2019

Using Sociodemographic Approach to Examine Health Services and HIV/AIDS Awareness in Nigeria

Mercy I. Ebosie
Walden University

Walden University

College of Health Sciences

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Mercy I. Ebosie

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Review Committee
Dr. Loretta Cain, Committee Chairperson, Public Health Faculty
Dr. Naa-Solo Tettey, Committee Member, Public Health Faculty
Dr. Patrick Tschida, University Reviewer, Public Health Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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Mercy I. Ebosie

MSN, Stockton State College, Pomona, 2007

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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December 2018

Abstract

The purpose of this study was to examine community health services and HIV/AIDS awareness in rural communities in Abia State Nigeria in respect to the sociodemographic factors of level of community health services, level of education, and community leaders' influence. Two questions guided the research process: To what extent are sociodemographic factors associated with HIV/AIDS awareness, and what is the relationship between level of community health services and extent of HIV/AIDS, as perceived by residents of these communities. A mixed method paradigm was used. A sample of 131 participants, who were HIV/AIDS patients, were purposively drawn from a population of 107,488 individuals from 2 selected rural communities in Aba South, Abia State, Nigeria. The Kolmogorov-Smirnov for normality distribution at p=0.1 for all variables indicated that normality rule was not violated. Descriptive and inferential tests (Spearman's rank order correlation, analysis of variance[ANOVA], chi-square tests of independence, Fisher's exact tests, and independent sample t-tests) were carried out with SPSS V.2 software and the confident level set at 95% (α=0.05). Findings revealed no significant association between level of education, level of community health services, and influence of community leaders and extent of HIV/AIDS awareness, as perceived by residents of these communities (p>0.05). Results also indicated significant relationship between the level of community health services and the extent of risk of HIV/AIDS, as perceived by residents of these communities. A well-planned method of information dissemination on HIV/AIDS can also be used to educate rural residents in Nigeria.

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Dedication

This dissertation is dedicated in memory of my father who was a church teacher with very little pay, did not go far in his own education yet instilled the importance of education to me and my siblings. Also, in the memory of my mother who had such faith in me, even when I told her that I was giving up the journey, she encouraged me to continue "in spite of all odds". I remember my parents could go hungry just to ensure that their children got the education they needed to succeed in life.

I also dedicate this dissertation to my loving husband Cyril, my son Cyril Jr. and my daughter Christy, for believing in me, and encouraging me throughout the process. I will not forget my siblings Grace, Joseph, Felix, Ugochi and Ijeoma, for believing in what I am able to do. May I also pay tribute to my late brothers Ahaomakauba and Okechukwu

Let me mention people in Abia/Imo states who are still struggling with HIV/AIDS and the stigma that is making it harder for them to get the care they deserve.

Acknowledgments

I give God all glory and honor for His mercy and grace which not only saw me through but also led me to the completion of my dissertation. There was NO WAY I could have done it without Him, the author and finisher of my life.

I would like to give my sincere thanks to my chair, Dr Loretta Cain and my committee member Dr Naa-Solo Tettey and Dr Patrick Tschida for all your guidance and time throughout the dissertation. Your guidance and encouragement made the end of this dissertation possible. It was an honor to have such a team to work with.

I also want to thank my loving husband, Cyril, my son, Cyril Jr., and my daughter Christy, who supported me, never complained even when I abandoned my responsibilities as a mother and a wife, just to do school work.

I also thank my friends for their prayers and support

God Bless you all.

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Chapter 1: Introduction to the Study

Over recent decades, exposure has been given to the advent of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS). Despite the widespread attention to the problem by health services, mainstream media, and social media, the disease continues to pose a serious threat to humanity. HIV/AIDS is a highly infectious disease, with an ability to create havoc within communities, families, individuals, nations, and the world in general. Sociodemographic factors, mediated by religious and cultural beliefs, affect how society perceives the problem and the form of the solutions devised to address it. Overall, developed countries have demonstrated a greater level of access to knowledge and resources to deal with this disease

According to the United States Department of Health and Human Services (2015), by the end of 2014, there were 36.9 million people living with AIDS globally, including 2.1 million newly infected individuals and 1.5 million AIDS-related deaths. Sub-Saharan nations, which are home to 13% of the world population, account for 71% (25.8 million) of the people living with AIDS and 70% of the newly infected worldwide (AIDS.gov, 2014). Most of these nations are also dealing with other health challenges, such as malaria, infectious diseases (e.g., tuberculosis), a lack of infrastructures for medical care and food insecurity, among other problems. Most of the people living with HIV/AIDS are not knowledgeable about prevention and management of HIV/AIDS; those that are aware often lack access to healthcare or preventive care.

Among the Sub-Saharan nations, Nigeria is not only the second on the list (South Africa is the first), but also, “has the second highest number of HIV-infected people in

the world" (Erinosho, Joseph, Isi-ugo-Abanihe, Dike, & Aderinto, 2013, p.1). The United Nations program on HIV and AIDS (UNAIDS, 2014) has estimated that Nigeria alone has 3.2 (3.0-3.6) million people living with HIV/AIDS, with 210,000 (190,000-240,000) AIDS-related deaths. In 2014, there were an estimated 3.4 million new infections, the second highest number in the world (Averting Aids & HIV-AIDS Education & Research Trust [AVERT], 2014). AVERT (2014) also estimated that approximately 2 million (17,000 – 2, 3000, 000) Nigerian children were orphaned due to AIDS, and in the same year, 56,000 babies were born who tested positive for HIV. "Unfortunately, despite the magnitude of HIV/AIDS situation in Nigeria, there is no accurate data of the number of people living with the virus or the number of deaths attributable to the epidemics" (Adesina, 2014, p. 238). The actual numbers are likely to be higher especially as the figures do not include rural areas where data is not collected as to the cause or causes of deaths.

Some sociodemographic factors associated with the spread of the virus have made HIV/AIDS a significant public health challenge in Nigeria. NACA (2011) attributed the high rate of HIV/AIDS in Nigeria to poverty and its associated conditions of illiteracy, particularly among rural dwellers, and high rates of sexually transmitted infections (STDs) among vulnerable groups. Related contributing factors include low condom use and a general lack of perceived personal risk. Yet, as national response and strategies have been treatment driven, public health education and access to health care are often neglected priorities, relegated to the background (NACA, 2011)

Currently, there is no realistic prospect of a global or national cure for this deadly virus. Many types of research have been devoted to finding a cure, and retrovirus therapy (ART) has afforded the afflicted an opportunity to live a healthier life, thus making HIV/AIDS a chronic, rather than terminal disease for those who can access such treatments (Colvin, 2011; Deek, Lewin, & Havlir, 2013: Nigatu, 2012). Such treatments are not widely available in developing nations, and most patients cannot afford retrovirus medications due to their high cost. To combat this problem, even where retroviral drugs are in abundance, preventive measures are the preferred and most cost-effective method to attenuate the HIV/AIDS threat. Such measures include the ability of the nation, the communities, the medical personnel and afflicted individuals to examine changing behaviors and attitudes through effective health education and the provision of needed infrastructures. There has already been a significant investment into resources such as condoms, which play an essential role in safe sex practices; but, most rural communities are not aware of such tools. In regions where condoms are available, people lack the knowledge to properly and effectively use them and are discouraged by their costs.

One issue affecting the effectiveness of education measures is technology. Multifaceted health information technology, which has been primary to the achievement of higher levels of prevention in urban areas, is lacking or very limited in rural areas. Even where these tools are available, internet and electricity are luxurious commodities, especially in rural areas, and enjoyed only by the elites due to their exorbitant costs.

Background

Despite the efforts made by governments and philanthropists, Nigeria remains the country with the second highest burden of the epidemic in the world. Okonofua, (2013) observed that HIV/AIDS remains an unsettling dilemma in Nigeria. Reading statistics on global epidemics of HIV/AIDS showed that 9% (about 3.4million) of all the global people living with AIDS live in Nigeria, which is home to 14% of HIV-related deaths, with only 20% of the population in treatment, including only 27% of pregnant women receiving treatment for prevention of mother-to-child transmission (PMTCT, UNAIDS, 2015).

Within Nigeria, Abia State is witnessing a persistent rise in HIV prevalence, ranking eighth among the country's regions with a prevalence rate of 7.3% (Onyeonoro et al., 2014). HIV/AIDS is not only destroying the health of the populace, it is entrenching poverty, changing the society, and wreaking havoc on the lives of the population. Rural dwellers are mostly affected due to low health literacy, coupled with being deeply rooted in traditional culture, especially concepts relating to male supremacy, polygamy, and multiple sex partners.

Health education is the key to health improvement. Public health education awareness should not be limited to urban areas. The bulk of any new educational and preventive initiatives should be in the rural areas, where health literacy in very low. Effective health education is culturally sensitive by being tailored to the needs and beliefs of the group, thus inspiring the interest and engagement of community members. Effective HIV/AIDS education will also empower the communities to form alliances

against other diseases. Increasing health literacy will lead to improved health behaviors and health status, leading to a containment of the mortality rate. In the absence of health education, many factors continue working against official efforts to mitigate the spread of HIV/AIDS in Nigeria, especially within rural communities. Determinants of the high prevalence of HIV/AIDS in rural areas in particular and Nigeria in general include low levels of health literacy, weak access to health care, with limited sites (if any) where people can get tested for their status or receive treatment the embeddedness of gender inequality in the culture of society and culture (AVERT, 2014). Customary laws that condemn men who have sex with other men have encouraged stigma and discrimination against them based on their sexual orientation and prevented those individuals from accessing the needed prevention and treatment programs (AVERT, 2015). Adesina (2014) identified other drivers as low risk perception, multiple concurrent sexual partnerships and inefficient, ineffective treatment of sexually transmitted infections (STIs).

Problem Statement

Globally, Nigeria has the second largest number of people living with HIV/AIDS, with Abia State ranked eighth in virus prevalence among states in that country (Federal Ministry of Health Nigeria, 2010; National Agency for Control of AIDS, 2012; Onyeonoro, Emelumadu, Nwamoh, Ukegbu, & Okafo, 2014). Drivers of the epidemic include a lack of knowledge of HIV (53.5% of the people), low risk perception (<40% of the people), predominantly male factor-driven risky sexual behavior, and relatively low rates of condom use (32.2% of women, 71.1% of men; Onyeonoro et al., 2014). Salem

and Adamu (2015) highlighted the contribution of religious and cultural norms to the spread of the disease, along with inaccurate knowledge, poor risk perception and lack of access to care.

Little has been done to ensure that people living in rural areas are not only aware of the disease's prevalence, but also have knowledge of how to prevent its spread or how to manage the virus if already infected. A dearth of accurate data concerning those afflicted, particularly in rural areas, makes it difficult to accurately determine the number of people living with the virus and the number of deaths that can be attributed to the epidemic (Adesina, 2014). There are still disparities in access to health services and retroviral drugs due to sociodemographic factors in rural communities in Nigeria. AVERT (2014) observed that education is critical in preventing the spread of the disease, particularly in rural areas of developing countries such as Nigeria. Knowledge equips people on the strategies to prevent infection by the virus. However, in Nigeria, most health education initiatives have been limited to cities because of cultural sensitivities in rural areas (Nwachukwu, Egenege, Nwachukwu, & Blinkhorn, 2008). Cultural sensitivities have so much impact because of lack of, or limited health education.

Literature searches on studies done on HIV/AIDS in Nigeria and other developing nations have revealed significant gaps in knowledge, an indication that little progress has been made in defining the factors that have hindered health education as it relates to HIV/AIDS awareness, prevention and treatment in rural areas (Adam & Awunor, 2014). However, researchers have demonstrated that the main driver of HIV

infections, transmissions, and subsequent death is the lack of knowledge on prevention and treatment of the disease.

I addressed the problem from a regional perspective, examining the relationship between some sociodemographic factors and HIV/AIDS infections in two rural communities of Abia State in southeastern Nigeria. I used mixed methods in investigating the relationship between sociodemographic factors such as health education, access to health care and the effect of community leaders and the rates of infection and mortality related to HIV/AIDS in these communities. It is anticipated that the results will assist community leaders in designing guidelines that will not only initiate educational programs on HIV/AIDS, but also empower community members to engender positive social change.

Purpose of the Study

The purpose of the study was to determine whether or not a relationship exists between sociodemographic factors (access to health, health educational and community leaders) and prevention /treatment of HIV/AIDS in two rural communities of southeastern Nigeria based on research conducted during 2016. A convergent mixed method approach was used, whereby quantitative and qualitative data were concurrently collected, analyzed separately, and then reintegrated during interpretation. I used the health believe model (HBM) and diffusion of innovation (DOI) theory as theoretical bases to explore whether or not there is a relationship between the key sociodemographic variables among residents of two rural communities.

A quantitative design uses numerical and statistical data analyses to study a sample of the population of interest (Creswell, 2009), while the qualitative approach gives insight into the participants' perception on access to healthcare, health education and the influence/effect of community leaders. The databases collected during the quantitative and qualitative designs are compared and converged adding insights and understanding that might be missed when only a single method is used (University of Alabama, nd), and to ensure well validated as well as substantiated findings (Creswell, 2009), thus obtaining a more complete understanding of the research problem (Creswell, 2014).

It was anticipated that the results would assist in improving the health of community members and residents of Abia State in general. Through the knowledge that they acquire, members of the communities will be able to positively change their health behaviors and be more empowered concerning their rights to health care. The results also have the potential to assist policy makers in formulating laws and regulations directed towards achieving social change, which will in turn improve the health status of the communities.

Research Questions

I used a mixed method and thus had quantitative and qualitative research components. The two major questions include:

RQ1: Quantitative – To what extent are the sociodemographic factors level of education, public health services and influence of community leaders

associated with HIV/AIDs awareness in two rural communities in Southern Nigeria?

RQ2: Qualitative - What is the relationship between the level of Community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities?

Theoretical Framework

Two theories were adopted to form the theoretical framework for this inquiry: The Health Belief Model (HBM) and Diffusion of Innovation (DOI) theory. HBM was developed in 1950s (Glanz, Rimer, & Viswanath, 2008; Last, 2007) as a means to explain why people do not participate in programs meant to keep them healthy. It has become the most commonly used approach in health education and health promotion (Hayden, 2014; Tarkang & Zotor, 2015). HBM has seven constructs, namely perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy, and its overall premise is that "knowledge will bring change" (Shiavo, 2014, p.41). Rogers (1962, 1983, 1995) developed the DOI concept to address "how new ideas, concepts, or practices" can proliferate within or between communities or societies (Shiavo, 2014, p.36). DOI is comprised of five subgroups, classified as innovators, early adopters, early majority, late majority, and laggards. The principle behind this notion is that change occurs over time, and is reliant on awareness, knowledge and interest, decision, trial and the ultimate approval or refusal of the behavior (Shiavo, 2014). Chapter 2 contains further details of these theoretical frameworks.

Nature of the Study

A mixed methods approach was used to investigate if there is a relationship between sociodemographic factors (health education, access to healthcare and effect of community leaders) and HIV/AIDS in two rural areas in Abia State, Nigeria. This investigation has the potential to proceed as a longitudinal study; but, limited resources and time limit hindered its feasibility for long term analysis. A convergent parallel design was used for the collection and analysis of complementary data. The sociodemographic factors are defined as independent variables, while the dependent variable is HIV/AIDS prevention and treatment. The focus of the study is on health education/literacy of the populace in the service of prevention and treatment of HIV/AIDS.

The sample population was derived from members of the two rural communities in Abia State, Nigeria. 136 people are expected to be surveyed through questionnaires, while 12 were interviewed, including six AIDS patients, two community leaders, two health providers, and two respondents who did not belong to any of these groups. The goal was to obtain information from all groups. It is important to note that the six people with AIDS were interviewed separately to ensure a more relaxed environment for sharing personal information.

Definitions

AVERT: Averting Aids & HIV-AIDS Education & Research Trust is a UK charity launched in 1995, which has become one of the world's foremost on-line providers of HIV/AIDS information.

Community leaders: Those individuals who represent their communities and take responsibility for the wellbeing and improvement of their communities. Community leaders are agents of social change as well as guardians of traditions.

Convergent parallel mixed design: A mixed methods research approach in which qualitative and quantitative data are collected at the same time, analyzed separately, and the results are mixed during interpretation of the data (Creswell & Plano Clark, 2011).

Epidemic: An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area (WHO, 2016).

Eze: a word meaning *king* in the Igbo language of eastern Nigeria, which continues to be used as a title among traditional rulers in that region.

Health education: Defined by WHO (2016) as "any combination of learning experiences designed to help individuals and communities improve their health by increasing their knowledge or influencing their attitude" (p.1)

Health literacy: "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions". (U S Department of Health and Human Services, 2005, p.11-12).

HIV/AIDS: HIV is human immunodeficiency virus, a retrovirus that infects cells of immune system. Acquired immunodeficiency syndrome is the advanced stage of HIV. It generally takes 10-15 years for HIV to progress to AIDS; however, antiretroviral drugs can slow the progress (WHO, 2015).

Mixed methods approach: "An emergent methodology of research that advances the systematic integration or 'mixing' of quantitative and qualitative data within a single investigation or sustained program of inquiry" (Wisdom & Creswell, 2013, p.1).

NACA: The National Agency for the Control of AIDS (formerly known as the National Action Committee on AIDS) was established by the Nigerian government in 2000 to coordinate the various actions on HIV/AIDS in that country (NACA, 2015).

Risky sexual behavior: Behaviors that expose one to contracting sexually transmitted diseases and /or unwanted pregnancy, for example, unprotected sex(WHO, 2016).

Sociodemographic: A combination of social (e.g., family, wealth, life-style, religion) and demographic (e.g., age, gender, place of religion, educational status) factors.

Assumptions

Assumptions are integral part of research, so basic that "without them the research problem itself could not exist" (Leedey & Ormrod, 2010, p 62). The following assumptions informed me:

1. Participants will be open, truthful, and accurate in their responses. To ensure a high level of openness, truthfulness and accuracy, participants are assured of the confidentiality of any information they provide.
2. The instrument has validity and will measure accurately what it is supposed to measure. An instrument developed and tested by Center for AIDS Prevention Studies at the University of California at San Francisco (UCSF, 2012) was used to ensure a high level of validity and accuracy.

3. The sample represents the study population.
4. Developing a positive relationship with the participants will encourage them to provide accurate and rich information during the interviews.

Scope and Delimitations

The aim of the investigation was to determine what, if any relationship exists between sociodemographic factors (access to health, health education and community leaders) and the prevention /treatment of HIV/AIDS in two rural communities of Southeastern Nigeria. With the assistance of local health care providers, the questionnaire will be distributed only to those with HIV/AIDS. A purposeful sample for the interview was determined among those from the two communities who are afflicted with HIV/AIDS, whether or not the individuals are in treatment. Two community leaders and two health care providers were interviewed.

The delimitations included:

1. The decision to investigate the relationship between some sociodemographic factors and HIV/AIDS is based on interactions with individuals from the communities of interest, who demonstrated limited knowledge of HIV/AIDS causes and treatment when questioned about HIV/AIDS during the needs acquisition process.
2. I speak the language of the communities of interest; most of the interactions were expressed in the local language, including the provision of explanations and discussion of any concerns. However, being able to speak the language of the population did not guarantee that the

participants would be 100% honest in the questionnaires or in the interviews.

3. The participants were adults between the ages of 20 and 60 years of age to ensure that participants can effectively contribute to answering the research questions.
4. For purposes of manageability and because of time limits, only two communities are included in this investigation.
5. The choice of a mixed methods approach is labor intensive, but it aims to empower study participants' voices in a manner that ensures that study findings are "grounded in participant's experiences" (Wisdom & Creswell, 2013, p. 3).

Limitations

The major strength of a qualitative community-based study lies in its approach to local situations, conditions and stakeholders' desires, especially as they relate to providing a fuller understanding and description of people's personal experiences of a phenomenon. However, the validity of the results faces possible threats and bias. I minimized some of these probabilities. Extraneous variables that are beyond my control include participants' personal honesty, personal bias, and sensitivity to social stigmas, which are all factors that could lead to the withholding or embroidery of information by participants. To curtail this, I needed to be as open as possible to the participants.

Instrumentation items are another potential source of limitation, though this issue can be avoided by ensuring clearly written (in simple language) items and providing

opportunities for the clarification of concerns or ambiguities. Attrition and mortality could result from a participant's failure to return questionnaires, as well as incomplete or missing answers, and some participants may choose to withdraw from the study before its completion. These complications were minimized by face-to-face completion of questionnaires, whereby an investigator personally hands the questionnaires to participants and collects them thereafter. This procedure also enabled me to be available to answer participants' questions and clarify their concerns on the spot.

Another potential limitation was the inability to generalize findings to other communities, populations, or settings, as they may prove unique to the comparatively few people included in the study. There was also the possibility of the study results being influenced by my personal biases and idiosyncrasies (University of South Alabama, nd).

Significance of the Study

I addressed major factors that may have hindered some members of rural Sub-Saharan African communities from being educated about the prevention and treatment of HIV/AIDS. It has long been known that most health initiatives are held in the cities because of the higher cultural sensitivities that often hinder their reception in rural areas (Nwachkwu, Egenege, Nwachukwu, & Blinkhorn, 2008). Yet, the increase in the rate of HIV/AIDS is highest in rural areas where lack of public health education, access to healthcare and reduced resources have hindered improvements in health status (Nwachukwu et al., 2008). I aimed to increase the community's knowledge and understanding of HIV/AIDS, including their causes, preventive measures and treatment.

The knowledge is expected to bring about changes in lifestyle and behaviors leading to social changes.

The study has the potential to encourage health education in these rural areas thus increasing efforts to reduce health inequalities between rural residents and those living in the cities. Although one may argue for the greater effectiveness and reach of other health educational tools, such as television and the Internet, these are considered luxury commodities in Nigeria, accessible only to the relatively wealthy. This study, being community-based, will promote unity in the communities, as well as empower community members towards designing other activities to improve their own health status.

There are three levels (individual, community and societal) to the positive social change implications of this study. Individually, the knowledge of HIV/AIDS transmission, preventive measures and self -efficacy acquired, will affect and sustain the change in risky behavior. Knowledge of HIV/AIDS risky behaviors will also increase individual perception of susceptibility, perceived cost of care, as well as benefits of not getting infected.

On the community level, the study will be presented to community members as designed, according to their needs. The results will be viewed as accurate and sensitive to their needs, thereby increasing the potential of implementing recommendations, resulting in social change. The community could be empowered through being educated to know and assert their rights in "formulating concrete demands for access to services, and non-discrimination on the basis of HIV and other social status" (Barr, Amon, & Clayton,

2011, p.400). The findings will also be used to plan and organize health initiatives that are both culturally appropriate which will in turn empower the communities towards social change.

On the societal level, the social changes include the possibility that data generated from the study, when presented to the Local Government Area Policy and lawmakers, as well as the State Ministry of Health, which may be used as an evidence-base, in the enacting of laws and ordinances that will affect the health behaviors of community members. The policies could help in facilitating and developing health centers (which will include public health units), thereby improving the health of the communities and facilitating behavior changes. The policy changes could also affect societal changes in attitude and behaviors that support and promote healthy practices. From this study, HIV/AIDS could be viewed as a priority health issue leading to initiatives in stopping the spread within the communities.

The results of the study will be published in research journals, adding to the existing body of knowledge in this area of study. Because the research is heuristic in nature, the resulting data may also form a basis for further investigations concerning this issue.

Summary

Government efforts to control or stop the spread of HIV/AIDS have been well documented; yet, Nigeria is the country with the second highest prevalence of the disease, with only a slow prevalence decline from 4.1% in 2010 to 4.0% in 2013 (Okonofua, 2013). The prevalence of the virus varies by region and state, with Abia State

ranked eighth in Nigeria with a prevalence of 7.3% (NACA, 2015). Rural areas of the state bear the heaviest burden of the epidemic, a state of affairs that has been attributed to low health literacy, poor access to health care, gender issues and poverty, stigma and discrimination, among other issues (NACA, 2015). Various studies have been conducted on HIV/AIDS in Nigeria; but, information on the factors preventing its control in rural areas remains limited. Controlling this epidemic can only be achieved if rural dwellers are efficiently and effectively educated. The aim of this investigation was to determine whether or not a relationship exists between the sociodemographic factors (access to health, health educational and community leaders) and prevention/treatment of HIV/AIDS in two rural communities of Southeastern Nigeria.

In this chapter, I presented the introduction, background, problem statement and purpose of the investigation, as well as elucidating the research questions and describing the theoretical framework. Also addressed were the nature of the study, definitions of relevant terms, my preliminary assumptions, and the scope of research, including its delimitations and limitations, and chapter review related literatures concerning HIV/AIDS. In Chapter 3, I will outline the methodology and data collection process, while in Chapters 4 and 5, I will present and discuss the analysis and its findings, while also proposing recommendations. It is expected that the results of the investigation will not only effect social changes within the communities of interest, but within Abia State in general.

Chapter 2: Literature Review

Introduction

HIV/AIDS has continued to wreak havoc on the population of the world. "HIV/AIDS epidemic remains one of the most challenging of all infectious disease of poverty in the absence of cure" (Erinosho, Joseph, Isiugo-Abanihe, & Dike, 2012, p. 113). In Sub-Saharan nations like Nigeria, the severity of the problem is beyond imagination. HIV/AIDS is "first and foremost a personal security issue, threatening the lives, health, family structure and the well-being of individuals and entire communities" (Adesina, 2014, p. 234). With the prevalence rate, as high as 4.6%, people still practice risky sexual behaviors, regardless of preventive alternatives available to them (Erinosho, Joseph, Isiugo-Abanihe, Dike, & Aderinto, 2013). In Nigeria, most health education efforts are carried out in the cities. Nwachukwu, Egenege, Nwachukwu, and Blinkhorn (2008) noted the absence of educational initiatives in the rural areas were related to lack of necessary infrastructures, such as access roads and electricity. Nwachukwu et al. also observed that cultural sensitivities such as poor or no sex education, low health literacy status and cultural milieu of male dominance, were contributory. Limited education made cultural sensitivities (cultural beliefs and norms) to have an immense impact on HIV/AIDS prevention.

Literature searches on HIV/AIDS studies performed on Nigeria and other developing nations, revealed gaps that indicated that limited measures were adopted to define the sociodemographic factors that have hindered HIV/AIDS awareness, prevention, and treatment in the rural areas. The major sociodemographic factors

considered in this investigation included the level of health education, the effects of the presence or absence of primary health centers (with public health units) and community leadership (official and unofficial). I used mixed methods to investigate the relationship between these sociodemographic factors in two communities in Southeastern state of Nigeria, together with the rate of HIV/AIDS infections and mortality. “HIV/AIDS epidemic remains one of the most challenging of all infectious disease of poverty in the absence of cure” (Erinosho et al., 2012, p.113). HIV/AIDS has continued to wreak havoc on the population of the world. In Nigeria, most health education efforts are carried out in the cities. Nwachukwu et al. (2008) noted the absence of educational initiatives in the rural areas were related to lack of necessary infrastructures, such as access roads and electricity. Nwachukwu et al. also observed that cultural sensitivities such as poor or no sex education, low health literacy status, and cultural milieu of male dominance, were contributory. Limited education made cultural sensitivities (cultural beliefs and norms) to have an immense impact on HIV/AIDS prevention. Literature searches on HIV/AIDS studies performed on Nigeria and other developing nations, revealed gaps that indicated that limited measures were adopted to define the sociodemographic factors that have hindered HIV/AIDS awareness, prevention, and treatment in the rural areas.

The major socio-demographic factors to be considered in this investigation include the level of health education, the effects of the presence or absence of primary health centers (with public health units) and community leadership (official and unofficial). I used mixed methods to investigate the relationship between these

sociodemographic factors in two communities in Southeastern state of Nigeria, together with the rate of HIV/AIDS infections and mortality.

Purpose of the Study

The purpose of the study was to determine whether or not a relationship exists between the socio-demographic factors and prevention /maintenance of HIV/AIDS in the two rural communities in Southeastern Nigeria. Mixed method design is the study method of choice. Although mixed method design is time consuming and costly, the benefits make it an appropriate choice. Triangulation provides for more comprehensive data and confirmation of findings, increases validity, as well as understanding of the phenomena (Bekhet & Zauszniewski, 2012)

In this chapter, I seek to assess the relationship, if any, between HIV/AIDS and some sociodemographic factors, namely access to health care, health education as well as community leaders in the two selected rural areas of Southeastern Nigeria. How the sociodemographic factors impact the two communities of interest in their knowledge, prevention and treatment of HIV/AIDS will also be discussed. I also examined the applicability of the HBM, which is the commonly used theory in health education and health promotion. I also explored the DOI, which is a social science theory developed by Rogers in 1962 (Schiavo, 2014). Both theories were used as theoretical frameworks, in predicting the roles of perceived risk and self-efficacy, as well as the adoption of innovation, in behavior change.

In this chapter, I will also highlight the gaps in the existing literature and defend the necessity of this study. The gaps indicated that limited measures were adopted to

define the sociodemographic factors that hindered HIV/AIDS awareness, prevention, and treatment in the rural areas. The roles of education, health care units (especially public health units) and community leaders in preventing and managing HIV/AIDS in the communities will be discussed.

Literature Search Strategies

This review of the literature was conducted using peer reviewed literature and textbooks, as well as other publications that were relevant to the research topic. Related publications and studies were also identified using computer searches of databases like, EBSCO through Walden Library, using combination of keywords such as *HIV/AIDS in Sub-Saharan nations, HIV/AIDS in Nigeria, global statistics of HIV/AIDS*, and *education and HIV/AIDS*. Other keywords in the search included the *role of public health units in HIV/AIDS, Health Belief Model and HIV/AIDS, health communication,* and *Diffusion of Innovation*. Efforts were made to limit the searches between 2010 and 2015.

This literature review is organized into sections. The first section presents a general overview of HIV/AIDS in Sub-Saharan nations and Nigeria, in particular. The second section discusses the role of education, public health units and community leadership in the health status of the populace, with emphasis on the community level. The HBM constructs and DOI are used as the theoretical framework that support the investigation. The last section serves as the summary of the literature review.

HIV/AIDS in Sub-Saharan Nations

HIV/AIDS is a public health problem that dangerously affects both developed and developing countries. The HIV/AIDS pandemic led to sociodemographic challenges in

most nations of the world. This lethal disease has facilitated the recurrence of diseases and conditions like pulmonary tuberculosis. These diseases are not only causing physical and emotional damage, but also upsetting the quality of life of millions of people, all over the world (Bello & Bello, 2013), especially in developing nations where health education and technology are limited.

According to AVERT (2014), 70% of all individuals living with HIV in the world were in Sub-Saharan nations. AVERT also noted that Sub-Saharan countries had the most serious epidemic diseases in the world, with 25 million people living with HIV. Within that populace, 1.6 million new infections and 1.2 million AIDS-related deaths were recorded in 2012. The prevalence of HIV/AIDS, however, varies between regions. Swaziland had the highest rate (in sub-Saharan and in the world), where 26.5% of the population was living with AIDS, while Senegal, in West Africa, on the other hand, had the lowest rate of, 0.5% (AVERT, 2014). With the increase in the provision of antiretroviral drugs, there has been an improvement in both the survival rate and the quality of life in these areas together with a reduction in the number of new infections (Hontelez et al., 2012). Though far from achieving the intended universal coverage, ART has led to a substantial reduction in mortality and morbidity within the Sub-Saharan nations. Many challenges, including limited access to second-line ART regimen, infrastructures and finances have limited universal coverage in these countries. Other significant challenges to long term program include, coinfections and comorbidities of HIV, such as tuberculosis and cancer, as well as lack of, or inadequate ART (Egger et al., 2012).

Review of HIV/AIDS in Nigeria

Based upon the reports from World Health Organization and other research studies, Nigeria has the second highest number of HIV-infected individuals in the world, and the number is still rising at current rate of 4.6% more than doubling the 1986 rate of 1.8% (Erinosho, Joseph, Isiugo-Abanihe, Dike, & Aderino, 2013). Erinosho et al. (2013) concluded that 2.95 million Nigerians were living with AIDS, and that 280,000 AIDS-related deaths occur annually, resulting in approximately 2.3 million orphans due to the disease. Reports claimed that 380,000 new infections occur annually, and 56,000 infants are infected in utero (AVERT, 2014). HIV/AIDS remains a thought-provoking epidemic in Nigeria, necessitating the full commitment and collaboration of national public health unit, philanthropists, scientists, communities, and individuals to work together towards eradication of this deadly disease.

Although some studies have been done in Nigeria using both quantitative and qualitative methods on behaviors and the spread of the disease, there has not yet been appreciable and effective strategies to affect decline in the prevalence or mortality rate (Erinosho et al., 2013). Access to ART is still very limited in Nigeria. According to UNAIDS GAP Report (2014), only two out of 10 people living with HIV/AIDS have access to treatment in Nigeria, resulting in 19% of AIDS related deaths. The numbers showed that there has been little or no decline in AIDS-related deaths in Nigeria in 2014. The increase could be due to the fact that individuals are unfamiliar with the risks and management of the disease, unaware of their own HIV status and/or unsure how to find out whether or not they have the disease.

However, the main reason behind the increase in the number of new infections can be attributed to limited or lack of health education. Educating the populace in the language and terms they will understand, designing the teaching using constructs of the HBM is beneficial in reducing the rate of infections. This will be explained further, later in the text. With education, people are better able to perceive their risks for an illness (HIV/AIDS) and are then likely to alter their behaviors so that diseases can be prevented (Oono, Ong, Shahaduz, & Pearce, 2015)

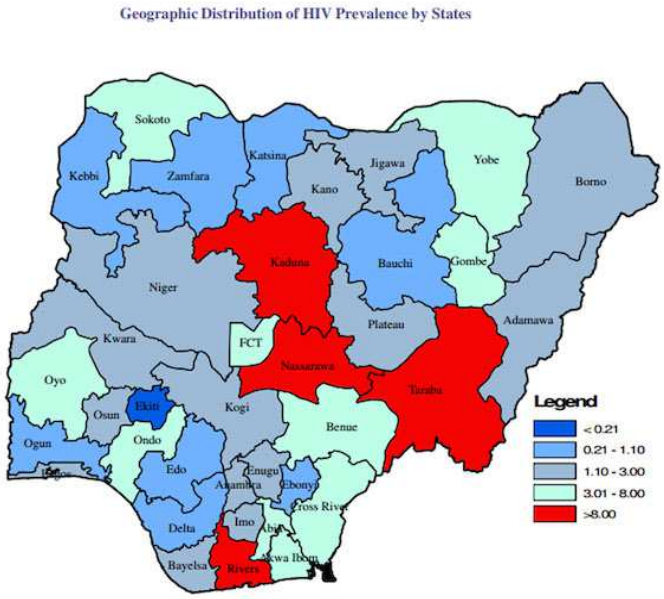

Figure 1. Google map (n.d). Nigeria. Retrieved from https://www.google.com/search?q=HIV/AIDS+IN+NIGERIA&espv=2&biw=1366&bih=623&source=lnms&tbm=isch&sa=X&ved=0CAcQ_AUoAmoVChMIkNL5_v_ixwIVARo-Ch3x8w_z#imgrc=m2me2GEtfzIarM%3A

HIV/AIDS in Abia State

Abia is a state in southeast Nigeria. Its capital is Umuahia, though the most commercial city of the state is Aba. Abia is currently witnessing a persistent rise in HIV and is the eighth state in Nigeria with high rate of HIV and a prevalence rate of 7.3% (NACA, 2012; Onyeonoro et al., 2014). There is a higher prevalence in rural areas (7.7%), while urban areas have a rate of 3.0 % (NACA, 2012; Onyeonoro et al., 2014,). Misconception about the disease and its spread still exists. The most at risk individuals like sex workers, disregard the threat, and consequently practice risky behaviors like unprotected sex (Odoemelam & Nwachukwu, 2013). There are little or no treatment or even care services within rural areas. Patients who can afford both the transportation and treatment, only travel to the cities of Aba or Umuahia to access care and treatment services (Obi et al., 2010).

According to Obi et al. (2010), the increase in HIV/AIDS has also been attributed to poverty, ignorance, and other variables associated with these two factors There are many other influences involved. Adisa, Onyeonoro, Agu, Eleweke, and Chisara (2010) reported that the attitudes of health care workers in two cities of Abia, indicated that a lack of considerable knowledge by health care providers, also contributes to the problem. Observing the attitudes of healthcare workers, they found that some health care workers were uninformed about protecting themselves and the people they care for. By increasing their knowledge base, this would improve HIV services and result in a reduction of new infections.

There are many aspects of rural life that pose unique challenges to the members of the community. These include, lack of health education, limited access to health care, and financial distress. Patients who can afford both transportation and treatment, can only travel to the cities of Aba or Umuahia (the capital) in order to access the necessary care and treatment services (Obi et al., 2010). Challenges that affect visitors, such as health care educators, in their efforts to mobilize the communities include, lack of infrastructures and lack of access roads. These are major problems that should not be ignored in the areas in question.

Figure 2. Google maps Abia State. Retieved from https://www.google.com/search?q=abia+state+of+nigeria&espv=2&biw=1366&bih=667&source=lnms&tbm=isch&sa=X&sqi=2&ved=0ahUKEwjT48qImsbJAhXI6yYKHW35CXwQ_AUIBygC#imgrc=QmxXB_lvjbNgtM%3A

Odoemelam and Nwachukwu (2013) observed that the reality behind the HIV/AIDS epidemic in rural communities is created by socioeconomic constraints which require appropriate messages blended with empowerment strategies. Their observation supports the need for this investigation, which is based on empowering rural communities into taking actions towards social changes that would improve their health status.

Theoretical Perspective

Most programs and HIV/AIDS initiatives are based on theoretical underpinnings, especially with the modern concept of evidence-based practices. Two theories are adopted to form the theoretical framework for this inquiry. The theories are, the HBM and DOI theory.

Health Belief Model

This is a social, behavioral model that was developed for a logical positivist paradigm of science by Hochbaun, Rosenstalk, and Kegels in the 1950s, and was created in response to the failure of some individuals to accept a free tuberculosis health-screening program (University of Twente, 2012). Hochbaun et al. studied what motivated some individual to accept the service and why others did not take advantage of the free screening (University of Twente, 2012). Since then, HBM has been commonly used, among other theories, as theoretical framework for health behavior research and as a guiding framework for health behavior interventions (Glanz, Rimer, & Viswanath, 2008, p. 45; National Cancer Institute, 2005; Tarkang & Zotor, 2015). The assumption of HBM is that people engage in healthy behavior only when they are aware of the risks or severity of the disease involved; perceive that the benefits of behavior change outweigh

the hassles of treatment prevention potential or other negative aspects (Shiavo, 2014). Others include the social events as cues to action as well as individual's confidence in his/her ability to perform the required actions (Shiavo, 2014). HBM provides standardized assessment data about the ability and motivation for one to change his or her health practices (Tarkang & Zotor, 2015).

HBM has seven constructs. The first four are perceived seriousness (the fear of the consequences of the disease), perceived susceptibility (fear of the possibility of getting infected) perceived benefits(efficacy of the advice), and perceived barriers relating to the costs of the actions (Tarkang & Zotor 2015), recently, cues to action (events to motivate action) and self-efficacy (one's ability to respond) were adopted from the work of Bandura and added to the original constructs (Tarkang & Zotor, 2015). HBM is realistic in recognizing that the need to change health behavior may not be enough to cause change on an individual level (Boskey, 2014). The addition of two elements, cues to action and self-efficacy are what will lead the individual to leap to action (Boskey, 2014) A cue to action is an event, like, an educational or awareness program that will prompt a desire to change. A cue to action is usually the catalyst that leads to decision-making (Tarkang & Zotor, 2015). Self-efficacy looks at a person's belief that he or she can positively make the desired change. HBM is one of the earliest theories on health behavior to explain the change process (Tarkang & Zotor, 2015). In addition to being a popular theory in health education and health promotion (Tarkang & Zotor, 2015), it has inspired the field of health education (Shiavo, 2014).

Looking at the area of interest as well as the population, application of the principles of the HBM is appropriate. Tarkang and Zotor (2015) noted, "HBM provides an organized assessment data about clients' abilities and motivation to change their health status" (p. 1). The relationship between HBM constructs helps to explain some socio-demographic factors that not only influence health perceptions, but also lead to limited HIV/AIDS knowledge, within the communities of interest. HBM also explains and predicts health behaviors (Tarkang & Zotor, 2015)

HBM has been used in many studies. In a cross-sectional study, in which 180 female students from three schools completed a survey based on HBM. Baghianimoghaddam, Forghani, Zolghadr, Rahaii, and Khani (2010) found that students were more likely to disregard disease preventive actions when they did not perceive the severity of HIV/AIDS or their susceptibility to the disease. Oyekale and Oyekale (2010) used HBM to analyze factors affecting the conduct of HIV test and changing risky behavior among single youths. Oyekale and Oyekale used data from 92,516 people who completed the health section of a survey conducted by National Living Standard Survey (NLSS) that covered different aspects of household activities, for the analysis. They observed that probability of changing risky behavior and getting tested for HIV increased with access to information on HIV.

Diffusion of Innovation

DOI is one of the oldest social science theories. DOI was developed by Roger in 1962 (University of Boston, 2013). It is a model that explains how an innovation or practice spreads through a social system or community (Shiavo, 2014). However, the rate

of the adoption of the innovation depends on the characteristics of the innovation. These characteristics include the communication channel, the relationship within the social system, and time (Gainforth, Latimer-Cheung, Athanasopoulos, Moore, & Ginis, 2014). Schiavo (2014) noted that the principle of DOI is that, change occurs over time and depends on receptiveness, knowledge, interest, choice, trial implementation, as well as approval or rejection of the behavior. However, communication strategies play a crucial role in whether members of a community accept or reject an innovation. Effective health communication is therefore the key to the success of the behavior change. The communication strategies that are required are those that enable community members to receive information about the behavior change.

Communication works better where influential community leaders are involved (Kansas University, 2016). It is imperative that the information on health behavior change is tailored, not only to the needs of the communities but also culturally adapted and acceptable to the local communities. However, not all the members of the communities adopt the innovation at the same time. Rogers (2007) established five categories to discuss adoption stages; innovators, early adopters, late adopters, late majority and laggards.

DOI has been used in different studies. Zhang et al. (2015) applied DOI to understand the factors impacting patient acceptance and the use of consumer e-health innovations. Zhang et al. observed that factors that prevented the adoption of e-health innovations were in accordance with Rogers's four determinants of successful

innovations, “communication channels, the attributes of the innovation, the characteristics of the adopters, and the social system” (p. 3).

Constructs

Health Education and HIV/AIDS

> Education contributes to health and prosperity by equipping people with knowledge and skills for problem solving and helps provide a sense of control and mastery over life circumstances. It increases opportunities for job and income security, and job satisfaction. And it improves people's ability to access and understand information to help keep them healthy. (Public Health Agency of Canada, 2013)

The World Health Organization (2016) defined health education as “any combination of learning experiences, designed to help individual and communities improve their health, by increasing their knowledge or influencing their attitudes” (p.1). The need for health education is not just to educate; it also involves ensuring that the topic is learned and practiced by participants. Health education empowers individuals as well as communities to influence their health behavior, to improve their living and working conditions and to change their health status (Kent University, 2015).

Scholars and medical professionals have increasingly observed the important role of health education in attenuating the spread of HIV/AIDS. Aggleton, Yankah, and Crewe (2011) identified education as the key to reducing HIV-related risk and vulnerability, as well as mitigating the spread of HIV/AIDS on both individuals and community level. Aggleton et al. observed that the outcomes are not always predictable

because the prevention of HIV is a complicated process. They went further to conclude that education has an important role to play in each stage (primary, secondary and tertiary) of HIV/AIDS prevention because it can equip individuals with knowledge on how to prevent infection by changing their attitudes and risky behavior.

In Nigeria, the number of already infected individuals and the rate of new infections are still high in comparison to other nations of the worlds. This is partly due to the fact that teaching about HIV/AIDS (sex education), in local schools, communities, especially to the youth is regarded as a taboo (Aggleton et al., 2011). Even open discussion of sex is considered an act of irresponsibility that indicates promiscuity (Aggleton et al., 2011). The stigma attached to HIV/AIDS is so that schoolteachers and health providers are afraid to discuss sex education out of fear of being stigmatized by the community (Aggleton et al., 2011). Aggleton et al. (2011) contended that the spread of HIV/AIDS can be attenuated not only by highlighting the effects of the disease, but also by educating community members on how it is transmitted, in other words, education becomes a defensive or protective mechanism, coupled with treatment modalities to those already infected with the disease.

Education can play a part in reducing the elements of discrimination and shame, by pointing out various fallacies or misinformation. Shame and fear of discrimination inhibit many individuals from seeking access to voluntary counseling and testing (Okonofua, 2015). Health education, in form of prevention, treatment, and positive responses can potentially slow and even stop the spread of the disease. However, due to

the lack of health education, especially in the rural communities, HIV/AIDS rates continue to rise in rural Nigerian communities.

Certain contextual factors such as cultural and religious beliefs, unsupportive environments in schools and ministries of education, as well as the strong stigma attached to HIV/AIDS, have caused teachers to fear learning or teaching about the disease (Aggleton et al., 2011). Notwithstanding, AVERT (2014) contended that "schools play a major role in shaping the attitudes, opinions and behavior of young people, and so are ideal environments for teaching the social, with the biological aspects of HIV and AIDS" (p.2). This quote highlights both the physical and psychological aspects of HIV/AIDS education and underscores the necessity for educators and teaching personnel to actively participate in the delivery of HIV/AIDS education before children become infected with the disease. As already mentioned, Nwachukwu et al. (2008) created a progress report on community-based HIV/AIDS health education programs in rural Nigeria. This report provided information to determine that cultural sensitivities inhibit the expansion of HIV/AIDS health education programs. Cultural sensitivities are dogmatic beliefs, practices and values that lead individuals to disregard health implications and education initiatives.

Cultural knowledge is a prerequisite to increasing participation in health education initiatives. Naturally, cultural knowledge enables service providers to also become aware of other needs of community members, in relation to other diseases like, syphilis and tuberculosis. The teaching style are formulated into culturally-familiar modules and are created in the local language. Different versions of the same message are

presented in order to avoid saturation and fatigue from one style. Social science researchers' understandings of culturally sensitive perspectives and locally situated notions of culture are used to formulate teaching modules to tackle most practices, like unhealthy eating and environmental factors that affect health behaviors (Aronowitz, Deener, Keene, Schnittker, & Tach, 2015).

Ofotokun et al. (2010) studied three rural villages (Mianakawa, Gaya South, and Kutama) in Nigeria and found that a low baseline HIV/AIDS knowledge indicated that there is need for awareness programs, tailored to the requirements of the rural communities. Ofotokun et al. modified the existing educational curriculum and material on HIV, to teach members of Miamakawa, Gaya South, and Kutama communities, "practical risk reduction approaches, as well as local myths and misinformation that fuel the stigmatization of people living with HIV" (p.2). They simplified the learning process by discussing the issues using short stories, proverbs, dramas and folksongs in the local language. The results showed that culturally adapted modules, small group learnings and use of the local language are cost-effective ways of improving HIV/AIDS awareness and knowledge in rural areas, especially in Nigeria. Ofotokun et al. argued that people who were originally, not considered at risk, and should also be made aware of all aspects of the HIV/AIDS disease. AVERT (2014) maintained that people who already have the disease should be taught ways to prevent spreading the disease to others.

It is important that such education is provided in different locations to ensure its outreach and effectiveness. By widening its outreach, both those who are deemed to be at less risk and those considered to be high-risk can become equally aware of the dangers

and responsibilities when faced with this disease. Ofotokun et al. (2010) indicated that schools should be a primary focus for AIDS education service providers, as children are considered to be at high-risk for developing the disease. This is a preventative measure and the goal is to educate children before they become infected with the disease, particularly before they begin to engage in sexual activities.

Another significant aspect of health literacy is voluntary counseling and testing (VCT). VCT is a counseling session that offers an individual the opportunity to make an informed choice about getting tested or not (Azugo, Ogbonnaya, & Alo, 2011; Fikadie, Bedimo, & Alamrew, 2014). The session also educates the individual on how to practice healthy sexual behaviors to prevent infection, and how to improve his or her quality of life if found positive for HIV. It is imperative that individuals and groups be educated on the need to get tested. However, getting people to accept the need for VCT remains a major challenge, especially vulnerable groups in Sub-Saharan rural communities (Azugo et al., 2011). As with HIV/AIDS healthcare access, barriers include stigma, fear of receiving a HIV-positive result, lack of confidentiality, long distance travel to VCT centers and long delays of HIV test results (Azugo et al., 2011).

Mbamara, Obiechina, and Akabuike (2012) conducted a study in Anambra state in Southeast Nigeria and utilized a primary research methodology in which questionnaires were used to ascertain facts and information from law undergraduates. Their study was conducted to determine how the participants will react to VCT. Mbamara et al. discovered that the majority of respondents were aware of VCT via Christian organizations, electronic media, and printed media. However, they found that despite

their educational status, around twenty-eight percent of the subjects neither knew of VCT, nor did they have knowledge or skills to protect themselves. Their research study returned comparable overall findings to that of Yahaya, Jimoh, and Balogun (2010) who did similar fieldwork in Kwara State, Nigeria. Mbamara et al. similarly concluded that VCT enables a dual benefit to both those who are found to have the disease and those who are free of it. They argued that counseling and testing for HIV/AIDS removes anxiety while simultaneously establishing awareness of the risks of irresponsible sexual behavior. This, in turn, facilitates changes in sexual behavior. For those already infected with the disease, early diagnosis via VCT allows them access to health care and support, including, "access to antiretroviral (ARV) drug therapy" (p. 291). The authors agreed that early intervention via VCT helps to prevent the onset of stigma and discrimination.

Chimoyi et al. (2015) noted that the factors that influence individuals to VCT include sociodemographic characteristics, nearness to a health facility, HIV-related awareness, and prevention. Other factors include the perception of being at risk for infection; the perceived benefits of VCT, psychosocial factors such as HIV/AIDS-related stigma; discrimination, and concerns about confidentiality. In other words, they are the same factors that inhibit people from willingly engaging in preventive behaviors.

Another factor previously discussed, is that HIV/AIDS is not limited to those who are sexually irresponsible. Access to drugs, especially the injectable is an important factor. Exchange of injection needles increases risk and exposure to the disease. Mbamara et al. (2012) found that other forms of exposure to contaminated needles, such as tattoo needles can also increase risk of the disease. These varying risk factors suggest

that VCT is a critical means to prevent HIV/AIDS for all of society, regardless of sexual activities or preferences. The primary objective of VCT is prevention, which creates positive change in awareness, attitude, and behavior (Nwachukwu, 2012). Nwachukwu (2012) also noted that such changes allow for the improvement of "social, psychological, and economic perspectives" (p. 111).

Access to Health Care

Public Health Agency of Canada (2013) noted "Health services, particularly those designed to maintain and promote health, to prevent disease, and to restore health and function contribute to population health. The health Services continuum of care includes treatment and secondary prevention" (p. 1).

These descriptions of the importance and impact of healthcare access captures the situation of access to health globally, particularly in Nigeria. The health status of urban dwellers, where most hospital and health centers are in Nigeria, is higher when compared to rural areas. Many rural areas have limited or no health care services, making patent medicine dealers (PMDs) the most commonly used providers. A PMD is "a person without formal training in pharmacy and sells orthodox pharmaceutical products on a retail basis, for profit" (Uzochkwu, Onwujekwe, Okwuosa, & Ibe, 2014). PMDs are patronized by people, especially the poor and the uneducated, because they perceive the PMDs as affordable, easily accessible and have experiences in all kinds of illnesses. Yerumoh (2014) observed that the government of Nigeria attempted to establish what he called a "community and people oriented health system" (para 7). Yerumoh found that this system has not succeeded because of lack of infrastructure, the politicization of

models, and the lack of well-trained personnel to efficiently manage the programs. Yerumoh went further to say that Nigeria's health care remains weak because of a

> Lack of coordination, fragmentation of services, dearth of resources, including drug and supplies, inadequate and decaying infrastructure, inequity in resource distribution, and access to care, and very deplorable quality of care; a situation compounded by the lack of roles and responsibilities among the different levels of government. (Yerumoh, 2014, p. 3)

Onwujekwe, Onoka, Uzochukwu, and Hanson (2011) found that there are inequities in the use of the different providers. They called for reforms aimed at decreasing barriers to access to public and formal health services for rural dwellers. Onwujekwe et al. also noted that most people (especially rural dwellers) do not seek medical care because of a lack of access to care and their inability to afford the cost of services from private clinics and hospitals. It is unfortunate that households bear the full cost of health treatment, whether in private or government health care settings. Availability of finances becomes a challenge as well as a barrier to health care access and increases the disease burden (Onwujekwe et al., 2011). Other factors that contribute to the limited access include, poverty, geographic inaccessibility, transportation costs, lack of knowledge, and the absence of a provider at health care facilities (Onwujekwe et al., 2011).

To provide optimum health services to the Nigerian people, the government launched the National Health Insurance Scheme (NHIS) in mid-2005 with the aim of securing universal coverage and improving the health status of Nigerians. Until 2011,

only 5.3 million Nigerians (3.5% of the population) were enrolled (Odeyemi & Nixon, 2013). Both the number of those who were aware of the scheme and those who enrolled in the program, have not been impressive, particularly rural area dwellers (Odeyemi & Nixon, 2013). Such knowledge and information should be passed on to rural residents through their leaders. Community leaders were not involved in the scheme. Even, state governments feel excluded from the scheme making attainment of universal health coverage problematic (Okpani & Abimbola, 2015). Uzochukwu et al. (2015) observed that 9 years after the inauguration of the scheme (NHIS), only two states have adopted the program.

The World Health Organization (2014) also noted that Nigeria has a large stock of human resources for health but has the primary challenge of adequate distribution of health workers. The concentration of the health workforce in urban areas can be attributed in part to a "work environment that contributes to low motivation, less-than-optimal productivity, high attrition, especially from rural areas" (World Health Organization, 2014, p. 1). The lack of health workers is a challenge to antiretroviral drugs distributions, when such drugs are available. The workforce in the communities in question, needs to include highly trained public health personnel who plan and implement health initiatives based on the cultures of the communities. It is obvious that the public health workers need to work together with the community leaders (officials and unofficial) in order to be successful, but such co-operation is sometimes lacking.

Community Leaders

Leadership is an essential contextual influence because community leaders play vital roles in how national strategies and decisions are interpreted and executed (Campbell, 2010). The focus is usually on political and national leaders. This means that HIV/AIDS rates continued to remain high in areas that are geographically far away from political and national leadership's centers (Campbell, 2010). The attitudes and behaviors of community leaders (including religious leaders) on HIV/AIDS have vital roles to play in modifying the behaviors and attitudes of the communities they serve. This is because community leaders are custodians of power and respect, as well as the gatekeepers of their communities.

Derek, Campbell, Allen, Robinson, and Stewart (2010) observed that the attitudes of community leaders, especially religious leaders, can also be a major barrier to promote social changes. Ucheaga and Hartwig (2010) found that because religious values play important part in the lives of members of organized religions, members of religious groups often receive their health, sexuality and morality teachings from their religious leaders. Those leaders may not be equipped to balance religious doctrine with complex health issues like HIV/AIDS (Derek et al., 2010). Some religious leaders admitted to having contributed to the spread of HIV/AIDS by denying its existence in their areas or by judging those who were affected (National Prevention Information Network-NPIN, 2014). Some religious leaders also attributed HIV/AIDS epidemics to immoral behavior. The strength of religious leaders lies in the fact that they have the capacity, credibility, creativity, and influence in delivering messages to their congregations

(AsekunOlarinmoye, AsekunOlarinmoye, Fatiregun, & Fawole, 2013). Nigerians, especially those living in rural areas are religious thus, "Any messages on HIV/AIDS imparted by religious leaders are important in changing the attitudes and behavioral patterns of their followers about the epidemics" (Oluduro, 2010, p. 210/508). Religious leaders need to be properly trained, to ensure dissemination of accurate information on HIV/AIDS to their congregations. Rural areas in Nigeria need more enlightened community leaders to encourage and lead communities to social change.

Summary

This chapter was a literature review of existing research including literature search strategies, a description of theoretical foundations (HBM and DOI), and an outline of, the variables. In Chapter 3, I will discuss data collection method of the target communities, design, approach and rationale. It will also include a description of the methods for ensuring confidentiality and protection of the participants.

Chapter 3: Research Method

Introduction

HIV/AIDS is an important health problem in rural areas of Nigeria. Most health initiatives and education aimed at addressing this issue are implemented in urban areas with infrastructures beyond that which exists in the rural areas. People in urban areas are more conscious of their health status than those in the rural areas (Nwachukwu et al., 2008). The purpose of this investigation was to determine whether or not a relationship exists between HIV/AIDS and some sociodemographic factors, namely (a) access to health care, (b) health education, and (c) impact of community leaders, in two selected rural areas in Southeastern Nigeria.

Chapters 1 and 2 included information on HIV/AIDS in Sub-Saharan nations in general, with specific focus on Nigeria. The literature review and theoretical basis for the investigation were discussed. Gaps in the literature were identified concerning health education status, access to healthcare and the effect (negative and positive) of community leaders on health education and HIV/AIDS as they relate to the two rural communities of interest. Chapter 3 is a description of the setting, my role as the investigator, the research design, the rationale behind the methodology, issues relating to the validity, and trustworthiness of the data.

Setting

The setting of the study focused on two communities of interest, each of which is situated in Aba North, one of the local governments of Abia State, Nigeria. Aba North, which has an estimated population of 107,488 people (53,733 men and 53,755 women)

based on the 2006 census (National Bureau of Statistics, 2010), has its headquarters at Eziama, Urata. Igbo is the dominant ethnic language of this area.

These communities were carefully chosen. Abia is one of the states in Nigeria that has seen a persistent rise in HIV prevalence since 1999, more than doubling from 3.0% in 1999 to 7.3% in 2010 (Nwokeukwu, Chukwu, Emma-Ukaegbu, & Nwogu, 2013; Onyeonoro, Emelumadu, Nwamoh, Ukegbu, & Okafo, 2014). A Federal Ministry of Health report (2013) noted that the general epidemic population of Abia State rose from 1.6% in 2007 to 3.2% in 2012. Questioning of area residents while thinking about a study, revealed that some individuals in these communities were not sure of what HIV/AIDS was, much less aware of its preventive modalities or means of management of those already infected. It became necessary to investigate the relationship between sociodemographic factors and HIV/AIDS in two rural communities of the state. It is expected that these communities would benefit both from the investigation and the potential social changes that may result from the inquiry.

Based on the culture and nature of the investigation (involving members of the community), it is imperative that the community leaders are made aware of the intension. Community leaders are elected by the community. These community leaders are recognized as the spokespersons and advocates for the community. These community leaders are respected, their insights valued, and their supports are most needed to affect any changes (political or health issue) in the communities (University of Kansas, nd). To achieve success, the community leaders who can garner acceptance and participation of

the members of the communities should be made aware of the plan to conduct investigations in their communities.

To this effect, I met with the community leaders from these two areas for an introductory, needs assessment, forum. This was an opportunity to introduce myself, gain a wider perspective on local HIV/AIDS knowledge and needs, and seek the community leaders' permission as well as their support to conduct the investigation. During the meeting, the purpose of the investigation, including the process and anticipated benefits, will be explained to them. Questions were answered, and concerns explained. They were also be given a phone number to call should any of them has a question or concern later.

Research Design and Rationale

Two major research questions govern the proposed investigation.

RQ1: Quantitative. To what extent are the sociodemographic factors, level of education, public health services and influence of community leaders associated with HIV/AIDs awareness in two rural communities in Southern Nigeria?

RQ2: Qualitative. What is the relationship between the level of Community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities**?**

I employed a mixed research model. Mixed method approach, which has gained popularity over recent decades, involves the application of a combination of quantitative and qualitative approaches (Creswell, 2009). Creswell (2009) noted that the problems associated with social and health studies are multilayered, requiring a combination of

qualitative and quantitative designs, thus utilizing the strengths of both, to address the complexities. There are two widely used designs in mixed methods research: concurrent and sequential (Viswanath, Brown, & Bala, 2013). In concurrent designs, quantitative and qualitative data are collected and analyzed during the same period to reach a better understanding of the phenomena of interest. In contrast, for sequential design, quantitative and qualitative data are collected and analyzed separately, and at different times during the study (Creswell, & Plano Clark, 2011). Due to the nature of this investigation and its time limitations, the concurrent design was used. There are different types of concurrent designs such as concurrent transformation strategy, concurrent triangulation strategy and concurrent parallel strategy (Creswell, 2009). I used concurrent parallel design.

Convergent parallel design allows for one data collection phase where quantitative and qualitative data are collected simultaneously, analyzed separately, results merged, and interpretation combined (Creswell & Plano Clark, 2011). This design allows for a broader perspective of the problems from different types of data (Creswell, 2009) with data integration done during data analysis. The analysis and interpretation of data separately also make subjugated perspectives more visible (Mertens & Hesse-Biber, 2012).

The mixed model has disadvantages. It can be time consuming, expensive and create conflicts among researchers, as methodological purists require researchers to use either quantitative or qualitative methods, rather than mixing the designs (Cronholm & Hjalmarsson, 2011). Other possible challenges include the “generalizability of the data,

timing of the sampling, and the difficulty in compiling and analyzing of data" (Northwest Nazarene University, 2015, p.1). The ways these challenges were handled are explained accordingly within the methodology.

Quantitative Approach

Quantitative research is associated with the belief that "reality can be measured and observed objectively" (Tariq & Woodman, 2010, p 3.). Quantitative approach is also conventionally described as deductive (Tariq & Woodman, 2010). Quantitative design uses numerical and statistical analyses to study a sample of the population of interest (Creswell, 2009). There are two major types of quantitative design, surveys and experiments (Creswell, 2009). In this investigation, I used a survey design (questionnaires) that provides a numeric description of the attitudes of the population of interest, by studying a sample of the population (Creswell, 2009). The approach examines the association between HIV/AIDS awareness and preventive measures, as well as positive or negative perceptions concerning, knowledge level of HIV/AIDS, the effects of access to health care, as well as the effect community leaders have on health status of the communities.

Information to be collected through questionnaires was expected to reflect the investigation questions. The survey through questionnaires is chosen because of its versatility, efficiency, and generalizability. It is also seen as the best means available for developing a representative picture of the HIV/AIDS awareness, attitude and characteristics of the communities of interest. The risk of errors based on poor measurement and omissions in the questionnaire was minimized by modifying a validity

and reliability tested instrument developed by the Center for AIDS Prevention Studies at the University of California at San Francisco (UCSF, 2012; Appendix). I also included the HIV-Knowledge Questionnaire (Carey, 2007).

Cross-sectional (one-shot) sampling method was used to obtain an overall picture of the population of interest at the time of the study (Ranjit, 2010; Robbins, 2009). The participants in the questionnaire were residents of the two communities, who are between the ages of 20 and 60. The questionnaire and the interview questions were derived from the two research questions. The questionnaire included questions based on these quantitative questions:

1.1 Is there a correlation between educational level and HIV/AIDS knowledge?

*H*0: Level of education has no correlation with knowledge of HIV/AIDS.

1.2. Is access to public health services vital to population health?

*H*0: Access to public health services does not affect the health of the population.

1.3. What effect do community leaders have on influencing the health behaviors of their people?

*H*0: Community leaders have no influence on the health behaviors of their people.

Qualitative Design

The belief is that qualitative research has multiple realities that are shaped by personal viewpoints, context and meaning, which are provided by in-depth interviews Qualitative design is described as inductive, as the questions are open ended (Tariq & Woodman, 2010). Open-ended questions design were the choice. The interview gave

insight into the participants' perceptions concerning access to healthcare, health education and the effect of the community leaders on HIV/AID in the chosen communities. According to Creswell (2013), "we conduct qualitative research when we want to empower individuals to share their stories, hear their voices, and minimize the power relationships that often exist between a researcher and the participants" (p.48). The benefits also include that it allows for more detailed, more accurate information that will not only be beneficial but will also provide more insight to the phenomena.

Participants were purposively selected from among those that filled out the questionnaires for the quantitative design. The interviews were held in local community halls in private, or any private and quiet place. Based on the individual participant's choice. This approach uses open-ended questions, which will not limit the breadth of the information, rather encourage more detailed answers that are personal and reflective. The guide included date, time, brief description of the issue, the questions, and finally comments thanking the participant (Creswell, 2013). The interview questions were derived from these:

RQ2:1. Community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities?

RQ 2:2. What is the relationship between level of health education and knowledge of HIV/AIDS prevention and management?

RQ 2:3. What influence (if any) do community leaders have on the health behaviors of members of their communities?

Role of the Investigator

It is crucial to the credibility of the research that the investigator clarifies his or her role, particularly concerning the qualitative aspects of the investigation (Unluer, 2012). The role of the researcher can be as an insider or as an outsider. Each position has its challenges and advantages. Al-Natour (2011) noted that researchers often hold fluid insider/outsider positions because of the complexities regarding the closeness/distance between the researcher and the participants and impacts of the investigation. It was difficult to operate completely either as an outsider or an insider. Other significant markers, which reflected the sociopolitical context of the research period, also affect the investigator-subject relationship, such as race, gender, ethnicity, language, and class (Al-Natour, 2011).

In this investigation, the intention is to hold a fluid outsider/insider position, with the outsider role as predominant. As an outsider with no previous acquaintance with the participants, no assumptions will be made concerning behaviors and events (Unluer, 2012), though these need investigations for clarification. Not being familiar with the participants means that the participants may assume that the investigator does not know what they know, resulting in a willingness to give as much information as may clarify all dimensions of the issues in question (Unluer, 2012). This is the intention; however, challenges are recognizable. Prospective participants may refuse to participate in the investigation based on a stereotyped view that researchers disappear after the study, and some may not be comfortable enough to give honest information that might compromise their privacy.

On the other hand, acting as an insider, and a descendant of same ethnic group, gaining participants' trust, understanding the culture of the participants, not changing the flow of social communication and knowing how best to approach them, will increase the richness and quality of the data (Unluer, 2012). These social skills may take an outsider a considerable time to acquire. Encouraging the community's participation in the investigations may shift the role of the researcher to that of an advocate, collaborator or mentor, who empowers the community and encourage them to use their skills, resources, and networks to implement recommendations that may result from the investigation (Weil, Romocki, & Romocki, n.d.). Irrespective of my position, and bearing in mind the purpose of the investigation, it was imperative that I dislodge myself from bias, emotions, values, and any factors that may compromise the objectives of the investigation. To address these issues, I shared my opinions with my chairman and colleagues to identify and acknowledge any forms of bias. The limitations of the investigation will be discussed as well.

Ethical Protection of Participants

Ethical issues are associated with using human beings as participants in any investigation. Autonomy, beneficence, and justice are three primary ethical principles cited in the Belmont Report (Adams & Callahan, 2014). Efforts were made to ensure adherence to these principles as guided by the Walden Ethics Committee. It was important that the investigation be approved by Walden IRB. It is equally important that I obtain permission to conduct the study, from Abia State Ministries of Health, as well as the local health office covering the communities of interest. The investigation process

was repeatedly explained at meetings with the community leaders. At the meetings, questions and concerns were answered and clarified accordingly. My primary concerns included the safety, privacy, and confidentiality of the participants.

For informed consent to be ethically valid, the document must contain the nature of the investigation, risk and stresses clearly written, as well as an explanation, verbally, in the local language (Adams & Callahan, 2014). I took an online-based training on ethics, in using humans as participants in research study, (organized by National Institute of Health, sponsored by Walden University; Certificate Number 2185495). Informed consent was obtained from all participants. It is important to demonstrate respect for the values and interest of these communities throughout the investigation. Opportunities were given for participants to ask questions and express any concerns, and these were thoroughly clarified. The consent to participate is voluntary, without coercion or unrealistic promises of benefits. Some of the questionnaire items were likely to be discomfiting for participants because of their relation to private life experiences. The cost and inconvenience to participants will be minimized by meeting respondents at their chosen places, and times. The research findings will be reviewed with the participants.

Methodology

The mixed method which employs the combination of both qualitative and quantitative approaches will be used (Creswell, 2009). This emergent methodology is gaining popularity because of the complexities of social and health science researches that make the use of only quantitative or qualitative inadequate. In this design, each data was analyzed separately, and the convergence was done during interpretation. The

purpose was to have a valid and well- substantiated conclusion on the relationship (if any), between the sociodemographic factors, and HIV/AIDS.

Population Identification

This is a mixed method study. Participants were adults between 20 and 60 years of age in both the qualitative and the quantitative approaches. The participants all lived within the two geographical communities. Most respondents are diagnosed with HIV/AIDS, though participants may or may not be undergoing treatment.

Participant Selection

Working in support of the community leaders and local health care providers, the following process were used to identify and recruit participants:

- An initial meeting with community leaders to introduce the investigation and review details of the process, the ethics involved, and the potential benefits to participants and the communities
- Visits to health provider offices and the nearest health center to the communities to present information about the investigation in support with health care providers and community leaders as well as recruit prospective participants.
- Distribution of informed consent forms to prospective participants, as well as answer their questions and clarifying any concerns. Participants will be assured of the privacy and confidentiality of any information provided during the study.

- Distribution of questionnaires for the quantitative component, with the help of local health care providers.
- Conduct of interviews at places and times convenient for respondents.
- Conduct data analysis.

The method of recruiting participants was crucial to the success of any research study, as understanding the target group and forming rapport with community leaders provides access to potential participants (Sergeant, 2012). Community leaders, including religious leaders, can be efficient and effective instruments in the prevention as well as in treatment and care of those already infected (Asekun-Olarinmoye, Asekun-Olarinmoye, Fatiregun, & Fawole, 2013). Securing the support of such leaders ensures that community members invest interest in the investigation and that they and the investigator establish stronger levels of mutual trust. Though different approaches are associated with the quantitative and qualitative aspects of the study, both methods required that a sample of the participants be drawn from the population of interest. Two methods were applied in selecting participants. The purposive method was employed for the qualitative session, and questionnaires as utilized for the quantitative session.

The purposive method was used because the qualitative study is aimed at gaining a better understanding of some factors that may be affecting the knowledge and treatment of HIV/AIDS in the chosen communities. Participants were selected based on their knowledge about these phenomena (Creswell & Plano Clark, 2011). The selection of participants was based on characteristics and experiences that not only contributed to a greater understanding of the factors affecting HIV/AIDS knowledge and treatment in the

two communities but also informed the investigation questions (Creswell & Plano Clark, 2011; Sargeant, 2012). Participants were adults who are diagnosed with HIV/AIDS, which include those receiving treatment locally or outside of the community as well as those not receiving treatment. To ensure that all sections of the communities are included, nonproportional- quota sampling was used, whereby each community is divided into two, giving a total of four strata (Perrin, 2016).

Sample Size

In the quantitative method, I utilized an interview-administered structured questionnaire survey with 136 adults (about 25 participants from each stratum) between the ages of 20-60 years, all of whom are diagnosed as HIV- positive. There is confidentiality law in Nigeria. However, some places have HIV/AIDS clinics where victims of the disease go for treatment and counselling. The survey was given out during such clinics. This method was chosen for accuracy because the local postal system is still unreliable. It is hoped that the clinics offered a large and manageable number (about 136) between the two communities. The questionnaire focused on past and present risk behaviors, HIV awareness, the point at which HIV was diagnosed, and the treatment received, if any. To collect information on health literacy status relating to HIV/AIDS, the questionnaire included socioeconomic questions concerning educational level, employment status, and means of obtaining health information. The questionnaire was simple, clear, and logical. To achieve a good result, I stepped out of the clinic area and at the same time remain available to answer any questions and clarify concerns.

Determining sample size in qualitative inquiry using survey design is different than when applying quantitative methods. Sample sizes in qualitative investigations are usually smaller than those of quantitative studies because qualitative research (particularly interviews) is more concerned with the in-depth understanding of meaning and analyzes the relationship between categories (Dworkin, 2012; Mason, 2010). Unlike quantitative studies, qualitative research is not usually concerned with testing hypotheses or generalizing about a larger population. Expert researchers suggest between five and50 participants in qualitative studies (Dworkin, 2012); the sample size should be enough as to uncover most, if not all potentially significant perceptions, ensuring that the data is not superfluous (Mason, 2010). However, some factors, such as available resources, study time, the objectives of the study, and in some cases, the concept of data saturation play useful roles in determining the sample size (Burmeister & Aitken, 2012). Data saturation is reached "when the researcher gathers data to the point of diminishing returns when nothing new is being added" (Marshall, Cardon, Poddar, & Fontenot, 2013, p.11). Data saturation is an elusive concept in a qualitative study, as a qualitative methodologist may lack adequate standards for sample size, and thus choose sample size arbitrarily (Marshall et al., 2013).

Although researchers agree on some principles and concepts, such as placing restrictions on new data, themes and coding and the ability to replicate the study, how and when saturation is attained will vary significantly between different research designs (Fusch & Ness, 2015). Funch and Ness (2015) noted that data saturation is hard to define, a researcher should therefore choose sample size that has the best opportunity to reach

saturation. Mason (2010) argued that the size of the sample is less relevant than the quality of the data the researcher obtains; some qualitative researchers believe that saturation can be achieved with any number of interviews, depending on the skill and experience of the researcher. Nonetheless, to gauge the potential for data saturation, some universities still request that Ph.D. students using the qualitative method in their studies include the number of expected participants in their proposals (Mason, 2010).

Data Collection–Qualitative Component

Upon obtaining approval from Walden University's IRB, permission from Abia State Ministries of Health, and the Aba North local government health department, the following were undertaken for both qualitative and quantitative investigations.

Focused interviews were conducted in a room located in the town hall or at the elementary school (as chosen by the participants), in settings suitable for privacy without disturbance from friends or family members. Data were collected through in-depth interviews with 13 participants, each lasting 35-45 minutes. Notes were taken, and the interviews were also be audiotaped as approved by the participants. Questions focused on HIV/AIDS awareness, risk behaviors (past and present), understanding care and access to health care. Nevertheless, saturation of data cannot be conclusively claimed in this investigation.

Mason (2010) observed that it is difficult to prove saturation of data in a qualitative study, particularly for an inexperienced researcher. Qualitative research is concerned with meaning, not inference, so, "one occurrence is potentially as useful as many, in understanding the process behind a topic" (Mason, 2010, p.1). Qualitative study

is labor intensive, expensive, and time-consuming, and so analyzing a significant data-set can be impractical. In their review of research methods, Baker and Edwards (2012) noted that there is no guideline or formula for calculating the number of interviews required in any qualitative study, though most qualitative methodologists suggest 20-40 participants. Mason (2010) argued that if the researcher understands the concept of saturation and the factors that affect it, the number of interviews should be decided by the researcher and his or her supervisor. To this end, my supervisor and I agreed on interviewing 13 carefully selected participants.

Instrumentation

Data Collection, Quantitative Component

Questionnaires were distributed to 100 adults with a positive HIV diagnosis. These will be circulated at local health providers' offices, as well as at the homes of participants who are not receiving any treatment or who are going outside the communities for treatment. The process was expected to last for 5 days. The unreliability of postal services in these and neighboring communities necessitated the choice of hand-delivering of the questionnaires, and the need for me to be available to answer any questions or concerns as they arise. My presence may influence the participants' responses to the questions, but this issue was addressed by my stepping out of the room to allow the respondents to make their choices. The instrument to be used was retrieved from the Survey Instruments and Scales developed by the USCF (2012). The survey was designed and tested by the university's scholars who granted permission to HIV researchers to adapt and modify the tool to fit their specific research conditions and

needs. Also, to be included is HIV Knowledge Questionnaire HIV -KQ-18, developed and tested by Carey and Schroder (2002; Appendix A).

For the qualitative design, a topic guide was used to ensure that questions relating to relevant issues are asked, documented with notes and tape-recorded. A more intensive note-taking will be done during the interview of any participant who declines the tape recording of his/her information. Participants were reminded that identifying information will never be included with their responses.

Data Analyses

Mixed method analyses involve the combination, integration or other complementary application of qualitative and quantitative analyses (Creswell & Plano Clark, 2011). Accordingly, before analysis, data from the quantitative sessions was reviewed and cleaned as necessary. I devoted extra effort to ensure that each questionnaire is completed during data collection.

Quantitative data collected through interviewer-assisted questionnaires were analyzed with the use of Statistical Package for Social Sciences (SPSS), which is commonly used for statistical analysis of quantitative data (Greasley, 2008). The descriptive analysis provides a summary on the gender, age and educational status of the participants, and generates patterns in order to better understand the perceptions of the participants concerning the impacts of access to health care and community members' knowledge and management of HIV/AIDS. Independent *t* tests were conducted to determine what, if any, relationship existed between the listed sociodemographic factors and HIV/AIDS education and treatment. The mean scores and their standard deviations

were calculated to measure the level of influence, if any, of access to health care and the effect community leaders have on respondents' knowledge and treatment of HIV/AIDS.

NVivo was used to analyze qualitative data. Nonnumerical Unstructured Data Indexing Searching and Theorizing (NUD*IST) software was designed in the 1980s for qualitative data management (Stanford, 2011). NVivo, an improved version of NUD*IST, is a comprehensive qualitative software data analysis used to organize, analyze, and find insights in qualitative data (Stanford, 2011). The emergence of NVivo has significantly improved the quality of qualitative investigations, as the tool yields more professional results, manages and queries data, includes models, and reports visually (Hilal & Alabri, 2013). However, its use requires a thorough knowledge and skill of its applications. Because I do not possess enough knowledge or skill on the use of NVivo, it is deemed worthwhile to pay a professional to complete the analysis. The paid professional signed a data-confidential consent paper, after which the data collected were made available to him.

Parallel mixed data analysis involving independent analysis of qualitative and quantitative data will be used to provide information on some sociodemographic factors associated with HIV/AIDS through connecting, combining or integrating the findings (Graff, 2014). NVivo software is used to integrate the findings.

Threats to Validity

Although the mixed method approach combines strengths of quantitative and qualitative approaches, there are also challenges that can impede the accuracy of the data and the validity of research conclusions (Creswell, 2009). The recognized rules for

controlling quantitative and qualitative research methods need to be followed (Terrell, 2012). Threats to validity are present at all stages of the investigation: research design formulation; data collection; data analysis, and interpretation. There are two types of validity, external and internal (Creswell, 2009), and their principles are based on the trustworthiness, utility, and dependability of the investigator, the participants, and other stakeholders (Zohrabi, 2013). To ensure validity and reliability of research data, and results, the investigator and the stakeholders must maintain effective communication to achieve the same level of perception of fit between the problem, and the method (Hesse-Biber, 2010).

It is important to note that rigor be applied to the different methods in an effort to boost the validity of the investigation. To boost the internal validity, data were collected from different sources, such as the questionnaire and interviews, which will be later corroborated to sum the findings. As Creswell (2009) noted, the quality of the instrument is critical to the conclusions the investigator will draw from the study. Bearing this in mind, data were collected from the questionnaires developed and tested by the UCSF (2012) as well as those developed and tested by Carey and Schroder (2002).

Member checks were used to check the accuracy and validate the interview data. These were accomplished through later meetings with the interviewees, during which the results, and interpretations of the interviews were reviewed for content confirmation, plausibility and truthfulness recognition, as well as participant support and acceptance (Zohrabi, 2013). An opportunity for questions and answers as provided, and corrections were made to sentence structure and grammar, as needed. This process is necessary to

ensure both the accuracy of data and the approval of participants before documenting the data, and subsequently applying it to the study.

In other to further boosts the validity of the data, I remained available at the time of filling out the questionnaires, to answer any questions and clarify any concerns that might arise. I recognize bias and worked to remain nonjudgmental, explicit, critical and faithful throughout the investigation (Zohrabi, 2013). Validity was further strengthened using the mixed method and the subsequent integration of quantitative and qualitative data, which also enhanced the reliability of the study.

Ethical Procedure

The two major ethical issues about using humans in social sciences are the need for informed consent and the imperative of not causing harm to participants (Rudestam & Newton, 2007). This study followed regulations on international study as stipulated by Walden University's IRB, Abia State Ministry of Health and Abia South Local Government Health Unit. Each of these will individually grant approval for the study. The chiefs and the community leaders of the communities of interest gave their approval following presentation of approval from the local government office. Informed consent was obtained from all participants. Information on the process and format of the study, the right of participants to withdraw at any time, the preservation of anonymity and confidentiality, the safety of all information given, as well as the potential benefits of the study were contained in the consent. All participants were repeatedly assured that their participation is voluntary, and that anyone can withdraw from the study at any time. Based on the cultural context, participants were informed that some sexuality-related

questions might be uncomfortable, and a telephone number was given to participants to be used in contacting me for any questions or concerns.

For security reasons, hard copies of all documents will be stored in a locked cabinet, with the key available only to me. As a routine, these documents will be shredded after 3 years. Third parties involved in data input and analysis, such as the transcriber, also will sign a confidentiality consent form. Extra care will be taken to ensure the confidentiality of all documents, including the tape recordings.

Summary

In Chapter 3, I described in detail the methodology of the study, which included the setting, design, data collection and instrumentation, along with the validity and ethical procedure. I also described my role as the investigator. The issue of data saturation was addressed. The process of triangulation of qualitative and quantitative data gave comprehensive information as a means to achieve valid and reliable data and results. In Chapter 4, I will discuss the results of the analysis. In Chapter 5, I will provide details concerning the findings and their implications, the limitations of the study, as well as any need for further research.

Chapter 4: Results

Introduction

HIV/AIDS is an important health problem in rural areas of Nigeria. Most health initiatives and education aimed at addressing this issue are implemented in urban areas with infrastructures beyond that which exists in the rural areas. People in urban areas are more conscious of their health status than those in the rural areas (Nwachukwu et al., 2008). The purpose of this investigation was to determine whether or not a relationship exists between HIV/AIDS and some sociodemographic factors, namely (a) access to health care, (b) health education, and (c) impact of community leaders, in two selected rural areas in Southeastern Nigeria.

Chapters 1 and 2 included information on HIV/AIDS in Sub-Saharan nations in general, with a specific focus on Nigeria. The literature review and theoretical basis for the investigation were discussed. Gaps in the literature were identified concerning health education status, access to healthcare and the effect (negative and positive) of community leaders on health education and HIV/AIDS as they relate to the two rural communities of interest. Chapter 3 included a description of the setting, my role as the investigator, the research design, the rationale behind the methodology, and issues relating to the validity and trustworthiness of the data. Chapter 4 includes the analyses and findings related to this study using a mixed-methods model via a convergent parallel design. The chapter includes both quantitative and qualitative analyses and findings and will be presented in two sections. The first section will include the quantitative analyses and findings derived from the study instrumentation. The section will include a description of the population

and sample, assumptions for the statistical tests and presentation of the inferential tests to address the three statistical hypotheses of Research Question 1. The second section will include analysis of the qualitative findings derived from the answers to interview questions with a sub-group of participants who completed the quantitative survey. Two overarching research questions govern the proposed investigation:

RQ1: Quantitative. To what extent are the socio-demographic factors, level of education, public health services and influence of community leaders associated with HIV/AIDs awareness in two rural communities in Southern Nigeria?

RQ2: Qualitative. What is the relationship between the level of Community Health Services and the extent and risk of HIV/AIDS, as perceived by residents of these communities**?**

Quantitative Findings

Descriptive Findings

The setting of the study focused on two communities of interest, each of which is situated in Aba North, one of the local governments of Abia State, Nigeria. Aba North, which has an estimated population of 107,488 people (53,733 men and 53,755 women) based on the 2006 census (National Bureau of Statistics, 2010), has its headquarters at Eziama, Urata. Igbo is the dominant ethnic language of this area.

A total of *N*=131 participants, all HIV positive, completed the quantitative survey. The participants ranged in age from 18 to 72 years (*M*=37.08 years, *SD*=10.75 years). Only 33 participants reported their yearly income. Yearly income for those 33

participants ranged from 10,000 to 780,000 naira (*M*=243,517.21 naira, *SD*=174,421 naira). Table 1 presents frequency counts and percentages of the demographic variables for the study participants.

The participants included 76 females (58% of all participants) and 55 males (42% or all participants. Over half of the participants were married (76 participants, 58% of participants). Over one-third of the participants (34%) were employed as trade or technical workers. Two-thirds of the participants (66%) had a high school education or less.

Table 1

*Frequency Counts and Percentages for Participant Demographic Variables (*N=*131)*

Variable	Frequency	Percent
Gender		
Female	76	58.0
Male	55	42.0
Marital status		
Married	76	58.0
Never Married	39	29.8
Divorced	6	4.6
Widowed	7	5.3
Missing/Unknown	3	2.3
Occupation		
Business	16	12.2
Farming	13	9.9
Government	10	7.6
Professional	15	11.5
Trade/technical	45	34.4
Other occupation	17	13.0
Student	11	8.4
Unemployed	1	0.8
Missing/Unknown	3	2.3
Highest education level		
Less than elementary school	1	0.8
Elementary but less than high school	25	19.1
High school	60	45.8
Associate degree or technical school	7	5.3
Bachelor's degree	32	24.4
Missing/Unknown	6	4.6

Assumptions

Many records were missing data on various variables. SPSS software offers an option of pairwise deletion of records with missing data. Pairwise deletion is a technique that excludes a case only when it is missing data for a particular analysis but includes the case for all analyses for which it has the needed information (Pallant, 2013). To help retain as much power as possible for the study, the cases with the missing information on variables used for a particular hypothesis test were excluded only for that hypothesis test, but the cases were retained for hypothesis tests in which they had the available information.

Hypothesis tests included Spearman's rank order correlation, analysis of variance (ANOVA), chi-square tests of independence, Fisher's exact tests, and independent samples t-tests. The dataset was investigated for the inferential analysis assumptions of absence of outliers, normality, equal variances, and/or required cell counts, as needed, for each test for the variables used for hypothesis testing.

Outliers in a dataset have the potential to distort results of an inferential analysis. A check of boxplots for the dependent variables of (a) knowledge of HIV/AIDS (Hypothesis 1.1), and community leadership score (Hypothesis 1.3) was performed to visually inspect for outliers. The boxplots indicated that none of the variables contained more than 5% outliers. The variables were standardized to check for the presence of extreme outliers (z-score of +/- 3.3). None of the outliers were extreme. Median and mean values were also close in value for each of the variables, indicating that outliers were not adversely affecting the dataset. Because all outliers were in acceptable ranges of

their associated constructs, construct means, and medians were similar for each construct, and less than 5% of the data were missing on any one variable, it was determined that all records would be retained for analysis and that the outlier assumption was not violated.

Normality for the two continuous variables of (a) knowledge of HIV/AIDS (Hypothesis 1.1), and community leadership score (Hypothesis 1.3) were investigated with SPSS Explore. The Kolmogorov-Smirnov test (K-S test) for normality indicated deviations from normal distributions at the p=.01 level for both variables. However, the K-S test is sensitive to larger sample sizes (> 50) and will return a significant value when in fact; the data are normally distributed (Tabachnick & Fidell, 2007). A visual check of histograms for the two variables indicated a normal distribution for knowledge of HIV/AIDS, and some left skew on the community leadership score distribution. The tests used for inference in this study are robust to deviations from normality when most of the other assumptions are met. It was decided that the assumption of normality was not seriously violated, and parametric tests were used on both of the continuous variables during inferential analysis, without transformation of the variables.

The assumption of equal variances, a requirement for the ANOVA and independent samples *t*-tests of the study, was investigated with Levene's test. The assumption of equal variances was met for the *t*-tests performed to address Hypotheses 1.1 and 1.3. The assumption was therefore met.

The tests for Hypothesis 1.2 included categorical variables. Therefore, chi-squared tests of independence and Fisher's exact tests were used to address Hypothesis 1.2, Assumptions for the chi square test of independence are that the records are

independent (each record is counted in only one cell), each cell in the table has at least one observation, and at least 20% of the cells contain expected counts of 5 or more. When the cell expected cell count assumption was not met, A Fisher's exact test was used in lieu of the chi-square test of independence. Unless otherwise specified, all descriptive and inferential tests were performed with SPSS v.22 software, and the level of confidence was set at 95% ($\alpha = .05$)

Tests of Hypothesis

Research Question 1. To what extent are the sociodemographic factors, level of education, public health services and influence of community leaders associated with HIV/AIDs awareness in two rural communities in Southern Nigeria?

Research Question 1.1. Is there a correlation between educational level and HIV/AIDS knowledge?

Null Hypothesis 1.1. Level of education has no correlation with knowledge of HIV/AIDS.

Spearman's rank order correlation and an analysis of variance (ANOVA) test were performed to address the null hypothesis of Research Question 1.1. The five levels of education were not equally distributed for the study participants (Table 1). The five education levels were aggregated into three groups for statistical analysis as follows: (a) some high school or less (n=26), (b) high school graduate (n=60), and (c) greater than high school (n= 9). Aggregating the groups allowed for larger group sizes and gave more power to the correlational and ANOVA tests. The variable of knowledge of HIV/AIDS

was computed as the number of correct answers to the knowledge questions of the survey, which were Questions 22 through 46 inclusive.

A Spearman's rank order correlation analysis was conducted to test the correlation between level of education and knowledge of HIV/AIDS. Spearman's correlation was conducted rather than Pearson's correlation, because Spearman's correlations can be used when variables are at least ordinal (Pallant, 2013), while Pearson's correlation requires binary or continuous variables. Direct (positive) correlations indicate the values of two variables move in a like manner, values either increase or decrease similarly. An indirect (negative) correlation indicates the values of two variables move in opposing directions, that is, when the values of one variable increase, the values of the other variable decrease. According to Cohen (1992), a correlation coefficient with an absolute value between .10 and .29 indicates a small effect between two variables, a correlation between .30 and .49 is a medium effect, and .50 to 1.0 is a large effect. An indirect correlation was found between level of education and knowledge of HIV/AIDS, but the correlation was close to zero and not statistically significant (N=125, ρ =.036; p=.693).

A one-way ANOVA was performed to investigate mean differences on the dependent variable of knowledge of HIV/AIDS, for the independent variable of level of education with three groups of (a) some high school or less (n=26), (b) high school graduate (n=60), and (c) greater than high school (n=39). A summary of the measures of central tendency and variability for the scores of the dependent variable of knowledge of

HIV/AIDS is presented in Table 2. Results of the ANOVA were not statistically significant [$F(2, 122)=0.59$, $p=.556$].

A significant correlation was not found between the levels of education and knowledge of HIV/AIDS. Additionally, a statistically significant mean difference was not found for the knowledge of HIV/AIDS scores between the three levels of education. I did not reject Null Hypothesis 1.1. There is not sufficient evidence to indicate that level of education is correlated with knowledge of HIV/AIDS.

Table 2

Measures of Central Tendency and Variability for the Dependent Variable of Knowledge of HIV/AIDS According to the Independent Variable Group Classifications for Level of Education (N = 125)

Level of Education	*N*	*M*	*SD*	SE_{Mean}	95% CI for Mean Lower	95% CI for Mean Upper	Range
Some high school or less	26	16.96	4.89	0.96	14.99	18.94	7 – 23
High school graduate	60	15.72	5.71	0.74	14.24	17.19	0 – 24
Greater than high School	39	16.44	4.32	0.69	15.04	17.84	6 - 24

Note. N = sample size; *M* = Mean; *SD* = Standard Deviation; *SE* = Standard Error; CI = Confidence Interval.
Possible range of scores for Knowledge of HIV/AIDS is 0 to 25, with higher scores indicative of greater knowledge of HIV/AIDS.

Research Question 1.2. Is access to public health services vital to population health?

Null Hypothesis 1.2. Access to public health services does not affect the health of the population.

A variable directly defining the health of the population was not present in the dataset. A proxy variable, Population Health Risk (PHR), was derived from the responses to three survey questions which required yes or no (dichotomous) responses: Question 12. “Do you have access to antiretroviral’s (ARVs)?”; Question 19, “Are you on HIV/AIDS medicines?” , and Question 20, “Have you refilled your prescription in the

past 6 months?" If a participant answered "yes" to any of the three questions, then they were coded as No = 1 as NOT being a population health risk (PHR = No; *n* = 51) on the PHR variable. If a participant answered "no" to all three questions, then he/she was coded as yes = 0 a population health risk (PHR= Yes ; *n* = 30) on the PHR variable.

The PHR variable was then used with five survey questions derived as access to public health services variables in chi square tests of independence, or with Fishers Exact tests when the expected cell size assumption was not met. An independent samples *t*-test was used to test for differences between the two groups of the PHR variable, which were used as an independent variable, and the dependent variable of time in minutes as related to Survey Question 2.1, which asked participants, "How long does it take you to get to there?" which was a follow-up question to Survey Question 2, "How do you get there?"

Chi-square tests of independence included adjusted standardized residuals for each cell in the cross-tabulation table. The adjusted standardized residual is a z-score, a measurement of standard deviation from the expected count of a cell in the chi-square contingency table. Adjusted standardized residuals of the absolute value of 2 or greater were considered to be contributing a significant amount to the chi-square value (Agresti, 2002). SPSS v.22 was used to perform the chi-square tests of independence. R v.3.2 statistical software was used to perform the Fisher exact tests. A total of seven inferential tests were performed, one for each of the access to public health services variables.

Seven survey questions (1, 2, 3, 4, 5, 7, and 8) were coded for use as the access to public health services variables. Survey Questions 1 through 5 were related to *access to care.* Survey Questions 7 and 8 were related to *cost of care*. The coding structure for each

of the access to public health variables, and the results of the analyses performed to test each of the seven access to public health variables with the PHR proxy variable, are presented in the following paragraphs.

Survey question 1, "Where do you usually go to when you are sick?" included five possible responses of (a) hospital, (b) health care center, (c) doctor's private practice, (d) chemist, and (e) traditional healer/prophet. The responses were nominal/categorical.

A Fisher's exact test was performed to test for differences in proportions on the five categories of Survey Question 1 as relates to the two PHR risk categories. R v3.2 statistical software was used to perform the test. The crosstabulation table of cell counts between each category of Survey Question 1 and the PHR risk categories is presented in Table 3. Results were not statistically significant ($p = .817$), which indicated that the type of healthcare practitioner seen by a participant was not statistically significantly associated with population health risk.

Table 3

Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Access to Care Variable Question of, "Where do you go to when you are sick?" (N = 131)

	Where do you go when you are sick?					
Risk Type	Hospital	Health Care Center	Doctor in Private Practice	Chemist	Traditional Healer/Prophet	Total
PHR = Yes	52	10	5	12	1	80
PHR = No	30	7	2	11	1	51
Total	82	17	7	23	2	131

Fisher's Exact Test p-value = .817

Note. PHR = Population Health Risk.

Survey Question 2, "How do you get there?" included four possible responses of (a) by walking, (b) by taxi, (c) by bus, and (d) own car. The responses were nominal/categorical.

A Fisher's exact test was performed to test for differences in proportions on the four categories of Survey Question 2 as relates to the two PHR risk categories. R v3.2 statistical software was used to perform the test. The crosstabulation table of cell counts between each category of Survey Question 2 and the PHR risk categories is presented in Table 4. Results were not statistically significant ($p = .401$), which indicated that the type of transportation used by a participant to visit his or her health care provider was not statistically significantly associated with population health risk.

Table 4

Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Access to Care Variable Question of, "How do you get there?" (N = 131)

	How do you get there? (Relates to access to health care provider of Question 1)?				
Risk Type	Walking	Taxi	Bus	Own Car	Total
PHR = No	21	5	47	7	80
PHR = Yes	17	4	29	1	51
Total	38	9	76	8	131
Fisher's Exact Test p-value = .401					

Note. PHR = Population Health Risk.

A follow-up question, Survey Question 2.1, asked participants, "How long does it take you to get to there?" An independent samples t-test was used to test for differences between the two groups of the PHR variable (health risk = yes vs. health risk = no) which were used as an independent variable, and the dependent variable of time in minutes. The t-test was statistically significant, $t(128) = 2.57$, $p = .011$. Participants coded as being a health risk had a significantly shorter travel time ($M = 29.50$ minutes, $SD = 25.67$ minutes) than participants who were not coded as being a health risk ($M = 42.96$, $SD = 30.97$).

Survey Question 3 asked, "Do you have a regular doctor that you see for your disease?" The responses for survey question 3 were dichotomously coded for analysis as yes = 1 and no = 0. A chi-square test of independence was performed to test for

differences in proportions on the two categories of Survey Question 3 as relates to the two PHR risk categories. The crosstabulation table of cell counts between each category of Survey Question 3 and the PHR risk categories is presented in Table 5. Results were not statistically significant ($\chi^2(1) = 3.18$, $p = .075$), which indicated that whether or not a participant had a regular doctor to see for their disease was not statistically significantly associated with population health risk.

Table 5

*Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Access to Care Variable Question of, "Do you have a regular doctor that you see for your disease?" (*N = *127)*

	Do you have a regular doctor that you see for your disease?		
Risk Type	No	Yes	Total
PHR = No (frequency)	40	38	78
Expected Count	44.8	33.2	---
% Total	31.5	29.9	61.4
Adj. std. residual	-1.8	1.8	---
PHR = Yes (frequency)	33	16	49
Expected Count	28.2	20.8	---
% Total	26.0	12.6	38.6
Adj. std. residual	1.8	-1.8	---
Total (frequency)	73	54	127
Expected Count	---	---	---
% Total	57.5	42.5	100.0

$X^2(1) = 3.18$, $p = .075$

Note. PHR = Population Health Risk.

Survey Question 4 asked, "Do you have difficulty going to your doctor when you want to see him/her?" The responses for Survey Question 4 were dichotomously coded for analysis as yes = 1 and no = 0. A chi-square test of independence was performed to test for differences in proportions on the two categories of Survey Question 4 as relates to the two PHR risk categories. The crosstabulation table of cell counts between each category of Survey Question 4 and the PHR risk categories is presented in Table 6. Results were not statistically significant ($\chi^2(1) = 2.54$, $p = .111$), which indicated that whether or not a participant had difficulty in going to his or her doctor when they wanted to see the doctor was not statistically significantly associated with population health risk.

Table 6

*Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Access to Care Variable Question of, "Do you have difficulty going to your doctor when you want to see him/her?" (*N = *131)*

	Do you have difficulty going to your doctor when you want to see him/her?		
Risk Type	No	Yes	Total
PHR = No (frequency)	52	28	80
Expected Count	47.6	32.4	---
% Total	39.7	21.4	61.1
Adj. std. residual	1.6	-1.6	---
PHR = Yes (frequency)	26	25	51
Expected Count	30.4	20.6	---
% Total	19.8	19.1	38.9
Adj. std. residual	-1.6	1.6	---
Total (frequency)	78	53	131
Expected Count	---	---	---
% Total	59.5	40.5	100.0

$X^2(1) = 2.54$, $p = .111$

Note. PHR = Population Health Risk.

Survey Question 5 asked, "Do you have difficulty going to hospital when you want to see your doctor?" The responses for Survey Question 5 were dichotomously coded for analysis as yes = 1 and no = 0. A chi-square test of independence was performed to test for differences in proportions on the two categories of Survey Question 5 as relates to the two PHR risk categories. The crosstabulation table of cell counts between each category of Survey Question 5 and the PHR risk categories is presented in Table 7. Results were not statistically significant ($\chi^2(1) = 1.05$, $p = .305$), which indicated that whether or not a participant had difficulty in going to the hospital when they wanted to see the doctor was not statistically significantly associated with population health risk.

Table 7

*Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Access to Care Variable Question of, "Do you have difficulty going to hospital when you want to see your doctor?" (*N *= 130)*

	Do you have difficulty going to hospital when you want to see your doctor?		
Risk Type	No	Yes	Total
PHR = No (frequency)	52	28	80
Expected Count	49.2	30.8	---
% Total	40.0	21.5	61.5
Adj. std. residual	1.0	-1.0	---
PHR = Yes (frequency)	28	22	50
Expected Count	30.8	19.2	---
% Total	21.5	16.9	38.5
Adj. std. residual	-1.0	1.0	---
Total (frequency)	80	50	130
Expected Count	---	---	---
% Total	59.5	40.5	100.0

$X^2(1) = 1.05$, $p = .305$

Note. PHR = Population Health Risk.

Survey Question 7 asked, "Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?" The responses for survey question 7 were dichotomously coded for analysis as yes = 1 and no = 0. A chi-square test of independence was performed to test for differences in proportions on the two categories of Survey Question 7 as relates to the two PHR risk categories. The crosstabulation table of cell counts between each category of Survey Question 7 and the PHR risk categories is presented in Table 8. Results were not statistically significant ($\chi^2(1) = 2.68$, $p = .102$), which indicated that whether or not a participant could not see a doctor in the previous year due to the cost of care was not statistically significantly associated with population health risk.

Table 8

*Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Cost of Care Variable Question of, "Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?" (*N = *118)*

	Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?		
Risk Type	No	Yes	Total
PHR = No (frequency)	35	36	71
Expected Count	30.7	40.3	---
% Total	29.7	30.5	60.2
Adj. std. residual	1.6	-1.6	---
PHR = Yes (frequency)	16	31	47
Expected Count	20.3	26.7	---
% Total	13.6	26.3	39.8
Adj. std. residual	-1.6	1.6	---
Total (frequency)	51	67	118
Expected Count	---	---	---
% Total	43.2	56.8	100.0

$X^2(1) = 2.68$, $p = .102$

Note. PHR = Population Health Risk.

Survey Question 8, "How do you pay for your doctor's visit and/or hospital visit?" included four possible responses of (a) insurance, (b) your employer pays, (c) you pay from your pocket, and (d) I don't have to pay. The responses were nominal/categorical. A Fisher's exact test was performed to test for differences in proportions on the four categories of Survey Question 8 as relates to the two PHR risk categories. R v3.2 statistical software was used to perform the test. The crosstabulation table of cell counts between each category of Survey Question 8 and the PHR risk

categories is presented in Table 9. Results were statistically significant (p = .005), which indicated that there was an association between the type of payment made for a health care visit and whether or not a participant was classified as a public health risk. A review of the crosstabulation numbers indicated large percentage differences between the groups of PHR risk groups on the two cost of care variables, (a) your employer pays, and (b) I don't have to pay.

In response to the Survey Question 8 cost of care variable classification of "your employer pays", 1.3% of the PHR = No group had employer paid doctor visit costs and 11.8% of the PHR = Yes group had employer paid doctor visit costs. In response to the Survey Question 8 cost of care variable classification of "I don't have to pay" 13.8% of the PHR = No did not have to pay for doctor visits and 3.9% of the PHR = Yes group did not have to pay for their doctor visits.

Table 9

*Crosstabulation Table of Population Health Risk (PHR) Category vs. Responses to Cost of Care Variable Question of, "How do you pay for your doctor's visit and/or hospital visit?" (*N = *131)*

	How do you pay for your doctor's visit and/or hospital visit?"				
Risk Type	Insurance	Employer Pays	Self-Pay	Do Not Have to Pay	Total
PHR = No	0	1	68	11	80
PHR = Yes	1	6	42	2	51
Total	1	7	110	13	131
Fisher's Exact Test p-value = .005					

Note. PHR = Population Health Risk.

The Fisher's Exact test for Survey Question 8, "How do you pay for your doctor's visit and/or hospital visit?" was statistically significant (p = .005), which indicated that there was an association between the type of payment made for a health care visit and whether or not a participant was classified as a public health risk. The PHR = Yes group and PHR = No groups differed on two payment types of (a) your employer pays, and (b) I don't have to pay.

A larger proportion of PHR = Yes participants (11.8%) received employer compensation for doctor visits than did participants in the PHR = No group. Conversely, A larger proportion of PHR = No participants (13.8%) did not have to pay for doctor visits when compared to the PHR = Yes risk group (3.9%). I rejected Null Hypothesis

1.2. There is sufficient evidence to indicate that access to public health services affects the health of the population.

Research Question 1.3. What effect do community leaders have on influencing the health behaviors of their people?

Null Hypothesis 1.3. Community leaders have no influence on the health behaviors of their people.

This study was not an experimental design and therefore the word "influence" which was used in the Research Question and Null Hypothesis 1.3 should not have been used. Influence implied effect. And only an experimental design, with random allocation of subjects and an intervention on one or more groups, can establish an effect. The *t*-test and correlation tests performed could only test for association, not influence of community leaders with the health behaviors of their people.

Three independent samples *t*-tests and one Spearman's rank order correlation were analyzed to test Null Hypothesis 1.3. The dependent variable for all three *t*-tests was the variable of community leadership score. Community leadership score was also included in the bi-variate comparison of the Spearman's correlation analysis. A summary table of the findings from the hypothesis tests of Research Question 1.3 is presented in Table 10.

Four survey questions (9, 17, 19, and 20) were coded for use as health behavior independent variables, with one independent variable included in each of the four hypothesis tests. The coding structure for each of the health behavior independent variables, and the results of the analyses performed to test each with the variable of

community leadership score, are presented in the following paragraphs by survey question.

Survey Question 9, “Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation. Include testing fluid from your mouth.” Where do you usually go to when you are sick?” was dichotomously coded as no or don’t know = 0 (n = 20) and yes = 1 (n = 108). This variable was used as the independent variable in an independent samples t-test with the dependent variable of community leadership score. Higher community leadership scores were associated with greater belief of the positive role of community leaders by a participant.

The inclusion criteria of the study required that all the participants were HIV positive. However, as can be seen by the frequencies noted, not all participants said they had been tested. The t-test was not statistically significant, $t(126) = .106$, $p = .916$. Participants coded as not being tested, or not knowing if they were tested for HIV/AIDS had a slightly lower mean community leadership score ($M = 3.45$, $SD = 0.69$) than participants who said they had been tested for HIV/AIDS ($M = 3.47$, $SD = 0.89$).

Question 17 was, “How many times did you visit the health center in the past 6 months?” A Spearman’s rank order correlation analysis was conducted to test the correlation between the number of times a participant visited the health center in the past 6 months and community leadership score. Spearman’s correlation was conducted rather than Pearson’s correlation, because Spearman’s correlations can be used when variables are at least ordinal (Pallant, 2013), while Pearson’s correlation requires binary or continuous variables. Direct (positive) correlations indicate the values of two variables

move in a like manner, values either increase or decrease similarly. An indirect (negative) correlation indicates the values of two variables move in opposing directions, that is, when the values of one variable increase, the values of the other variable decrease. According to Cohen (1992) a correlation coefficient with an absolute value between .10 and .29 indicates a small effect between two variables, a correlation between .30 and .49 is a medium effect, and .50 to 1.0 is a large effect. A direct correlation was found between the number of times a participant visited the health center in the past 6 months and community leadership score, but the correlation was a small effect and not statistically significant ($N = 130$, $\rho = .121$; $p = .170$).

Survey Question 19, "Are you on HIV/AIDS medicines" was dichotomously coded as no = 0 ($n = 46$) and yes = 1 ($n = 83$). This variable was used as the independent variable in an independent samples *t*-test with the dependent variable of community leadership score. Higher community leadership scores were associated with greater belief of the positive role of community leaders by a participant.

The *t*-test was statistically significant, $t(127) = 2.05$, $p = .043$. Participants coded as being on HIV/AIDS medicines had a significantly higher mean community leadership score ($M = 3.60$, $SD = 0.75$) than participants who said they were not on HIV/AIDS medicines ($M = 3.30$, $SD = 0.8$). The findings suggest that those who were taking their HIV/AIDS medicines had greater belief of the positive role of community leaders than those who were not taking their HIV/AIDS medicine.

Survey Question 20, "Have you refilled your prescription in the past 6 months?" was dichotomously coded as no = 0 ($n = 44$) and yes = 1 ($n = 85$). This variable was used

as the independent variable in an independent samples t-test with the dependent variable of community leadership score. Higher community leadership scores were associated with greater belief of the positive role of community leaders by a participant.

The *t*-test was not statistically significant, $t(127) = 1.11$, $p = .268$. Participants coded as refilling their prescriptions in the past 6 months had a higher mean community leadership score ($M = 3.51$, $SD = 0.92$) than participants who said they has not refilled their prescriptions in the past 6 months ($M = 3.32$, $SD = 0.88$). However, the differences were not statistically significant.

Table 10

Summary Table of Quantitative Analysis Findings for Research Question 1.3 Null Hypothesis of "Community leaders have no influence on the health behaviors of their people."

1.3 Community leaders have no influence on the health behaviors of their people.			
Ever been tested for HIV and Community Leadership Score	Independent *t*-test	Not significant	.916
Number of times visited health center in last 6 months and Community Leadership Score	Spearman's correlation	Not significant	.170
Taking HIV medicines and Community Leadership Score	Independent t-test	Significant	.043
Refilled prescription in last 6 months and Community Leadership Score	Independent t-test	Not significant	.268

Conclusion as relates to Null Hypothesis 1.3. Survey Question 19, "Are you on HIV/AIDS medicines" was statistically significant, $t(127) = 2.05$, $p = .043$. Participants

coded as being on HIV/AIDS medicines had a significantly higher mean community leadership score (M = 3.60, SD = 0.75) than participants who said they were not on HIV/AIDS medicines (M = 3.30, SD = 0.8). The findings suggest that those who were taking their HIV/AIDS medicines had greater belief of the positive role of community leaders than those who were not taking their HIV/AIDS medicine. Therefore, reject Null Hypothesis 1.3. There is not sufficient evidence to indicate that Community leaders have influence on the health behaviors of their people.

Summary of Quantitative Findings

A summary of the analyses, test statistics, p-values, and conclusions are presented in Table 11. Two hypotheses, 1.2 and 1.3 tested as statistically significant for one analysis each. The Fisher's Exact test for Survey Question 8, "How do you pay for your doctor's visit and/or hospital visit?" was statistically significant (p = .005), which indicated that there was an association between the type of payment made for a health care visit and whether or not a participant was classified as a public health risk. The PHR = Yes group and PHR = No groups differed on two payment types of (a) your employer pays and (b) I don't have to pay. A larger proportion of PHR = Yes participants (11.8%) received employer compensation for doctor visits than did participants in the PHR = No group. Conversely, A larger proportion of PHR = No participants (13.8%) did not have to pay for doctor visits when compared to the PHR = Yes risk group (3.9%). Null Hypothesis 1.2 was rejected.

Survey Question 19, "Are you on HIV/AIDS medicines" was statistically significant, $t(127) = 2.05$, p = .043. Participants coded as being on HIV/AIDS medicines

had a significantly higher mean community leadership score ($M = 3.60$, $SD = 0.75$) than participants who said they were not on HIV/AIDS medicines ($M = 3.30$, $SD = 0.8$). The findings suggest that those who were taking their HIV/AIDS medicines had greater belief of the positive role of community leaders than those who were not taking their HIV/AIDS medicine. I rejected Null Hypothesis 1.3. Null Hypothesis 1.3 was rejected. The next section contains the thematic analysis and findings for the responses derived from the open-ended interviews.

Table 11

Summary Table of Quantitative Analysis Findings Vis-à-vis Each Null Hypothesis

Null Hypothesis/Model Specification	Analysis	Findings	p-value
1.1 Level of education has no correlation with knowledge of HIV/AIDS.			
Level of education vs. knowledge of HIV/AIDS	Spearman's correlation	Not significant	.693
Level of education (with 3 levels) vs. knowledge of HIV/AGE	ANOVA	Not significant	.556
1.2 Access to public health services does not affect the health of the population.			
Access to ARV and Population Health Risk	Fisher's exact test	Not significant	.817
Mode of transportation and Population Health Risk	Fisher's exact test	Not significant	.401
Travel time (minutes) to access public health services	Independent t-test	Significant	.011
Access to a regular doctor and Population Health Risk	χ^2 test of independence	Not significant	.075
Difficulty going to doctor and Population Health Risk	χ^2 test of independence	Not significant	.111
Difficulty going to hospital and Population Health Risk	χ^2 test of independence	Not significant	.305
A Time in last 12 months could not see a doctor and Population Health Risk	χ^2 test of independence	Not significant	.102
Null Hypothesis/Model Specification	Analysis	Findings	p-value
1.2 Access to public health services does not affect the health of the population. (cont'd)			
Mode of payment for doctor visit and Population Health Risk	Fisher's exact test	Significant	.005
1.3 Community leaders have no influence on the health behaviors of their people.			
Ever been tested for HIV and Community Leadership Score	Independent t-test	Not significant	.916
Number of times visited health center in last 6 months and Community Leadership Score	Spearman's correlation	Not significant	.170
Taking HIV medicines and Community Leadership Score	Independent t-test	Significant	.043
Refilled prescription in last 6 months and Community Leadership Score	Independent t-test	Not significant	.268

Note. ANOVA = Analysis of Variance; ARV = Antiretroviral.

Qualitative Findings

Participants for the open-ended interviews of the qualitative part of this research were purposively selected from among those that filled out the questionnaires for the quantitative design. Each participant was interviews in local community halls, or in another private and quiet place. A total of 13 interviews were completed. A content analysis of the information obtained for each participant via a researcher developed interview questionnaire were used to address the following overarching research question and three sub-questions:

Research Question 2. Qualitative. What is the relationship between the level of Community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities**?**

Research Question 2.1. What is the relationship between the level of community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities?

Research Question 2.2. What is the relationship between level of health education and knowledge of HIV/AIDS prevention and management?

Research Question 2.3. What influence (if any) do community leaders have on the health behaviors of members of their communities?

Study Participants

The *N*=13 participants of the study were purposively sampled from among those that filled out the questionnaires for the quantitative design. Table 12 presents the unique

ID numbers assigned to each of the 13 participants, the gender of each participant, and the standing of each participant in his or her community. The sample consisted of 10 females (77% of the participants) and 3 males (23% of participants). Three participants (23%) were classified as healthcare workers, five (38%) were classified as community leaders, and 4 participants (31%) were HIV positive community members. One participant was both a healthcare worker and community leader.

Table 12

*Community Standing and Gender for Participants Interviewed (*N*=13)*

Participant ID	Community Standing	Gender
P01	Healthcare worker	Female
P02	HIV+ community member	Female
P03	Community leader	Female
P04	Healthcare worker and Community leader	Male
P05	HIV+ community member	Female
P06	Healthcare worker	Female
P07	Healthcare worker	Female
P08	Community leader	Male
P09	Community leader	Female
P10	HIV+ community member	Female
P11	Community leader	Female
P12	Community leader	Male
P13	HIV+ community member	Female

Note. HIV+ = positively tested for the Human Immunodeficiency Virus.

Data Collection

Interviews were conducted on *N*=13 participants. All interviews were recorded using a recording device. The recordings were then transcribed for analysis by a third party transcription service into separate Word documents. The transcripts were then uploaded into NVivo 10 software for qualitative analysis.

The Interpretative Phenomenological Analysis (IPA) approach was used to review and sort the qualitative data. The IPA approach involves a close examination of the experiences and meaning-making activities of interviewees (Reid, Flowers, & Larkin, 2005, p. 20-23). The qualitative responses from the transcribed Word documents were sorted and coded in detail, with the focus shifting between the key responses of the participants to my interpretation of the meaning of those responses (Larkin, Watts, & Clifton, 2006). The IPA was used in order to better understand what a given experience of a participant was like (phenomenology) and how I made sense of it (interpretation).

Phenomenological reduction of the collected data was performed using Nvivo10 software (QSR International Pty Ltd., 2012). The Auto Code function was used to classify the participants' responses into nodes according to the individual interview transcripts. Knowledge obtained from word frequency analyses and output of visual representations (word clouds) of the number of times a word appeared in answers to each of the transcripts assisted the researcher in a more in-depth classification of themes to address the research questions. A larger size word in the word cloud for a particular transcript indicated a higher degree of the word's usage by the participant.

I then reviewed each transcript node and performed a preliminary grouping of every expression relevant to each interview question and the research questions of the study. The preliminary grouping was performed by reviewing each of the open-ended response items in each of the transcripts and then classifying all relevant information. Additional nodes were constructed as themes emerged from the word frequency and data review and classification process.

Reduction and elimination of unrelated text was then performed. I tested each coded expression and aggregated them if they were similar in context, thus clustering the invariant constituents by grouping clusters into core themes. The themes were then cross-referenced with each participant's complete interview record in order to create a textual structural description of the perceptions and essence of the participant's responses. Each expression relevant to each participant's experience was checked for its relationship to the invariant constituents, purpose statement, and the research questions of the study. This process led to the identification and final determination of the themes of the study. Table 13 presents the themes derived from the data analysis as relates to each of the three qualitative sub-research questions. The derived themes resulting from the data analysis are presented according to each sub research question.

Table 13

Relating Qualitative Sub-Research Questions to Themes

Research Question	Theme	Description
RQ 2.1.What is the relationship between the level of community health services and the extent of HIV/AIDS, as perceived by residents of these communities?	Distance to health services is greatest barrier to treatment	Many community members and leaders stated that although there was no cost for doctor visits and plenty of medicine, the cost of travel to facilities was the greatest barrier to receiving testing and/or consistent treatment.
	Long waits at the healthcare facility are a barrier to proper treatment	Some community members shared that they, or others in the community, preferred visiting chemists or traditional healers because the wait time was too long at the healthcare facility.
	Lack of equipment for CD4 tests in many healthcare facilities.	Although medicine for treatment of HIV was readily available, many facilities did not have enough equipment for testing CD4 cell counts.
RQ 2.2. What is the relationship between level of health education and knowledge of HIV/AIDS prevention and management?	Community meetings and healthcare worker visits help facilitate treatment	Most of the study participants felt that regular community meetings and healthcare worker visits helped them, and their neighbors, to feel secure in seeking testing and treatment. One community leader said that community meetings would have a greater turn-out if medication was offered on-site.
RQ 2.2. (cont'd). What is the relationship between level of health education and knowledge of HIV/AIDS prevention and management?	Reduction in fatalistic beliefs	Some community members did not yet know or believe that HIV was treatable and not a "death sentence". This created stigma in the community and hindered people in seeking out testing and treatment. However, some community leaders and members said that they saw the stigma decreasing. They believed the decrease was mostly due to the shared knowledge that HIV could now be treated as a condition, rather than being a "death sentence".
	Community knowledge and awareness	All of the community members were able to give correct information the many types of HIV transmission modes. Some community members shared their concerns about wasting as a fear of having HIV, and the availability of healthy food for a healthy diet.
	Neighborliness	Many community members helped others in their community who had HIV/AIDS. Helping others gave everyone strength to face the disease.
RQ 2.3. What influence (if any) do community leaders have on the health behaviors of members of their communities?	Initial contact	The community leader was the initial contact for community members to learn about HIV and to get referred for testing and treatment.
	Collaboration	Community leaders cared deeply about their communities and found it easy to collaborate with both the government and healthcare workers.

Study Findings

The study findings are reported according to research question and theme. Although the themes are reported individually, many of the participants' responses could be attributed to more than one theme. When a participant's responses could be classified to more than one theme, their response was reported to the theme where it made the most impact to the study findings.

Research Question 2.1. What is the relationship between the level of community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities?

Distance to health services is greatest barrier to treatment. Many of the members of the community, as well as many of the community leaders, mentioned distance as a very prohibitive barrier for community members receiving HIV/AIDS testing and/or consistent treatment. There was no cost for doctor visits for consultation, diagnosis, and follow-up visits related to HIV/AIDS treatment. Medicine was readily available at designated healthcare facilities, also at no cost. But not at all healthcare facilities carried the medicine. P008, a male community leader, mentioned that HIV/AIDS medicine was available at the teaching hospital in another community. With the exception of pregnant women, medicine was not available from the health center in his local community.

However, another community leader, P012, noted many facilities available for testing and treatment of HIV/AIDS in his community. The facilities were part of the

Heart-to-heart program in Nigeria. According to the nimedhealth.com, the Heart-to-heart centers provide counseling, testing and treatment to individuals as relates to HIV/AIDS. P012 described the level of community services in his area more favorably as follows:

> Every health center in Nigeria where you can find a sign board written Heart to Heart, that health center is capable of giving healthcare to HIV patients. Anybody who has HIV or who knows anybody who has HIV should advise the person to go to any health center or health facility that has Heart to Heart program. That place, they will receive required health services. We have it in Aba, all over. Like in SDA Hospital, there is Heart to Heart. We have it in teaching hospital, there is Heart to Heart. We have it in Living Word Hospital, at least to mention but a few.

The cost of traveling long distances was prohibitive for many community members. Community members and leaders mentioned the high cost of "drops." Drops are the number of times one takes a bus or taxi before getting to a destination. Each drop is a geographic zone, and the charges for fees and fares at each drop are high. Patient P13 had to make three drops each way to visit a health center with HIV testing and medicine.

An HIV positive community member, P10, stated that she traveled "very far" to receive help, about three drops. She said she was satisfied with the care given at the health center, and the CD4 testing and drugs were free. However, it was still expensive to pay for travel. She stated that although HIV treatment was free, other treatments, such as drugs for malaria, were not free, and said this caused a problem of "misinformation" which meant that those seeking drugs for conditions other than HIV were sometimes surprised to find they would have to pay for them. She also noted that she had problems

with transportation when short on money, and this concerned her regarding her health, saying, “Sometimes when I don't have money, like now, things are very hard. I will not say that is all well with me.”

Another female HIV patient, P02, described how she was not consistent with her treatment due to the cost of travel. The conversation with the researcher follows:

P02: I don't have money to transfer myself. Today is 29th. Since I have my card now, the last date was 7th August, is supposed to when I come to collect my drug. Since I don't have money for transportation, that's why I came today. I borrowed money today so that I will have my drug.

Researcher: So, you don't have any center where you can get your medication around where you live?

P02: No, it's only this place. This is the hospital. It is the nearest place from where I'm living.

Researcher: From where you're living. Where do you live?

P02: I live about [inaudible 00:07:56].

Researcher: [inaudible 00:07:59] that's too far. You can't walk it.

P02: Yes [no I cannot].

Although the patients felt the distance and cost of travel was prohibitive, two community leaders did not feel the distance and cost were too much. P09, a community leader and HIV positive female, stated that the health center was accessible by KK (taxi) or bus, but not by walking, and that this “was not too far…they can reach here.” She stated the fee was about 150 to 200 (naira) and there were about two drops each way,

depending on which facility the person wished to visit. P03, a female community leader, said there were community health centers close by and that community members could walk to them for treatment. She noted that there were enough drugs available for everyone who needed them.

P07, a healthcare worker, said that the health workers performed community outreach to visit communities and make home visits. She did not mention that she tested or dispensed drugs, only that she made visits in the community and stopped to counsel others on safe practices during her travels:

> We just go as a form of education, generally. If we meet ... When I see people on the road doing some kind of thing that are not good [*sic*], like engaging in this manicure with all these outside men, I discourage them. I talk to them, say, "Do you know what implication you are doing [implications you are causing]? Why not do this at home?" This knife... are not sterilized [*sic*]. They are using it on many people. You don't know the person they are using it, what the person has, so I discourage such attitude [*sic*].

Long waits at the healthcare facility are a barrier to proper treatment. In addition to the costs of traveling long distances, concerns were voiced about long waits at the healthcare facilities, and some community members visited chemists (Retail stores that market drugs, be it prescription, proprietary or nonprescription. Mostly owned and managed by nonpharmacists). Visiting chemists was not seen by community members to be as beneficial as going to a doctor at a healthcare facility. The reason given for seeing the chemists was mostly the cost of travel, not quality of care. P05, an HIV positive

community member described the difficulty she had in paying for traveling long distances to a treatment center, and why it was less money and less of a wait time to visit the chemist:

> Going to the health center you need money now. Two drops for a good ticket. One hundred and fifty-nine (naira) before you go and come back, four hundred, five hundred. If you don't have money and sometimes if you are rich bus. And when you get to that place [you have to wait]. That chemist you go there you get medicine. You go now [get the medicine without waiting]. When you see a doctor, you wait and wait and wait before you see the doctor. Maybe your number is 70 or something and people who go will say, "I have wasted a lot of time."

When P05 was asked by the researcher why she believed it was better to go to the chemist, she stated that "the chemists are really good," and that "The man (chemist) that is selling drugs you have to just tell the person you have sickness. They mix drugs and medicine and give it to you." She also said, "We have a medical center. They are too far. The chemist will mix you a drug, and you will get well."

Lack of equipment for CD4 tests in many healthcare facilities. Although medicine for treatment of HIV was readily available, many facilities did not have enough equipment, especially for testing CD4 cell counts. When asked by the researcher if he felt that community members with HIV were "getting the healthcare they deserve" P12, a community leader, explained the problem of the lack of equipment in detail:

> They are getting the healthcare but there's room for improvement. They are getting the healthcare, but the problem with our healthcare it the equipment. Our

> health centers don't have enough equipment to assist people like us. People with HIV virus. What am I trying to say? There is a test HIV patients run, called CD4 test, and this CD4, for some time, many HIV patients have not been able to run this test in so many hospitals I know in Aba [*sic*]. Because, of lack of equipment [*sic*]. And they've been spending their own money going outside this state to go and run that test, because that test is very necessary. Without that test, the doctors will not know whether to continue giving them the normal drugs or not to. That test is very important. That is just one of the examples. There are so many other ones where most of our hospitals don't have the required equipment.

Another community leader, P11, also commented that the lack of equipment was a problem not just because of the need for proper testing, but also because people who come for testing are referred to other facilities where the equipment is available, but again, cannot afford the money or time to make another trip:

> The facility that we are in charge of, they're really taking care of our patients. You come there, the nurses are friendly. They will take care of you, but sometimes when coming for CD4 counts…When I talk about CD4 counts, this is a machine that takes care of us. That determines your health because health-wise you may look healthy, but inside you, it's not all that okay. It's this CD4 count that will ascertain your health worthy [*sic*]. The level of the virus in you. Sometimes we go to the facility, they will tell you that here in Annam, particularly in Abach today, I don't think that there is any, it's only one hospital that has that equipment. Many of us have been coming for the test and go home [without being tested]. There are

> some that come out [to be tested] three, four times. They weren't able to access the test. That is the only way we are having problems.

Research Question 2.2. What is the relationship between level of health education and knowledge of HIV/AIDS prevention and management?

Community meetings and healthcare worker visits help facilitate treatment. Many community members felt that regular community meetings helped them, and their neighbors, to feel secure in seeking testing and treatment. P05, a female community member, noted that the meetings were an important information channel because she did not always get lights and television. She said she heard about prevention information on the radio; but, the meetings were presented monthly with good information. Community leader P08 said that he called a community meeting about HIV/AIDS two times a year. Healthcare workers also visited communities to educate the population and to refer to resources as needed. P04, a healthcare worker and community leader described his role in bringing knowledge to his community:

> I'm a health worker in HIV/AIDS in Abanot Development ... More especially, my community, Eziama community. We go to sensitize people. That's the role I play, to sensitize people, because I've been trained on that. To sensitize people about HIV, people that have it, that they should not be hiding. They should be open, and I refer them to the appropriate place they're supposed to be. That's what we do. My role in my community. Any person that comes out to say that he has HIV/AIDs, I do encourage the person, that it's not something he should be afraid of. [HIV is] something that can be curbed, it's something that can be taken care of.

> I refer the patient to the appropriate place she ought to be in the health center, where the person can be taken care of.
>
> People that don't have [HIV], I do enlighten them how to prevent, how to avoid so that they would not contact the HIV diseases. There are ways not to ... About using the same syringe that another person has used. When they go to barber, they barb their hair, nail cutting, some other things I do enlighten them about. And sexual intercourse. They need to be protected… you have to protect yourself with condom.
>
> People are responding to the prevention measures that we've given to them, and the height of HIV positive has reduced in my community and also in Abanot Local Government, it has been reduced. We don't have {as many new] patients now because people are taking the measures that were given to them to avoid it.

P02, a community member, also said that she has seen the numbers of people newly infected with HIV decrease over time. P07, also a healthcare worker, described how all pregnant women were treated for HIV with antiretroviral drugs until they could be tested. When women brought their children in for immunization visits, these mothers were given health talks on HIV and prevention, and the steps one should take to not advance in the stages of HIV. Midwives were also educated to inform and educate mothers on the prevention of HIV and to advise the mothers to get tested to be informed of their HIV status. P02 also said that educating commercial drivers and sex workers in the use of condoms was important as they were usually HIV positive in greater numbers.

One community leader, P08, suggested that bringing medicine to the community, perhaps prescribing it at community meetings, would result in more people attending the meetings. And easier accessibility to receiving medication would result in better preventions and management of HIV/AIDS in the community.

Reduction in fatalistic beliefs. Some community members did not yet know or believe that HIV was treatable and not a "death sentence." This created stigma in the community and hindered people in seeking out testing and treatment. However, some community leaders and members said that they saw the stigma decreasing. They believed the decrease was mostly due to the shared knowledge that HIV could now be treated as a condition, rather than being a "death sentence." One community member, P05, was not aware that drugs were now available to manage the HIV virus. When she was told by the researcher that the medicine which is available now can treat HIV as a chronic condition, similar to diabetes or hypertension, P05 said that she would tell others that ,"here is a drug now and that people won't die if you keep taking your drug now."

P13, a community member with the HIV virus shared that when she was first tested and confirmed as HIV positive, she thought, "Hey, this is the end of my life." But she is thriving now, saying, "thank God today I'm alive and I'm bouncing. I'm happy!"

One healthcare worker, P01, shared her thoughts on how she shares the news that HIV is now treated as a chronic illness with the communities she serves, saying, "We tell them [community members] that it's not the end of life. That so many people are living with HIV and that they can still. If they maintain good habits, they'll live out their total life span given to them by God."

Another healthcare worker, P06, shared the message of hope she shares with the community, saying:

> We are telling them [the community members] not to lose hope, not to lose hope [*sic*]. For us, some people, if you have HIV, they will lose hope. Some will die. But here, if you come, we will sit down and encourage you not to lose hope and encourage them to be taking these [medications] everyday as prescribed.

All of the community members were asked about modes of transmission of the HIV virus and they correctly described many avenues of transmission and ways of prevention. Some community members shared their concerns about wasting as a fear of having HIV, and the availability of healthy food for a healthy diet was a concern for some with the HIV virus. P02, an HIV positive community member, said that she believed she contracted the virus from her husband. She noted that the HIV virus could be transferred by sexual intercourse, and also mentioned some other, less contagious, modes of transmission such as shaving, manicure salons, barber salons, and kissing. She said that she prevented spreading the virus by taking her drugs, avoiding sexual contact, and not getting her nails done at a salon.

P10, a female HIV positive community member, stated that having HIV/AIDS was a challenge for a person, but they should first go and get tested and that private counseling was available at the doctor. She stated that one should eat more fruits and vegetables and avoid alcohol and bitter cola. In regard to treatment, P10 stated that getting Sceptrin from the doctor was about 10 times more than getting medicine from a

chemist. P10 did not go to the chemist, but said others did if they could not afford medicine at a doctor's visit.

P05, an HIV positive female community member, was asked if she knew of anyone who had AIDS in her community. She stated, "No, that is [a] rumor. How would we know? Someone would be sick [and] before you know it they would be slim." She then described how weight loss was an indicator that someone had AIDS, "So when you see anybody say, "I am sick" and sometimes they will tell you, "just leave me." This one will say, "I have malaria and typhoid" before you know it they will be slim, slim, slim. That's how you know that [AIDS] is the problem. You watch them."

The concern about weight loss as a sign of getting sicker was present among other community members. P02 said that she was taking her drugs as prescribed and eating well but was still losing weight. She was not sure if the drugs may have been causing her weight loss. P13 noted that when she was much more ill, that she disclosed her HIV/AIDS status to others in the community, and the community made sure she had enough to eat, "Even if you'd like to eat a five course of garri, [said the others in the community] just tell us!"

Neighborliness. Many community members helped others in their community who had HIV/AIDS. Helping others gave everyone strength to face the disease. Continuing with the dialogue from P10, the researcher noted that P10 must be good, because she was loved. P10 said she was well cared for, and had only to ask for help and it was given by others in her community:

> Usually I just make a call, "Please we don't have food today. There is nothing in this house and these children are disturbing me." They say, "Okay, I'm coming, or I'll send somebody." They will just help me. Even if I say, "I'm hungry." We are walking like this I say, "I'm hungry. I want to eat." They say, "Go in and just let them give you food." When I eat they say, "Madam, give her extra." As if they're making jokes of me. But [this support] helped me a lot. I will eat and eat that extra. I will feed very well!
>
> Before you know it, my CD4 was very high. Even the pharmacist was asking me, "What do you take? Do you take quail egg?" I say, "No, I don't quail eggs. I feed very well." My in-law then calls me say, "If you normally eat one cup of garri, please try to eat three or four." When I put it into practice, I found out that food [could be] used to help somebody [with HIV/AIDS].

P10 and P13 also helped others with HIV/AIDS. P10 said that when the lab technician told her she was HIV positive that she was shocked. But then she said, “I picked courage.” She shared that when she went for her appointments she would go to the ward at the health clinic and ask the nurses to show her to a person with HIV/AIDS. To tell the person with HIV/AIDS that a community member was there to visit with them. If the patient would see her, then she would tell them to also pick courage, “I told the person [with HIV/AIDS] don’t lose hope.”

P13 also visited others with HIV/AIDS at the hospital. She discussed how patients would improve dramatically between her visits, and how accepting help from others saved her own life:

> Even in the next one month, when you'll come back that is if you'd see that person, you'll [not recognize the person because they have improved so much]. The person will say, "I'm so, so and so person." You'll say, "Are you this person? All right, thank God!" People think you will die or anytime that's nature [the normal progression of the disease]. When I found out that it's true that AIDS can be cured, because my own was full-blown AIDS…I can't [couldn't] eat. I can't walk from here to here. I will just sit down there and rest [*sic*].

Well, after taking the drugs I was like, "I want to volunteer myself." I volunteered myself to help others. I want to know more about this virus that nearly killed me. If not by the grace of God and my obedience too. Because when they say, "This is what is happening to you. Do you want me to help you?" I say, "Yes, okay." They refer me to the hospital.

Research Question 2.3. What influence (if any) do community leaders have on the health behaviors of members of their communities?

Initial contact. The community leader was the initial contact for community members to learn about HIV and to get referred for testing and treatment. Community leader P03 approached community members by opening a dialogue with them, saying, "to reach my fellow members, my fellow neighbors ... I interact with them by asking them about HIV and asking them some questions about it, ask them if they have heard about it." She noted their answers and referred them to the proper places for testing and treatment. She said that through her help, she felt the community members received the healthcare they needed.

P08, a male community leader discussed how he makes initial contact with members of the community, “Well, my purpose in the community is to go around and see the people that live with the HIV so that they will start to drink the medicine, and to measure who healthy, unhealthy.” When asked by the researcher, “Do they [community members] really come out and tell you that they have HIV?” P08 answered:

> They don't need to come out, but I see that in my eyes that I talk and question them that you don't die. You go into hospital and drink medicine. That you will live longer, and so many of them who live with that HIV, are living longer now.

Sharing faith was an important aspect in the interaction of P08 with others in the community. He mentioned that he prayed with those who were sick so they “fell that they have hope.” He also said that he counseled the community that it was safe to have some contact so that community members would not shy away from each other. He felt that those with HIV needed the community for support and stated, “If you leave them [those with HIV/AIDS] and you send them away from you, they fear that they will die, but [they] are not animals, they know they're just [normal people].”

P09, a community leader who was also HIV positive, said that when she sees the signs of HIV/AIDS in a community member that she took them to the hospital for testing and treatment. She also advised her community on prevention:

> I advise them to prevent yourself [*sic*] from having sexual intercourse with an either married man or married woman. I used to tell them to focus on their own family, not going outside. Then I tell them to prevent using sharp objects, even

> barbering their hair. I tell them after barbering their hair, they should treat the clipper to prevent that sickness.

P04, a healthcare worker and community leader, shared his thoughts on the benefits of regularly interacting with the community:

> Interaction is about sensitization. It's about awareness. Making people to be aware that in such cases they don't need to be afraid. Interaction is about passing information, is holding information to people about HIV and AIDS or other health matters, relatable what they don't know. There are people that are uncivilized and timid, but when you get them enlightened, when you come into interaction with them, they will have the knowledge, which they don't have, and they will follow the right step to handle their cases.

Community leader P12 noted that making contact and getting those who were HIV positive into treatment not only protected the community, but the contact and interaction by community leaders, especially leaders with HIV, with community members, eased the stigma for those with a positive diagnosis:

> The interaction between us and people living with HIV/AIDs have been smooth. It has been smooth for those of us who understand. Because the problem with interacting with HIV patients and...the problem with the people who are to interact and take care of HIV patients is the problem of stigma. If one doesn't understand HIV properly, he would stigmatize against the patient. For those of us who understand HIV properly, we don't stigmatize against the patient. We love them, we care about them, we interact with them, we live with them, we eat with

> them, we drink with them, we do things together with them. So, the interaction has been smooth.

Collaboration. Community leaders cared deeply about their communities and found it easy to collaborate with both the government and healthcare workers. The government was a useful resource for community leaders. P12 stated that community leaders were trained by the government via seminars and conferences. The conferences were held approximately every 3 months, and the government paid for community leaders to travel and attend the events. Community leaders also visited churches in the community for "sensitization" which entailed speaking about HIV, sharing experiences of living with HIV, and thus helping the community to realize that HIV was not something that could be caught by casual contact. P12 said:

> It's not only sensitizing our own immediate environment. We go to churches, motor parks and any organization we can go to. These are things we have been doing to see that the stigma against HIV is reduced and people get to know more about it that it's not a death sentence.

Community leaders also collaborated with healthcare workers to educate the community and refer community members for testing and treatment. Community leader P03 stated that she was more able to convince community members to be tested and treated if she took a healthcare worker with her on visits in the community. She said that the healthcare worker would write referrals to the healthcare facility on the spot, and the referral was a strong catalyst for convincing.

P12 stated that he worked with healthcare facilities to track those who may not have been coming in regularly for treatment. He also said he would pay out of his own pocket if necessary to make sure community members received the help they needed:

> HIV/AIDS is a curse that has disturbed or put a lot of people in bad state, and we have been fighting it. Particularly myself, I've done the much I can. And this much include sensitization of people who are negative so that they don't get infected. How to prevent getting infected by the HIV virus. Apart from sensitization we go after those who are infected, who have been collecting their drugs or they've stopped collecting their drugs for some time. When the hospital looks for them and they don't see them we come to the hospital, collect their names as defaulters, then we'll go after them.
>
> We'll go to their houses, we will go to their shops, we'll go and find them to find out why they didn't come to collect their drugs. Because it is such people who are vulnerable, and who easily transmit the disease to the negative ones. We go after those ones who have stopped taking their drugs so that we know the reason why they stopped taking their drugs. Encourage them to come back to the hospital and continue with their medication. Apart from this, we also give some little, little support, like financial support, for those who find it difficult to transport themselves to the hospital. On our own, we give them financial support, like transport.
>
> Some of them, because of the hardship of the recession they don't have enough to eat. When you find out such people you just have to. You don't have any option,

you just have to assist them financially and not waiting for the government to give you money or for anybody to give you money. You just have to help them.

Summary

This mixed-methods study was performed to investigate whether or not a relationship existed between sociodemographic factors (access to health, health educational and community leaders) and prevention /treatment of HIV/AIDS in two rural communities of southeastern Nigeria based on research conducted during 2017. A convergent mixed method approach was used, whereby quantitative and qualitative data were concurrently collected, analyzed separately. The findings from this chapter will be reintegrated during interpretation in the discussion chapter. A total of N=131 HIV positive participants completed quantitative questionnaires, and n=13 participant volunteers completed in-person interviews, to assess participants' perceptions on access to healthcare, health education and the influence/effect of community leaders as relates to HIV/AIDS awareness, education, and treatment.

A summary of the quantitative analyses, test statistics, p-values, and conclusions are presented in Table 10. Two hypotheses, 1.2 and 1.3 tested as statistically significant for one analysis each. The Fisher's Exact test for Survey Question 8, "How do you pay for your doctor's visit and/or hospital visit?" was statistically significant (p=.005), which indicated that there was an association between the type of payment made for a health care visit and whether or not a participant was classified as a public health risk. The PHR=Yes group and PHR=No groups differed on two payment types of (a) your employer pays, and (b) I don't have to pay. A larger proportion of PHR=Yes participants

(11.8%) received employer compensation for doctor visits than did participants in the PHR=No group. Conversely, A larger proportion of PHR=No participants (13.8%) did not have to pay for doctor visits when compared to the PHR=Yes risk group (3.9%). Null Hypothesis 1.2 was rejected.

Survey Question 19, "Are you on HIV/AIDS medicines" was statistically significant, $t(127) = 2.05$, $p = .043$. Participants coded as being on HIV/AIDS medicines had a significantly higher mean community leadership score (M=3.60, SD=0.75) than participants who said they were not on HIV/AIDS medicines (M=3.30, SD=0.8). The findings suggest that those who were taking their HIV/AIDS medicines had greater belief of the positive role of community leaders than those who were not taking their HIV/AIDS medicine. I rejected Null Hypothesis 1.3. Null Hypothesis 1.3 was rejected.

The themes derived from the interviews of the qualitative portion of the study are presented in Table 12. Many themes were positive in scope and included themes related to community cohesion and support of treating community members with HIV/AIDS. Some negative themes included long traveling distances to proper healthcare facilities and the presence of lingering stigma of HIV/AIDS as a "death sentence".

The next chapter will provide a discussion of the nine themes as they apply to the six research questions and the literature review of this study. The chapter will also provide information on study implications and recommendations for further research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This study was to determine whether a relationship exists between HIV/AIDS and some sociodemographic factors, namely (a) access to health care, (b) health education, and (c) impact of community leaders, in two selected rural areas in Southeastern Nigeria. This chapter includes the major findings as related to the relationship between HIV/AIDS and some sociodemographic factors as well as social changes that may be valuable to individuals, the communities and public health policy makers. Also included are the limitations and areas that need further investigations as well as a brief summary. This chapter also discusses future research possibilities that will help answer the research questions:

RQ1: Quantitative – To what extent are the socio-demographic factors level of education, public health services and influence of community leaders associated with HIV/AIDs awareness in two rural communities in Southern Nigeria?

RQ2: Qualitative - What is the relationship between the level of Community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities?

At the inception of this study, I established that HIV/AIDS epidemic remains one of the most challenging diseases because of poverty, lack of education or low level of education and absence of cure (Erinosho et al., 2012, p. 113). This assertion was proven by findings in the literatures that were reviewed in this study and corroborated with study

quantitative and qualitative analyses results. It was established that Sub-Saharan states in Africa have suffered the severity of HIV/AIDS infections over many decades. These findings have been corroborated with empirical facts and figures to proffer solutions to curb the menace of HIV/AIDS which is the main crux of this research. I examined the qualitative results with the quantitative results, explaining the implications of such findings in respect to research objectives. It is important to note that the need for mixed method approach is the credence it lays to mitigate the threats to validity of results, because it provides corroborative results as a confirmation of validity of research objectives. When the quantitative results are contradictory with qualitative results, intervening variables are scrutinized further to find the hidden threats to validity of results. Whatever the case, for the decisions the researcher makes, the general rule is that the results are more acceptable when both qualitative approach and qualitative paradigm become complementary. When both paradigms are corroborated it gives researcher a greater confidence in the method used for the research. However, when they are contradictory, it gives room for further inquiry and create doubts in the validity of instruments used for analyses. In this study, both approaches showed similar results: which is an indication of the validity of the research instruments and method of analyses in this study. The findings, their implications and contribution to knowledge are discussed in this section of research report.

Interpretation of Data

Research Question 1

To what extent are the sociodemographic factors level of education, public health services and influence of community leaders associated with HIV/AIDs awareness in two rural communities in Southern Nigeria?

Question 1 sought to establish the relationship between the level of education, Public Health Services and the influence of community leaders with HIV/AIDS awareness in two rural communities in South Eastern Nigeria. A total of 133 questionnaires were returned out of 148 given out. The quantitative analysis relating to education showed that there was no significant relationship existing between the variables (with *p*-value of 0.693 Spearman's correlation). The null hypothesis was accepted. In 2013, Abia State emerged the overall best in West African School Certificate Examination (WASCE) an indication of high level of education in Abia State (Ozuobu, 2014). The implication is that education may not be associated with the menace of HIV/AIDS in Abia State, since they demonstrated high level of education when compared to other regions in the country.

It can also be projected that the level of education (ANOVA= 556) is not associated with the extent of HIV/AIDS awareness, treatment, management or cure. It is also possible to deduce that other southern states are not lacking education, and this can be generalized for the rest of the southern part of Nigeria. However, a slight difference which is not significant, exists between the three levels of education, as categorized in this study. The categories are less than high school, high school and greater than high

school. The mean ranges of the three categories show no significant difference (*p*-value .556, ANOVA), indicating that the level of education is not sufficient evidence when correlated with knowledge of HIV/AIDS. The implication of this study is that rural areas in South Eastern Nigeria may not be labelled as educationally disadvantaged areas. However, it has become obvious that knowledge not put into action produces no change in individuals' behavior or circumstances. HIV/AIDS epidemic is persistent in South Eastern part of Nigeria with 7.3% prevalence rate (NACA, 2012; Onyeonore et al., 2014).

Abia State Government places priority in education and has over 800 primary schools,160 secondary schools, one teacher training college and five technical colleges. Abia State has a population of 2,833,999 and area of 6,320km^2 and is richly endowed with highly educated and experienced professionals of all works of life. There is therefore no doubt, that Abia is not in any way educationally disadvantaged and is not lagging in growth and development when compared to other states in Nigeria or other regions of the Sub-Saharan states. The reason for the persistence or spreads of HIV/AIDS is not because Abia State lacks education or is unaware of the epidemic; but, because individuals are deeply rooted in certain misconceptions and traditional beliefs, especially in rural areas.

A typical rural dweller finds it difficult to believe that information coming from unknown faces or people are true. Information coming from outside his/her vicinity is not a fact but assumed to be fallacy or rumor and the question they pose to any informant is, "who told you?" This question means, "I don't really believe you," and that negates the whole idea of getting useful information across because it is regarded as rumor and untrue or unsubstantial. Rural dwellers usually view information source as a basis for

believing, so that is why community leaders have a major part to play in disseminating HIV/AIDS information, as related to healthy practices. It is no doubt that some rural dwellers fail to accept that HIV/AIDS is infectious only through seminal fluid and blood. Although they believe that the is dangerous, but the extent of its devastation is still considered as over-exaggerated by some rural dwellers. It is known by rural dwellers that education has led to growth and development in their community, but, they still have doubts about HIV/AIDS method of infection, management and treatment and will still try alternative medicines or local chemists believing they are faster and cheaper.

Most community members were able to give correct information about HIV/AIDS, irrespective of their level of education. People that engage in healthy life-style and behavior is not because of their level of knowledge of HIV/AIDS, but as a matter of personal decision. Even when some people are aware of the risks or severity of HIV infection, poverty or any other factor could lead to risk behaviors. This is the assumption of HBM principle. This assumption may not actually have supported by findings.

The findings indicated that education has no association with awareness or knowledge of HIV/AIDS, which seems contrary to popular opinion. According to Taking and Zocor (2015) individuals may not really be motivated to change the behavior with knowledge as is in HIV/AIDS. This could be the reason for the slow rate of positive change or increase in HIV/AIDS prevalence over the years; 4.1% in 2010 to 4.0% in 2013 (Okonofua, 2013), as compared to population increase. It becomes pertinent at this

discussion stage of this research report, to bring out some very important facts about state of education in Abia State, Nigeria.

It also found that some factors related to access to public health services do not affect the health of a population. Though the findings showed that accessibility is determined by individual's perception of distance to the nearest health center, in the ordinary sense, one should think that there should be a significant association between access to health services and level of health of a population. Fisher's *p*-value (.817) for access to ARV and PHR; mode of transportation ($p = .401$), access to regular doctors (p=.075), and difficulty in going to hospital (p=.111), all show no significant relationship with PHR. However, participants agreed that travel time (p-.011: independent *t* test) as well as mode of payment for doctors' visit, to access public health services are quite relevant and have significant effect on health of the population.

In the qualitative results, community members stated that distance is a barrier to receiving testing and treatment. Patients who can afford both transportation and treatment travel long distances from rural communities to the cities for treatment (Obi et al., 2010). The issue of transport is significantly associated to health risk. Usually roads, where available, are poorly maintained in the rural areas, making the cost of transportation high for rural dwellers. Obi et al. (2010) established that poverty, ignorance and other salient variables which includes misconception about the seriousness of HIV/AIDS may have contributed to the increase in endemic nature of HIV/AIDS in Southern parts of Nigeria, placing Abia State at the eighth most affected region in the sates of Nigerian. In addition to distance, community dwellers face the challenge of long waits at health care centers

and therefore resort to traditional healers or chemists who may not know how to treat HIV/AIDS. Even when medicine or equipment for CD4 tests are available, the crowded nature of such health service centers cause diversion to chemist and other unreliable methods of treatment.

Mood of payment for doctor visits was significant (p= .005). In Nigeria insurance policies are under development . Dias, Garand, & Swiderek (2013) noted that Nigeria has only 1% of its adult population covered by health insurance. Payment of hospital as well as doctor's visits are directly, out of pocket expense, meaning that individual's pay from their pockets. Currently only 1% (about 1.9 million of over 195 million) of Nigeria have health insurance (Nsofor, 2018). It is apparent that poverty is a major perceived barrier in the care, as well as management of HIV/AIDS in rural areas of Abia State. The implication is more deaths results from full blown AIDS because of poverty and inability to pay for the health services especially HIV/AIDS care, relating to transportation to healthcare center, as well as good feeding. This is one aspect of rural life that pose unique challenge to the members of the community as observed in the literature and in HBM. It was also confirmed by empirical studies in this research. Most participants (93.2%) reported that community leaders play important role in their management as well as treatment of HIV/AIDS.

Research Question 2

Qualitative: What is the relationship between the level of Community Health Services and the extent of HIV/AIDS, as perceived by residents of these communities?

Thirteen purposively selected participants sampled from among those who completed the questionnaires for the quantitative design were interviewed. The sample consisted of 10 females (77% of the participants) and three males (23% of participants). Three participants (23%) were classified as healthcare workers, five (38%) were classified as community leaders, and four participants (31%) were HIV positive community members. One participant was both a healthcare worker and community leader. The themes derived from the interviews are presented in Table 12

This question, which was analyzed qualitatively, adopted the interpretative phenomenological approach where the researcher sorted out meaning-making responses from interactive sessions. From the discussions and interviews, there is a high level of awareness of HIV/AIDS and participants recognize signs indicating available of health service delivery for HIV/AIDS around their locality. They mentioned some hospitals signs bearing Heart to Heart sign, as those who can give advice and treat HIV/AIDS. Nine themes were derived from the interviews. Many themes were positive in scope and included themes relating to community cohesion and support of treating community members with HIV/AIDS. Some negative themes included long traveling distances to proper healthcare facilities, lack of equipment for test, and the presence of lingering stigma of HIV/AIDS as a death sentence.

Distance to Health Services is the Greatest Barrier to Treatment

Participants reported that cost of travel and wait time were the greatest barrier to receiving testing and/or consistent treatment. Poor and inaccessible roads made transportation unavailable and unaffordable where available. One of the participants

reported that she travels very far. Though she received help, but it was very expensive to pay for the travel coupled with the fact that she had to pay for other treatments not related HIV/AIDS. These contribute immensely to skipping and/or delays in keeping appointment for treatments. This fact agrees with Creswell (2009) who noted that problems associated with social and health studies are multi-layered. Azugo et al. (2011) noted that distance to get to the testing sites where and when available including the long delays of HIV test was one of the hindrances in the prevention and treatment of HIV/AIDS.

> P02: I don't have money to transfer myself. Today is 29th. Since I have my card now, the last date was 7th August, is supposed to when I come to collect my drug. Since I don't have money for transportation, that's why I came today. I borrowed money today so that I will have my drug.

P05 said, "Going to the health center you need money now. Two drops for a good ticket. One hundred and fifty-nine (naira) before you go and come back, 400, 500." In another example, P11 commented that the lack of equipment was a problem not just because of the need for proper testing, but also because people who come for testing are referred to other facilities where the equipment is available, but again, cannot afford the money or time to make another trip.

Although community members claim that cost of travelling long distances was prohibitive, one cannot deny the fact that hospitals are better and safer for treating HIV/AIDS. Yet, some of these community members with HIV/AIDS, use the chemists and traditional healers for cheap, as well as quick services. These practices have huge

impact on both prevention and management of HIV/AIDS. Also reported is the fact that even those who could afford transportations to healthcare centers, do not always get the required medications and/or the needed test–CD4 count. Making unavailability of CD4 count another theme.

Lack of Equipment for CD4 Tests in Many Healthcare Facilities

The unavailability of equipment for CD4 (white cells that fight infection) test is another important theme. Although there are some facilities that have ART but most of them do not have equipment to check the effectiveness of the medicines. CD4 test indicates how well the immune system is functioning, with normal value between 500 and 1,5000 (U.S Department of Veteran Affairs, 2018). CD 4 improves if the medications are effective. The issue of distance also plays a negative part on community member seeking test for their CD4 level.

> The facility that we are in charge of, they're really taking care of our patients. You come there, the nurses are friendly. They will take care of you, but sometimes when coming for CD4 counts…When I talk about CD4 counts, this is a machine that takes care of us. That determines your health because health-wise you may look healthy, but inside you, it's not all that okay. It's this CD4 count that will ascertain your health worthy [*sic*]. The level of the virus in you. Sometimes we go to the facility, they will tell you that here in Abia, particularly in Abach today, I don't think that there is any, it's only one hospital that has that equipment. Many of us have been coming for the test and go home [without being tested]. There are

> some that come out [to be tested] three, four times. They weren't able to access the test. That is the only way we are having problems.

Community Meetings Help Facilitate Treatment

The next theme focused on community leaders. Interestingly, community leaders' efforts were found to be beneficial in preventing, management and treatment of the disease. This is because community leaders are custodians of power and respect, as well as the gatekeepers of their communities. Community leaders assist in the prevention and management on HIV/AIDS in these communities through communication. Kansas University (2016) observed that communication works better where influential community leaders are involved. Many community members felt that regular meetings, where members are taught all about HIV/AIDS were very helpful. It is important to note that one of the community leaders (P09) is HIV/AIDS positive. She talked at length on how she has impacted her experiences (through advice) to members of the community.

> We are telling them [the community members] not to lose hope, not to lose hope [*sic*]. For us, some people, if you have HIV, they will lose hope. Some will die. But here, if you come, we will sit down and encourage you not to lose hope and encourage them to be taking these [medications] everyday as prescribed.

> P0 4 stated, I'm a health worker in HIV/AIDS in Aba North. Development ... More especially, my community, Eziama community. We go to sensitize people. That's the role I play, to sensitize people, because I've been trained on that. To sensitize people about HIV, people that have it, that they should not be hiding.

They should be open, and I refer them to the appropriate place they're supposed to be.

It is no doubt that DOI, is an important factor in information transfer in rural communities of Abia State and Nigeria in general. Using the HBM, it is obvious that awareness of HIV/AIDS is positively related to change in behaviors that put individuals at risk of contracting HIV/AIDS. People will engage in preventive behaviors if they are fully aware of the seriousness and dangers of HIV/AIDS. Thus, these meetings serve as a critical medium for disseminating the information these leaders learn from the trainings provided to them by the government. As observed by Oluduro(2010, p. 210). “Any messages on HIV/AIDS imparted by religious leaders are important in changing the attitudes and behavioral patterns of their followers about the epidemics.” Asekun et al., (2013) also noted community leaders (who are seen as the custodians of the communities) have the capacity, credibility, creativity, and influence in delivering messages to their members and to the congregation.

Noninterference and Stigma of HIV Diagnosis Exit

The themes noninterference and stigma of having HIV/AIDS were issues of importance; community leaders did not proactively seek members of the community who have or who are suspected of having HIV/AIDS. Stigma leads to discrimination, prejudiced thoughts, behaviors, and social devaluation by other community members (Monjok, Smesny, & Essien, 2010). Understanding and removing stigma is imperative if the war against HIV/AIDS in rural areas of Abia State would be effective. Positive social change would be achieved easier if the dynamics of stigmatization are removed or at least

reduced significantly. Stigma also prevents individual from HIV/AIDS test to know his/her status. The leaders explained that although stigma issue is decreasing but the rate is minimal. Above all, some members of the communities still see HIV/AIDS as a death sentence.

Good Training in HIV/AIDS Awareness and Referral for Assistance

Another theme emerged, "good training in HIV/AIDS awareness and referral for assistance" These community leaders were provided with free training on HIV/AIDS awareness, prevention and treatment modalities, by Abia State Health Department. Armed with these knowledges, community leaders were able to impart accurate information to their community members. However, they are not equipped with HIV/AIDS medications thus sick members still have to travel to healthcare centers for medications and tests.

Community leaders cared deeply about their communities and found it easy to collaborate with both the government and healthcare workers. The government was a useful resource for community leaders. P12 stated that community leaders were trained by the government via seminars and conferences. The conferences were held approximately every 3 months, and the government paid for community leaders to travel and attend the events.

Medication Should be Brought to the Community

Community members suggested that medications be brought to community meetings as they believe that the practice would encourage treatment adherence.

Although some still believe that HIV is “a death sentence” taking medications was noted to be important to them.

One of the noticeable differences between this study and existing literature is that members of the communities claimed to have good knowledge of HIV transmission and treatment, yet they delay or cancel appointments to Healthcare centers for treatments. Knowledge not put into action produces no change in individuals’ behavior or circumstances. In spite of the claims, HIV/AIDS epidemic is persistent in South Eastern part of Nigeria having 7.3% prevalence rate (NACA, 2012; Onyeonore et al., 2014). Knowledge is not enough. Other factors affecting access to healthcare facilities, such as lack of good roads and public transportation, stigma, and myths affect health behavior changes and are equally vital. Nwachukwu, Egenege, Nwachukwu, and Blinkhorn (2008) noted that absence of educational initiatives in the rural areas were related to lack of necessary infrastructures, such as access roads and electricity. Access factors affects both members of the communities as well as potential healthcare providers and educators.

Community Members Help Each Other

Participants in this study presented what is not common, if at all present in literature. Some community members with HIV/AIDS ignored being stigmatized and assist others with the disease in many different ways. P10 said:

> Usually I just make a call, "Please we don't have food today. There is nothing in this house and these children are disturbing me." They say, "Okay, I'm coming, or I'll send somebody." They will just help me. Even if I say, "I'm hungry." We are walking like this I say, "I'm hungry. I want to eat." They say, "Go in and just let

> them give you food." When I eat they say, "Madam, give her extra." As if they're making jokes of me. But [this support] helped me a lot. I will eat and eat that extra. I will feed very well!

This is an interesting finding in this study. This group of community members are innovators, acting as role models and persuade other subgroups (including laggards) in not only accepting the disease but also in adopting new health behaviors and social practices (Schiavo, 2014) that help them deal with the disease. I had discussions with two of them on the resources that are available to them. They requested that I connect them with any nongovernmental organizations who serve social or political courses of change that will support their course. They reported that they have heard about NGOs but have not been fortunate to meet with any.

Social Change Implications

HIV/AIDS is a public health issue that requires social change processes for its prevention as well as its management. For changes to occur, collective efforts are required. Social changes occur over time and have profound long-term consequences for the parties involved (Schiavo, 2014). Schiavo (2014) also noted that the principle of DOI is that, change occurs over time and depends on receptiveness, knowledge, interest, choice, trial implementation, as well as approval or rejection of the behavior. The social implication of this study will be discussed in three levels, individual, community and the society in general.

On individual level, the increased knowledge of HIV/AIDS transmission, preventive measures, self -efficacy acquired, as well as cues to action, could positively

affect and sustain the change in risky behaviors. Knowledge of HIV/AIDS risky behaviors could also increase individual perception of susceptibility, consistent treatment as well as benefits of keeping follow up appointments, despite transportation cost.

On the community level, the result of this study will be presented to community members as it was designed, according to their needs. The results would be viewed as accurate and sensitive to their needs, and would increase the potential of implementing the recommendations, resulting in social change. The community could be empowered through teaming together to assert their rights in "formulating concrete demands for access to services, and non-discrimination on the basis of HIV and other social status" (Barr, Amon, & Clayton, 2011, p.400). The members of the community are encouraged to work together and learn from each other, ways of putting their knowledge of HIV/AIDS in practice. The findings could be used to plan and organize health initiatives that are both culturally appropriate which could in turn empower the communities towards social change.

On the societal level, data generated from this study would be presented and discussed with public health policy makers in the Local Government Area Health Department. The data could also be presented to State Ministry of Health policy and law makers, as an evidence-based data in enacting laws and ordinances that may affect the health behaviors of community members. This could result in policies towards improving road network and provision of public transportations .The policies could help in facilitating and developing health centers equipped with trained medical staff as well as provision of medications thereby improving the health of the communities and

facilitating behavior changes. The policy changes could also affect societal changes in attitude and behaviors that support and promote healthy practices. Groups that are likely to benefit from this study include, the participants, other members of the community and the state in general.

The results of the study could be published in research journals, adding to the existing body of knowledge in this area of study. Because the research is heuristic in nature, the resulting data could also form a basis for further investigations concerning HIV/AIDS. The findings could also be used to plan and organize health initiatives that are culturally appropriate which could in turn, empower the communities towards social change. The result of this study also has the potential to contributing significantly to overall state health policy.

Implication for Theory and Research

Chapter 2 included theoretical framework which were based on HBM and DOI. The parts played by these theories are discussed next. HBM assumptions include the suggestion that people engage in healthy behavior only when they are aware of the risks or severity of the disease involved; perceive that the benefits of behavior change outweigh the hassles of treatment prevention potential or other negative aspects (Shiavo, 2014). In this study the results showed that people may claim knowledge of diseases but do not really affect behavior changes that will not only prevent infection, but also affect cure. Benefits will be achieved better when the problems of infrastructure are solved. Self-efficacy, as well as cure to action by some community members helping each other, are core components that kept each member motivated to change their health behaviors.

Diffusion of Innovation premise is that change occurs over time and depends on awareness, knowledge and interest. It also made it clear that communication strategies play important role on whether members of the community accept or reject the innovation. It indicates that effective health communication is the key to the success of the behavior change.

When compared with the result it is evidence that communication is an important component in effective healthcare behavior change. The participants showed evidence of effective communication as not only affecting their learning status but also motivating them to put what they learnt in practice. All the participants indicated the benefit s of cue -to action and self-efficacy because the early adopters were able to talk about the needs of the other community members using culturally adapted and acceptable tones and dialect.

Limitations

One cannot study HIV/AIDS and not expect problems along the way. Efforts were made to minimize the limitations. Although questionnaires were personally handed to the participant and were requested to complete and return to me, some participants either did not complete the questionnaires or did not return them. This was expected. Another limitation is the fact that honesty is questionable. This can be based on the fact that stigma still has impact on HIV/AIDS, especially in rural communities. Although some community leaders (including church leaders) have made efforts to stop or reduce the effects of stigma on HIV/AIDS to no avail. Another limitation is inability to generalize findings to other communities, populations, or settings, as they may prove unique to the comparatively few people included in the study.

Time factor was a big issue because of the nature of the study. This type of study requires that the researcher live or stay for a long period of time not only to ask questions but also to observe the behavior patterns of the community members as related to those living with HIV/AIDS. However, the data were collected over 2 weeks making it impossible for long observation of behavior patterns of the community members.

The attendance to the meeting called to validate information before confirming the data collected was poorly attended. In spite of all educations and knowledge claimed during this investigation, stigma is still a big issue in HIV/AIDs. Study participants as well as those not included in the study did not want to be stigmatized by the community or labeled "HIV/AIDS carrier", thus did not attend the meeting.

Recommendations

Following the objectives and findings of this study some recommendations are necessary. A planned program of training using seminars/talks and community meetings, should be organized by health service providers in rural area of South eastern part of Nigeria particularly rural communities in Abia State. This program can also be carried out in other remote areas of sub-Saharan African countries. The design, method, and content should be done using experienced health workers. This is to influence community leaders to identify with the need for creating deeper and stronger awareness that can make significant impact towards reduction of spread of HIV in their communities

To strengthen the relationship between level of community health services and extent of risk of HIV/AIDS, it becomes necessary to involve all stakeholders in this aspect. Community leaders should make plans to be coordinator of care-giving for people

living with HIV/AIDS in their communities. Community leaders in these areas are not only trusted by their community members, but "their closeness to the communities afford them the chance to make a real difference in halting the spread of HIV/AIDS" (Oluduro, 2010, p. 210/508). If it is not possible to bring healthcare closer to the patients by creating nearer health facility centers, community leaders could persuade government to provide cheap means of transportation to and from health facilities centers that are not near to the community members. This could alleviate the risk of skipping appointments by those who cannot afford transport fares to health centers.

There is also a need to develop materials that can assist in disseminating information on HIV/AIDS that can be translated in indigenous language of rural communities, other than English language. These materials should be made accessible to community members as flyers, posters, t-shirts, stickers, and simple pamphlets. It is also possible to make jingles for radios and televisions stations to join in the campaigns geared towards HIV/AIDS extermination in rural areas of Sub-Saharan African states. Government and NGOs can partner with communities to make this work.

Understanding the dynamics of stigma is critical if the war against HIV/AIDS would be won. Positive social change would be practical if both the public health personnel and the leaders could formulate culturally appropriate and specific initiatives with emphasis on the evils and barriers of stigmatizations on HIV/AIDS infection. Religious leaders and Herbal healers located in the rural communities need to be fully trained on how to deliver appropriate and factual messages relating to HIV/AIDS in rural communities in Abia State. These categories of leaders have the confident, so much so

that these community members trust whatever they say as true and should be believed without question. This makes these categories of leaders in the drive for not only knowledge dissemination for HIV/AIDS, but also in the practicality of the knowledge.

Suggestion for Future Studies

This result of this study indicated the need to get community leaders (including leaders of all types of religion), involved in HIV/AIDS testing, management and treatment. Oluduro (2010) noted "Their strengths and credibility, and their closeness to the communities afford them the chance to make a real difference in halting the spread of HIV/AIDS" (p. 210/508). Community leaders are the custodians of their communities and are well respected and seen as role models. Getting them well informed and educated on HIV/AIDS is a positive way to not only reducing the spread of the disease but may lead to complete eradication of the diseases. Planning for efficient and organized health care delivery for those already living with the disease in rural areas would be beneficial. Gender disparity, stigma, and discrimination against people living with HIV/AIDS should be seen by all as issues in the fight against the disease thus should be dealt with precisely by all, especially the community leaders. The effect of stigma cannot be overlooked. A culturally specific and appropriate study would assist in finding ways for removing barriers created by stigma that have indirectly affected initiatives towards prevention and treatment programs.

Conclusion

This study was done with the aim of having an empirical evidence on why HIV/AIDS menace is still chronic, and even said to be endemic in south eastern part of

Nigeria, specifically Abia State. Implicit in the study was the fact that knowledge of prevention, management and treatment is crucial in reduction of HIV/AIDS spread in Sub-Saharan African nations. The level of knowledge demonstrated by leaders and members of rural communities in Aba North, Abia State Nigeria, is high; a deliberate effort has been made by government to provide tangible and appropriate treatment for HV/AIDS. It is therefore envisaged that if community leaders and members are trained further on management of HIV issues, they could play more vital role in reduction of the rate of spread, especially in program training contents such as counselling, awareness, management and support. More importantly, to encourage community members to put their knowledge into practice.

The inconclusive nature of this study makes further research or inquiry on the need to strengthen methods, means and programs on HIV/AIDS prevention, management and treatment very crucial. Ofotokun et al. (2010) opened a new page on the need for proper planning for rural sensitization, and this study has filled some gaps on establishing that there is no dearth of vital information; but, that the information is not taken serious by rural dweller who may have other factors preventing them from information utilization. The result of this study has contributed to the knowledge on why HIV/AIDS is still a menace and is slow in reduction, despite the level of knowledge available. One major reason why HIV/AIDS has become difficult to eradicate is tradition and religious beliefs in rural areas of sub-Saharan African nations. Some other factors include poverty and shallow knowledge of its prevention because of myths associated with HIV/AIDS cause and treatment.

The case of Ebola, which has been well researched reveals many salient factors mitigating against control and management of most deadly diseases in Africa. By knowing the facts about how HIV is transmitted, people living with HIV can save themselves a lot of worry and bust the myths about HIV/AIDS. Some of the myths is that HIV is caused by a spell cast by a witch or wizard, it can be transmitted by mosquito through bites, it can be cured by herbs and many other myths. The fact remains that HIV is not caused by spells or mosquitoes and has no known cure yet. Another myth is that only sex workers can contract HIV infection, and this had made rural people neglect risk behavior thereby exposing themselves more to the risk of being infected. They need to be aware that HIV can be transmitted in so many other ways that exposes the blood or seminal fluid of an infected person to another individual where there is body breakage or opening into the blood stream. There are so many other myths that have affected the rate at which HIV is spread. This calls for proper planning for method and means of knowledge dissemination on prevention, management and treatment of HIV/AIDS in rural communities of South eastern Nigeria and other Sub-Saharan regions

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Appendix A: Questionnaire

Access to Care Questions

i. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, government plans such as Medicare, or Indian Health Service?

1. Yes

2. No

3. Don't know / Not sure

4. Refused

ii. Do you have one person you think of as your personal doctor or health care provider?

1.Yes

2.No

iii. If "No," "Is there more than one, or is there no person who you think of as your personal doctor or health care provider?"

1.Yes, only one

2. More than one

3.No

4.Don't know / Not sure

5.Refused

iv. Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

1.Yes

2. No

3. Don't know/Not sure

4. Refused

v. About how long has it been since you last visited a doctor for a routine checkup? (A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition).

1. Within the past year (anytime less than 12 months ago)

2. Within the past 2 years (1 year but less than 2 years ago)

3. Within the past 5 years (2 years but less than 5 years ago)

or more years ago

4. Don't know / Not sure

5. Never

6. Refused

The next few questions are about the national health problem of HIV, the virus that causes AIDS. Please remember that your answers are strictly confidential and that you don't have to answer every question if you do not want to. Although you will be asked about testing, I will not ask you about the results of any test you may have had.

Vi. Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation. Include testing fluid from your mouth.

1. Yes

2. No

3. Don't know / Not sure

4. Refused

Vii. Not including blood donations, in what month and year was your last HIV test? NOTE: If response is before January 1985, code "Don't know."

1. Yes

2. No

3. I don't know

Viii. Where did you have your last HIV test

1. At a private doctor or HMO office

2. At a counseling and testing site

3. At an emergency room

4. As an inpatient in a hospital, at a clinic, in a jail or prison, at a drug treatment facility,

5. At home, or somewhere

Knowledge Questions

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, please circle "DK."

	Circle the right one:	True	False	Don't Know
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.Pulling 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 infected 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 partner's mouth, if their 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 pool 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 chance of getting HIV. T F DK

Risk Behavior Assessment Questions

The next questions are about sex. These questions refer to sex that was wanted or unwanted as well as sex that was for money or drugs. Please be as truthful as possible.

1.Having sexual intercourse with someone who has AIDS is one way of getting the disease.

(a) Yes

(b) No

2. If you shake hands with someone who has AIDS you can get the disease

(a) Yes

(b) No

3. If someone with AIDS coughs or sneezes in your face you can get the disease.

(a) Yes

(b) No

4. I believe that if a person with AIDS is bitten by a blood sucking insect, it is possible to

get AIDS if that same blood sucking insect bites you.

(a) Yes

(b) No

5.You increase the chance of getting AIDS by having sexual intercourse with many different people.

(a) Yes

(b) No

6.Using a condom (rubber) during sexual intercourse can prevent the spread of AIDS.

(a) Yes

(b) No

7. You can avoid getting AIDS by eating a balanced diet and taking vitamins.

(a) Yes

(b) No

8. If a man with HIV sleeps with a virgin he can be cured of HIV

(a) Yes

(b) No

Community Leaders' Questions

The next few questions are about your community leadership responsibility

Community leaders should teach their subjects about sexual health and use of condoms

(a)Yes

(b) No

(c) Don't know

Community leaders should promote openness thus promoting strong community bond

(a)Yes

(b) No

(c) don't know

Community leaders understand how people learn about HIV/AIDS, and support that open, frank discussion of the impact of AIDS may be a central way to fight stigma and foster real behavior change.

(a)Yes

(b) No

(c) Don't know

Interview questions

Community leaders

1.What can you do to be positively in the struggle against HIV/AIDS?

2.What is the role of the municipal leader in this struggle?

3.What do you consider as the high-risk factors and protective factors?

4 Tell me what kind of solutions you think, can be initiated by community leaders?

5Tell me what you think about interaction between the community leaders and people living with HIV/AIDS as well as official in the LGA?

Health providers

1.What is your professional/occupation?

i Physician

ii Nurse

iii Dentist

iv Pharmacist

v Peer Counselor/Advocate

vi Health Educator

vii Other - specify

2. Do you provide primary medical care? (i) Yes (ii) No

3. About how long have you been providing care or services to people living with HIV?

Months Years

4. About how many patients/clients with HIV currently receive regular care from you, personally? (Please estimate the total number, including new and return patients/clients) patients/clients

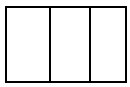
5.About how many patients/clients with HIV did you personally see at this clinic during the past five working days? (Please estimate the total number, including new and return patients/clients) patients/clients

6. If you are a primary medical care provider, do you consider yourself to be an HIV specialist

(i) Yes (ii) No

7. About how many patients/clients with HIV currently receive regular care from you, personally? (Please estimate the total number, including new and return patients/clients) patients/clients

8. About how many patients/clients with HIV did you personally see at this clinic during the past five working days? (Please estimate the total number, including new and return patients/clients)



9.What kind of treatment do you offer HIV/AIDS patients?

10.How does your organization refer patients, fax, telephone, writing or clients to other organizations

(you may respond with more than one)?

Community Members

1.Where do you go for medical care?

2.Tell me your experience with medical care

3. Tell me what you think can be done to help you navigate through your health care?

Appendix B: Interview Guide

The interview follows the same pattern except that the questions are different between each group.

HIV/AIDS Victims

Time of interview-- ----------

Date----------

Place----------

Interviewer ----------

Interviewee #----------

Educational status----------

Occupation----------

Age----------

Objective: To obtain input as well as experience from the participants which include, patients, health care providers and community leaders as well as a neutral community member.

1.Describe your educational background

2.Tell me what you do when you or a member of your family gets sick

3.Tell me what you know about HIV/AIDS

4. How did you get your information?

5. Tell me how you knew you have HIV and what was your experience

5. Tell me how you have been treating this infection.

6. Describe your experience with the community health center/ your health provider

Thank you for participating bin this interview. Be assured that your responses are confidential. The paper and tape will be locked in a cabinet and the key on my person always.

Health care provider

1.Tell me about your care of an HIV/AIDS patient

2 Tell me about your educational strategy of HIV/AIDS pts

3. How do you provide complimentary or alternative treatment?

4. How do you run HIV clinic and the educational sessions (if any)

Community leaders

1.Tell me what you know about HIV/AIDS infection and treatment.

2.Describe what you have done to help in preventing the spread of HIV in your community

3.Describe what you think you can do, as a leader, to help prevent the spread of HIV/AIDS in your community