS Education & Prevention, 14*(2), 172-182. doi:10.1521/aeap.14.2.172.23902

Catania, J. A. (1986). Help-seeking: An avenue for adult sexual development. Unpublished doctoral dissertation. University of California, San Francisco.

Catania, J. A., Coates, T. J., Keageles, S., et al. (1992). Condom use in multi-ethnic neighborhoods of San Francisco: The population-based AMEN (AIDS in Multi-Ethnic Neighborhoods) Study. *American Journal of Public Health, 82,* 284 -287.

Catania, J. A., Kegeles, S. M., & Coates, T. J. (1990). Towards an understanding of risk behavior: An AIDS risk reduction model (ARRM). *Health Education Quarterly,*

17(1), 53-72. doi:10.1037/0278-6133.13.6.548.

Catania, J. A., McDermott, L. J., & Pollack, L. M. (1986). Questionnaire response bias and face-to-face interview sample bias in sexuality research. *The Journal of Sex Research, 22*(1), 52-72. doi:10.2307/3812111

Center for AIDS Prevention Studies (2012). Retrieved from http://caps.ucsf.edu/resources/survey-instruments

CDC (2011). Condoms and STDs: Effectiveness-Male latex condom. Retrieved from http://www.cdc.gov/condomeffectiveness/latex.htm

CDC (2008). HIV/AIDS Statistics and Surveillance. Retrieved from http://bearspace.baylor.edu/Charles_Kemp/www/haitian_refugees.htm

CDC (2006). HIV/AIDS Among Women. Retrieved from http://www.cdc.gov/hiv/pubs/facts/women.htm

Champion, J. D. & Collins, J. L. (2012). Comparison of a theory-based (AIDS Risk Reduction Model) cognitive behavioral intervention versus enhanced counseling for abused ethnic minority adolescent women on infection with sexually transmitted infection: Results of a randomized controlled trial. *International Journal of Nursing Studies, 49*, 138-150

Chesney, M. A. Factors affecting adherence to antiretroviral therapy. *Clinical infectious Disease, 30*, 171 -176.

Choi, K. H., Catania, J. A., & Dolcini, M. M. (1994). Extra-marital sex and HIV risky behavior among US adults: Results from the National AIDS Behavior survey. *American Journal of Public Health, 84*, 2003 -2007.

Clausen, T., Rossow, I., Naidoo, N., & Kowal, P. (2009). Diverse alcohol drinking

    patterns in 20 African countries. *Addiction, 104*, 1147 – 1154.

Cohen, M. S., Shaw, G. M., McMichael, A. J., & Haynes, B.F. (2011). Acute HIV-1

    Infection. *New England Journal of Medicine, 364*, 1943 – 1954.

Commendador, K. A. (2010). Parental influences on adolescent decision-making and

    contraceptive use. *Pediatric Nursing, 36*,147–170.

Cooper, M. L. (2002). Alcohol use and risky sexual behavior among college students

    and youth: Evaluating the evidence. *Journal of Studies on Alcohol, 14,* 101–

    117.

Crepaz, N., & Marks, G. (2002). Towards an understanding of sexual risk behavior in

    people living with HIV: a review of social, psychological and medical findings.

    AIDS, 16, 135–149

Creswell, J. (2009). Research design: Qualitative, quantitative, and mixed methods

    approaches (3rd ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2013). Qualitative inquiry and research design: Choosing among five

    approaches (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc

Crosby, R. A., DiClemente, R. J., Wingood, G. M., et al. (2002). Condom use and

    correlates of African American adolescent females' infrequent communication

    with sex partners about preventing sexually transmitted diseases and pregnancy.

    Health Education and Behavior, 29, 219 – 231.

Crosby, R. A., DiClemente, R. J., Wingood, G. M., Salazar, L. F., Harrington, K., Davies,

    S. L., & Oh, M. K. (2003). Identification of strategies for promoting condom use:

A prospective analysis of high-risk African American female teens. *Prevention Science, 4*, 263–70. doi:10.1023=A:1026020332309

Davis, T. J, & Kalu-Nwiwu, A. (2001). Education, ethnicity and national integration in the history of Nigeria: Continuing problems of Africa's colonial legacy. *Journal of Negro History, 86*, 1–11.

DeClemente, R. E., & Peterson, J. L. (1994). *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 61–78). NY: Plenum.

Dibua, C. (2010). Socioeconomic and sociocultural risk factors to HIV/AIDS: Case study of some locations in eastern Nigeria. *The Internet Journal of Tropical Medicine, 6*(2), 1- 15.

DiClemente, R. J., Wingood, G. M., Crosby, R., Cobb, B. K., Harrington, K., & Davies, S. L. (2001). Parent-adolescent communication and sexual risk behaviors among African American adolescent females. *Journal of Pediatrics, 139*, 407–412. doi:10.1067=mpd.2001.117075

DiClemente, R. J., Wingood, G. M., Rose, E., Sales, J. M., & Crosby, R. A. (2010). Evaluation of an HIV/STD sexual risk-reduction intervention for pregnant African American adolescents attending a prenatal clinic in an urban public hospital: Preliminary evidence of efficacy. *Journal of Pediatric and Adolescent Gynecology, 23*(1), 32-38.

Diener, E., & Crandall, R. (1978). *Ethics in social and behavioral research*. Chicago, IL: University of Chicago Press.

Dilorio, C., Kelly, M., & Hockenberry0Eaton, M. (1999). Communication about sexual

issues: Mothers, fathers, and friends. *Journal of Adolescent Health, 24*, 181-189.

Dilworth, J. E. (2009). Parents as co-educators: Do effective sex education programs include parents? *Family Science Review, 14*, 48-58.

Dolcini, M. M., Coates, T. J., Catania, J. A., Kegeles, S. M., & Hauck, W. W. (1995). Multiple sexual partners and their psychosocial correlates: The population-based AIDS in Multi-Ethnic Neighborhoods (AMEN) Study. *Health Psychology, 14*, 1-10.

Doran, D. (2009). AIDS deaths top 25 million but infections slow. Retrieved from http://www.google.com/hostednews/afp/article/

D'Onofrio, B. M., Lahey, B. B., Turkheimer, E., & Lichtenstein, P. (2013). Critical need for family-based, quasi-experimental designs in integrating genetic and social science research. *American Journal of Public Health, 103* (S1), S46-S55.

Durojaiye, O. C. (2011). Knowledge, attitude and practice of HIV/AIDS: Behavior Change among tertiary education students in Lagos, Nigeria. *Annals of Tropical Medicine and Public Health, 4*(1) 18 -24.

Durojaye, E., & Balogun, V. (2010). Human rights implications of mandatory premarital HIV testing in Nigeria. *International Journal of Law, Policy and the Family, 24* (2), 245 – 265.

Dworkin, S., Dunbar, M., Krishnan, S., Hatcher, A., & Sawires, S. (2011). Uncovering tensions and capitalizing on synergies in HIV/AIDS and antiviolence programs. *American Journal of Public Health, 101*, 995 – 1003.

Ebeniro, C. D. (2010). Knowledge and beliefs about HIV/AIDS among male and female students of Nigerian Universities. *Journal of Comparative Research in Anthropology and Sociology, 1*(1), 121-131.

Ekeanyawu, L., Loremikan, S., & Ikubaje, J. (2004). Transparency international national integrity systems: Transparency country report, Nigeria.

El-Sadr, W. M. & Hoos, D. (2008). The President's emergency Plan for Aids Relief—is the emergency over? *The New England Journal of Medicine, 3(*59), 553–555

Emelumadu, O. F., Ezeama, N. N., Ifeadike, C. O., Ubajaka, C. F., Adogu, P. O. U., Umeh, U., Nwamoh, U. N., Ukegbu, A. U., & Onyonoro, U. U. (2014). Parents' perceptions of timing of initiation of sexuality discussion with adolescents in Anambra state, south eastern, Nigeria. *Pediatric and Adolescence Gynecology, 27*, 294-300.

Emerson, R. (1961). Crucial problems involved in nation-building in Africa. *Journal of Negro Education, 30,* 193–205.

Endicott, L. (2010). Institutional Review Board (IRB) frequently asked questions Retrieved from http://my.campuscruiser.com/cruiser/waldenu/ctl/self-paced_trainings/irb/IRB.htm

Enewereji, E. E. (2008). Sexual behavior and inheritance rights among HIV- positive women in Abia State, Nigeria. *Tanzania Journal of Health Research, 10*(2), 73-78.

Entonu, P. & Agwale, S. (2007). A review of the epidemiology, prevention and treatment of human immunodeficiency virus infection in Nigeria. *Brazillian Journal of*

Infections Disease, 11, 579-590.

Epstein, M., & Ward, L. M. (2008). ''Always use protection'': Communication boys

receive about sex from parents, peers, and the media. *Journal of Youth and*

Adolescence, 37, 113–126. doi:10.1007=s10964-007-9187-1

Estes, R. (1997). *World social situation*. In R. L. Edwards (Ed.), Encyclopedia of social

work (19th ed., 1997 suppl., pp. 343-359) Washington, DC: NASW Press

Exner, T., Gardos, P., Seal, D., & Ehrdart, A. (1999). HIV sexual risk interventions with

heterosexual men: the forgotten group. *AIDS Behavior, 3*, 347 – 358.

Falola, T., & Heaton, M. M. (2010). *A History of Nigeria*. Cambridge: University Press.

Federal Ministry of Health. (2010). National HIV strategic plan 2010-2015: National

agency for the control of AIDS. Retrieved from http://www.naca.gov.ng.

Farmer, M., & Meston, C. (2006). Predictors of condom use self-efficacy in an ethnically

diverse university sample. *Archives of Sexual Behavior, 35* (3), 313-326.

Retrieved from http://link.springer.com/article/10.1007%2Fs10508-006-9027-5

Feldman, S.S., & Rosenthal, D. A (2000). The effect of communication characteristics on

family members' perceptions of parents as sex educators. *Journal of Research on*

Adolescence, 10, 119-150.

Field, A. (2013). Discovering Statistics Using IBM SPSS Statistics (4th ed.). London:

Sage

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior*. New York, NY:

Taylor and Francis Fisher, T. D., Davis, C. M., Yarber, W. L, & Davis, S. L.

(2011). *Handbook of Sexuality-Related Measures (3rd edition)*. NY: Routledge.

Fishbein, M., Middlestadt, S., & Hitchcock, P. (1994). Using information to change

    sexually transmitted disease related to behavior: An analysis based on the theory

    of reasoned action. In r. J. DiClemente, & J. L. Peterson (Eds). *Preventing AIDS:*

    Theories and methods of behavioral interventions (pp. 61-78). NY: Plenum.

Fowler, F. J., & Mills, G. E. (eds.). (1993). *Survey research methods* (3rd ed). Thousand

    Oaks, CA: Sage.

Fortson, J. G. (2011). The mortality risk and human capital investment: The impact of

    HIV/AIDS in sub-Sahara Africa. *The Review of Economics and Statistics, 93*(1), 1

    -15Fowler, F. J. (2002). *Survey research methods* (3rd ed.) Thousand Oaks, CA:

    Sage Publications.

Fowler, F. J. (2009). *Survey research methods* (4th ed.). Thousand Oaks, CA: Sage

Publications Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the*

    social sciences (7th ed.). NY: Worth.

George, W. H., Frone, M. R., Copper, M. L., Russell, M., Skinner, J. B., & Windle, M.

    (1994). A revised Alcohol Expectancy Questionnaires: Factor structure

    confirmation and invariance in a general population sample. *Journal of Studies on*

    Alcohol, 177-184.

Gerbert, B., Bronstone, A., McPhee, S., Pantilat, S., & Allerton, M. (1998). Development

    and testing of an HIV-risk screening instrument for use in health care settings.

    American Journal of Preventive Medicine, 15(2), 103-113. doi:10.1016/S0749-

    3797(98)00025-7

Gillies, P., Tolley, K., & Wolstenholme, J. (1996). Is AIDS a disease of poverty? *AIDS*

Care, *8*, 351–64.

Gillespie, S, Suneetha, K. & Robert, G. (2007). Is poverty or wealth driving HIV transmission? *AIDS, 21*(7), 5 –16.

Gillespie, S, Suneetha, K. & Robert, G. (2007). Is poverty or wealth driving HIV transmission? *AIDS, 21*(7), 5 –16.

Glanz, K., & Rimer, G. K. (1995). *Theory at a glance. A guide for health promotion practice.* Washington, DC: U.S. Department of Health and Human Services, PHS, NIH.

Glanz, K. & Rimer, B. K. (1997). Theory at a glance: A guide for health promotion practice. National Cancer Institute, National Institutes of Health, U.S. Department of Health and Human Services. Washington, DC: NIH Publications

Glanz, K. & Rimer, B. K. (2005). Theory at a glance: A guide for health promotion practice. National Cancer Institute, National Institutes of Health, U.S. Department of Health and Human Services. Washington, DC: NIH Publications

Gobopamang, L. (2011). Does correct knowledge about HIV and AIDS lead to safer sexual behavior? The case of young people in Botswana. African Population Studies, 25(1), 44– 62

Goldstein, A. L., Barnett, N. P., Pedlow, C. T., & Murphy, J. G. (2007). Drinking in conjunction with sexual experiences among at-risk college student drinkers. Journal of Studies on Alcohol and Drugs, 68, 697–705.

Gott, M., & Hinchliff, S. (2003). How important is sex in later life? The views of older people. Social Science and Medicine, 56(8), 1617-1628. doi:10.1016/S0277-

9536(02)00180-6

Green, E.C. (2003). Faith-based organizations: contributions to HIV prevention. Washington, DC: The Synergy Project, US Agency for International Development.

Green, S. B., & Salkind, N. J. (2011). Using SPSS for Windows and Macintosh: Analyzing and understanding data (6th ed.). Upper Saddle River, NJ: Pearson

Greene, J. O. (2003). Models of adult communication skill acquisition: Practice and the course of performance improvement. In J. O. Greene & B. R. Burleson (Eds.), Handbook of communication and social interaction skills (pp. 51–91). New York, NY: Erlbaum.

Greene, J. O. (2003). Models of adult communication skill acquisition: Practice and the course of performance improvement. In J. O. Greene & B. R. Burleson (Eds.), Handbook of communication and social interaction skills (pp. 51–91). New York, NY: Erlbaum.

Group, V. H. (2000). Efficacy of voluntary HIV-1 counselling and testing in individuals and couples in Kenya, Tanzania and Trinidad: a randomized trial. *The Lancet, 356*, 103–112.

Gregson, S., Gonese, E., Hallet, T. B., Taruberekera, N., Hargrove, J. W., Lopman, B., Corbett, E., Dorrington, R., Dube, S., Dehnes, K., & Mugurngi, O. (2010). HIV decline in Zimbabwe due to reductions in risky sex? Evidence from a comprehensive epidemiological review. *International Journal of Epidemiology*, *39*(5): 1311–1323.

Gupta, G. (2002). How men's power over women fuels the HIV epidemic. *British Medical Journal, 3(24),* 183–184.

Gupta, G. R. (2000). Gender, sexuality, and HIV/AIDS: the what, the why, and the how. *Canadian HIV/ AIDS Policy & Law,5*, 86 – 93.

Guzma´n, B. L., Schlehofer-Sutton, M. M., Villanueva, C. M., Stritto, M. E. D., Casada, B. J., & Feria, A. (2003). Let's talk about sex: How comfortable discussions about sex impact teen sexual behavior. *Journal of Health Communication, 8*, 583–598.

Halperin, D.T., Mugurungi, O., Hallett, T. B., Muchini, B., Campbell, B., Magure, T., Benedikt, C., & Gregson, S. (2011). A surprising prevention success: Why did the HIV epidemic decline in Zimbabwe? *PLoS Medicine, 8*(2): 100 - 114.

Hawkins, G., Chalamilla, G., Okuma, J., Spiegelman, D., Hertzmark, E., et al. (2011). Sex differences in antiretroviral treatment outcomes among HIV-infected adults in an urban Tanzania setting. *AIDS, 25*, 1189 -1197.

Hays, R. B., Turner, H., & Coates, T.J.(1992). Social support, AIDS-related symptoms and depression among gay men. *Journal of Clinical Psychology, 60*, 463 – 469.

Healy, L. M. (2008). International social work: Professional action in an interdependent world (2nd ed.). New York, N.Y: Oxford University Press.

Higgins, J., Hoffman, S, Dworkin, S. (2010). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. *American Journal of Public Health, 100,* 435–445.

Howard, A. A., Arnsten, J. H., Lo, Y., Vlahov, D., Rich, J. D., Schuman, P., et al. (2002). A prospective study of adherence and viral load in a large multi-center cohort of

HIV-infected women. *AIDS, 16*, 2175 – 2182.

Ile, I., & Akukwe, C. (2001). Niger Delta, Nigeria: issues, challenges and opportunities for equitable development. Retrieved from http://nigeriaworld.com/articles/2000-2001/niger-delta.html.

Iliyasu, Z., Aliyu, M., Abubakar, I. S., & Galadanci, H. S. (2012). Sexual and reproductive health communication between mothers and their adolescent daughters in Northern Nigeria. *Health Care for Women International, 33*, 238-152

Isiugo-Abanihe, U. (2006). Sociocultural aspects of HIV/AIDS infection in Nigeria. *African Journal of Medicine and Medical Sciences, 35*, 45-55.

Izugbara, C. O. (2005). Local erotic songs and chants among rural Nigerian adolescent males. *Sexuality and Culture*, *9*, 53–76.

Jaffar, S., Grant, A. D., Whitworth, J., Smith, P. G., & Whittle, H. (2004). The natural history of HIV-1 and HIV-2 infections in adults in Africa: a literature review. *Bulletin of the World Health Organization, 82*(6), 462 – 469.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education Quarterly, 11*, 1-47.

Jaquet, A., Ekouevi, D. K., Bashi, J., Aboubakrine, M., Messou, E., et al (2010). Alcohol use and non-adherence to antiretroviral therapy in HIV-infected patients in West Africa. *Addiction, 105*, 1416 – 1421.

Joint United Nations Program on HIV/AIDS (2014). *UNAIDS Report on the Global AIDS Epidemic*. Retrieved from

http://www.unaids.org/globalreport/global_report.htm

Joint United Nations Program on HIV/AIDS (UNAIDS) (2000). *Enhancing the greater involvement of people living with or affected by HIV/AIDS (GIPA) in sub-Saharan Africa*. A UN response: How far have we gone. Retrieved from http://www.unaids.org/en/media/unaids/contentassets/dataimport/publications

Josephine, S.K., Agapit, A.Y., & Komla, T.A. (2001). *Churches and the HIV/AIDS pandemic: analysis of the situation in 10 West/Central African countries*. Geneva: World Council of Churches.

Justice, A., Sullivan, L., & Feillin, D. (2010). HIV/AIDS, comorbidity, and alcohol. Can we make a difference? *Alcohol Research and Health, 33*(3), 258-266.

Kakietek, J., Geberselassie, T., Manteuffel, B., Ogunghemi, K., Krivelova, A., Bausch, S., Rodriguez-Garcia, R., Bonnel, R., N'jie, N., Fruh, J. & Gar. S. (2013). It takes a village: community-based organizations and the availability and utilization of HIV/AIDS-related services in Nigeria. *AIDS Care, 25*(1), 78 – 87.

Kebede, D., Woldemichael, K., Wondafrash, M., Haile, A., & Amberbir, A. M. (2008). Disclosure experience and associated factors among HIV positive men and women Clinical service users in southwest Ethiopia. *British Medical Council of Public Health, 8,* 8 -81.

Kiriakidis, P. (2009). *EdD Dissertation Handbook Manual*. Toronto, ON: Research & Education Consulting Corporation

Kowalewski, M., Longshore, D., & Anglin, M. D. (1994). The AIDS risk reduction model: Examining intentions to use condoms among injection drug users. *Journal*

of Applied Social Psychology, *24*, 2002–2027.

Kreuter, M.W. & Skinner, C. S. (2000). Tailoring: What's in a name? *Health Education Research, 15*(1), 1.

Krishnan, S., Dunbar, M., Minnis, A., Medlin, C., Gerdts, C., et al. (2008). Poverty, gender inequities, and women's risk of human immunodeficiency virus/AIDS. *Annals of New York Academic Science, 11*(36), 101–110.

Klomegah, R. Y. (2011). Sexual behavior and HIV/AIDS in sub-Sahara Africa: A comparative analysis of Swaziland and Niger. *International Review of Modern Sociology, 37*(2), 217 –237.

Lamptey, P. R. (2002). Reducing heterosexual transmission of HIV in poor countries. *British Medical Journal, 324,* 207–211.

Lauby, J., Millett, G., LaPollo, A., Bond, L., Murrill, C., & Marks, G. (2008). Sexual risk behaviors of HIV positive, HIV-negative and serostatus unknown Black men who have sex with men and women. *Arch Sex Behavior, 37*, 708-719.

Lefkowitz, E. S., Boone, T. L., & Shearer, C. L. (2004). Communication with close friends about sex-related topics during emerging adulthood. *Journal of Youth and Adolescence, 33*, 339-351.

Lefkowitz, E. S. & Espinosa-Hernandez, G. (2007). Sex-related communication with mothers and close friends during the transition to university. *Journal of Sex Research, 44*(1), 17-27.

Leslie, L. L. (1972). Are high response rates essential to valid surveys? *Social Science Research, 1,* 323-334.

Letamo, G. (2011). Does correct knowledge about HIV and AIDS lead to safer sexual

    behavior? The case of young people in Botswana. *African Population Studies,*

    25(1), 44 – 62.

Lewis, J. E., Malow, M. M. & Norman, L. (2008). Does alcohol use among sexually

    active college students moderate HIV risk behavior? *Journal of HIV/AIDS*

    Prevention in Children & Youth, 9(2), 138 – 157.

Longshore, D., & Anglin, M. D. (1995). Intentions to share injection paraphernalia: An

    Empirical test of the AIDS Risk Reduction Model among injection drug users.

    International Journal of the Addictions, *30*, 305–321.

Longshore, D., Stein, J. A., & Anglin, M. D. (1997). Psychosocial antecedents of needle/

    syringe disinfection by drug users: A theory-based prospective analysis. *AIDS*

    Education and Prevention, *9*, 442–459.

Longshore, D., Stein, J. A., & Conner, B. T. (2004). Psychosocial antecedents of

    Injection risk reduction: A multivariate analysis. *AIDS Education and Prevention*,

    16, 353–366.

Longshore, D., Stein, J. A., & Chin, D. (2006). Pathways to sexual risk reduction: Gender

    differences and strategies for intervention. *AIDS and Behavior*, *10*, 93–104.

Lou, J., Chen, S., Yu, H., Lin, Y., & Li, R. (2010). Sexual cognitive predictors of sexual

    communication in junior college adolescents: Medical student perspectives.

    Journal of

    Nursing Research, 18(4). 290 -297.

Malow, R. M., Corrigan, S. A., Cunningham, S. C., West, J. A., & Pena, J. M. (1993).

Psychosocial factors associated with condom use among African-American drug Abuser in treatment. *AIDS Education and Prevention*, *5*, 244–253.

Malow, R. M., Ireland, S. J., Halpert, E. S., Szapocznik, J., McMahon, R. C., & Haber, L. (1994). A description of the Maternal Addiction Program of the University of Miami/Jackson Memorial Medical Center. *Journal of Substance Abuse Treatment*, *11*, 55–60.

Marcellin, F., Boyer, S., Protopopescu, C., Dia, A., Ongolo-Zogo, P., Koulla-Shiro, S., et al. (2008). Determinants of unplanned antiretroviral treatment interruptions among people living with HIV in Yaoundé, Cameroon. *Tropical Medicine of International Health, 13,* 1470 -1478.

McCarthy, D.M., Kroll, L.S. & Smith, G.T. (2001). Integrating disinhibition and learning risk for alcohol use. *Experimental and Clinical Psychopharmacology, 9(4),* 389-398.

McCarthy, D.M., Miller, T.L., Smith, G.T. & Smith, J.A. (2001). Disinhibition and expectancy in risk for alcohol use: Comparing Black and White college samples. *Journal of Studies on Alcohol, 62(3),* 313-321.

McGuire, W. G. (1984). Public communication as a strategy for inducing health promoting behavioral change. *Preventive Medicine, 13,* 299-319.

MacNeil, J. M., Mberesero, F., Kilonzo, G. (1999). Is care and support associated with preventive behavior among people with HIV? *AIDS Care, 11*, 537–546.

Mehrotra, P., Zimmerman, R. S., Noar, S. M., & Dumenci, L. (2013). A test of an adapted multiple domain models in predicting sexual behaviors among unmarried

young adults in India. *Journal of Sex Research, 50*(2), 116 -127

Milhausen, R. R., Sales, J. M., Wingood, G. M., DiClemente, R J., Salazar, L. F., & Crosby, R. A. (2007). Validation of a partner sexual communication scale for use in HIV/AIDS prevention interventions. *Journal of HIV/AIDS Prevention in Children and Youth, 8*(1), 11–33. doi:10.1300=J499v08n01_02

Morris-Bilotti, S. (1992). The chronically poor: breaking the cycle. Paper prepared for the National Conference and Workshop on *Corporate Community Involvement of the Public Affairs Council* (Washington, DC, May 20-21).

Morojele, N. K., Kachieng'a, M. A., Mokoko, E., Nkoko, M. A., Parry C. D. H., Nkowane, M. A. *et al (2006).* Alcohol use and sexual risk behavior among risky drinkers and bar and shebeen patrons in Gauteng province, South Africa. *Social Science of Medicine, 62,* 217–27.

National Population Commission. (2004). Nigeria Demographic and Health Survey 2003. Cited in Odu et al. (2008). Knowledge and attitudes regarding HIV/AIDS and antiretroviral therapy among patients at a Nigerian treatment clinic. *Journal of Infectious Disease Control 6*(11), 809-816.

National Institute on Alcohol Abuse and Alcoholism (2014). Alcohol Use Disorder. Retrieved fromhttp://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/alcohol-use

Noar, S. M., Carlyle, K., & Cole, C. (2006). Why communication is crucial: Meta-analysis of the relationship between safer sexual communication and condom use. *Journal of Health Communication, 11,* 365–90. Doi:

10.1080=10810730600671862

Noar, S. M. (2007). An interventionist's guide to AIDS behavioral theories. *AIDS Care, 19*, 392 –402

Nzioka, C., (2000). The social meanings of death from HIV/AIDS: an African interpretative view. *Culture, Health & Sexuality 2* (1), 114

Obi, S. C. (2010). *Readings for Amerigerian Igbo: Culture, History, Language and Legacy.* Bloomington, CA: Authorhouse Press.

Obijiofor, L. (2010). Press coverage of HIV/AIDS in Nigeria and the sociocultural barriers that inhibit media coverage. *China Media Research, 6*(4), 24-31.

Ochieng-Ooko, V., Ochieng, D., Siddle, J. E., Hodlsworth, M., & Wools-Kaloustian, K. (2010). Influence of gender on loss to follow-up in a large HIV treatment program in western Kenya. *Bull World Health Organ, 88*, 681 – 688.

Odu, O.O., Asekun-Olarinmoye, E. O., Bamidele, J. O., Egbewale, B. E., Amusan, O. A., & Olowookere, S. A., Fatiregun, A. A, & Adewole, I. F. (2008). Knowledge, attitudes to HIV/AIDS and sexual behavior of students in a tertiary institution in southwestern Nigeria. *European Society of Contraception and Reproductive Health Care, 13*(1), 90-96.

Odutolu, O. et al (2006). *AIDS in Nigeria: A nation on the threshold*. Chapter 11: The National Response to HIV/AIDS. Cambridge, MA: Harvard Center for Population and Development Studies Office of the Global AIDS Coordinator (2005). *PEPFAR first annual report to Congress*. Washington, D.C : Government Press.

Ogle, S., Glasier, A., & Riley, S. C. (2008). Communication between parents and their

children about sexual health. *Contraception, 77*(4) 283-288

Ogunjuyigbe, P., & Adeyemi, E. (2005). Women's sexual control within conjugal union:

Implications for HIV/AIDS infection and control in a metropolitan city.

Demographic Research. 12(2), 29-50.

Ojikutu, B., & Stone, V. (2005). Women, inequality, and the burden of HIV. *New

England Journal of Medicine, 3*(52) 649–652.

Ojo, O., Aransiola, J., Fatusi, A., et al. (2011). Pattern and socio-demographic correlates

of parent-child communication on sexual and reproductive health issues in

southwest Nigeria: a mixes method study. The African Symposium: *An online

journal of the African Educational Research Network, 11*, 29 -39.

Okulate, G. T., Jones, O. B. E., & Olorunda, M. B. (2008). Condom use and other HIV

risk issues among Nigerian soldiers: challenges for identifying peer educators.

AIDS Care, 20(8) 911 – 916.

Oladepo, O. & Fayemi, M. M. (2011). Perceptions about sexual abstinence and

knowledge of HIV/AIDS prevention among in-school adolescents in a western

Nigerian city. *BioMed Central Public Health, 11*(304), 1- 10.

Oladepo, O., Usendiah, J.S., & Ajuwon, J. (1999). Christian religious leaders' knowledge

and state of preparedness for AIDS education in an urban area in Nigeria.

*International Quarterly of Community Health Education: Journal of Policy and

Applied Research, 18* (3),1-10.

Olowookere, S. A., Fatiregun, A. A. & Adewole, I. F. (2012) Knowledge and attitudes

regarding HIV/AIDS and antiretroviral therapy among patients at a Nigerian

treatment clinic. *Journal of Infection in Developing Countries, 6*(11), 809-816.

Olowu, A. O. (2008). Knowledge, attitudes to HIV/AIDS and sexual behavior of students in a tertiary institution in southwestern Nigeria. *The European Journal of Contraception and Reproductive Health Care, 13*(1), 90–96.

Omokbodion, F. O., Kayode, O. O., Ojanen, M. A., & Barengo, N. C. (2007). Knowledge about HIV/AIDS and sexual practices among automobile repair workers in Ibadan, Southwest Nigeria. *African Journal of Reproductive Health*, *11*(2), 24 – 32.

Opara, P. L., Eke, G. K., & Akani, N. A. (2010). Mothers' perception of sexuality education for children. *Nigeria Journal of Medicine, 19*, 168-179.

Orubuloye, I., Caldwell, J.C., & Caldwell, P. (1994). The role of religious leaders in changing sexual behavior in Southwest Nigeria in an era of AIDS. In I.O. Orubuloye, J.C. Caldwell, P. Caldwell and G. Santow (eds). *Sexual networking and AIDS in Sub-Saharan Africa: behavioral research and the social context*. Canberra, Australia: The Australian National University Press, 117-134.

Owen, J., & Fincham, F. D. (2011). Effects of gender and psychosocial factors on ''friends with benefits'' relationships among young adults. *Archives of Sexual Behavior, 40*, 311–320.

Paniagua, F. A & O'Boyle, M. (2008). Comprehensively assessing cognitive and behavioral risks for HIV infection among middle-aged and older adults. *Educational Gerontology, 34*(4), 267-281.

Paranjape, A.S., Castleman, K., Milner, T.E., & Rylander, G. H. (2007). "Advanced

imaging technique for automated classification of casts and crystals in urine".
SPIE, *6424*, 64240X

Parikh, S. A. (2007). The political economy of marriage and HIV: The ABC approach,—safe‖ infidelity, and managing moral risk in Uganda. *American Journal of Public Health. 97*, 1198-1208.

Parker, W., & Birdsall, K. (2005). *HIV/AIDS, stigma and faith-based organizations: a review*. Johannesburg, South Africa: Centre for AIDS Development, Research and Evaluation

Pates, M., & Johnson, J. (2004). HIV/AIDS, national security, and global stability. *Secret Individual Rights Responsibility.* Retrieved from http://www.abanet.org/irr/hr/fall04/home.html.

Patterson, D. A., Wolf, S., & Keefe, R. H. (2013). HIV and additions: From separated treatments to ideal single provider. *Journal of Social Work Values and Ethics*, 10(1), p. 43-51.

Patton, M. Q. 2002). *Qualitative Research & Evaluation Methods (3ʳᵈ ed.).* Thousand Oaks, California: Sage Publications.

Phatlane, S. N. (2003). Poverty and HIV/AIDS in apartheid South Africa. Social Identities *Journal Study of Race, Nation and Culture, 9,* 73–91.

Phiri, I.A. (2003). African women of faith speak out in an HIV/AIDS era. In I.A. Phiri, B. Haddad & M. Masenya (eds.). *African women, HIV/AIDS, and faith communities*. Pietermaritzburg, South Africa: Cluster.

Population Reference Bureau. (2009). *World population data sheet*. Retrieved from

http://www.prb.org/pdf05WorldDataSheet.Eng.pdf.

Powell, H. L., & Segrin, C. (2004). The effect of family and peer communication on college students' communication with dating partners about HIV and AIDS. *Health Communication,16*, 427–449. doi:10.1207=s15327027hc1604_3

Reis, C., Heisler, M., Amowitz, L. L et al. (2005). Discriminatory attitudes and practices by health workers toward patients with HIV/AIDS in Nigeria. *PLoS Medicine, 2* (246), 1-23.

Riley, G. A & Baah-Odoom, D. (2010). Do stigma, blame and stereotyping contribute to unsafe sexual behavior? A test of claims about the spread of HIV/AIDS arising from social representation theory and the AIDS risk reduction model. *Social Science and Medicine, 71*, 600 – 607.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1994). The health belief model and HIV risk behavior change. In R. J. DiClemente & J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioral interventions*. New York, NY: Plenum Press.

Rouner, D., & Lindsey, R. (2006). Female adolescent communication about sexually transmitted disease. *Health Communication, 19* (1), 29-38

Rudestam, K. E. & Newton, R. R. (2007). *Surviving your dissertation: A comprehensive guide to content and process.* Thousand Oaks, CA: Sage Publications

Ryan, S., Franzetta, K., Manlove, J., & Holcombe, E. (2007). Adolescents' discussions about contraception or STDs with partners before first sex. *Perspectives on Sexual and Reproductive Health, 39*, 149–157. doi:10.1363=3914907

Salami, A. K., Araoye, M. A., & Adamu, U.G. (2006). Knowledge, risk perception and willingness of relatives of patients to submit to voluntary HIV counseling and testing. *African Journal of Clinical Experimental Microbiology, 7*, 57–64.

Salami, A. K., Fadeyi, A., Ogunmodede, A., & Desalu, O. (2011). Status disclosure among people living with HIV/AIDS in Ilorin, Nigeria. *West African Journal of Medicine, 30*(5), 359 – 363.

Sales, J. M., Lang, D. L., DiClemente, R. J., Latham, T. P., Wingood, G. M., Hardin, J. W., & Rose, E. S. (2012). The mediating role of partner communication frequency on condom use among African American adolescent females participating in an HIV prevention intervention. *Health Psychology, 31*, 63–69. doi:10.1037=a0025073

Sallar, A. M., & Somda, D. A. K. (2011). Homosexuality and HIV in Africa: An essay on using entertainment education as a vehicle for stigma reduction. *Sexuality and Culture, 15*, 279 – 309.

Samet, J. H., Horton, N. J., Melt, S., Freedberg, K. A., & Palepu, A. (2004). Alcohol consumption and antiretroviral adherence among HIV-infected person with alcohol problems. *Alcohol Clinical Experimental Resources, 28*, 572 – 577.

Schneider, M., Chersich, M., Neuman, M., & Parry, C. (2012). Alcohol consumption and HIV/AIDS: the neglected interface. *Addiction, 107* (8), 1369–1371. doi:10.1111/j.1360-0443.2012.03824.x

Sepúlveda, J., Carpenter, C., Curran, J., Holzmer, W., Smits, H., Scott, K. & Orza, M. (2007). *PEPFAR implementation: Progress and promise*. Washington, D.C: the

National Academics Press.

Shaw, M. (ed). (2000). *AIDS an incredibly easy mini guide*. Springhouse, PA:

Springhouse Corporation.

Sheeran, P., Abraham, C., & Orbell, S. (1999). Psychosocial correlates of heterosexual

condom use: A meta-analysis. *Psychological Bulletin, 125*, 90–132.

doi:10.1037=0033-2909.125.1.90

Shuper, P. A., Joharchi, N., Irving, H., & Rehm, J. (2009). Alcohol as a correlate of

unprotected sexual behavior among people living with HIV/AIDS: review and

meta-analysis. *AIDS Behavioral Journal, 13*, 1021–36.

Sylverberg, C. (2006). The ABC Model of HIV Prevention. Retrieved from

http://sexuality.about.com/od/saferse1/a/ABCprevention.htm

Smith, D. J. (2003). Imagining HIV/AIDS: morality and perceptions of personal risk in

Nigeria. *Medical Anthropology, 2,* 343–72.

Smith, D.J. (2004). Youth, sin and sex in Nigeria: Christianity and HIV/AIDS-related

beliefs and behavior among rural urban migrants. *Culture, Health & Sexuality, 6*

(5), 425-437.

Sprecher, S., Harris, G., & Meyers, A. (2008). Perceptions of sources of sex education

and targets of sex communication: Socio-demographic and cohort effects. *Journal

of Sex Research, 45*,17–26. doi:10.1080=00224490701629522Substance Abuse

and mental Health Services Administration(2014). Alcohol, Tobacco, and Other

Drugs. Retrieved from http://www.samhsa.gov/atod

The Henry J. Kaiser Family Foundation (2007). The global HIV/AIDS epidemic.

HIV/AIDS Policy Fact Sheet, 4(23), 34 – 54.

The United Nations Population Division (2008). *World Population Prospects*: *The 2008 Revision Population Database.* Retrieved from http://esa.un.org/unpp

Tolley, N.M. (2006). Faith-based organizations' prevention response to HIV/AIDS in Yaoundé Cameroon. Unpublished Master's Thesis. Global Health Division, School of Public Health, Yale University, New Haven, CT. Trochim, W. M. K. (2006). *Survey research*. Retrieved from http://www.socialresearchmethods.net/kb/survey.php

Tschann, J. M., & Adler, N. E. (1997). Sexual self-acceptance, communication with partner, and contraceptive use among adolescent females: A longitudinal study. *Journal of Research on Adolescents, 7*, 413–430. doi:10.1207=s15327795jra0704_4

Tucker, J. S., Burnam, M. A., Sherbourne, C. D., Kung, F. Y., & Gilfford, A. L. (2003). Substance use and mental health correlates of nonadherence to antiretroviral medications in a sample of patients with human immunodeficiency virus infection. *American Journal of Medicine, 114*, 573 - 580

Turchik, J. A., & Garske, J. P. (2009). Measurement of sexual risk taking among college students. *Achieves of Sexual Behavior, 38*, 936-948.

Ucheaga, D. N., & Hartwig, K. A. (2010). Religious leaders' response to AIDS in Nigeria. *Global Public Health, 5* (6) 611 – 625.

Udoh, I. A. (2006). An educational training model for HIV/AIDS prevention in the Niger Delta of Nigeria: a Delphi study. Doctoral Dissertation. North Dakota State

University.

Udonwa, N., Ekpo, M., Ekanem, I., et al. (2004) Oil doom and AIDS boom in the Niger

Delta region of Nigeria. *Rural Remote Health Journal, 4*, 273-283.

Urdaneta, C. (2005). Virtual pathways in Africa's fight against HIV/AIDS. Individual

Rights Responsibility. Retrieved from

http://www.abanet.org/irr/hr/fall04/home.html.

United Nations Population Fund.(2013). Strengthening efforts to prevent HIV/AIDS

Retrieved from http://www.unfpa.org/public/

 UNAIDS (2013). Global Report on AIDS epidemic. Retrieved from

http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2

013/gr2

United States Department of Health & Human Services. (1978). ''The Belmont Report:

Ethical Principles and Guidelines for the Protection of Human Subjects of Re-

search.'' DHEW Publication No. (OS) 78-0012. Reprinted in Federal Register 44

(April 18, 1979): 23912. Washington, DC: U.S. Government Printing Office,

University of New Hampshire (2013). IRB Review Levels. Retrieved

fromhttp://www.unh.edu/research/irb-review

United States Department of Health and Human Services. (2005). *Theory at a Glance: A*

Guide for Health Promotion Practice. Washington, DC: NIH Publications

Waddell, E. N., & Messeri, P. A. (2006). Social support, disclosure, and use of

antiretroviral therapy. *AIDS Behavior, 10*, 263 – 272.

Wagnenaar, B. H., Sullivan, P. S., & Stephenson, R. (2012). HIV knowledge and

associated factors among internet-using men who have sex with men (MSM) in South Africa and the United States. *Plos One, 7* (3), 1 – 8.

Wamoyi, J., Fenwick, A., Urassa, M., Zaba, B., & Stones, W. (2010). Parent-child communication about sexual and reproductive health in rural Tanzania: Implications for young people's health interventions. *Reproductive Health, 7*, 6–14.

Werner-Wilson, R. J., Fitzharris, J. L., & Morrissey, K. M. (2004). Adolescent and parent perceptions of media influence on adolescent sexuality. *Adolescence, 39*(154) 303- 324

Widman, L., Choukas-Bradley, S., Helms, S., Golin, C. E., & Prinstein, M. J. (2014). Sexual communication between early adolescents and their dating partners, parents, and best friends. *Journal of Sex Research, 51* (7), 731 – 741.

Widman, L., Golin, C. E., & Noar, S. M. (2013). When do condom use intentions lead to actions? Examining the role of sexual communication on safer sexual behavior among people living with HIV. *Journal of Health Psychology*. 18(4) 507 517. doi:10.1177/1359105312446769

Widman, L., Welsh, D. P., McNulty, J. K., & Little, K. C. (2006). Sexual communication and contraceptive use in adolescent dating couples. *Journal of Adolescent Health, 39*, 893–899. doi:10.1016=j.jadohealth.2006.06.003

Wilcher, R. & Cates, W. (2010). Reaching the underserved: Family planning for women with HIV. *Studies in Family Planning, 41*, 125–128.

Winchester, M. S., McGrath, J. W, Kaawa-Mafigiri, D., Namutiibwa, F., Ssendegye, G.,

Nalwoga, A., Kyarikunda, E., Birungi, J., Kisakye, S., Ayebazibwe, N., Walakira, E., & Rwabukwali, C. B. (2013). Early HIV disclosure and nondisclosure among men and women on antiretroviral treatment in Uganda. *AIDS Care, 25* (10), 1253 − 1258.

Wong, L.H, Rooyen, V., Modiba, P., Richter, L., Gray, G., McIntyre, J. A, et al. Test and Tell: Correlates and Con-sequences of Testing and Disclosure of HIV Status in South Africa (HPTN 043 Project Accept). *Journal of Acquired Immune Deficiency Syndrome, 50*, 215–222

Zwi, A. B., & Cabral, J. R. (1991). Identifying ''high risk situations'' for preventing AIDS. *British Medical Journal, 303,* 1527–1529.

Appendix A: HIV-KQ-18

Instruction*:* The purpose of this scale is to measure your knowledge of HIV. For each statement, please circle "True" (T), "False" (F), or "I don't know" (DK). If you do not know, please do not guess; instead,

	Questions to test HIV Knowledge	**True**	**False**	**Do n't kno w**
1.	Coughing and sneezing DO NOT spread HIV	T	F	DK
2.	A person can get HIV by sharing a glass of water with someone who has HIV	T	F	DK
3.	Putting out the penis before a man climaxes/cums keeps a woman from getting HIV during sex	T	F	DK
4.	A woman can get HIV if she has anal sex with a man	T	F	DK
5.	Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV	T	F	DK
6.	All pregnant women infected with HIV will have babies born with AIDS	T	F	DK
7.	People who have been infect with HIV quickly show serious signs of being infected	T	F	DK
8.	There is a vaccine that can stop adults from getting HIV	T	F	DK
9.	People are likely to get HIV by deep kissing, putting their tongue in their partners mouth, if there partner has HIV	T	F	DK
10.	A woman cannot get HIV if she has sex during her period	T	F	DK
11.	There is a female condom that can help decrease a woman's Chance of getting HIV	T	F	DK
12.	A natural skin condom works better against HIV than does a latex condom	T	F	DK
13.	A person will NOT get HIV, if she or he is taking antibiotics	T	F	DK
14.	Having sex with more than one partner can increase a person's chance of being infected with HIV	T	F	DK
15.	Taking a test for HIV one week after having sex will tell a person if she or he has HIV	T	F	DK
16.	A person can get HIV by sitting in a hot tub or a swimming Poor with a person who has HIV	T	F	DK
17.	A person can get HIV from oral sex	T	F	DK
18	Using Vaseline or baby oil with condoms lowers the chances of getting HIV	T	F	DK

please circle "DK."

*Catania, J. A., Kegeles, S. M., & Coates, T. J. (1990). Towards an understanding of risk behavior: An AIDS risk reduction model (ARRM). *Health Education Quarterly, 17(1), 53-72.*

Appendix B: The Revised Alcohol Expectancy Questionnaire (AEQ-3)

Instruction: This questionnaire consists of a series of statements that describe possible beliefs of effects following alcohol use. The intention is to find out your present beliefs about alcohol. Please read each of the statements and respond accordingly to your honest belief about alcohol effects. Use "agree strongly" to express the statement that best describes what you believe and use "disagree strongly" to express that statement that least express what you believe.

1. Drinking makes me feel warm and flushed
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

2. Alcohol lowers muscle tension in my body
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

3. A few drinks make me feel less shy
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

4. Alcohol helps me to fall asleep more easily
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

5. I feel powerful when I drink, as if I can really make other people do as I want
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

6. I am more clumsy after a few drinks
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

7. I am more romantic when I drink
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

8. Drinking makes the future seem brighter to me.
1. Agree strongly   2. Agree moderately   3. Agree slightly 4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

9. If I have had a couple of drinks, it is easier for me to tell someone off

1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

10. I can't act as quickly when I have been drinking.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

11. Alcohol can act as an anesthetic for me, that is, it can stop pain.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

12. I often feel sexier after I have had a few drinks.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

13. Drinking makes me feel good
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

14. Alcohol makes me careless about my actions
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

15. Some alcohol has a pleasant, cleansing, tingly taste to me.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

16. Drinking makes me more aggressive.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

17. Alcohol seems like magic to me.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

18. Alcohol makes it hard for me to concentrate.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

19. I am better lover after a few drinks.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

20. When I am drinking, it is easier to open up and express my feelings

1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

21. Drinking adds a certain warmth and friendliness to social occasions for me.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

22. If I am feeling tied down or frustrated, a few drinks make me feel better.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

23. I can't think as quickly as I drink
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

24. Having a few drinks is a nice way for me to celebrate special occasions.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

25. Alcohol makes me worry less.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

26. Drinking makes me less efficient.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

27. Drinking is pleasurable because it's enjoyable for me to join in with people who are enjoying themselves.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

28. After a few drinks, I am more sexually responsive, that is, more in the mood for sex.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

29. I feel more physically coordinated after I drink.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

30. I am more likely to say embarrassing things after drinking.

1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

31. I enjoy having sex more if I have had some alcohol.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

32. I am more likely to get into an argument if I have had some alcohol.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

33. Alcohol makes me less worried about doing things well.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

34. Alcohol helps me sleep better.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

35. Drinking give s me more confidence in myself.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

36. Alcohol makes me more irresponsible.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

37. After a few drinks, it is easier for me to pick a fight.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

38. A few drinks make it easier for me to talk to people.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

39. If I have a couple of drinks, it is easier to express my feelings
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

40. Alcohol makes me more interesting.
1. Agree strongly   2. Agree moderately   3. Agree slightly   4. Disagree slightly
5. Disagree moderately   6. Disagree strongly

* George, W. H., Frone, M. R., Copper, M. L., Russell, M., Skinner, J. B., & Windle, M. (1994). A revised Alcohol Expectancy Questionnaire: Factor structure confirmation and invariance in a general population sample. *Journal of Studies on Alcohol,* 177-184

Appendix C: Sexual Risk Survey

Instructions: Please read the following statements and record the number that is true for you over the past six months for each question on the blank. If you do not know for sure how many times a behavior took place, try to estimate the number as close as you can. Thinking about the average number of times the behavior happened a week or a month might make it easier to estimate an accurate number, especially if the behavior happened fairly regularly. If you've had multiple partners, try to think about how long you were with each partner, amount of sexual encounters you had with each and try to get an accurate estimate of the total number of each behavior. If the question does not apply to you or you have never engaged in the behavior in the question, put a "0" on the blank.

Please do not leave items blank. Remember that in the following questions "sex" includes oral, anal and vaginal sex and that "sexual behavior" includes passionate kissing, making out, fondling, petting, oral-to-anal stimulation and hand-to-genital stimulation. Refer to the Glossary on pages 10 and 11 of this questionnaire for any word(s) you are not sure about. Please consider only the last six months when answering and please be honest. In the **PAST SIX MONTHS**

1. _____ How many partners have you engaged in sexual behavior with but not had sex with?

2. _____ How many times have you left a social event with someone you just met?

3. _____ How many times have you "hooked up" and engaged in sexual behavior with someone you didn't know or didn't know well but did not have sex?

4. _____ How many times have you not remembered what you did the night before?

5. _____ How many times have you gone out to bars/parties/social events with the intent of engaging in sexual behavior with someone?

6. _____ How many times have you had others express concern about your sexual behavior?

7. _____ How many times have you felt so sexual/horny that you could not control your sexual behaviors?

8. _____ How many times have you gone out to bars/parties/social events with the intent of "hooking up" and having sex with someone?

9. _____ How many times have you gotten so drunk or high that you couldn't control your sexual behaviors?

10. _____ How many times have you drank or gotten high to the point of losing

memory or blacking out?

11. _____ How many times have you had an unexpected and unanticipated sexual experience?

12. _____ How many times have you had a sexual encounter you engaged in willingly but later regretted?

For the next set of questions, follow the same direction as before. However, for questions 13-37, if you have never had sex (oral, anal or vaginal), please put a "0" on each blank.
In the **PAST SIX MONTHS**

13. _____ How many partners have you had sex with?

14. _____ How many times have you had vaginal intercourse without a latex or polyurethane condom? Note: Include times when you have used a lambskin or membrane condom.

15. _____ How many times have you had vaginal intercourse without protection against pregnancy?

16. _____ How many times have you given or received fellatio (oral sex on a man) without a condom?

17. _____ How many times have you given or received cunnilingus (oral sex on a woman) without a dental dam or "adequate protection" (please see definition of dental dam for what is considered adequate protection)?

18. _____ How many times have you had anal sex without a condom?

19. _____ How many times have you or your partner engaged in anal penetration by a hand ("fisting") or other object without a latex glove or condom followed by unprotected anal sex?

20. _____ How many times have you given or received analingus (oral stimulation of the anal region, "rimming") without a dental dam or "adequate protection"(please see definition of dental dam for what is considered adequate protection)?

21. _____ How many people have you had sex that you know but are not involved in any sort of relationship with (i.e. "friends with benefits", "fuck buddies")?

22. _____ How many times have you had sex with someone you don't know well or

just met?

23. _____ How many times have you or your partner used alcohol or drugs before or during sex?

24. _____ How many times have you had sex with a new partner before discussing sexual history, IV drug use, disease status and other current sexual partners?

25. _____ How many times have you had sex to get money, drugs/alcohol or favors?

26. _____ How many times have you cheated on a regular committed partner?

27. _____ How many times have you had sex with a prostitute/hooker?

28. _____ How many times (that you know of) have you had sex with someone who had a STI?

29. _____ How many times (that you know of) have you had sex with someone who has had many sexual partners?

30. _____ How many times (that you know of) have you had sex with someone who used IV drugs?

31. _____ How many times have you known that a partner cheated on you and you continued to have sexual relations with that partner after you knew that he/she had cheated? (If the same partner has cheated more than once and you've had sex with him/her after each time, please count each time.)

32. _____ How many times have you gone to sex parties?

33. _____ How many times you have reused condoms (had sex more than once without getting a new condom or gone from one type of sex to another without getting a new condom, such as from vaginal to anal sex)?

34. _____ How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STIs/HIV?

35. _____ How many times have you had sex only using the withdrawal method ("pulling out") as a form of birth control?

36. _____ How many partners have you had sex with that you didn't trust?

37. _____ How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period?

Glossary

The following is a list of definitions for terms as they are used in the following survey (please read before starting—especially the definitions of "sex" and "sexual behavior"). The terms in this survey may be used differently than the way you typically use them. If you find slang terminology offensive and understand the more formal terms and definitions, you may skip the a.k.a terms in parentheses.

Analingus: Oral to anal stimulation, where a person stimulates another person's anal region with one's mouth/tongue (a.k.a. "rimming", "butt/ass licking")

Anal Sex: Penis to anus stimulation, where a man's penis penetrates another person's anus (a.k.a. "butt/ass sex")

Birth Control/Protection against pregnancy: Methods used to prevent pregnancy, such as taking birth control pills, Norplant implants, birth control patches, condoms, diaphragms, contraceptive sponges, withdraw method, etc. Note: Only latex and polyurethane condoms will also effectively protect against STIs

Condom: A male condom is a sheath (usually made of latex) that is placed on the outside of the penis and covers the entire shaft of the penis during sexual relations to help protect against pregnancy and STIs. A female condom is a soft flexible tube (usually made of polyurethane) that is inserted into the vagina before sex to protect against pregnancy and STIs. Note: Only latex & polyurethane condoms offer adequate protection against STIs.

Cunnilingus: Oral sex on a woman, using one's mouth to stimulate a woman's genitals (a.k.a. "eating a woman out", "going down on a woman")

Dental dam (or "adequate protection"): A thin piece of latex that can be placed between the mouth and the vagina during oral sex on a woman to help prevent STIs, or placed between the mouth and anal region during oral to anal sex (analingus) to prevent STIs and bacterial infections. Although purchased dental dams are the most reliable, they can also be self-made by cutting a large square from a latex condom (people often use flavored condoms for this) or by using a square of plastic wrap as long as there are no holes in the material and the covering adequately covers the genital region. These self-made dental dams are considered "adequate protection" in this study.

Fellatio: Oral sex on a man, using one's mouth to stimulate a man's penis (a.k.a. "blow job", "giving head")

Hooking up: Engaged in sexual behavior (such as making out/fondling) or sex with someone, usually outside of a relationship

IV drugs: Intravenous drugs that are injected into the body using a needle and a syringe, drugs that you can "shoot up" such as heroin.

Oral Sex: Mouth to genital stimulation, using one's mouth to stimulate or touch the genitals of a man or a woman (a.k.a. fellatio, cunnilingus, "blow jobs", "going down on someone")

Sex: Includes oral, anal, and vaginal sex.

Sexual behavior: Includes passionate kissing, fondling, petting, oral-to-anal stimulation and hand-to genital stimulation (includes "making out", "dry sex/humping", "fingering", analingus, "rimming" "hand jobs")

Sexual partner: A person with whom you have had sex (oral, anal or vaginal) or engaged in sexual behavior with

STI: Stands for a sexually transmitted infection, a disease that can be given to someone through oral, genital and/or anal sex. Some STIs may also be gotten through oral to anal contact and hand to genital contact. STIs include herpes, trichomonas, chlamydia, syphilis, gonorrhea, vaginitis, genital warts, pubic lice, hepatitis B and HIV infection which leads to AIDS.

Vaginal sex: Sexual intercourse where a man's penis penetrates a woman's vagina, this is the only type of sex that can directly result in pregnancy. (Please note that rear entry intercourse, such as "doggy-style" sex, is considered vaginal sex as long as the penis is penetrating the vagina and not the anal region.

* Fisher, T. D., Davis, C. M., Yarber, W. L, & Davis, S. L. (2010). *Handbook of Sexuality-Related Measures*. New York: Routledge.

Appendix D: Dyadic Sexual Communication Scale

Instruction: The purpose of this scale is to examine how individuals and their partners communicate about sex. Please, read and respond to each statement with your current partner in mind. For each statement, place an X on either A, B, C, D or E columns to indicate your extent of agreement or disagreement. Below are the interpretations of A, B, C. D and E.

A = *Strongly agree with the statement* **B** = *Moderately agree with the statement*

C = *Neutral -neither agree or disagree* **D** = *Moderately disagree with the statement*

E = *Strongly disagree with the statement*

	Statements To Test Sexual Communication	**A**	**B**	**C**	**D**	**E**
1.	My partner rarely responds when I want to talk about sex					
2.	Some sexual matters are too upsetting to discus with my sexual partner					
3.	There are sexual issues of problems in our sexual relationship that we have never discussed					
4.	My partner and I never seem to resolve our disagreements about sexual issue					
5.	Whenever my partner and I talk about sex, I feel like she or he is lecturing me					
6.	My partner often complains that I am not very clear about what I want sexually					
7.	My partner and I have never had a heart-to-heart talk about our sex life together					
8.	My partner has no difficulty in talking to me about his or her sexual feelings and desires					
9.	Even when angry with me, my partner is able to appreciate my views on sexuality					
10.	Talking about sex is a satisfying experience for me and my partner					
11	My partner and I can usually talk calmly about our sex life					
11	I have little difficulty in telling my partner what I do or don't do sexually					
12.	I often feel embarrassed when talking about the details of our sex life with my partner					

* Choi, K. H., Catania, J. A., & Dolcini, M. M. (1994). Extramarital sex and HIV risky behavior among US adults: Results from the National AIDS Behavior survey. *American Journal of Public Health*, *84*, 2003 -2007.

Appendix E: Demographic Questionnaire

DEMOGRAPHICS

Instruction: Please, answer these demographic questions for categorization purposes.
1. What is your gender? a. Male: _____ b. Female: _____ c. Prefer not to answer: _____
2. How old are you: _____ (enter age in years)?
3. What is your religious affiliation? a. Christian_____ b. Moslem_____ c. African Traditional Religion_____ d. Others (specify):_____
4. What is your local government (County): _____?
5. What is your state of origin? _____?
6. In what state where you born? _____?
7. What is your sexual orientation? a. Heterosexual_____ b. Homosexual_____ c. Bi-sexual: _____ d. Prefer not to answer_____
8. In addition to English, what other language (s) do you speak? a. Igbo____ b. Hausa____
c. Yoruba_____ d. Efik: _____ e. Ibibio_____ f. Other (specify)._____
9. What is your tribe: _____?
10. What is your marital status? a. Single____ b. Married_____ c. Divorced_____ d. Separated____ e. Other (specify) _____
11. Are you currently dating? a. Yes_____ b. No_____
12. Are you currently sexually active? a. Yes_____ b. No_____
13. Do you currently know your HIV status? a. Yes_____ b. No_____

Appendix F: Recruitment Transcript

Introductory Speech

Good morning/afternoon everybody. My name is JohnPaul Ezeonyido and I am from Igbo-Ukwu, Anambra State. I received my BA degree from Bigard Memorial Seminary Enugu in 1997 before I migrated to the United States for my graduate studies in 1999. I am currently a PhD student of Walden University, Minneapolis, Minnesota, USA. I am working on my dissertation which aims at examining how HIV knowledge, alcohol use, and risky behavior are associated with sexual communication among Nigerian university students. I am here today to conduct a survey on these variables.

I developed interest in the HIV/AIDS on World's AIDS day 2014 when it was announced that the daily HIV virus global incidence has reached 6,300 and that 25 million out of the 35 million people infected by HIV/AIDS live in the sub-Sahara Africa. In the same year, it was also discovered that Nigeria is ranked second in Africa on the HIV prevalence, next only to South Africa. I chose this topic because of its potential implication to social change and benefits in creating HIV/AIDS interventions and policies. Consequently, the outcome of this study could be instrumental in the reduction of HIV/AIDS incidence through behavioral change and help in the management of high HIV/AIDS prevalence already in Nigeria. It could also increase the awareness of some societal norms, traditions, sociocultural, and religious practices that put college students at risk for HIV/AIDS infections in Nigeria. This study could also reduce some bias, stigma, discrimination, and gender stereotypes that are HIV/AIDS-related in Nigeria. It was this mindset that influenced my desire to choose this topic and to choose Nigerian university students as my study population.

Screening for Eligible Participants

 I thank all of you for the gift of your time and for giving me this opportunity to address you. I also wish to let you know that there is no obligation whatsoever to participate in this study and even if you decide to participate and change your mind along the line, you can still withdraw. This study is also limited to only single undergraduate students (not married) and between 18 and 35 years old. However, if there is anyone who is married, below 18 years or above 35 years, it is ok to stay still the end. Regardless of your age or marital status, you are free to stay or leave at any time, if you want to. Please, know that your leaving will not be considered rude or disruptive. At this point, I would like to answer any questions you may have.

Distribution of the Informed Consent and Survey Questionnaire
 (After the questions and discussions). At this point, I would ask eligible participants to please grab a copy of the informed consent and survey questionnaire. The informed consent gives you further information about your right to participate and necessary

contacts you may need. Please, take time to read it. I will be in the school library from 8am to 8pm tomorrow to collect back the completed questionnaires. There will also be a courtesy reminder by the class representative tomorrow during class. Thanks very much for your time and have a blessed day.

Appendix G: Frequency and Percent of Condensed Groups

Demographic	Frequency (n)	Percent (%)	Demographic (condensed groups)	Frequency (n)	Percent (%)
Sexual Orientation			Sexual Orientation		
Heterosexual	82	76.6	Heterosexual	82	76.6
Homosexual	4	3.7	Other	25	23.3
Bi-Sexual	3	2.8			
Prefer No Answer	18	16.8			
Languages Spoken			Languages Spoken		
Igbo	85	79.4	Igbo	85	79.4
Hausa	7	6.5	Other	22	20.6
Yoruba	7	6.5			
Efik	1	0.9			
Ibibio	3	2.8			
Others	4	3.7			
Tribe			Tribal Affiliation		
Igbo	105	98.1	Igbo	105	98.1
Yoruba	1	0.9	Other	2	1.9
Hausa	1	0.9			

Note. Total $N = 107$

Appendix H: HIV-KQ-18 Scores

Knowledge of HIV	Incorrect(0)		Correct (1)	
	n	%	*n*	%
Q1	91	85.0	16	15.0
Q2	96	89.7	11	10.3
Q3	89	83.2	18	16.8
Q4	39	36.4	68	63.6
Q5	99	92.5	8	7.5
Q6	90	84.1	17	15.9
Q7	95	88.8	12	11.2
Q8	95	88.8	12	11.2
Q9	58	54.2	49	45.8
Q10	101	94.4	6	5.6
Q11	37	34.6	70	65.4
Q12	13	12.1	94	87.9
Q13	98	91.6	9	8.4
Q14	97	90.7	10	9.3
Q15	80	74.8	27	25.2
Q16	5	4.7	102	95.3
Q17	59	55.1	48	44.9
Q18	97	90.7	10	9.3

Appendix I: Summary of Correlations between Predictor Variables

Predictor Variable	Predictor Variable											
	1	2	3	4	5	6	7	8	9	10	11	12
Knowledge of HIV	1.000	-0.120	0.035	0.052	-0.032	0.084	0.165	0.113	0.007	0.058	-0.015	0.221
Belief about Alcohol		1.000	-0.440	-0.144	0.341	0.166	-0.230	0.112	0.061	-0.065	-0.103	-0.026
Sexual Risk Behavior			1.000	0.183	-0.233	-0.025	-0.031	-0.027	-0.293	-0.091	-0.043	0.101
Age				1.000	-0.350	-0.030	-0.046	-0.050	-0.150	-0.094	0.323	0.023
Gender					1.000	0.061	-0.037	0.071	0.394	-0.016	-0.162	-0.033
Sexual Orientation						1.000	0.103	0.159	-0.009	-0.047	-0.063	-0.068
Dating Status							1.000	0.188	0.217	0.273	-0.017	0.145
Marital Status								1.000	-0.017	-0.126	-0.072	0.506
Sexual Activity Status									1.000	0.138	-0.069	-0.013
Knowledge of HIV Status										1.000	-0.062	-0.006
Other Language Spoken											1.000	-0.056
Tribe												1.000