

**DETERMINANTS OF VOLUNTARY HIV COUNSELLING AND  
TESTING UPTAKE IN THE FEDERAL CAPITAL TERRITORY  
ABUJA, NIGERIA**

by

**OMOKHUDU IDOGHO**

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**SUPERVISOR: PROF SP HATTINGH**

**JOINT SUPERVISOR: PROF MJ OOSTHUIZEN**

November 2010

Student number: 3567-009-6

## **DECLARATION**

I declare that **DETERMINANTS OF VOLUNTARY HIV COUNSELLING AND TESTING UPTAKE IN THE FEDERAL CAPITAL TERRITORY ABUJA, NIGERIA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

\_\_\_\_\_  
**SIGNATURE**  
DR OMOKHUDU IDOGHO

\_\_\_\_\_  
**DATE**

# **DETERMINANTS OF VOLUNTARY HIV COUNSELLING AND TESTING UPTAKE IN THE FEDERAL CAPITAL TERRITORY ABUJA, NIGERIA**

STUDENT NUMBER: 3567-009-6  
STUDENT: O IDOGHO  
DEGREE: MASTER OF PUBLIC HEALTH  
DEPARTMENT: HEALTH STUDIES, UNIVERSITY OF SOUTH AFRICA  
SUPERVISOR: PROF SP HATTINGH  
JOINT SUPERVISOR: PROF MJ OOSTHUIZEN

## **ABSTRACT**

The overall aim of this study was to understand the determinants of VCT uptake in the general population of Nigeria's federal capital territory of Abuja. Uptake of VCT still remains low despite increased availability of VCT information and services in Abuja, Nigeria.

A quantitative cross-sectional study was undertaken with 180 respondents from Abuja, using an adaptation of the Health Belief Model as conceptual framework, to elucidate the social demographics of respondents, their HIV/VCT knowledge, their perceptions of VCT facility design, societal support for VCT, and how HIV stigma shapes the phenomenon of VCT uptake in Abuja, Nigeria.

The key findings were that a better understanding of HIV prevention, a perception of support from community and religious leaders, and access to HIV test services in government facilities are positive predictors of higher VCT uptake. Poor personal risk assessment and the cost of HIV testing were identified as the key barriers to VCT access.

## **KEY CONCEPTS**

HIV, AIDS, HIV voluntary counselling and testing, Determinants of HIV voluntary counselling and testing uptake, Health Belief Model.

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## *Dedication*

*This study is dedicated to God Almighty who, for all time and seasons, is my strength and whom I praise for his many blessing and unending favour.*

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## List of abbreviations

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AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti retroviral drugs or treatment for HIV/AIDS
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
EFS	Extended Family Support
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
KI	Key Informant
KII	Key Informant Interview
LGA	Local Government Area
MDG	Millennium Development Goal
NARHS	Nigerian Reproductive Health Survey
NGO	Non-Governmental Organisation
PLWHIV	People living with HIV and AIDS
PMTCT	Prevention of Mother to Child Transmission of HIV infection
SPSS	Statistical Package for the Social Sciences
UNAIDS	The United Nations Joint Programme on HIV/AIDS
VCT	Voluntary HIV Counselling and Testing
WHO	The World Health Organization



## List of annexures

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Annexure A      Permission asked and obtained to conduct the study

Annexure B      Data collection instrument

## Chapter 1

### ORIENTATION TO THE STUDY

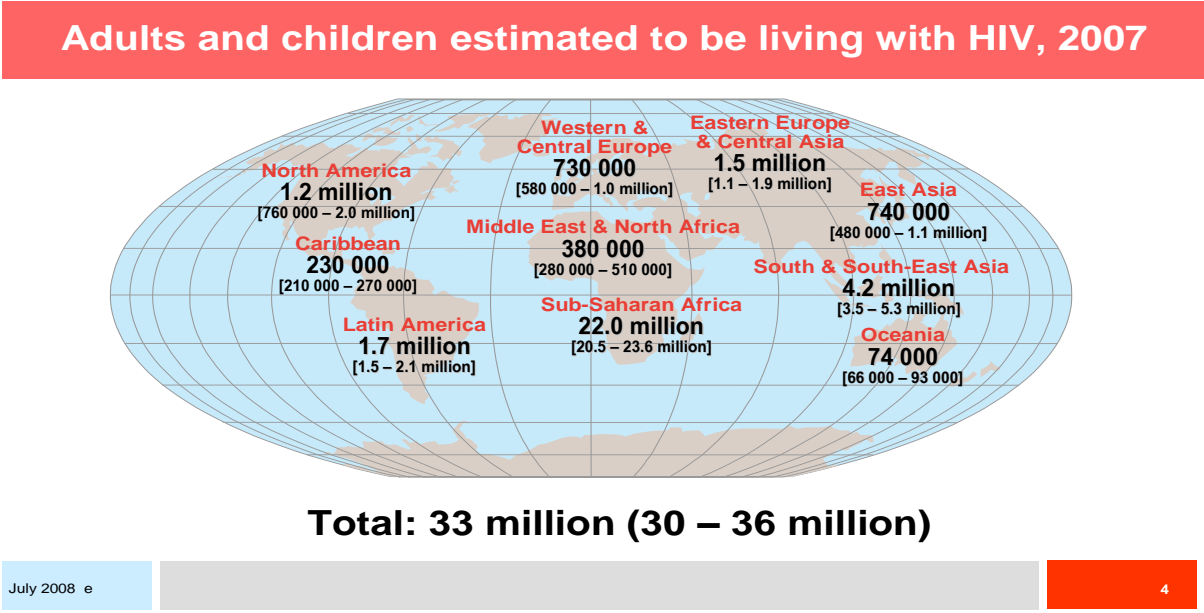
#### 1.1 INTRODUCTION

The Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) remain the most serious infectious disease challenge to public health (WHO 2007:24). It is estimated that 6 800 people world-wide were infected daily with HIV in 2007, and in the same year an estimated 5 700 persons died world-wide from AIDS every day (UNAIDS 2008:15), making HIV/AIDS one of the major killer diseases, particularly in sub-Saharan Africa. Globally, 33.2 million people (in the range of 30.6 to 36.1 million) were living with HIV/AIDS in 2007, of which 2.7 million were new infections (UNAIDS 2008:16). As shown in figure 1.1, Africa is home to the bulk of people living with HIV & AIDS — estimated at about 22 million people, making the continent the epicentre of the epidemic. Asia has the second highest disease burden of about 5.5 million, followed by Latin America with 1.7, and the emerging former communist countries of Eastern Europe with 1.5 million (UNAIDS 2008:17).

While the HIV epidemic seems to have more or less stabilised in terms of numbers in some parts of the world since 2000, the total number of people who are living with HIV continues to increase because of new infections in other parts of the world (UNAIDS 2008:30). Recent evidence suggests that there are localised reductions in the prevalence of HIV-infections in countries such as Botswana, Malawi, Kenya and Zimbabwe (UNAIDS 2008:36).

Young people aged 15 to 24 now account for 45% of new infections globally (UNAIDS 2008:33). In the *generalised* epidemic found in Africa, women in this age group account for 60% of new HIV infections. In regions outside Africa with a *concentrated* epidemic, HIV disproportionately affects injecting drug users, men who have sex with men, sex workers and other most at risk population groups (UNAIDS 2008:41).

In terms of HIV testing and counselling globally, in seventeen low and medium income countries with data on HIV testing, only 10.9% of men and 10.3% of women had ever received an HIV test result between 2005 and 2007 (UNAIDS, UNICEF & WHO 2008). The report also indicates that only 20% of people living with HIV know their HIV status (UNAIDS, UNICEF & WHO 2008:49).



**Figure 1.1: Total number of people living with HIV/AIDS**

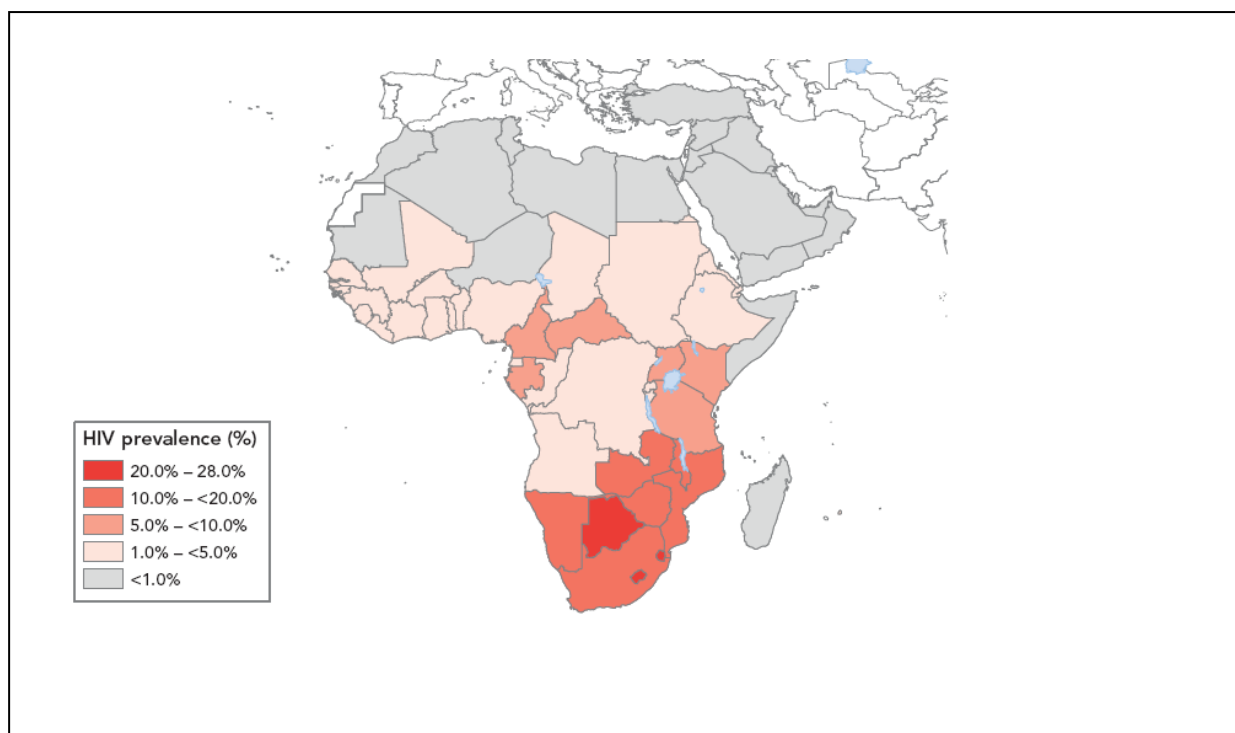
Source: UNAIDS (2008:15)

Within this period, there has been a 100% increase in the number of facilities providing testing and counselling services in these seventeen countries (UNAIDS, UNICEF & WHO 2008:50). This suggest that much more needs to be done to scale up testing, if universal treatment is to become a reality.

### 1.1.1 HIV/AIDS in Africa

Sub-Saharan Africa remains the epicentre of the AIDS epidemic, with 67% of the global disease burden and 75% of the estimated 2.2 million AIDS deaths in 2007 (UNAIDS 2008:30). An estimated 1.9 million people were newly infected with HIV in sub-Saharan

Africa in 2007, bringing to 22 million the number of people on the continent living with HIV (UNAIDS 2008:31). Sub-Saharan Africa suffers from multiple epidemics, as can be seen from the variation in national HIV prevalence. Figure 1.2 shows the national prevalence. In West Africa it is less than 5%. This rises to 5 to 10% in seven countries in Central and East Africa (Cameroon, the Central African Republic, Gabon, Malawi, Moçambique, Uganda, and the United Republic of Tanzania), and reaches a high of 15% and more in the southern African countries of Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe.



**Figure 1.2: An overview of national HIV prevalence in Africa, 2007**

Source: UNAIDS (2008:31)

The HIV epidemic in Africa is described as a *generalised* HIV epidemic, reflecting the high prevalence in the general population (UNAIDS 2008:33). Women are disproportionately affected in comparison with men, with stark differences between the sexes among young people (UNAIDS 2008:35). The epidemic in Africa appears to have stabilised, although often at very high levels, particularly in Southern Africa. Recent evidence suggests that about seven countries have met the targets set in 2007 by the United Nations' Declaration of Commitment to reduce new infections by 25% by 2010 (UNAIDS 2008:30). This seems

to suggest that strategies that have been deployed to combat the epidemic are succeeding in reducing infection rates, and this gives hope that the epidemic may yet be curtailed.

HIV testing uptake continues to be low in Africa. In the twelve countries with data available for the period between 2005 and 2007, only 9.5% of women and 7.9% of men had ever had an HIV test and received the result (UNAIDS, UNICEF & WHO 2008:53). Considering that there has been a doubling of testing facilities in these countries (UNAIDS, UNICEF & WHO 2008:50), this suggests that there are other determinants of the level of HIV testing. Some of these determinants mentioned in the literature, operate at the level of the individual. These include age, HIV and Voluntary HIV Counselling and Testing (VCT) knowledge, perception of services, stigma and sexual practice (Bwambale, Ssali, Byaruhanga, Kalyango & Karamagi. 2008:263; Zhou, Guo, Fan, Tian, & Zhou 2009:23; Jereni & Muula 2008:17; Iyaniwura & Oloyede 2006:29; Mmbaga, Leyna, Mnyika, Hussain & Klepp 2007:948), stigma and fear of discrimination (Bwambale *et al* 2008:263; Iliyasu, Kabir, Galadanci, Abubakar & Aliyu 2005:27-32), and supply factors such as limited access to and design of the VCT facilities (Irungu, Varkey, Cha & Patterson 2008:111; Sherr, Lopman, Kakowa, Dube, Chawira, Nyamukapa, Oberzaucher, Cremin & Gregson 2007:852; Bateganya, Abdulwadud & Kiene 2007:4; Prost, Sseruma, Fakoya, Arthur, Taegtmeier, Njeri, Fakoya & Imrie 2007:549).

With regard to the broad design of HIV testing, in 2006 the World Health Organization (WHO) stepped in to propose two variants of voluntary HIV counselling and testing. These were client initiated and provider initiated testing and counselling (UNAIDS, UNICEF & WHO 2008:55). In the era of limited access to HIV treatment, client initiated testing has been more common in Africa, with a few cases of provider initiated testing being made available mainly in antenatal care. This is in contrast to Western countries, where client initiated testing had coexisted with provider initiated testing since the mid-nineties (UNAIDS, UNICEF & WHO 2008:56). In the light of increasing treatment access, however, provider initiated testing has been gaining prominence in Africa. South Africa, Botswana, Malawi, Kenya and Uganda are presently scaling up this approach (UNAIDS, UNICEF & WHO 2008:56).

## **1.2 BACKGROUND OF THE STUDY**

To orientate the reader, this section will briefly provide general information about Nigeria as a country, its population and topography. The researcher deemed this necessary so that the reader could get a glimpse of the country as a whole, the possible contributory factors associated with HIV/AIDS, as well as problems encountered in the control of the disease. The topographic and socio-economic descriptions will indicate to the reader the accessibility of Nigeria both from the sea and the land from various neighbouring countries. Nigeria is becoming an affluent country with wide disparities in the wealth quintiles, as will be shown below. These disparities could contribute to the escalation of diseases and other influences which are typical of other countries. One of these influences is exposure to HIV.

### **1.2.1 Nigeria**

Nigeria is located in West Africa. The name *Nigeria* was coined by the wife of Lord Lugard, the British colonial administrator who amalgamated the northern and southern protectorates to create Nigeria in 1914 (Ade-Ajayi & Crowder 1976:7). The name was created by combining the word Niger, from the River Niger, one of the two major rivers running through the country, and the Latin ending –ia, indicating a geographic location. Nigeria gained independence from the British in 1960, and became a member of the Commonwealth of Nations on 1 October 1960, and a republic in 1963 (Ade-Ajayi & Crowder 1976:7; Falola, & Heaton 2008:144).

Nigeria is the most populous country in Africa and the eighth most populous in the world, with a population of 140 million (Nigerian National Population Commission 2007:2). The annual population growth rate is estimated at 2.8% (Nigerian Federal Ministry of Health 2006:3). The country comprises 350 distinct ethnic groups, with Hausa, Igbo, Yoruba, Ijaws, Kanuris and Ibibio being the largest of the groups (Falola & Heaton 2008:144). Some of the large cities in Nigeria are Lagos, Port Harcourt, Kano, Kaduna, Ibadan and Abuja (Nigerian National Planning Commission 2001:18).

Nigeria has three distinct climatic and vegetation zones. These are the lush tropical rainforest in the south with annual rainfall of 60 to 80 inches, and the dry Sahel savannah

in the north with less than 20 inches of rain. The middle belt of the country is characterised by a mixture of forest and grassland, with rainfall between 20 and 60 inches per year (Nigerian National Planning Commission 2001:6).

### 1.2.1.1 Overview of the geopolitical arrangements

Nigeria's system of government comprises three tiers. These tiers are the central or federal government, followed by 36 autonomous states and 774 local government areas (LGAs) (Constitution of the Federal Republic of Nigeria 1999:3). The federal capital territory which seats Abuja, the national capital city, enjoys a special status. Although it is seen as a state, it is under the direct jurisdiction (including executive and legislative oversight) of the central government (Federal Republic of Nigeria 1999:4).



**Figure 1.3: Map of Nigeria showing the country profiles, major cities and rivers**

Source: National Agency for the Control of AIDS 2008:3

Nigeria has an area of 923 768 square kilometres (Nigerian National Planning Commission 2004:3). As depicted in figure 1.3, Nigeria shares land borders with the Republic of Benin in the west, Chad and Cameroon in the east, and the Niger Republic in the north. On its southern border lies an extensive stretch of coast bordering the Gulf of Guinea in the Atlantic Ocean (Nigeria National Agency for the Control of AIDS 2008:3). In addition, the

country has two main rivers, the Niger and the Benue rivers, which bestride the country like the letter Y and into which the smaller rivers drain. The two rivers converge and empty into the Niger Delta, where the bulk of petroleum resources lie (Nigerian National Planning Commission 2004:5).

The country has a presidential system of government, along the lines of the USA's presidential democracy. It has federal, state and local government executives. The federal executive is headed by the President, and state and local executives are headed by governors and local government chairpersons respectively (Federal Republic of Nigeria 1999:4). Each tier of government has a legislative arm, with a bicameral legislature at federal level — the Senate and House of Representative. At state level each state has a house of assembly, and at local government level there are local legislative councils. The federal judiciary runs its suits of courts all the way to the Supreme Court, while the states have their own court systems. Local government operates the customary courts system, but generally operates within the state legal framework (Federal Republic of Nigeria 1999:11).

Functionally, the federal government is broadly responsible for giving policy direction in key sectors with the active participation of the states. The federal government also manages matters on the exclusive list, for example national defence, police and customs.. The states and federal departments are concurrently responsible for issues on the concurrent list, for example health and education (Federal Republic of Nigeria 1999:7).

#### **1.2.1.2 Nigeria's socio-economic performance**

Nigeria's annual per capita income increased from US\$350 in 2000 to US\$1 128 in 2007 (United Nations Development Programme 2007:234). This is due to improved economic management and the high cost of crude oil on the international markets. This recent economic growth was also stimulated by the dramatic shift in Nigeria's debt profile in 2006, when the country became the first in Africa to completely pay off its debt (estimated at US\$30 billion) owed to the Paris club of creditors. The annual saving, estimated at about US\$1.15 billion, made from not having to service this debt, also known as Debt Relief Gains, is being channelled into poverty reduction programmes by a special catalytic vehicle



known as the Millennium Development Goals Project Office under the Presidency (Federal Republic of Nigeria 2006:2). While agriculture used to be the mainstay of the country's economy and the principal foreign exchange earner, the discovery of oil in the 1950s led to the collapse of that sector. However, agriculture still accounts for more than 70% of the productive workforce (Nigerian National Planning Commission 2004:28).

As of 2008, Nigeria is ranked 35<sup>th</sup> in the world in terms of Gross Domestic Product (Central Intelligence Agency 2008:3), and has been classified as a middle income country with an emerging market, spurred in part by its large petroleum reserve. In addition, recent bank consolidation, fairly good local government, improved communications and transport infrastructure, a vibrant stock exchange, and a highly educated work force, have boosted the socio-economic well-being of the country as a whole. For example, Nigeria has the fastest growing telecommunications market in the world, with the largest number of phone users on the continent just six years after the introduction of mobile phones. The present government blueprint for economic development, titled the 7-Point Agenda (Federal Republic of Nigeria 2008:1) builds on this foundation to drive the country's ambition to be the 20<sup>th</sup> largest economy in the world by the year 2020, otherwise known as *Vision 2020*.

### **1.2.1.3 Health system performance in Nigeria**

The health system in Nigeria runs parallel to the federal constitutional arrangements, with management and organisation operating at federal level (policy framework and tertiary care), at federal state level (policy and secondary care), and at local government level (policy implementation and primary health care) (Federal Republic of Nigeria 2008:3). Until recently — when these roles and responsibilities were codified in the National Health Bill — the health system lacked the statutory basis for its day-to-day functioning. Over the years this has undermined the country's investment in health, which is estimated at just about US\$10 per capita compared to the international recommended level of US\$34 per capita (WHO 2000:148). It is therefore not surprising that the health system was ranked 187<sup>th</sup> of the 191 countries assessed by WHO in 2000 (WHO 2000:165). Poor health investment alone does not explain the whole picture, because even Uganda, with lower per capita health expenditure, performed better in the WHO ranking. This seems to suggest that the organisation and management of the system was not optimal even at present levels of

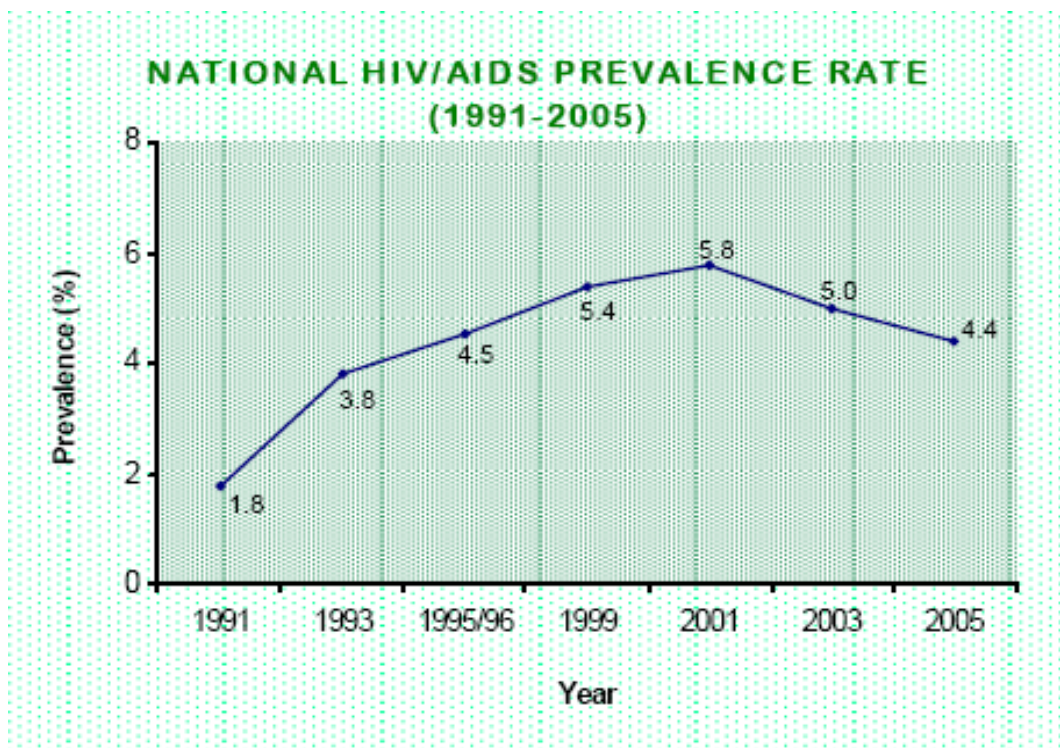
investment. Thus it is not surprising that Nigeria has some of the worst health indicators in the world. The Nigerian Federal Ministry of Health (2007:4) states that 2 300 children under five years of age, and 145 women of child-bearing age, die every day in Nigeria, making this country the second largest contributor to the so called “Under-five Mortality Rate” (U5MR) and “Maternal Mortality Rate” (MMR) in the world. Annually, one million Nigerian children die before their fifth birthday (Black, Morris & Bryce 2003:2227) representing 10% of the global total of child deaths. Furthermore, each year an estimated 52 900 Nigerian women die from pregnancy and childbirth related complications, translating into a 1 in 13 probability of dying during pregnancy (Nigerian Federal Ministry of Health 2003:4). It is estimated that 270 000 of the 5.4 million deliveries in Nigeria annually are by HIV infected women, representing 13.5% of the global HIV disease burden in pregnant women (UNAIDS, UNICEF & WHO 2007:37). In 2002 the country commenced extensive health system reforms under the previous administration, however many of the elements of those reforms, including the National Health Bill, are still at the Nigerian National Assembly awaiting harmonisation between the Senate and the House of Representatives.

### **1.2.2 HIV/AIDS in Nigeria**

HIV/AIDS continues to be a major public health problem in Nigeria, where it is believed that 2.86 million Nigerians are now living with HIV/AIDS (Nigerian Federal Ministry of Health 2005:3). Of these, 1.2 million Nigerians are estimated to have already developed clinical AIDS in 2003 (Nigerian Federal Ministry of Health 2003:2). The cumulative death rate by the end of 2005 was estimated at 1.45 million (Nigerian Federal Ministry of Health 2005:12).

Figure 1.4 presents an overview of the prevalence trend over the last sixteen years (1999-2005) (Nigerian Federal Ministry of Health 2005:13). Starting at a low of 1.8% when the country started collecting antenatal sero-prevalence information in 1991, the epidemic peaked at 5.8% in 2001. The last two surveillance reports show that the epidemic has stabilised somewhat. It is, however, important to state that the last two figures were adjusted in 2006 as part of the United Nations Joint Programme on HIV/AIDS (UNAIDS) global revision in national HIV prevalence rates, based on better estimation methods

(UNAIDS 2008:14). The next surveillance will allow a better conclusion as to the status of the epidemic trend in the country.



**Figure 1.4: Nigeria HIV Prevalence Trends 1991-2005**

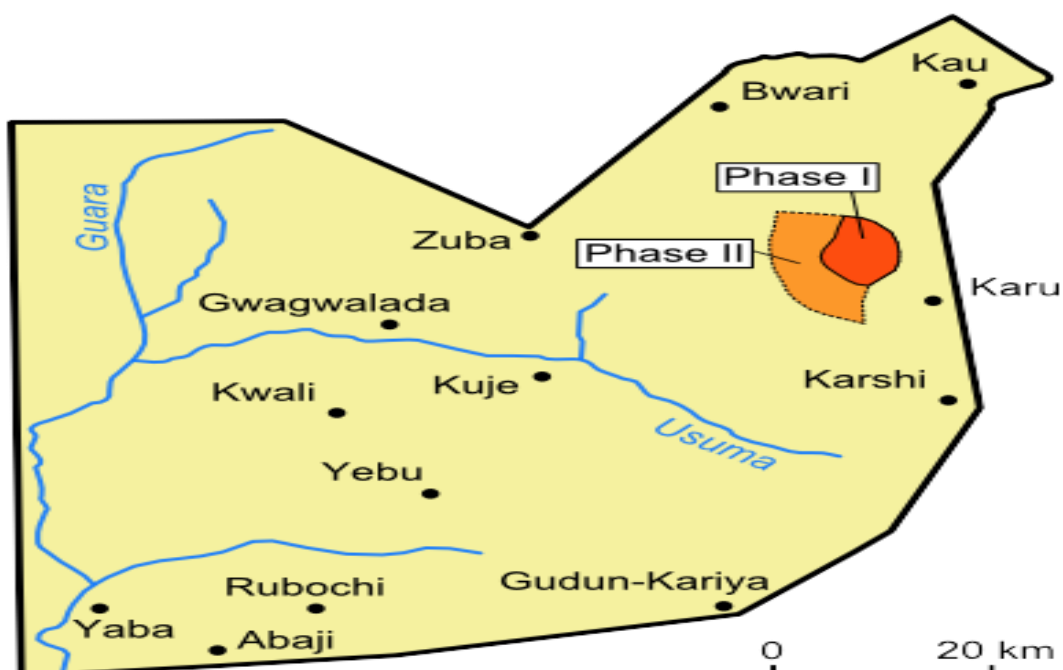
Source: National Agency for the Control of AIDS 2008:6

The HIV/AIDS epidemic continues to threaten Nigeria's development, despite the increased level of health investment in the last five years, which was aimed at tackling the epidemic from both the prevention and the treatment angle. It is estimated that 412 250 adults and 94 990 children require antiretroviral (ARV) treatment in Nigeria (Nigerian Federal Ministry of Health 2003:2). This led to the directive by the previous President, Olusegun Obasanjo, to Nigeria's Federal Ministry of Health to get 250 000 people on ARVs by the end of 2006 (Federal Republic of Nigeria 2003:2). However, empirical data jointly collected by the WHO, UNAIDS and UNICEF at the end of 2006, show that only 198 000 of the estimated 552 000 that needed ARV treatment in 2006 were getting it (UNAIDS, UNICEF & WHO 2007:14). The prime limitation mentioned in the report was the limited number of people who knew their HIV sero-status even in the context of wide scale availability of HIV treatment in Nigeria. HIV testing figures show that only 10% (6.4% of men and 13.6% of women) of the general population know their HIV status (Nigerian

National Agency for the Control of AIDS 2008:20). All of this suggests that the utilisation of Voluntary Counselling and Testing (VCT) services, which is a critical bridge to enhancing prevention and promoting proactive treatment options, has not happened as envisaged.

### 1.2.3 The federal capital territory of Abuja

The geographic area of study referred to as Abuja, is an area located within the federal capital territory (FCT), with an estimated size of about 713 square kilometres.



**Figure 1.5: Map of the federal capital territory with Abuja Insert (as Phase 1 and 11).**

Source: Abuja Geographic Information System 2005:1

The federal capital territory of Abuja is managed directly from the Presidency with a minister in charge. Its laws are made by the federal legislature, comprising the Senate and the House of Representatives, which are seated in Abuja. The population of the capital territory is 1.405 million people (NPC 2007:3). The federal capital territory has a number of satellite towns, such as Gwagwalada and Karu among others, and a core federal capital city, Abuja, depicted as phase 1 and 11 in figure 1.5.

In this area, the reported HIV prevalence rate is 6.5% (Nigerian Federal Ministry of Health 2005:3). The FCT has the fifth highest prevalence of HIV/AIDS of all the Nigerian states. Only Benue at 10%, Akwa Ibom at 8%, Nasarawa at 6.7%, and Enugu at 6.6% are higher. It is also instructive that all these five states are contiguous, as can be seen in figure 1.3, and two of the states, Benue and Akwa Ibom, border Cameroon which had a national prevalence of 11% in 2005 (UNAIDS 2007:238).

The background and profile of the country, and the related evidence of the incidence of HIV/AIDS, indicate that HIV is indeed a significant problem that warrants further research. This study seeks to identify specific determinants that shape the readiness for and acceptability of HIV testing in Nigeria, with special reference to the general population within the federal capital territory of Abuja.

### **1.3 THE RESEARCH PROBLEM**

Voluntary counselling and testing (VCT) is the bridge between HIV prevention, care and support (Bwambale *et al* 2008:263; WHO 2002:3). Knowledge of HIV status provides many potential benefits for the individual and society, allowing appropriate linkages between prevention, psychosocial support and medical care (Fylkesnes & Siziya 2004:569; MacPhail, Pettifor, Coates & Rees 2008:88; UNAIDS 2001:14). A negative HIV test result provides motivation to practice safer sex and adopt appropriate changes in behaviour to prevent HIV infection (MacPhail *et al* 2008:88; Marks, Crepaz & Janssen 2006:1449; UNAIDS 2001:14). In addition, the cost effectiveness of VCT has been found to compare favourably with other preventative interventions (Sweat, Gregorich, Sangiwa, Furlonge, Balmer, Kamenga, Grinstead & Coates 2000:119). An HIV positive result could lead to early access to, and a better outcome of, treatment and care (MacPhail *et al* 2008:89; WHO/UNAIDS/UNICEF 2007:6).

It is generally believed that the availability and increased access to free antiretroviral therapy would enhance hope and encourage people to go for HIV testing (Day, Miyamura, Grant, Leeuw, Munsamy, Baggaley & Churchyard 2003:665; UNAIDS 2001:14). In earnest of providing HIV testing services, the HIV Strategic Framework (Nigerian National Agency

for the Control of AIDS 2005:12) sets out the ambitious strategy of testing 80% of 140 million Nigerians (Nigerian National Population Commission 2007:1) and meeting the treatment needs of an estimated 80% of 552 000 Nigerians who will need ARVs by 2010 (Nigerian National Agency for the Control of AIDS 2005:22). However, despite the availability and ease of accessing VCT and antiretroviral therapy services, and the massive investment in HIV education programmes, uptake of VCT remains low in Nigeria. It is estimated that only 6.4% of men and 13.6% of women in the general population know their HIV status (Nigerian National Agency for the Control of AIDS 2008:20). Less than 10% of pregnant women in Nigeria receive treatment to reduce the risk of mother-to-child transmission of HIV (UNAIDS, UNICEF & WHO 2008:90). While the 15 to 29 years age group has the highest HIV prevalence in Nigeria, most of them remain untested (Iyaniwura & Oloyede 2006:27). Knowledge and awareness of VCT, and the personal motivation and efficacy to go for an HIV test, still seem relatively low among young people, with only 63% of a group of sampled students in one Nigerian tertiary institution being aware of VCT (Ikechebelu, Udigwe, Ikechebelu & Imoh 2006:247). The acceptability can be gauged from the fact that only 26.4% had ever had an HIV test, and of this number about half did it voluntarily (Ikechebelu *et al* 2006: 248).

This would suggest that other determinants shape the interest in being tested (i.e. readiness) and the ultimate use of VCT services (acceptability) in the country. The problem is that, unless VCT uptake is increased, it is unlikely that the goal of universal treatment coverage in Nigeria will be achieved, and prevention programmes may continue to be sero-status blind.

### **1.3.1 Research questions**

The study was guided by the following research questions:

- What is the perception of the community in Abuja with regard to VCT services in Nigeria?
- What are the reasons for the use and non-use of VCT services?
- What recommendations can be made with regard to improving the use of VCT services in Abuja, Nigeria.

### **1.3.2 Purpose and objectives of the study**

The overall purpose of the study was to understand the determinants of VCT uptake among the population in the federal capital territory of Abuja in Nigeria. Specifically, the study will bring knowledge about the following to the fore:

- the community's perception of VCT services in Nigeria,
- the reasons for the use and non-use of VCT services.

The specific objectives of this study were to:

- investigate the community's perception of VCT services in Nigeria,
- determine the reasons for the use and non-use of VCT services, and to
- make recommendations to improve the use of VCT services in Abuja, Nigeria.

### **1.4 ASSUMPTIONS UNDERLYING THE STUDY**

The following assumptions guided this study:

There is extensive availability of VCT centres in Abuja.

Access to antiretroviral treatment is widespread and should be a strong motivator for testing uptake.

### **1.5 SIGNIFICANCE OF THE STUDY**

This study contributes to the body of knowledge on what influences uptake of HIV testing in Abuja, Nigeria. In addition, the recommendations will find operational application in shaping strategies aimed at:

- increasing access to and use of VCT services.

This study may also serve as a guideline for other researchers and interest groups to apply similar strategies in their geographic areas, and to conduct research on which factual information can be based.

## **1.6 DEMARCATION OF THE STUDY FIELD**

The study was carried out in two satellite towns of Abuja. These are Karu and Bwari. The two towns were randomly selected from a list of ten large settlements falling under the jurisdiction of the five area councils in and around Abuja. The inclusion criteria included locations with a good enough demographic and socio-economic spread to enable researchers to answer the research questions. These included high population density, good mix of socio-economic class as measured by the cost of property rents and formal and informal economic activities.

## **1.7 CONCEPTUAL FRAMEWORK OF THE STUDY**

The Health Belief Model (HBM) was used as the conceptual framework for the study. The HBM provides a conceptual framework for understanding and explaining the determinants of engaging in actions that have health implications (Petrovici & Ritson 2006:222).

The two main assumptions underpinning the HBM are:

- The subjective valuation of a particular goal by individuals.
- The individual's estimates of the likelihood that a given action will accomplish that goal (Janz & Becker 1984:42).

Salazar (1991:131) outlines three major components of the HBM model. These are

- Individual perceptions that are shaped by individuals' belief about their susceptibility to a disease, as well as the seriousness with which they view the disease. This summarises the perceived threat of an illness for each person.



- Modifying factors — these include a range of variables, including demographic variables (age, gender, ethnicity and education), socio-psychological variables (personality, social class and peer pressure), and structural variables (knowledge about the disease and prior contact with the disease).
- Variables affecting the likelihood of initiating action — this is represented by the person's perceived benefit of the action minus the perceived barrier to accomplishing the action, which predicts the likelihood that the person will take the action to change behaviour.

Each of these components defines a category of determinants of health-promoting behaviour, for example variables affecting the likelihood of initiating actions are dependent on various internal and external cues to action (Palank 1991:816), and modifying factors incorporate factors such as biological characteristics, interpersonal influences and environmental factors (Palank 1991:816).

The study focused on understanding the determinant of VCT uptake among the general population in the federal capital territory of Abuja in Nigeria. Specifically, the study sought to understand the community's perception of VCT services in Nigeria, and the reasons for — or perceptions of — the use and non-use of such services. To conceptualise the determinants of VCT uptake, therefore, this study adopted the conceptual framework of Bwambale *et al* (2008:263), which evolved from the HBM model. In the Bwambale *et al* (2008:265) framework, three of the four variables — namely socio-demographic factors, socio-cultural factors, and the organisation of health services — operate as modifying components, while individual knowledge and perception operate as cognitive-perceptual components of the HBM model.

These variables were seen and measured as input variables. The outcome variable of that study was VCT utilisation by men as measured by interviewing men who came into a test facility, had pre-test counselling, had the HIV test and thereafter had post-test counselling.

In this study, the conceptual framework outlines four input variables that shape the decision to go for an HIV test or not. The demand side determinants of VCT uptake are socio-demographic factors and HIV knowledge, perception and practices. The supply side factors

on the other hand are: the design, organisation and operation of VCT; the wider health services; and family and community support for testing. In addition, considering the Nigerian context, this framework recognises the particular role of stigma in shaping HIV knowledge, perception and practices and wider family and community support for HIV testing, in addition to influencing the way HIV testing services are designed and offered to clients.

This conceptual framework will be discussed in more detail in Chapter 2.

## **1.8 RESEARCH METHODOLOGY**

Research methodology can be defined as the techniques and methods that a researcher uses to structure a study and to gather and analyse information in a systematic fashion (Polit & Beck 2004:15). Babbie and Mouton (2003:75) describe research methodology as a blueprint for the intended research process. The research methodology thus includes the research design, definition of study variables, selection of the study population, and a description of the various tools and procedures that will be used in gathering, analysing and interpreting the data. It also includes the various methods that will be applied to guarantee the reliability, objectivity and validity of the study conclusions.

### **1.8.1 Research design**

Mouton (2001:55) describes a research design as a plan or blueprint for how a researcher intends to conduct the research. The research design serves as a guide to the researcher in planning and implementing the study to achieve the intended objectives (Burns & Grove 2001:223).

In this study, a household-based, quantitative, descriptive and cross-sectional design was adopted to gain an understanding of how the five variables (participants' demographics, HIV/VCT knowledge, perception of VCT facility design, societal support, and stigma) shape the phenomenon of VCT uptake in Abuja Nigeria.

*Quantitative research* is a formal, objective and systematic process for generating information about the world. In quantitative research, evidence is gathered according to a specified plan, using formal instruments to collect the needed information (Somekh & Lewin 2005:215). A quantitative, descriptive research design was chosen for this study in order to systematically collect evidence of the knowledge and awareness of VCT services among the population in Abuja.

*Descriptive studies* provide accuracy in that they describe what exists and the frequency with which it occurs. Descriptive studies put information into categories. Furthermore, descriptive studies have as their main objective the portrayal of that which is being studied; be it persons, situations or groups (Burns & Grove 2001:248).

*Cross-sectional studies* entail the collection of data on a cross section of the population, which may comprise the whole population or a proportion (sample) of it (WHO 2001a17). In addition, Bryman (2004:41) describes a cross-sectional research design as the collection of data from more than one case occurring in the same situation in order to collect a body of quantitative data with two or more variables. This data is then examined to detect patterns of association.

### **1.8.2 Research method**

This study used a quantitative research design to explore the relationship between VCT uptake, the dependent variable, and the study (independent) variables: respondents' socio-economic demographics, their HIV/VCT knowledge, their perceptions of family and community support, stigma and the design of VCT services. Evidence in quantitative research is gathered according to a specified plan, using formal instruments such as questionnaires to collect the needed information. Burns and Grove (2001:37) describe a quantitative study as a formal, objective, rigorous and systematic process for generating information about the world and measuring the causal relationships between concepts or ideas. A structured interview schedule was developed to gather information from respondents regarding VCT uptake.

### 1.8.3 Population

A study population is the “universe” of units from which the sample is selected (Bryman 2001:87). Polit and Beck (2004:290) describe *target population* as “the aggregate of cases about which the researcher would like to make generalizations”. The population can also be regarded as the group to which results of a study are generalised (Trochim 2006:32).

The population for this study comprised persons living in and around Abuja FCT of Nigeria. Considering the nature of Abuja, a core federal capital city which is sparsely populated and often houses the elites and foreign embassies, more representative districts were selected for the study. The study population were persons living in and around Karu and Bwari satellite towns of Abuja FCT at the time of the research.

### 1.8.4 Sample and sampling procedure

A *sample* is “a subset of the population elements” (Polit & Beck 2004: 291) or “a segment of the population that is selected for investigation” (Bryman 2001:85). Selection of the sample is described as *sampling* and it could be based either on a probability or a non-probability approach.

Saks and Allsop (2007:157) describe *sampling* as the science and practice of selecting information from populations in a manner that allows inferences to be drawn from the data. De Vos *et al* (2002:199) argue that the use of a sample of a study population saves time, money and effort, yet can still produce research information of acceptable quality.

A *probability sample* is one that has been selected using random selection so that each unit in the population has a known chance of being selected (Bryman 2001:85). Examples of probability samples include simple random sampling, stratified random sampling, systematic sampling, cluster sampling, and panel sampling (De Vos *et al* 2002:203). Polit and Beck (2004: 292) describe random sampling as a process that entails selecting study participants randomly from a study population.

The *simple random sampling* method was the strategy used for the study in order to investigate the relationship between VCT uptake, the dependent variable, and the independent variables: study respondents' socioeconomic demographics, their HIV/VCT knowledge, and their perceptions of family and community support, stigma and the design of VCT services.

The *sampling units* were households in the study communities. The “day code”, as explained below, was used in selecting the households where the structured interview schedules were administered. For example, if the interview date was 23<sup>rd</sup> of November, (2+3 =5), every fifth household was included in the sample. One respondent was randomly selected in each household using simple balloting, and the candidate was interviewed using the structured interview schedules.

The inclusion criteria for selecting the respondents in each household were males aged between 15 and 64 years, and females between 15 and 49 years. The inclusion of similar numbers of males and females is in recognition of the fact that HIV infection and VCT testing have more to do with heterosexual than homosexual activity in the area of the study.

The study participants had varying demographic, socio-economic and HIV behavioural characteristics, which reflected the diversity of the wider Abuja society, hence it was possible to investigate the relationship between these variables and VCT uptake in the subset of the population group.

A total of 180 respondents were chosen and interviewed by two research assistants, the researcher was involved in overseeing the data collection process.

#### **1.8.4.1 Sample size estimation**

The required sample size for a study is dependent on the accuracy required, and the likely variation of the population characteristics being investigated. The main determinant of the sample size is therefore how accurate the results need to be, and depends on whether the study is descriptive or analytical (WHO 2001a:74). The larger the sample size, the smaller

the error will be in estimating the characteristics of the whole population (Saks & Allsop 2007:158); however, a larger sample size increases the cost of administering a survey and conducting the analysis.

The estimation of the sample size of this descriptive study was based on the population of Bwari and Karu satellite towns, which was estimated at about 263 000. When this is adjusted for the fact that 50% of the population were younger than 15 years (Nigerian National Population Commission 2007:11), the study population numbers about 131 500.

Assuming simple random sampling, and recognising that 10% (the population prevalence of VCT uptake) of the sample population are estimated to have ever taken an HIV test, the sample size is calculated as 162 respondents (Creative Research Systems 2003:1). This is based on a level of precision of  $\pm 5\%$  and a confidence level of 95%. An additional 10% of the sample size units (18) were included in the number of respondents to compensate for possible failure to complete the interview schedules within the data-collection period (Israel 2003:4). This translates into a total of 180 respondents.

### **1.8.5 Research instrument**

The study used a *structured interview schedule* as data collection instrument. Polit and Beck (2004:318) describe a data collection instrument as a formal written document that is used to collect and record information. A structured interview schedule represents a highly structured method of data collection that is low in cost and is quick to administer. The researcher used sixty open-ended and closed questions, broken into five broad areas in the study. Polit and Hungler (1995:336) argue that the inclusion of both open-ended and closed questions in a structured interview schedule offsets the strength and weakness of each type of question. The structured interview schedule included questions in the following areas:

- socio-demographic factors
- HIV knowledge, perception and practices
- the design, organisation and operation of VCT and the wider health services

- family or community support for testing
- perception of stigma.

The inclusion of these questions is based on a literature review that indicates that these variables influence uptake of VCT services.

#### **1.8.5.1 Reliability of the research instrument**

Reliability describes the consistency with which an instrument measures an attribute of the target (Polit & Beck 2004:417). Reliability refers to the extent to which the administration of the same instrument yields the same results consistently under comparable conditions (De Vos *et al* 2002:168). Internal consistency and equivalence are the two aspects of reliability that this study used. An instrument is said to be internally consistent to the extent that all its parts measure the same characteristic (Polit & Hungler 1995:415). Questions and observations that were relevant to the subject of investigation were used in order to enhance the reliability of the instrument. The reliability of an instrument that yields quantitative data is a major criterion for assessing its quality and accuracy.

Equivalence is described as the extent to which two different researchers using the instrument yield equivalent measurements of the same traits in the same people or situations (Polit & Hungler 1995:416).

#### **1.8.5.2 Validity of the research instrument**

Validity refers to the degree to which an instrument measures what it intends to measure (Polit & Beck 2004:422). De Vos, Strydom, Fouche and Delport (2002:167) describe validity as the ability of an instrument to measure exactly what it is supposed to measure. Content validity, which is concerned with the adequacy of the sampled items in the variables being measured, was enhanced by using questions from instruments used in related studies. The study supervisors also evaluated the study instrument.

### **1.8.6 Data analysis**

De Vos *et al* (2002:223) describe data analysis as the breakdown of data into constituent parts to obtain answers to research questions and to test research hypotheses. The researcher used quantitative data methods to analyse the data.

The quantitative research data was analysed using the Statistical Package for the Social Sciences (SPSS version 17) computer programme. Descriptive statistics was used to describe and interpret the data. Key variables were tested against the dependent variable (uptake of VCT by the respondents) to find out if there was any statistically significant relationship using Chi-square at a 5% level of significance.

Finally, variables that were found to have a statistically significant relationship were subjected to a second level of inferential analysis, using logistic regression to determine to what extent the significant variables influence uptake of VCT in the study population.

### **1.8.7 Pretesting the research instrument**

Polit and Beck (2004:728) describe a pre-test as the trial administration of a research instrument to identify possible flaws and to ascertain time requirements. In this study the structured interview schedule was pretested at Karu town with seven respondents in five households who were then excluded from being participants in the main part of the study. The interview schedule was then reviewed and, where necessary, revised on the basis of the results obtained from the pre-test.

## **1.9 DEFINITIONS OF TERMS**

Below, the key terms that will be used throughout this research are defined, and described as they apply to this study.



### 1.9.1 Determinants

A determinant can be defined as “that which influences to determine *the nature or outcome of something*” (Webster’s Comprehensive Dictionary of the English Language 1996:349). Collins Cobuild Advanced Learner’s English Dictionary (2001:416), on the other hand, defines a *determinant* of something as “causing it to be of particular kind or happen in a particular way”. In this study, determinants are referred to as elements or factors that influence or determine whether an individual will voluntarily go for HIV counselling and testing. These factors could be internal within the individual, otherwise described as “demand side” factors. Determinants can also be external to the individual, otherwise called “supply side” factors. An example of the former is personal risk perception, while for the latter it is perception of stigma in the health facility.

### 1.9.2 HIV and AIDS

Collins Cobuild Advanced Learner’s English Dictionary (2001:744) defines HIV as “*an abbreviation for human immunodeficiency virus, a virus which reduces people’s resistance to illness and can cause AIDS*”. It has also been described as “*a retrovirus that causes AIDS by infecting helper T cells of the immune system. The most common serotype, HIV-1, is distributed worldwide, while HIV-2 is primarily confined to West Africa*” (The American Heritage Dictionary of the English Language 2000:392).

The United States Centre for Disease Control (1999:[24]) defines HIV clinically either as a positive result on a screening test for HIV antibody followed by a “*positive result on a confirmatory test for HIV antibody or positive result or report of a detectable quantity on any of the following HIV virology tests (HIV nucleic acid (DNA or RNA) detection; HIV antigen test & HIV isolation (viral culture) or conditions that meet criteria included in the case definition for AIDS*”.

In this study, HIV is an acronym that stands for the Human Immunodeficiency Virus, a retrovirus that causes AIDS in the population of Nigeria and the World. It can infect an individual through exchanges of infected body fluids, such as blood, vaginal secretions and semen. Once inside the blood system of the infected individual, the virus destroys the T-

lymphocyte cells that help the individual in fighting infections and disease conditions. Being *HIV positive* denotes the presence of viral antibodies in the infected person's blood or other body fluid.

The American Heritage Dictionary of the English Language (2000:109) describes AIDS as an acronym for *acquired immune deficiency syndrome*. "*An infectious disease of the immune system caused by an human immunodeficiency virus (HIV)*". While Collins Cobuild Advanced Learner's English Dictionary (2001:34) describes "*AIDS as a disease which destroys the natural system of protection that the body has against other diseases*."

The United States Centre for Disease Control (1993) defines "*AIDS clinically as all human immunodeficiency virus (HIV)-infected adolescents and adults aged greater than or equal to 13 years who have either a) less than 200 CD4positive T-lymphocytes/uL; b) a CD4positive T-lymphocyte percentage of total lymphocytes of less than 14%; or c) any of the following three clinical conditions: pulmonary tuberculosis, recurrent pneumonia, or invasive cervical cancer*".

"*AIDS is characterized by a decrease in the number of helper T cells, which causes a severe immunodeficiency that leaves the body susceptible to a variety of potentially fatal infections*" (The American Heritage Dictionary of the English Language 2000). The virus is transmitted in infected bodily fluids such as semen and blood— generally as a result of sexual intercourse, the use of contaminated hypodermic syringes, and placental transfer between mother and foetus. Although a cure or vaccine does not yet exist, a number of antiviral drugs can decrease the viral load and subsequent infections in patients with AIDS.

In this study AIDS is a clinical condition caused by HIV and characterised by severe immune depression and the manifestation of various opportunistic infections in the population of Nigeria.

### **1.9.3 Voluntary counselling and testing**

The Compact Oxford English Dictionary (2005:619) describes voluntary as "*something done, given, or acting of one's own free will*". Counselling on the other hand is defined by

Webster's Comprehensive Dictionary of the English Language 1996, as [providing] "*professional help and or to give advice to (someone) to resolve personal or psychological problems*", while testing is described as checking something/someone to find out information (Collins Cobuild Advanced Learner's English Dictionary 2001:1611).

Therefore, one can surmise that voluntary counselling and testing implies someone presenting for advice of their free will and then using this advice, without any compulsion, in order to find some information about themselves. HIV voluntary counselling and testing is therefore the process whereby individuals or couples undergo pre-test counselling, risk assessment, a same-day rapid HIV test, post-test HIV prevention counselling (often not given in traditional testing) (Matovu & Makumbi 2007:1318), and referral for medical and support services by trained counsellors.

For the purpose of this study, voluntary counselling and testing means a process where an individual or couple of his/her/their free will agrees to have some of their body fluid examined for the presence of any substance that shows the presence or absence of the HIV virus. Providing these services in Abuja is important, in order to provide individuals and couples with professional support and information to assist them in deciding to take the test provided in any such facilities, and making the commitment to live with the outcome of the test .

VCT can be initiated by the client, actively seeking HIV testing and counselling at a facility that offers these services (WHO/UNAIDS 2008:55; Matovu & Makumbi 2007:1318; Fylkesnes & Siziya 2004:568; Creek, Ntomy, Seipone, Smith, Mogodi, Smit, Legwaila, Molokwane, Tebele & Mazhani 2007:105). It could also be required by health providers as a routine component of care packages in certain disease conditions such as tuberculosis that are likely to have an underlying HIV infection, or as part of antenatal care processes (WHO/UNAIDS 2008:55; Creek *et al* 2007:105). In this approach where VCT is initiated by clients, they enjoy the full right to opt out (WHO/UNAIDS 2008:55).

#### 1.9.4 Uptake

Collins Cobuild Advanced Learner's English Dictionary (2001:1726) describes uptake as the *amount of it that somebody uses*. Fylkesnes and Siziya (2004:568) describe *uptake* of VCT as a range of actions arising from the interest or desire in being tested for HIV (described as readiness) to the ultimate use of VCT services (acceptability). In this study uptake means the willingness to go for an HIV test, and the ultimate use or completion of the service (pre-test counselling, the blood test and post-test counselling).

#### 1.10 ETHICAL CONSIDERATIONS

The researcher met the ethical requirements for this research by seeking and obtaining permission from the research and ethical committees of the University of South Africa and the Nigerian National Agency for the Control of AIDS. The study was non-invasive, involving interaction and interviewing of the study participants. Covering notes on the structured interview schedule was used to explain to each respondent what the objectives of the study were, the probable benefits of the research and the advantages of their voluntary participation.

The following ethical considerations were adhered to in this study:

- ***The right of every person to privacy and refusal to participate***

Guided by Mouton (2001:243), the respondents were informed by the researcher that participation in the survey was not compulsory and that they had the option of opting out of the study.

- ***The right to anonymity and confidentiality***

Anonymity refers to the principle that the identity of the research participants is kept secret; the principle of confidentiality refers to the information gathered from the respondents (Mouton 2001:244). To ensure anonymity and confidentiality in this study, respondents names were not required on the structured interview schedules.

- ***The right to full disclosure about the research***

Mouton (2001:244) states that, as far as possible, the aim of research must be communicated to the research respondents.

The above ethical issues were taken into consideration to protect the respondents who participated in this study. To ensure that the participation of each respondent was voluntary, verbal information about the nature and purpose of the study was provided. The respondents were given the opportunity to either give their voluntary consent to participate in the study, or to refuse participation — without incurring any negative consequences whatsoever. The respondents were given the freedom to withdraw from the study if and when they wished, or to decline to answer any specific question.

Ensuring the anonymity and confidentiality of information provided by the respondents enhanced their right to privacy. This meant that there were no names and no labels attached to the completed interview schedules. Respondents remained anonymous in reports and publications of the study. Only figures and statistics were provided, and no person's name was mentioned. The completed interview schedules were simply numbered from 01 to 60 for data-capturing purposes.

The ethical considerations of this study will be discussed in detail in Chapter 4.

## **1.11 LIMITATIONS OF THE STUDY**

Although reasonable measures were taken to minimise errors, through the use of a structured interview schedule and random sampling, the study was cross-sectional, which meant that the data collected were not reflective of every individual in Abuja at the time when the study was conducted.

Karu and Bwari are satellite suburban towns around Abuja with mixed ethnic population groups. There has also been extensive media focus on HIV in the area because of its high prevalence. Therefore, the results may not necessarily be generalisable to other

communities in Nigeria, that may not have had the same extensive HIV coverage in the media.

## **1.12 LAYOUT OF THE STUDY**

This dissertation consists of six chapters.

Chapter 1 introduces the study area, the problem, and the purpose and objectives of the study. It also outlines the research design and methodology of the study and provides definitions of key terms.

Chapter 2 covers the conceptual framework that was used for the study,

Chapter 3 covers the literature review with regards to HIV/AIDS,

Chapter 4 discusses the research design and methodology,

Chapter 5 presents the data analysis and interpretation, and the results,

Chapter 6 discusses the conclusions and limitations of the study, and makes recommendations for practice and further research.

## **1.13 CONCLUSION**

This chapter provided a short orientation to Nigeria, the federal capital territory and Abuja, the federal capital city to orientate the reader to the context and conditions in which the study took place. The background to the research problem under study, the purpose, significance and objectives of the study, and the research design and methods — including the population, sampling, data collection and data analysis — were described. Key terms were then defined and the ethical considerations that were implemented in the study were briefly highlighted.

Chapter 2 discusses the conceptual framework that the researcher used for the study.

## Chapter 2

### The conceptual framework

#### 2.1 INTRODUCTION

Polit and Beck (2006:88) describe a conceptual framework as that which lays the foundation of a study and enables researchers to discover what is known or unknown about a topic of interest in order to conduct research that adds to the body of knowledge in a given discipline. This chapter discusses the conceptual framework of this study as it relates to HIV voluntary counselling and testing (VCT). The HBM (Health Belief Model) was used as the conceptual framework for this study as it was considered the most suitable (Bwambale *et al* 2008:263; Becker 1974a:300; Rosenstock 1974:329).

Brink, Van der Walt and Van Rensburg, (2006:23) describe a model as a “symbolic depiction of reality ... [that] uses diagrams and symbols to represent ideas”. The component[s] of a model can guide a researcher in the research task. While there is a wide range of models that attempt to explain health behaviour, the HBM is one of the most widely used conceptual frameworks, having being thoroughly evaluated in a number of studies (Strecher & Rosenstock 1997:227).

The researcher used the HBM as the theoretical compass for this study in order to gain a deeper insight into the determinants of VCT uptake among the general population in Abuja, Nigeria (Bwambale *et al* 2008:263; Lollis, Johnson & Antoni 1997:551).

#### 2.2 THE HEALTH BELIEF MODEL

The HBM is an “individual cognitive model which reflects an individual’s cognitive processes without a social context” (Garcia & Mann 2003:351). It is also described as a “psychological model that attempts to predict and explain health behaviors by focusing on the attitudes and beliefs of individuals” (Denison 1999:218).

## 2.2.1 The origin and development of the HBM

A team of social psychologists developed the HBM in the early 1950's. The team, which comprised Godfrey Hochbaum, Irwin Rosenstock and Stephen Kegels, was carrying out research on why, regardless of the availability of screening programmes for diseases and other preventive programmes, there was widespread nonparticipation by people in programmes offered for tuberculosis sufferers (Edelman & Mandle 1995:228). The reason for developing the HBM was the failure of uptake of the free screening programme for tuberculosis initiated by the United States of America (USA) Public Health Department in the 1950s (Dennill, King, & Swanepoel 1999:157; Eisen, Zellman, & McAlister 1992:251; Hochbaum 1958b:[2]). This failure of uptake of tuberculosis treatment programmes prompted the researchers to explore why people were not availing themselves of the services provided for tuberculosis, despite the fact that they were being offered free of charge. Dennill, King and Swanepoel (1999:157) argue that it was out of this research conducted by Hochbaum (1958a) that the main components of the HBM were developed. Stanhope and Lancaster (1996:252) argue that the HBM was inspired by a study of why people do not use free health screening programmes. Nies and McEwen (2007:108) further argue that the HBM attempts to explain and predict health related behaviour from certain patterns of belief about the recommended health behaviour.

Initially the HBM was designed to explain and predict the health behaviour of a population, including the beliefs and attitudes of diverse groups within the population (Broskey 2008:193). This framework was subsequently expanded to attempt explaining individual responses and behaviour when confronted with a diagnosed illness, and subsequent compliance with medical therapy (Rosenstock 1974:328).

Wider application of the HBM beyond tuberculosis control from the 1960s to the 1980's saw various modifications to the model (Becker 1974:470). This included developing standardised scales for measuring the various variables of the model (Maiman, Becker & Kirscht 1977:215); extending the use of the model to sexual risk behaviour (Rosenstock, Strecher & Becker, 1994:15) and the transmission of HIV (Beaudoin 2009:321; Bwambale *et al* 2008:265). Gillibrand and Stevenson (2006:159), Garcia and Mann (2003:347) and Ogden (2007:441), for example, used the model in an attempt to understand and explain the health-seeking behaviour of diabetics. Locus of control, self



efficacy, value of health and social support emerged as variables that shape adherence to prescribed medical therapy. In the same vein, Bwambale *et al* (2008:265) used four variables — socio-demographic and socio-cultural factors, health services, and HIV/AIDS knowledge and perception — to attempt explaining utilisation of voluntary HIV testing by men at a test facility.

## **2.2.2 Components of the HBM**

The original HBM posits that an individual's intention to participate in preventive health behaviour is shaped by five variables (Edelman & Mandle 1995:228; Rosenstock 1974:332). The key variables of the model are

- Perceived susceptibility [to disease]
- Perceived severity [of disease]
- Perceived threat (this is a more inclusive term often used in some of the literature, which encompasses both perceived susceptibility and perceived severity)
- Perceived benefits [of participation]
- Perceived barriers [to prevention of infection]

### **2.2.2.1 Perceived risk of infection or susceptibility**

Individuals' perception of how susceptible they are to a disease, is displayed in their belief regarding the possibility of contracting a disease (Edelman & Mandle 1995:228). People who believe that they are at risk are more likely to act in a responsible manner to prevent a disease (De Souza 2008:12), while people who believe that they are exposed to little or no risk are prone to engage in unhealthy behaviour (Mullen, Hersey & Iverson 1987:976; Salazar 1991).

### **2.2.2.2 Perceived severity of infection**

The intensity of individuals' general perception of disease depends on their belief regarding the severity of a disease (Rosenstock 1974:31). This is mostly based on medical information or knowledge and people's beliefs about the effect a disease would have on their lives (Conner & Norman 1996:212; Glanz *et al* 2002:1295).

### **2.2.2.3 Perceived threat**

This is a broader term often used in some of the literature, which encompasses both perceived susceptibility and perceived severity.

### **2.2.2.4 Perceived benefits of prevention of an infection**

The expression *perceived benefits of prevention of an infection* refers to the person's perception of the usefulness or value of a new behaviour in reducing the risk of developing a disease (Eisen *et al* 1992; Mattson 1999). It can also be described as a person's belief in the efficacy of the advised action to reduce the risk or severity of a disease impact (Dennill *et al* 1999:157).

### **2.2.2.5 Perceived barriers to the prevention of infection**

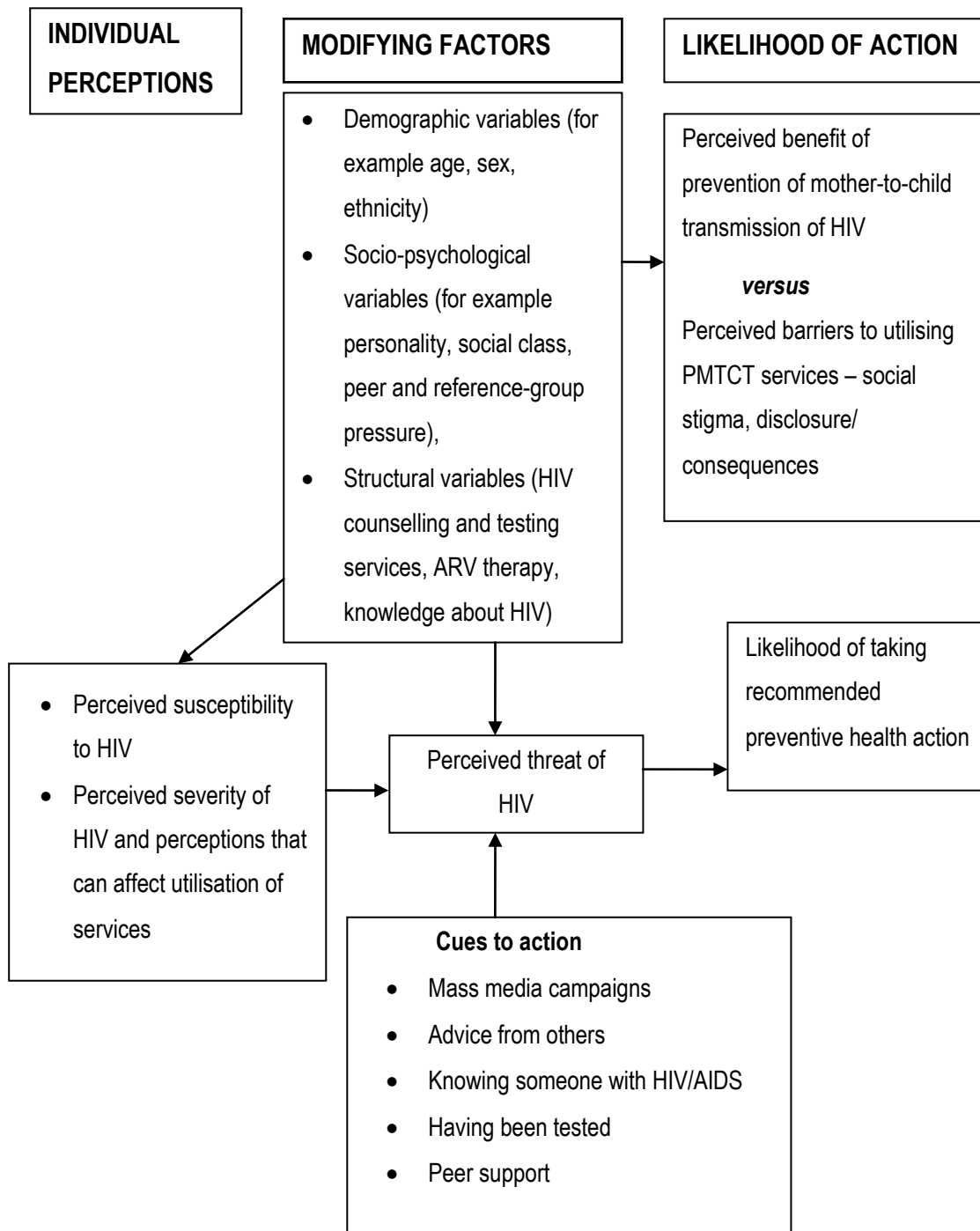
The perception of barriers that thwart individuals' desire or attempts to prevent being infected by HIV is the most important construct in behavioural change. It refers to individuals' own evaluation of obstacles that inhibit their adoption of new behaviour (Robinson, Bielamowicz, Rodgers, Wong & Konzelman 2008:46). This includes factors such as the time, costs, inconvenience, side effects, and effort entailed by taking preventive measures (Jamtsho 2008), as well as the risk of wrong diagnosis by healthcare professionals, and cultural beliefs (Moschetta, Bhavaraju, Beneson, DeLuca & Fraire 2003).

## **2.2.3 Evolution of the components of the HBM**

Subsequent changes to the HBM by various researchers resulted in the addition of new variables and more in-depth descriptions of what is actually being monitored. One common thread that runs through these modifications and the wider use of the HBM in other disease areas, is the replacement of belief in susceptibility to a disease in the original works of Hochbaum (as the reason for testing) by a more specific belief that one could already have the disease and not know it as the most important reason for seeking screening tests. Among the new additions were two variables — *cues to action* and *modifying factors* (Rosenstock 1974:329). Therefore, HBM can be said to have

three broad components, made up of a number of variables, that interplay to shape the uptake of health promoting or preventive actions.

The HBM is divided into three major components, which are: individual perceptions about health; modifying factors that include demographic, socio-psychological and structural variables; and the likelihood of action (Dennill *et al* 1999:156). According to Salazar (in Stanhope & Lancaster 1996:271), *cues to action*, such as mass media campaigns, advice from others, reminder postcards from healthcare providers, illness of family members or friends, and newspaper or magazine articles, may help motivate clients to take action. Figure 2.1 shows the variables and relationships in the HBM.



**Figure 2.1 Components of the Health Belief Model**

Adopted from Cookfair (1991:172) in Dennill *et al* (1999:157)

Salazar (1991:131) outlines these three major components of the HBM model, as shown in table 2.1.

**Table 2.1 The three major components of the HBM**

<b>Individual perceptions</b>	<b>Modifying factors</b>	<b>Variables affecting the likelihood of initiating actions</b>
<p>A person's belief about their susceptibility to a disease</p> <p>Plus the seriousness with which the disease is viewed by the individual.</p> <p>This summarises the perceived threat of an illness for each person</p>	<p>Demographic variables</p> <ul style="list-style-type: none"> <li>• age, gender, ethnicity and education</li> </ul> <p>Socio-psychological variables</p> <ul style="list-style-type: none"> <li>• personality</li> <li>• social class</li> <li>• peer pressure</li> </ul> <p>Structural variables</p> <ul style="list-style-type: none"> <li>• knowledge about the disease</li> <li>• prior contact with the disease</li> </ul>	<p>A person's perceived benefit from the action minus the perceived barrier to accomplishing the action predicts the likelihood that the person will take the action to change behaviour.</p>

Source: Adapted from Salazar (1991:131)

Each of the major components of the HBM defines a category of determinants of health-promoting behaviour, for example variables affecting the likelihood of initiating actions are dependent on various internal and external cues to action (Palank 1991:816; Simmons 1990:1163); and modifying factors incorporate factors such as biological characteristics, interpersonal influences and environmental factors (Palank 1991:816; Simmons 1990:1163). These three categories of determinants of health-promoting behaviour are presented in table 2.2.

**Table 2.2 Categories of the determinants of health-promoting behaviour**

<b>Cognitive-perceptual factors</b>	<b>Modifying factors</b>	<b>Variables affecting the likelihood of initiating actions</b>
Definition of health Importance of health Perceived health status Perceived control of health Perceived self-efficacy Perceived benefit of health-promoting behaviour Perceived barriers to health-promoting behaviour	Demographic factors (age, gender, ethnicity, education and income) Biological characteristics (body weight, body fat and height) Interpersonal influences (expectation of significant others, family pattern of health care and interaction with health professionals) Situational (environmental) factors (access to care) Behavioural factors (cognitive and psychomotor skills necessary to carry out health behaviours)	Depend on internal and external cues: The desire to feel well Individualised health teaching Mass media promotion campaigns

Source: Adapted from Palank (1991:816) and Simmons (1990:1163)

### **2.2.4 Cognitive perceptual factors**

The core of the cognitive-perceptual factors continues to derive from the original work of the HBM pioneers. A person's risk perception is a mental process by which individuals interpret knowledge to determine the risk that they are exposed to (Bergh & Theron 1999). Knowledge influences perception and perception enables a person to recognise and interpret events in the environment (Salazar 1991:129). This mental process is

shaped by the perceived susceptibility to a disease, the perceived severity of the disease condition and the perceived threat posed by it. It also incorporates a mental debate on perceived benefits and barriers to the health behaviour being promoted (Edelman & Mandle 1995:228). Important predictors of preventive health behaviour are individual perceptions related to severity, susceptibility, benefits and barriers (Becker 1974:381).

### **2.2.5 Self-efficacy to prevent infection**

Self-efficacy is a person's confidence in his/her ability to perform a recommended action successfully (Campbell 2004:30; Pender 1996:416). It is also the procedure by which a person processes, weighs and integrates diverse sources of information concerning her/his capability (Bandura 1977:198).

### **2.2.6 Modifying factors**

Modifying factors are a battery of variables that include demographic, socio-psychological and structural factors (Houton, Carabin & Henderson 2005:7). Other structural variables, such as past experience, skills, culture, motivation and level of education, modify the major constructs of perception. Modifying factors act as conditioners of an individual's perception about benefits of preventive health action (Rosenstock 1974:329).

- **Socio-economic factors**

Demographic variables such as age, gender and education affect individual perceptions of threats, such as being infected with HIV, and also shape the ability to avoid risk behaviour (Dennill *et al* 1995:142; Diwan and Thorson 1999:1000). People's developmental stage influences their risk behaviour in relation to HIV infection, for example younger age seems to predict a positive attitude to testing (Bwambale *et al* 2008:263; Jereni & Muula 2008:17; Mmbaga, Leyna, Mnyika, Hussain & Klepp 2007:160). Higher levels of education (Iyaniwura & Oloyede 2006:29; Jereni & Muula 2008:17) predict higher VCT uptake.

- **Socio-psychological factors**

A person's perception of an illness and the likelihood of taking precautions are influenced by socio-psychological variables, such as social class, peer pressure and personality (Dennill *et al* 1999:145).

- **Structural variables**

Structural variables, such as knowledge about and previous contact with a disease, may influence one's perception and likelihood of taking action. Positive perceptions and knowledge predispose behavioural change, thus making people more likely to seek healthcare and medical treatment (Dennill *et al* 1999), whereas lack of knowledge limits one's ability to prevent the spreading of disease and early treatment.

### **2.2.7 Variables affecting the likelihood of initiating actions**

Cues to action, such as the perception of symptoms, social influence, health education campaigns, mass media, reminders from healthcare professionals, newspapers, examples set by ill family members, all act as triggers for preventive health actions. The level of susceptibility and severity of the disease condition stimulate actions, and the individual's perception of barriers shapes the preferred mode of action that will be selected.

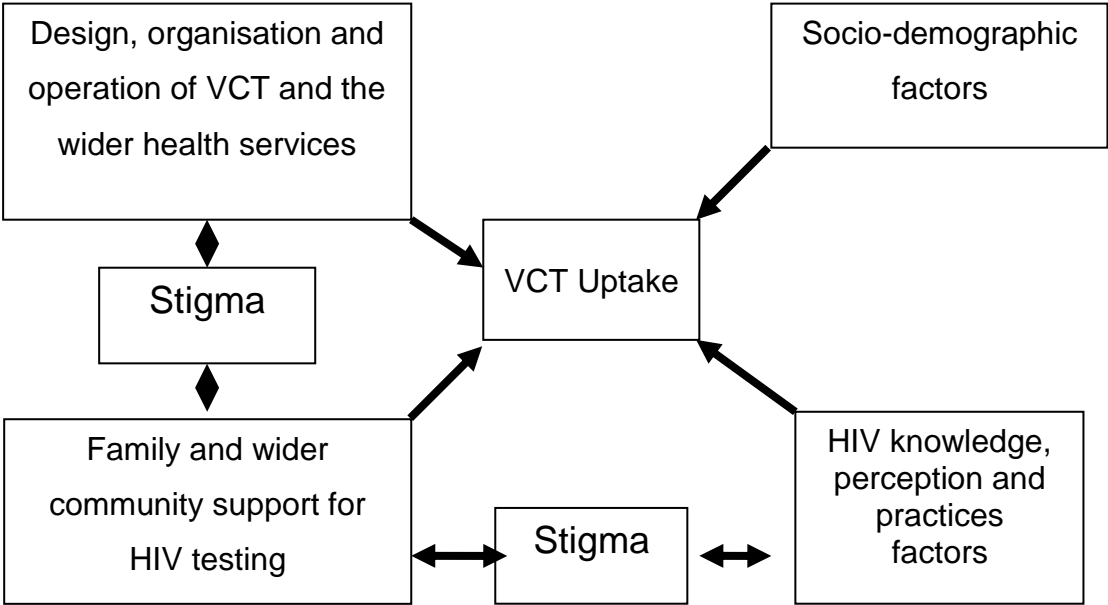
## **2.3 THE APPLICATION OF HBM TO VCT UPTAKE**

The study focused on understanding the determinants of VCT uptake among the general population in the federal capital territory of Abuja in Nigeria. Specifically, the study sought to understand the perception of the community of VCT services in Nigeria, and the reason for and perceptions of the use and non-use of such services. To conceptualise the determinants of VCT uptake, therefore, this study adopted the modification of the HBM model proposed by Bwambale *et al* (2008:263).

In the modified HBM model as presented by Bwambale *et al* (2008:265), three of the four variables (socio-demographic and socio-cultural factors, and the organisation of health services) operate as the modifying factors, while individual knowledge and



perception operate as components of the cognitive-perceptual factor of the model. These variables were seen and measured as input variables. The outcome variable measured by that study was VCT utilisation by men as assessed by men who came into a test facility, had pre-test counselling, had taken the HIV test and thereafter received post-test counselling.



**Figure 2.2 Conceptual framework for determination of VCT uptake**

Source: Adapted from Bwambale *et al* (2008:265)

The conceptual framework adopted by this study, as seen in figure 2.3, outlines four input variables that shape the decision to undergo an HIV test or not. The two modifying variables under the control of the individual are socio-demographic factors and HIV knowledge, perception and practices. The two supply-side factors on the other hand are the design, organisation and operation of VCT, the wider health services, and family and community support for testing. Considering the Nigerian context, this framework recognises and makes provision for tracking the particular role of stigma in shaping HIV knowledge, perception and practices, and wider family and community support for HIV testing, in addition to manifesting in the way HIV testing services are designed and offered to clients.

## 2.4 CORE ASSUMPTIONS AND STATEMENTS OF HBM

The HBM model may be applied to published descriptions of programmes and studies in health education, to health behaviour, and in planning the communication component of health education programmes (Collins & Benedict 2006:46). With regard to health education, Janz and Becker (1984:36) and Sheeran, Conner and Norman (2001:3) are of the opinion that the HBM model can be applied to three broad areas, namely

- preventive health behaviours, for example diet and exercise
- sick role behaviours
- clinic use

Application of the HBM in health intervention is based on the understanding that a person is motivated, and therefore will take a health-related action, for example go for an HIV test and use prescribed medicines to promote health or prevent a disease, if a number of factors hold true. Campbell (2004:2) and Dennill *et al* (1999:156), for example, argue that a person will take action if he or she

- feels that a negative health condition can be avoided by taking that specific action
- believes that a suggested health intervention will maintain specific behaviours
- has the personal efficacy for the action, including an acknowledgment by the person that certain barriers need to be overcome to institute and maintain specific behaviours needed for that action
- is optimistic that a recommended course of action can prevent a disease condition
- believes that by taking the health action, the disease condition can be prevented or cured, for example early detection of a disease condition can improve treatment options
- feels that the suggested health intervention is valuable
- believes that the effectiveness of the health action is worth the cost

This understanding has found wide use in health-promotion communication. In this regard, such messages often build on strengthening self-efficacy and *Cues to Action* variables. Some examples are media reports, labels on products, reminder postcards from a healthcare provider, ill family members and mass media campaigns (Ronald 2008).

## **2.5 LIMITATIONS OF THE HBM**

The HBM does not make provision for the influence of social norms and peer groups on people's health-related decisions and behaviour, especially when working with adolescents on HIV/AIDS-related issues. Only selected components of HBM are included in most HBM- based researches, hence the usefulness of the model as a whole is not being tested. When used as a psychological model, it does not consider environmental and economic factors that may influence health behaviour (Denison 1996). Moreover, the model is based on the assumption that individuals undertaking health behaviours do so in a rational way.

## **2.6 CONCLUSION**

A conceptual framework serves as a foundation on which a study is based and enables a researcher to discover what is known or unknown about a topic of interest in order to conduct research that adds to the body of knowledge. In this chapter the researcher has looked at the origin, components and evolution of the HBM and, in particular, some of the adaptations made to the model.

Chapter 3 discusses the literature review that the researcher used for the study.

## Chapter 3

### Literature review

#### 3.1 INTRODUCTION

Chapter 1 presented a short description of Nigeria, the federal capital territory, and Abuja capital city to orientate the reader to the context of the study. It also presented the research problem, the purpose, objectives and significance of the research, and the research methodology. It defined key terms used in the study. Chapter 2 presented and discussed the HBM as the conceptual framework for this study. This chapter reviews the literature relevant to HIV/AIDS research, and discusses the global, African and Nigerian situation and the response to the situation in each case, the role and importance of VCT in the continuum of care, and the determinants of VCT uptake, both from the demand and the supply side.

Hart (2001:261) defines the literature review as an effective evaluation of selected documents on a given research topic. A review may form an essential part of the research process, or it may constitute a research project in itself. A review of literature is important to discover the most recent and authoritative theory on a subject and ensure that previous studies are not duplicated (Babbie & Mouton 2003:87). Wikipedia online dictionary (accessed 23/08/2009) defines the literature review as a body of text that aims to review the critical points of current knowledge on a particular topic; its ultimate goal being to bring the reader up to date with current literature on a topic, and it forms the basis for another goal, such as future research that may be needed in the area. De Vos *et al* (2002:127) describe a literature review as contributing to a clearer understanding of the nature and meaning of the problem under study. A literature review is accomplished by a thorough and critical review of the existing information (WHO 2001:148).

The literature review for this study covered the global, African and Nigerian HIV/AIDS situational and response analysis, the role and importance of VCT in the continuum of HIV care, and the determinants of VCT uptake both from a demand and supply perspective. The review revealed the existing knowledge about these concepts and how

they are related, research undertaken on these concepts, and various approaches used in the study of the concepts.

## **3.2 OVERVIEW OF HIV/AIDS**

A short history and description of the main aspects of HIV and AIDS is provided to orientate the reader to the topic.

### **3.2.1 Historical background**

The geographical and biological origins of the HIV virus continue to be a contentious issue. Keele, Van Heuverswyn, Li, Bailes, Takehisa, Santiago, Bibollet-Ruche, Chen, Wain, Liegeois, Loul, Ngole, Bienvenue, Delaporte, Brookfield, Sharp, Shaw, Peeters and Hahn (2006:526) argue that the virus originated from the Simian Immunodeficiency Virus (SIV) in south-east Cameroonian chimpanzee colonies. According to a complex computer model of the evolution of HIV-1, the first transfer of SIV to humans is believed to have occurred in the 1930s (Korber, Muldoon, Theiler, Gao, Gupta, Lapedes, Hahn, Wolinsky and Bhattacharya 2000:1790), and HIV-2 was transferred from monkeys found in Guinea-Bissau at some point in the 1940s. No trace of SIV was found in other continents, leading to the conclusion that HIV originated in Africa (Lemey, Pybus, Wang, Saksena, Salemi & Vandamme 2003:6589).

The first clinically diagnosed case of AIDS was reported in the USA in 1981 in the gay male population, where a patient presented with an unusual form of *Pneumocystis carinii pneumonia* (PCP). Infection with the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) were first recognised as a distinct syndrome in 1981 (Mann & Tarantola, 1996:368). There are two HIV types, namely HIV-1 and HIV-2 with HIV 1 being more common in Nigeria (Olaitan 2007:1765).

### **3.2.2 Epidemiology of global HIV and AIDS**

HIV and AIDS remain among the most serious infectious disease challenges to public health (UNAIDS/WHO 2007:24). It is estimated that in 2007, 6 800 people were infected daily with HIV and an estimated 5 700 persons died from AIDS (UNAIDS 2008:15), making HIV/AIDS one of the major killer diseases — particularly in sub Saharan Africa. In global terms, 33.2 million people were living with HIV in 2007, with 2.7 million new

infections annually (UNAIDS 2008:16). The HIV epidemic seems to have stabilised since 2000 (UNAIDS 2008:30). Recent evidence suggests that there are localised reductions in HIV prevalence in countries such as Botswana, Malawi, Kenya and Zimbabwe (UNAIDS 2008:36).

Young people aged 15 to 24 account for 45% of new infections globally (UNAIDS 2008:33). In the generalised epidemic found in Africa, women in this age group account for 60% of new HIV infections. In regions outside Africa with concentrated epidemics, HIV disproportionately affects injecting drug users, men who have sex with men, sex workers and other most at risk population groups (UNAIDS 2008:41)

### **3.2.3 HIV/AIDS in Africa**

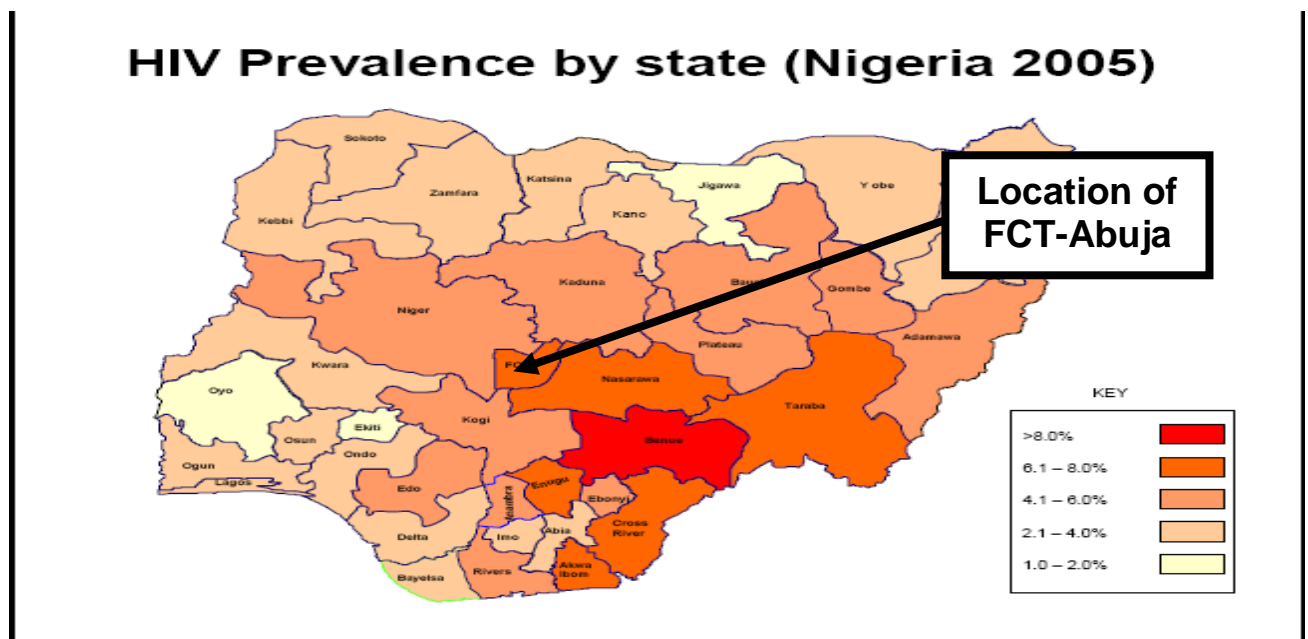
Sub-Saharan Africa is the epicentre of the HIV/AIDS epidemic, with 67% of the global disease burden and 75% of the estimated 2.2 million AIDS deaths in 2007 (UNAIDS 2008:30). An estimated 1.9 million people were newly infected with HIV in sub-Saharan Africa in 2007, bringing to 22 million the number of people living with HIV on the continent (UNAIDS 2008:31). Sub-Saharan Africa suffers from multiple epidemics, as can be seen from the divergent national HIV prevalences. The national prevalence in West Africa remains at less than 5%, while in Central and East Africa (Cameroon, the Central African Republic, Gabon, Malawi, Moçambique, Uganda, and the United Republic of Tanzania) it ranges from 5 to 10%. The southern African countries of Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe have the highest HIV prevalence in Africa and indeed the world, exceeding 15% in most of the countries.

The HIV epidemic in Africa is described as *generalised*, reflecting the fact that prevalence in the wider population is high (UNAIDS 2008:33). Women are disproportionately affected in comparison with men, with especially stark differences between the sexes among young people (UNAIDS 2008:35). The African epidemic appears to have stabilised, although often at very high levels, particularly in Southern Africa. Recent evidence suggests that about seven countries have met their United Nation's Declaration of Commitment targets of reducing new infections by 25%, set in 2007 for 2010 (UNAIDS 2008:30). This seems to suggest that strategies being deployed

are working in reducing infection rates and gives hope that the epidemic may be curtailed.

### 3.2.4 AIDS in Nigeria

An overview of the prevalence trend over the last sixteen years shows the epidemic peaking at 5.8% in 2001 from a low of 1.8% in 1991. The last two surveillance reports show that the epidemic has stabilised somewhat. It is important, however, to state that the last two figures were adjusted in 2006 as part of the UNAIDS global revision in national HIV prevalence rates as a result of better estimation methods (UNAIDS 2008:14). The next two surveillance reports will allow a better conclusion as to the trend of the epidemic in the country.

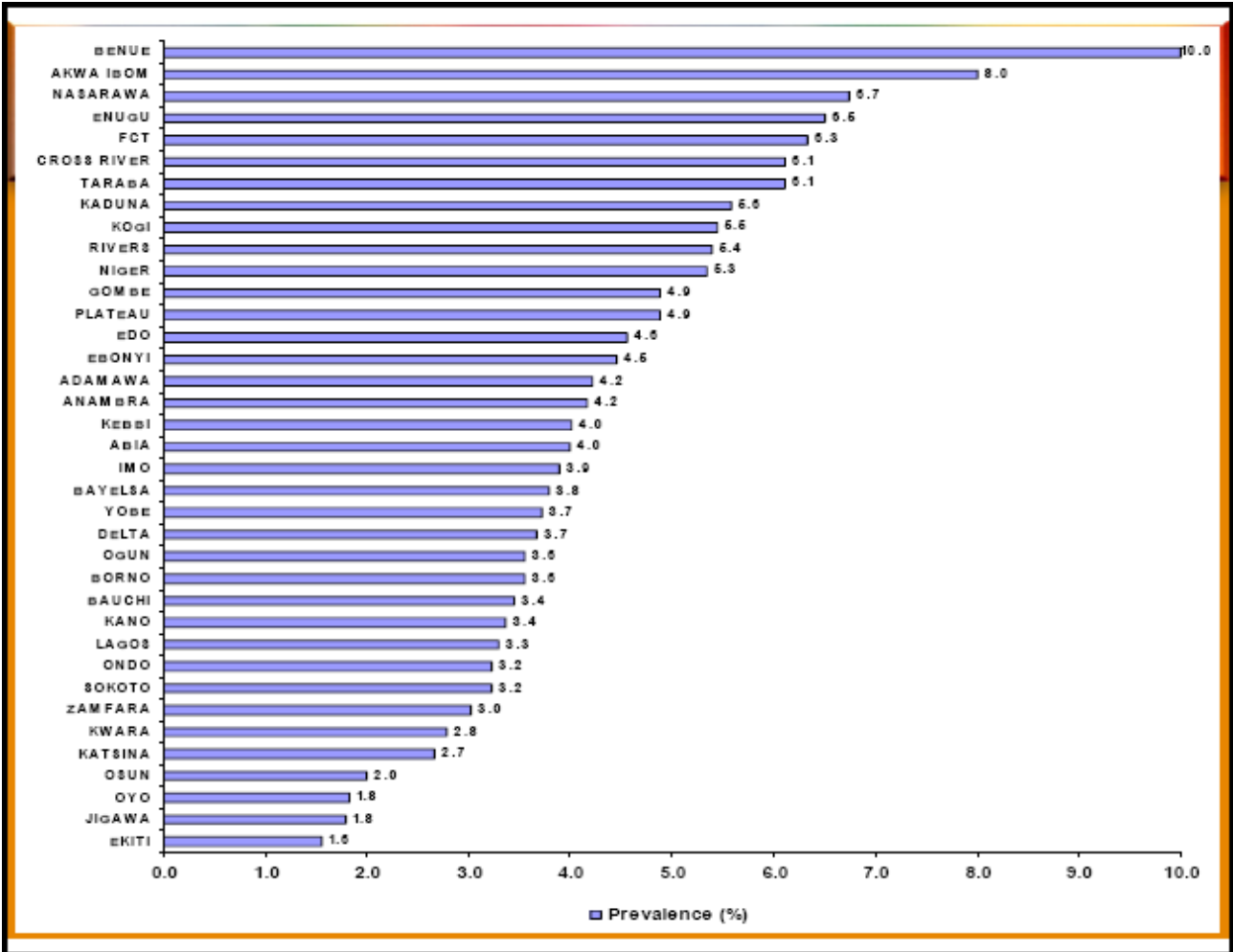


**Figure 3.1 Nigerian HIV Prevalence by States**

Source Nigerian Federal Ministry of Health (2005:13)

A state by state view of HIV prevalence as seen in figure 3.1, reveals that Nigeria had multiple epidemics. While the overall national HIV prevalence rate was estimated at 4.4%, HIV prevalence rates ranged from 1.6% in Ekiti, which is the state with the lowest rate, to 10% in Benue, the state with the highest prevalence rate (Nigerian Federal Ministry of Health 2005:13). Some telling characteristic of the epidemic is that all Nigerian states, including the federal capital territory, have prevalence rates greater

than 1%. In addition, fifteen states (FCT inclusive) had prevalence rates greater than the national average of 4.4% (Nigerian Federal Ministry of Health 2005:13).



**Figure 3.2 Specific HIV prevalence rates by states**  
 Source Nigerian Federal Ministry of Health (2005:14)

**3.2.5 AIDS in Abuja, Nigeria’s federal capital territory**

FCT Abuja, the area of this study, has a reported HIV prevalence rate of 6.5% (Nigerian Federal Ministry of Health 2005:3) making it the state with the fifth highest prevalence among Nigerian states. Only Benue at 10%, Akwa Ibom (8%), Nasarawa (6.7%) and Enugu (6.6%) are higher. It is also important to note that all five these states border each other, which most probably explains the correlation in prevalence rates.



### **3.3 HIV TESTING IN THE CONTINUUM OF HIV/AIDS PREVENTION AND TREATMENT AND SUPPORT**

Voluntary counselling and testing (VCT) is the bridge between HIV prevention, care and support (Bwambale *et al* 2008:263). Knowledge of HIV status provides many potential benefits to the individual and society, allowing appropriate linkages between prevention, psycho-social support and medical care (MacPhail, Pettifor, Coates & Rees 2008:88; Fylkesnes & Siziya 2004:569; UNAIDS 2001:14). A negative HIV test result provides motivation to practice safer sex and adopt appropriate HIV prevention behaviour change (MacPhail *et al* 2008:88; Marks, Crepaz & Janssen. 2006:1449; UNAIDS 2001:14). In addition, the cost-effectiveness of VCT has been found to compare favourably with other prevention interventions (Sweat, Gregorich, Sangiwa, Furlonge, Balmer, Kamenga, Grinstead & Coates 2000:119). An HIV positive result could lead to early access to and better outcome of treatment and care (MacPhail *et al* 2008:89; UNAIDS, UNICEF & WHO 2007:6).

In the seventeen low and medium income countries with data on HIV testing, only 10.9% of men and 10.3% of women had ever received an HIV test result between 2005 and 2007 (UNAIDS, UNICEF & WHO 2008:49). The report also suggests that only 20% of people living with HIV know their HIV status (UNAIDS, UNICEF & WHO 2008:49).

In Africa, the epicentre of the AIDS epidemic, HIV testing uptake continues to be low. In the twelve countries with data between 2005 and 2007, only 9.5% of women and 7.9% of men had ever had an HIV test and received the result (UNAIDS, UNICEF & WHO 2008:53).

In the particular case of Nigeria, despite wide availability of antiretroviral treatment in the country, and an 100% increase in the number of facilities providing testing and counselling services (UNAIDS, UNICEF & WHO 2008:50), HIV testing figures show that only 10% (6.4% of men and 13.6% of women) in the general population know their HIV status (Nigerian National Agency for the Control of AIDS 2008:20). Less than 10% of pregnant women in Nigeria receive treatment to reduce the risk of mother-to-child transmission of HIV (UNAIDS, UNICEF & WHO 2008:90). While the 15 to 29 year age group has the highest HIV prevalence in Nigeria, most people in this group remain untested (Iyaniwura & Oloyede 2006:27). In one study carried out by Ikechebelu,

Udigwe, Ikechebelu and Imoh (2006:247) among students in one Nigerian tertiary institution, only 63% of the group were aware of VCT and only 26.4% had ever had an HIV test; with half of this group taking the test voluntarily (Ikechebelu *et al* 2006:248).

This would suggest that other determinants, beyond wide availability of testing services and access to treatment, shape the interest in being tested (i.e. readiness) and the ultimate use of VCT services (acceptability) in the country.

### **3.4 DETERMINANTS OF VCT UPTAKE**

In the literature (Jereni & Muula 2008:17; Iyaniwura & Oloyede 2006:29; Weiser *et al* 2006:261; Adewole & Lawoyin 2004:167), two broad clusters of determinants shape a particular individual's interest in being tested (readiness) and the ultimate use of VCT services (acceptability). These include "demand"-related factors on the one hand and "supply"-related factors on the other.

- Demand-related factors describe a range of determinants that operate within the control of the individual. These include:
  - Socio-demographic factors, such as age, sex, education, religion and marital status (Jereni & Muula 2008:17; Iyaniwura & Oloyede 2006:29; Bwambale *et al* 2008:263; Weiser, Heisler, Leiter, Percy-de Korte, Tlou, DeMonner, Phaladze, Bangsberg & Iacopino 2006:261).
  - HIV-related knowledge, perception and practices: These include general HIV and AIDS knowledge (Weiser *et al* 2006:261; Adewole & Lawoyin 2004:167; Iliyasu *et al* 2006:1919; Gaje & Ali 2005:162), knowledge and perceptions of HIV test services (Bwambale *et al* 2008:263; Zhou *et al* 2009:23; Jereni & Muula 2008:17; Iyaniwura & Oloyede 2006:29; Mmbaga, Leyna, Mnyika, Hussain & Klepp 2009:166), low perceived risk of HIV infection (Iyaniwura & Oloyede 2006:27-31; Nakanjako, Kanya, Daniel, Mayanja-Kizza, Freers, Whalen & Katabira 2007:754) and fear of stigma and discrimination (Bwambale *et al* 2008:263; Iliyasu, Kabir, Galadanci, Abubakar & Aliyu 2005:30; Kalichman & Simbayi 2003).

- “Supply-related factors, on the other hand, include a range of determinants in the environment of the individual. These enabling environmental factors include:
  - The design and operation of VCT services (Bateganya, Abdulwadud & Kiene 2007:1002; Fylkesnes & Siziya 2004:569; Irungu, Varkey, Cha & Patterson 2008:111; Prost *et al* 2007:549). Others include shortage and quality of counsellors (Creek *et al* 2007:104; Nyblade, Pande, Mathur, MacQuarrie, Kidd, Hailom, Kidanu, Kilonzo, Mbwambo & Bond 2003:53); concerns about quality of services including confidentiality and availability of pre- and post-test counselling (Irungu, Varkey, Cha & Patterson 2008:111, Sherr, Lopman, Kakowa, Dube, Chawira, Nyamukapa, Oberzaucher, Cremin & Gregson 2007:852; Bateganya, Abdulwadud & Kiene 2007:1002; Creek *et al* 2007:104); and delays in returning HIV test results (Matovu & Makumbi 2007:1318; Creek *et al* 2007:104; Fylkesnes & Siziya 2004:566-72; Nyblade *et al* 2003:53).
  - Availability of family and wider community support for HIV testing (Iyaniwura & Oloyede 2006:27-31; Simbayi, Shisana, Chauveau & Ramalagan 2003:223) and perception of stigma in the environment (Bwambale *et al* 2008:263; Zhou *et al* 2009:23; Jereni & Muula 2008:17; Iyaniwura & Oloyede 2006:29; Mmbaga *et al* 2009:166) influence testing uptake.

### **3.4.1 Socio-demographic factors and VCT**

Younger age seems to predict a positive attitude to testing (Gaje & Ali 2005:162; Fylkesnes & Siziya 2004:566; Bwambale *et al* 2008:263; Jereni & Muula 2008:17; Mmbaga *et al* 2007:160). In a randomised trial on the acceptability of VCT in Zambia, Fylkesnes and Siziya (2004:566) argued that readiness for VCT was higher in age group 20 to 24 years (47%) as compared to age group 40 to 49 (18%). While self-perception of the risk of being HIV infected was the only significant factor among the young, poor self-rated health and a previous history of HIV testing were important factors among the older age group in shaping readiness for HIV testing. Jereni and Muula (2008:17) argued that people younger than 29 years are more likely to take an HIV test, and Mmbaga *et al* (2009:165) affirm that older people in their study population in Tanzania did not return for HIV test result and post-test counselling.

The relationship between gender and VCT uptake is more contentious. On the one hand, Mmbaga *et al* (2007:160) maintained that being male or female had no effect on VCT completion in Tanzania, while Iliyasu *et al* (2006:1919) on the other hand argue that females were more likely to complete VCT in Nigeria. Weiser *et al* (2006:261) also reported that females were more likely to go for an HIV test in Botswana. In a study of clients using VCT services in Malawi, 59% were found to be women (Jereni & Muula 2008:17).

Higher levels of education as an indicator of VCT uptake: Iyaniwura and Oloyede (2006:29), Jereni and Muula (2008:17), Sherr *et al* (2007:851); Gaje and Ali (2005:153) as well as Iliyasu *et al* (2006:19) predict higher uptakes of VCT with higher levels of education.

Marital status also seems to play a role in the decision to take an HIV test. Unmarried young people and youths who knew someone who was infected with HIV were more likely than married people to desire an HIV test (Iyaniwura & Oloyede 2006:27-31 and Simbayi *et al* 2003:223). On the other hand, Jereni & Muula (2008:17) found no difference in VCT uptake between married and unmarried clients.

#### **3.4.2 HIV knowledge, perception and practice as determinants of VCT uptake**

HIV knowledge is a significant predictor of a positive attitude toward VCT (Sherr *et al* 2007:851; Mmbaga *et al* 2009:160; Weiser *et al* 2006:261; Adewole & Lawoyin 2004:167; Iliyasu *et al* 2006:1917; Gaje & Ali 2005:162). In Blantyre, Malawi, recent knowledge about HIV was the most important reason given for getting an HIV test, followed by ill health as the second most important reason (Jereni & Muula 2008:17).

Weiser *et al* (2006:261) found that more frequent health-care visits predicted increased likelihood to use VCT services.

People with a stigmatising attitude to people living with HIV/AIDS are less likely to use VCT (Weiser *et al* 2006:261). Knowledge of the availability of antiretroviral therapy also predicts higher HIV testing uptake (Mmbaga *et al* 2009:160).

A history of sexual risk behaviour, including paying for sex (Gaje & Ali 2005:153) and inconsistent condom use (Weiser *et al* 2006:261), increases testing uptake. However, Mmbaga *et al* (2009:160) in Tanzania argued that recent sexual risk taking behaviour was implicated in noncompletion of HIV testing. In Thailand previous encounters with sexually transmitted disease, being previously married, and having participated in AIDS-related activities were factors associated with acceptability of HIV testing (Jiraphongsa, Danmoensawat, Greenland, Frerichs, Siraprapasiri, Glik & Detels 2002:89).

Feelings of invulnerability to HIV, and not having thought about it, are the commonest reason for not testing among Nigerian youths (Iyaniwura & Oloyede 2006:27).

In addition, prior HIV testing (Mmbaga *et al* 2009:160; Fylkesnes & Siziya 2004:566), spousal communication about HIV prevention (Gaje & Ali 2005:153 and Habte, Davey, Deyessa & Gass 2004), self-perceived risk of being HIV infected (Fylkesnes & Siziya 2004:566), and knowledge of a neighbourhood test site (Gaje & Ali 2005:153-165) predict the likelihood to go for an HIV test.

### **3.4.3 The design, organisation and operation of VCT and the wider health services**

The location and design of the VCT facility are also central in determining acceptability of VCT (Matovu & Makumbi 2007:1315; Irungu *et al* 2008:111; Bateganya *et al* 2007:1002; Fylkesnes & Siziya 2004:569; Prost *et al* 2007:549; Nyblade *et al* 2003:53). This presupposes that the design of the VCT facility, whether as a standalone facility or a facility integrated with other services, may play a critical role in the uptake of VCT services. In addition, the two broad types of HIV counselling and testing (HCT) may also shape the decision about taking an HIV test and where to go for the test. These two types are client-initiated or provider-initiated VCT (WHO/UNAIDS 2008:55; Matovu & Makumbi 2007:1318). Client-initiated VCT, as the name suggests, is initiated by the client, who actively seeks out HIV testing and counselling at a facility that offers these services (WHO/UNAIDS 2008:55; Matovu & Makumbi 2007:1318; Fylkesnes & Siziya 2004:568; Creek *et al* 2007:105). These facilities can be provided at a general health centre, a standalone facility, or even at a mobile facility. This is often the most common type of HIV counselling and testing in Africa. Provider initiated testing, or routine counselling and testing (RCT), on the other hand, is testing required by health providers

as a routine component of the care package for certain disease conditions (WHO/UNAIDS 2008:56; Creek *et al* 2007:102). These diseases are likely to be associated with an underlying HIV infection, and include conditions such as tuberculosis, or they may be part of antenatal care programmes. Some pre-test group counselling is provided and individualised post-test counselling is offered, depending on the test results ((WHO/UNAIDS 2008:56). These two types of VCT services exist in Nigeria; however, how they may or may not facilitate testing uptake is not known.

The link between the nature of the VCT facility and testing uptake has been studied in the context of clients' perceptions of stigma (Nyblade *et al* 2003:53; Fylkesnes & Siziya 2004: 566-72; Irungu *et al* 2008:111), with seemingly inconsistent results. In a study in Zambia, Fylkesnes and Siziya (2004:566-72) found that acceptability of VCT at an optional (out of community) location was 55.8%, as compared to 11.8% for the local clinic. However, this is contrasted by a community study in Nakuru, Kenya, where a nearby facility was preferred by 54.4% of the study population, as compared to 45.6% who preferred anonymous provision (Irungu *et al* 2008:111). Couple testing, dedicated clinics and private doctors' rooms as testing facilities were also preferred in the Kenya (Irungu *et al* 2008:111) and Ugandan studies (Bwambale *et al* 2008:263). This may be reflective of the maturity of the epidemic in these countries. It could also be a reflection of the clients' perception of how confidentiality is handled at the two types of locations (MacPhail *et al* 2008:96). In one study with South African miners, confidentiality of the test result was rated as a prime determinant of accepting VCT, as compared to ease of accessing antiretrovirals (Day, Miyamura, Grant, Leeuw, Munsamy, Baggerley & Churchyard 2003:669). Health issues were the prime determinant of going for HIV testing, while fear of testing HIV positive, stigmatisation and death were major identified barriers to testing among mine workers in South Africa (Day *et al* 2003:665-672). Iiyasu *et al* (2006:1919) described clinical VCT facilities as inappropriate for youth — especially such facilities within the community. Many women in Nigeria will not go voluntarily for an HIV test, even with a high level of knowledge of PMTCT (Prevention of Mother to Child Transmission) if the result will be shared with relatives (Ekanem & Gbadegesin 2004:91-100; Iiyasu *et al* 2006:1917). This highlights issues of confidentiality of VCT services at a time where couple counselling is being advocated in other countries (Irungu *et al* 2008:116).

### **3.4.4 Family and community support for testing**

Positive attitude of family members and friends to VCT seems to shape VCT uptake by young people (Denison, McCauley, Dunnett-Dagg, Lungu & Sweat 2008:103.) Young people seem to also disclose their HIV status predominantly to family and friends, and infrequently to sex partners (Denison *et al* 2008:104). This is further reinforced by MacPhail *et al* (2008:99) who argue that youth felt that they would disclose their HIV status to family members who they felt would be most supportive.

### **3.4.5 HIV stigma and impact on testing**

Stigma has also been proffered as one of the major determinants of HIV testing and counselling uptake (Bwambale *et al* 2008:263; Zhou *et al* 2009:23; Jereni & Muula 2008:17; Iyaniwura & Oloyede 2006:29; Mmbaga *et al* 2009:166). Iliyasu *et al* (2005:28) argue that the fear of isolation and the need to maintain marriage security in the community were key reasons for not accessing VCT in northern Nigeria. In the context of PMTCT, Maedot, Haile, Lulseged and Belachew (2007:337) confirmed similar trends in Ethiopia, arguing that fear of a husband's negative reaction, stigma and discrimination, and of being denied access to medical care, were key determinants of VCT uptake. Raising the effect of stigma further in Nigeria, (Ekanem & Gbadegesin 2004:93) argued that, even in the context of PMTCT, many women still prefer to breastfeed even if they know their HIV status, because of fear of being seen as different in the community and being stigmatised.

Fear of being stigmatised in the community — and even at health facilities — reduces testing even in contexts where treatment is available (Green 2003; Krueger 1996:536-548). In Nigeria people living with HIV and AIDS (PLWHIV) are seen as having lived an irresponsible life sexually, and therefore being under divine punishment for their immoral behaviour (Odimegwu 2003). Twenty percent of healthcare professionals surveyed in Nigeria believed that people with HIV/AIDS behaved immorally and deserved the disease (Reis, Heisler, Amowitz, Moreland, Mafeni, Anyamele, & Iacopino 2005:246). Nine percent of health-care workers interviewed in Nigeria indicated that they had refused admitting HIV/AIDS patients to their facilities, and 59% of health workers interviewed agreed that people with HIV/AIDS should be in a separate ward

(Reis *et al* 2005:246). This would suggest that the environment for VCT in the country continues to be negative.

### **3.5 CONCLUSION**

The importance of VCT as core intervention, with benefits for both HIV prevention and improved treatment outcomes for AIDS, is well established in the literature. Some research work has also been done on the subject of determinants of VCT uptake. Various variables, such as demographics, HIV knowledge and perception on the one hand, and the design of VCT services and family and community support on the other, seem to shape VCT uptake in various contexts. Programmes to promote VCT interventions need to be based on an understanding of the operation of these variables in specific contexts if they are to be successful. This study sought to test some of these arguments in the context of Nigeria.

Chapter 4 presents and discusses the research methodology of this study.



## Chapter 4

### Research methodology

#### 4.1 INTRODUCTION

Research methodology can be defined as the techniques and methods that a researcher uses to structure a study and to gather and analyse information in a systematic fashion (Polit & Beck 2004:15). Babbie and Mouton (2003:75) describe research methodology as a blueprint for the intended research process. The research methodology thus includes drawing up the research design, defining the study variables, selecting the study population, and choosing various kinds of tools and procedures to use in gathering, analysing and interpreting the data. It also encompasses the choice of various methods that will be applied to guarantee the reliability, objectivity and validity of the study conclusions.

#### 4.2 RESEARCH DESIGN

Mouton (2001:55) describes research design as a plan or blueprint for how a researcher intends to conduct the research. The research design serves as a guide to the researcher in planning and implementing the study in order to achieve the intended objectives (Burns & Grove 2001:223). An appropriate research design should provide trustworthy answers to the research questions, while at the same time avoiding or minimising bias (Polit & Beck 2004:209).

This study uses a survey approach. A household-based quantitative, descriptive and cross-sectional design was adopted to gain an understanding of how the five variables (participants' demographics, HIV/VCT knowledge, perception of VCT facility design, societal support and stigma) shape the phenomenon of VCT uptake in Abuja, Nigeria.

*Quantitative research* is a formal, objective and systematic process for generating information about the world. In quantitative research, evidence is gathered according to a specified plan, using formal instruments to collect the needed information (Somekh & Lewin 2005:215). A quantitative, descriptive research design was chosen for this study

as an appropriate method to systematically collect evidence of the knowledge and awareness of VCT among the population of Abuja.

*Descriptive studies* provide accuracy in that they describe what exists and the frequency with which it occurs; they assign new meaning to a phenomenon and put information into categories. Furthermore, descriptive studies have as their main objective the portrayal of that which is being studied, be it persons, situations or groups (Burns & Grove 2001:30).

*Cross-sectional studies* entail the collection of data on a cross section of the population, which may comprise the whole population or a proportion (sample) of it (WHO 2001b:17). Bryman (2004:41) describes cross-sectional research design as the collection of data from more than one case occurring in the same situation in order to collect a body of quantitative data with two or more variables. This data is then examined to detect patterns of association.

#### **4.3 RESEARCH METHOD**

According to Polit and Beck (2006:4), the research method refers to the scientific procedures used to improve, refine and develop the knowledge base.

This study used the quantitative research method to explore the relationship between VCT uptake as the dependent variable and, as independent variables (study variables), the study respondents' socio-economic demographics, their HIV/VCT knowledge, their perception of family and community support, and their perception of the design of VCT services and of stigma. According to Creswell (2009:12), quantitative methods involve the process of collecting, analysing, interpreting and writing the results of the study. The author further notes that "... specific methods exist in both survey and experimental research that relate to identifying a sample and population, specifying the strategy of inquiry, collecting and analyzing data, presenting the results, making an interpretation, and writing the research in a manner consistent with a survey or experimental study".

In quantitative research, evidence is gathered according to a specified plan, using formal instruments, such as questionnaires, to collect the needed information. Burns and Grove (2003:37) describe a quantitative study as a formal, objective, rigorous and

systematic process for generating information about the world, and measuring the causal relationships between concepts or ideas. Polit and Hungler (1995:13) state that the information gathered for quantitative research has to be in the form of numeric information that can be analysed with statistical procedures.

Creswell (2009:146) states that, in any research plan, the first step is to introduce readers to the basic purpose of and rationale for the survey research, and that the research plan should therefore begin by reviewing the purpose of the survey and the rationale for its selection.

In this study, the overall purpose of the study was to understand the determinants of VCT uptake among the population in the federal capital territory of Abuja in Nigeria. Specifically, the study will bring to the fore knowledge about the following:

- the perception of the community with regard to VCT services in Nigeria
- the reasons for the use and non-use of VCT services (see chapter 1, section 1.5)

Creswell (2009:146) states that four steps should be followed to discuss the methods of the study:

- As stated above, step 1 entails the identification of the purpose of the survey. The purpose is to generalise from a sample to a population so that inferences can be made about some characteristic, attitude or behaviour of the population (Babbie 1990 in Creswell 2009:146).

In this study, the purpose of using the survey method was to understand the determinants of VCT uptake in a sample population of 180 respondents with similar characteristic as the general population, and to extrapolate the outcomes to the general population in order to infer prevalent perceptions and use of VCT services.

- Step 2 entails indicating why a survey is the preferred type of data collection procedure for the study.

In this study, a structured interview schedule was developed to gather information from respondents regarding VCT uptake. The rationale for using a structured interview schedule as the survey method was that it was the most economical and cost-effective method to provide a rapid turnaround in the data collection.

- Step 3 entails the decision whether the survey will be cross sectional with the data collected at one point in time, or whether it will be longitudinal with data collected over time.

In this study, a cross sectional survey was used, with data being collected in one point of time from 30<sup>th</sup> October 2009 to 30<sup>th</sup> November 2009. The structured interview schedule was distributed to two research assistants, who had been trained by the researcher in administering the structured schedules. They were professional research assistants with extensive field experience in collecting data for the National HIV/AIDS and the Reproductive Health Survey (NARHS), the flagship survey by the Nigeria Federal Ministry of Health. They were also familiar with the language and lay terms that are used in the community in relation to HIV/AIDS.

Interviews during which the interview schedules were filled in by the research assistants lasted about 30 to 45 minutes. Before each interview commenced, the research assistants explained the purpose of the study to the participants; they explained the ethical considerations, for example how anonymity of the information would be ensured, and that the respondents were under no obligation to participate in the study and could withdraw from the study at any time they wished. The research assistants also indicated explicitly that there would be no compensation paid to the respondents for participating in the study.

- Step 4 entails specifying the form of data collection. In this regard Fink (2002) identifies four types of data collection, namely interviews, structured record reviews to collect financial, medical or school information, and structured observations. Fourthly, the data collection may also involve creating a Web-based or Internet survey and administering it online. Creswell (2009:147) is of the opinion that, regardless of the form of data collection, a rationale for the selected procedure is important, using arguments based on the strengths and weaknesses, costs, data availability and convenience of the procedure.

In this study, data collection was by means of a *structured* interview schedule, because many of the respondents may have lacked the technical understanding to grasp the full meaning of the questions asked in the interview schedule. In addition, by having the interview schedule administered by trained researchers, the questions could be explained and a satisfactory response rate guaranteed.

Creswell (2009:147) suggests that the researcher compile a checklist for survey methods. This checklist is given in table 4.1 below. In this study, the researcher gave due attention to each of the questions given in table 4.1.

**Table 4.1 Checklist for administering a survey method**

Question	Application /reference
Is the purpose of the survey design stated?	The purpose of this research was to understand the determinants of VCT uptake in the population of the federal capital territory of Abuja in Nigeria.
Are the reasons for choosing the design mentioned?	In this study, a household-based quantitative, descriptive and cross-sectional design was adopted to understand how the five variables (participants' demographics, HIV/VCT knowledge, perception of VCT facility design, societal support and stigma) shape the phenomenon of VCT uptake in Abuja Nigeria. The purpose of using the survey method was to understand the determinants of VCT uptake in a sample population of 180 respondents with similar characteristic as the general population, and to use the outcome to make inferences about the general population's perception and use of VCT services.
Are the population and its size mentioned?	Yes they are mentioned.
Is the nature of the survey (cross-sectional vs. longitudinal) identified?	In this study, a cross-sectional design was adopted.
Will the population be stratified? If so, how?	No.
How many people will be in the sample? On what basis was this	A total of 180 respondents were included in the sample, using the Creative Research Systems (2003:1) software for estimating

Question	Application /reference
number chosen?	the sample size, assuming a descriptive study, simple random sampling and recognising that 10% (population prevalence of VCT uptake) of the sample size are estimated to have ever taken a HIV test. Also $\pm 5\%$ level of precision and a confidence level of 95%.
What will the procedure be for sampling these individuals (e.g. random sampling, non-random sampling)?	Two-stage random sampling – day code to select households, and balloting to select respondent in each household.
What instrument will be used in the survey? Who developed the instrument?	Researcher developed the instrument, but it was shaped by the HBM model.
What are the content areas addressed in the survey? What scales are used?	Content areas include: Participants' demographics, HIV/VCT knowledge, perception of VCT facility design, societal support and stigma.
What procedure will be used to pilot or field test the survey?	The interview schedule was pre-tested in Karu town with seven respondents in five households, who were then excluded from being participants in the main part of the study. In addition, the research instrument was given to the research assistants who would be collecting the data for their input, and also to familiarise them with the content and meaning of the questions. Their contributions were also added to the interview schedule used in this research. The interview schedule was then reviewed and revised (where necessary) on the basis of the results obtained from the pre-test.
What is the time line for administering the survey?	One month for collecting the data.
What are the variables in the study?	Five study variables (participants' demographics, HIV/VCT knowledge, and perception of VCT facility design, societal support and stigma) and one dependent variable: uptake of VCT.
How do these variables cross-reference with the research questions and items on the survey?	Key variables were tested against the dependent variable (uptake of VCT by the respondents) to find out if there is any statistically significant relationship in the response, using Chi-square at 5% level of significance.

Question	Application /reference
<p>What specific steps will be taken in data analysis to:</p> <ul style="list-style-type: none"> <li>• Analyse returns</li> <li>• Check for response bias</li> <li>• Conduct a descriptive analysis</li> <li>• Collapse items into scales</li> <li>• Check for reliability of scales</li> <li>• Run inferential statistics to answer the research questions?</li> </ul>	<p>The data was analysed using SPSS version 17 and the first sets of analysis were largely descriptive using tables and graphs.</p> <p>Secondly, key variables were tested against the dependent variable (uptake of VCT by the respondents) to find out if there was any statistically significant relationship in the response using Chi-square at 5% level of significance.</p> <p>Finally, variables that were found to have statistically significant relationships, were subjected to a second level of inferential analysis, using logistic regression to determine to what extent the significant variables influenced uptake of VCT in the study population.</p>
<p>How will the results be interpreted?</p>	<p>Descriptive results expressed as frequencies or percentages will be presented to represent the proportion of the respondents that adhere to a certain view point or practice, and this will be related to the literature in the relevant field. In addition, “statistically significant relationship” will be interpreted to mean that the variable being studied does influence the dependent variable of VCT uptake among the respondents. The final inferential result of the selected variables will provide some idea of the strength of the relationship between the variable and VCT uptake.</p>

### 4.3.1 Population

The term *study population* describes the “universe” of units from which the sample is selected (Bryman 2004:87). Polit and Beck (2004:290) describe *target population* as “the aggregate of cases about which the researcher would like to make generalizations”. The population can also be regarded as the group to which results of a study are generalised (Trochim 2006:32).

The population for this study comprised persons living in and around Abuja FCT. Considering the nature of Abuja, a core federal capital city which is sparsely populated and often houses the elites and foreign embassies, more representative districts were selected for the study.

The study population were persons living in and around Karu and Bwari satellite towns of Abuja FCT at the time of the research.

#### **4.3.2 Sample and sampling procedure**

A sample is “a subset of the population elements” (Polit & Beck 2004:291) or “a segment of the population that is selected for investigation” (Bryman 2001:85). Selection of the sample is described as sampling and it could either be based on a probability or non-probability approach. Saks and Allsop (2007:157) describe sampling as the science and practice of selecting information from populations in a manner that allows inferences to be drawn from the data. De Vos *et al* (2002:199) argue that use of a sample of a study population saves time, money and effort but can still produce research information of acceptable quality.

A *probability sample* is one that has been selected using random selection so that each unit in the population has a known chance of being selected (Bryman 2001:85). Examples of probability sampling include simple random sampling, stratified random sampling, systematic sampling, cluster sampling, and panel sampling (De Vos *et al* 2002:203). Polit and Beck (2004:292) describe random sampling as a process that entails selecting study participants randomly from a study population

*Simple random sampling* was the strategy used for the study in order to investigate the relationship between the dependent variable, VCT uptake, and the study variables — study participants’ socio-economic demographics, HIV/VCT knowledge, and their perception of family and community support, design of VCT services and stigma.

The *sampling units* were households in the study communities. The day code was used in selecting the households where structured interview schedules were administered. For example, if the interview date was 23<sup>rd</sup> of November, (2+3=5), every fifth household was included in the sample and structured interview schedules administered to one respondent in each household.

Recognising that the subject matter, HIV infection and VCT testing, mainly concerns heterosexual activity in the area of study, the study focused on the sexually active age



group as defined by the Nigerian HIV/AIDS and Reproductive Health Survey oversight committee, hence in each household males aged between 15 and 64 years, and females aged between 15 and 49 years, were identified as potential respondents for the study.

To minimise bias that may come about if many respondents were selected from one household, one respondent was selected randomly from each household using simple balloting, and the candidate was interviewed using the structured interview schedules. A total of 180 respondents were chosen from the selected 180 households to be interviewed.

The study participants had such varying demographic, socio-economic and HIV behavioural characteristics, reflective of the diversity in the wider Abuja society, that it was possible to investigate the relationship between the chosen variables and VCT uptake in a subset of the population group.

#### **4.3.3 Sample size estimation**

The generalisability of a research result is a function of the sample size, as distinct from the relative size or proportion of the population sampled (Somekh & Lewin 2005:218). Sample size is dependent on the accuracy required and the likely variation of the population characteristics being investigated. The main determinant of the sample size is therefore, how accurate the results need to be, depending on whether the study is descriptive or analytical (WHO 2001a:74). The larger the sample size, the smaller the error will be in estimating the characteristics of the whole population (Saks & Allsop 2007:158). However, larger sample size increases the cost of administering a survey and conducting the analysis.

This study was descriptive in design, with the objective of obtaining an indication of the relationship between (a) the study population's socio-economic demographics, their HIV/VCT knowledge, and their perception of family and community support, design of VCT services and stigma, and (b) VCT uptake.

The population of Abuja at the last national census was estimated as 1.405 million people (NPC 2007:3). Estimates for Bwari and Karu were estimated respectively at

about 82 000 and 181 000, totalling about 263 000. Adjusting for the fact that 50% of the population were less than 15 years old (NPC 2007:11), this translates into a study population of about 131 500.

Creative Research Systems (2003:1) software was used to estimate the sample size for a descriptive study, assuming simple random sampling, and recognising that 10% (population prevalence of VCT uptake) of the sample size are estimated to have ever taken a HIV test, the sample size is calculated as 162 respondents. This is based on a level of precision of  $\pm 5\%$  and a confidence level of 95%. An additional 10% of the sample size units (18) were included in the number of respondents to compensate for possible failure to complete the interview schedules during the data-collection period (Israel 2003:4). This translates into a total of 180 respondents.

#### **4.3.4 Research instrument**

This study used a survey design (Creswell 2009:146), based on the main components of the HBM model, which incorporated a structured interview schedule as the data collection instrument to be used by the researcher.

Polit and Beck (2004:318) describe a data collection instrument as a formal written document that is used to collect and record information. A structured interview schedule represents a highly structured method of data collection that is low in cost and quick to administer. The researcher used a schedule with 60 open and closed-ended questions, arranged in five broad groups corresponding to areas in the study. Polit and Hungler (1995:336) argue that open and closed-ended questions in a structured interview schedule mutually offset the strengths and weaknesses of each type of question. The structured interview schedule included questions in the following areas:

- socio-demographic factors
- HIV knowledge, perception and practices
- the design, organisation and operation of VCT and the wider health services
- family and community support for testing
- perception of stigma associated with HIV testing

The decision to include these questions was based on a literature review that indicated that these variables influence uptake of VCT services (see chapter 3).

#### **4.3.4.1 Reliability of the research instrument**

*Reliability* refers to a description of the consistency with which an instrument measures an attribute of the target (Polit & Beck 2004:417). It refers to the extent to which the administration of the same instrument yields the same results consistently under comparable conditions (De Vos *et al* 2002:168). *Internal consistency* and *equivalence* are the two attributes of reliability that this study used. An instrument is said to be internally consistent to the extent that all its subparts measure the same characteristic (Polit & Hungler 1995:415). Questions and observations that were relevant to the subject of investigation were used in order to enhance the reliability of the instrument. The reliability of an instrument that yields quantitative data is a major criterion for assessing its quality and accuracy.

Equivalence is described as the extent to which two different observers using the instrument obtain equivalent measurements of the same traits in the same people or situations (Polit & Hungler 1995:416).

#### **4.3.4.2 Validity of the research instrument**

Validity refers to the degree to which an instrument measures what it is intended to measure (Polit and Beck 2004:422). De Vos *et al* (2002:167) describe validity as the ability of an instrument to measure exactly what it is supposed to measure. Content validity, which is concerned with the adequacy of the sampled items for the variables being measured, was enhanced by using questions from instruments used in related studies. The study supervisors also evaluated the study instrument.

#### **4.3.5 Data analysis**

De Vos *et al* (2002:223) describe data analysis as the breakdown of data into constituent parts to obtain answers to research questions and to test research hypotheses. The researcher used quantitative data analysis methods to analyse the data.

The data was analysed using Statistical Package for the Social Science (SPSS) version 17, and the first sets of analysis — largely descriptive — are presented with the aid of percentages, tables and graphs. Relevant research findings and literature to support the findings are included where applicable.

Key variables were tested against the dependent variable (uptake of VCT by the respondents) to find out if there was any statistically significant relationship in the response using Chi-square at 5% level of significance.

Finally, variables that were found to have statistically significant relationships were subjected to a second level of inferential analysis using logistic regression to determine to what extent the significant variables influenced uptake of VCT in the study population.

#### **4.3.6 Pre-testing the research instrument**

Polit and Beck (2004:728) describe a pre-test as the trial administration of a research instrument to identify possible flaws and to ascertain time requirements. In this study the structured interview schedule was pre-tested at Karu town with seven respondents in five households who were then excluded from being participants in the main part of the study. In addition, the research instrument was provided to the research assistants who would be collecting the data for their input, also to familiarise them with the content and meaning of the questions. Their contributions were also added to the interview schedule used in this research. The interview schedule was then reviewed and revised (where necessary) on the basis of the results obtained from the pre-test.

#### **4.4 ETHICAL CONSIDERATIONS**

The researcher met the ethical requirements for this research by obtaining permission from the Research and Ethical committees of the University of South Africa and the Nigerian National Agency for the Control of AIDS (see annexure A). The study was non-invasive, involving interaction with and interviewing of the study participants. Covering notes on the schedule were used to explain to each participant what the objectives of the study were, the probable benefits of the research and the advantages of their voluntary participation.

According to Mouton (2001:238), the ethics of science concerns what is wrong and what is right in the conduct of the research. Ethical considerations include the right to privacy from which arises the right to refuse to participate in the research, the right to anonymity and confidentiality, the right to full disclosure about the research, and the right not to be harmed in any manner (Mouton 2001:243).

Polit and Hungler (1999:701) and Polit and Beck (2004:717) describe ethics in research as a system of values that are concerned with the degree to which the research procedures adhere to professional, legal and social obligations regarding the participants in the study. Streubert Speziale and Carpenter (2007:57) and Polit and Beck (2004:141) assert that ethical considerations are a crucial factor in any research project. It is the responsibility of the researcher to ensure that the design is morally and ethically sound and that the human rights of each participant are protected. Polit and Hungler (1999:133-151), Burns and Grove (2003:161-191) and Polit and Beck (2004:143-150) refer to the Belmont Report (1978) in addressing the ethical considerations regarding research. This report was adopted by the United States National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research (1978) as a basis for regulations governing research by the USA Federal Government. The Belmont Report (1978) also served as a model for many of the guidelines adopted by specific disciplines. The report articulated three primary ethical principles, namely the principles of beneficence, respect for human dignity, and justice. These principles, according to Polit and Hungler (1999:134-140) and Polit and Beck (2004:143-150), together with their application to this study are shown in table 4.2 on the following pages.

**Table 4.2 Primary ethical principles according to the Belmont Report (1978)**

PRINCIPLE	APPLICATION TO THIS STUDY
<p><b>1. The principle of beneficence</b></p> <p>This principle has multiple dimensions and is considered to be one of the most important fundamental ethical principles in research as it embodies the maxim: ‘above all, do no harm.’ The dimensions of this principle are: freedom from harm, freedom from exploitation, benefits from research, and the risk/benefit ratio.</p> <p>a. Freedom from harm refers to harm that may be caused to respondents, such as physical, psychological, sociological and economic harm.</p> <p>b. Freedom from exploitation: This refers to the responsibility of the researcher not to place the participants at a disadvantage by exposing them to</p>	<p><b>1. The principle of beneficence</b></p> <p><i>a. Freedom from harm:</i> In this study the data collection process was conducted in accordance with the rules stipulated by the researcher as supervisor over two research assistants, in accordance with the agreement between the Department of Health Studies and the Nigerian National Agency for the Control of AIDS and the researcher in the approved proposal submitted in 2008 (see annexure A). Due to the sensitivity of the information, the researcher selected the research assistants from the core of professional public health professional working in the area. The data was captured from the respondents’ answers to the questions in the interview schedule. Each data collection session was conducted privately with only the respondent and the researcher present. The environment was safe, non-threatening and conducive to comfort for all concerned. Although informed consent was signed by each participant prior to the data collection process, the researcher repeated the purpose of the study as well as the contents of the informed consent document to each individual, before the data collection commenced. The researcher requested each of the respondents to honestly answer the questions asked by the researcher. There were no threatening questions posed to any of the respondents, and only the questions on the structured interview schedule were asked. Where it was felt that an explanation was needed, the researchers kept to the questions on the interview schedule but, when necessary, provided explanations in the language of the respondents. Each respondent was given the opportunity to ask questions prior to and after data collection.</p> <p><i>b. Freedom from exploitation:</i> Prior to data collection, the researcher repeated the purpose of the study as well as the contents of the informed consent. It was also emphasised to each respondent that the data collection was for research purposes only and no other purpose.</p>

PRINCIPLE	APPLICATION TO THIS STUDY
<p>situations for which they have not been prepared.</p> <p>c. Benefits from the research: This dimension refers to the perceptions by the respondents that there might be some personal benefit to them for their participation.</p> <p>d. Risk/benefit ratio: This requires a judgment by the researcher of whether the risks to participants are commensurate with the benefit to society and the healthcare profession of the knowledge produced.</p> <p><b>2. The principle of respect and human dignity</b> This principle entails the right to self-determination and the right to full disclosure.</p> <p>a. The right to self-determination: This involves the respondents' rights to be treated as autonomous agents who are capable of controlling their own activities. Prospective respondents have the right to voluntary participation or non-participation in the research, without the risk of any penalty or prejudicial treatment. Furthermore, respondents have the right to ask questions, ask for clarification and refuse to provide information, as well as to</p>	<p>c. Benefits <i>from the research</i>: Each respondent was informed that there would be no personal or monetary benefit for them for their participation in the study.</p> <p>d. <i>Risk/benefit ratio</i>: There were no risks involved in this research as only the opinions of the respondents were required and the research was not experimental in any way. No physical or psychological risks were identified.</p> <p><b>2. The right to respect and human dignity</b></p> <p>a. <i>The right to self-determination</i>: During the research process, the researcher respected self-determination and the human dignity of each participant in that —</p> <ul style="list-style-type: none"> <li>• Voluntary participation was ensured.</li> <li>• The purpose of the study was explained to each participant.</li> <li>• Informed consent was obtained from each participant.</li> <li>• Participants were assured that they were under no obligation to divulge any information that they were not prepared to, and that they would not be penalised for this in any way.</li> <li>• The researcher respected the dignity of each respondent by approaching and treating them</li> </ul>

PRINCIPLE	APPLICATION TO THIS STUDY
<p>terminate their participation at any time during the research.</p> <p>b. The right to full disclosure: This is the researcher's full description of the study, the responsibilities of the researcher, and the likely risks and benefits. The right to full disclosure and self-determination are the two major elements on which informed consent is based.</p> <p><b>3. The principle of justice</b></p> <p>This principle comprises the right of the participant to fair and equitable treatment and the right to privacy.</p> <p>a. The right to fair and equitable treatment and the right to privacy. This involves:</p> <ul style="list-style-type: none"> <li>▪ The fair and non-discriminatory selection of participants, so that any risks and benefits will be equitably shared. It should be based on research requirements and not on the convenience, gullibility or compromise or favoured position of certain types of people.</li> </ul>	<p>with respect as fellow human beings, and expressed appreciation for the participants' involvement in the research.</p> <p><i>b. The right to full disclosure:</i> The right to full disclosure was adhered to prior, during and after the completion of the study.</p> <p><b>3. The principle of justice:</b></p> <p><i>a. The right to fair and equitable treatment and the right to privacy:</i> this was assured by:</p> <ul style="list-style-type: none"> <li>▪ Respondents were interviewed by a designated research assistant with the assistance of a structured interview schedule. The questions on this interview schedule were asked in the same manner and format and sequence to every respondent. It is the researcher's opinion that fair and equitable treatment was applied throughout the procedure.</li> </ul>



PRINCIPLE	APPLICATION TO THIS STUDY
<ul style="list-style-type: none"> <li>▪ The non-prejudicial treatment of persons who decline to participate or those who decline to participate in the study after agreeing to do so.</li> <li>▪ The honouring of all the agreements made between the researcher and the participants.</li> <li>▪ Ensuring that respondents had access to research personnel at any time during the study to clarify information.</li> <li>▪ Respondents' access to appropriate professional assistance should there be any physical or psychological problems or additional information required.</li> <li>▪ Debriefing when necessary to divulge information that was withheld before the study, or to clarify any issues before, during or after completion of the research.</li> <li>▪ Respectful and courteous treatment of all participants throughout the research process, the right to privacy.</li> </ul>	<ul style="list-style-type: none"> <li>▪ There were no respondents who declined participation after the sample was selected or who withdrew from the study during the data collection.</li> <li>▪ All agreements between the researcher and the respondents, including the contents of the written informed consent document and the written agreement between the researcher and the Department of Health Studies of the University of South Africa and the Nigerian National Agency for the Control of AIDS, were adhered to and honoured.</li> <li>▪ Respondents were afforded the right and opportunity to request clarification from the researcher of any aspect pertaining to the research prior, during and after the completion of data collection.</li> <li>▪ There were no known or obvious physical or psychological problems incurred by the participants during data collection. Appropriate professional services were, however, available at each facility and could be accessed when needed.</li> <li>▪ Debriefing in the form of clarification of issues, and any questions were dealt with by the researcher. In addition, where the respondents required further information which was not covered by this research, they were given the address and contact details of the nearest clinic as well as access to testing for HIV.</li> <li>▪ All respondents were treated with respect, dignity and courtesy at all times.</li> </ul>

PRINCIPLE	APPLICATION TO THIS STUDY
<ul style="list-style-type: none"> <li>▪ The right to privacy encompasses guaranteed anonymity and confidentiality.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Anonymity and confidentiality were upheld by the researcher as all respondents were assured that their identity would be protected and that data that were collected would be protected from persons who are not involved in the research. Respondents were informed that, as the researcher is a student, the overall findings of the research had to be made available to the University of South Africa, as well as the various health departments who had an interest in this study. They were also informed that the findings of the study would be published in a professional journal. Respondents were again assured that, in all these instances, their right to privacy and identity would be protected.</li> </ul>

Source: (Polit & Hungler 1999:134-140; Burns & Grove 2003:161-191; Polit & Beck 2004:143-150).

## **4.5 CONCLUSION**

This chapter provided an overview of the research design and methodology and described the population and sample, the sampling method, the research instrument, data collection and analysis, and the ethical considerations.

Chapter 5 presents the data analysis and interpretation and the results.

## Chapter 5

### Data analysis and interpretation

#### 5.1 INTRODUCTION

In the previous chapter the research methodology and design of this study were described. This chapter discusses the data analysis, findings and interpretation of the results.

The purpose of the study was to understand the determinants of VCT uptake among the population in the federal capital territory of Abuja in Nigeria. Specifically —

The specific objectives of this study were to:

- Investigate the community's perception of VCT services in Nigeria.
- Determine the reasons for the use and non-use of VCT services.
- Make recommendations to improve the use of VCT services in Abuja, Nigeria.

#### 5.2 DATA COLLECTION

The data was collected by means of a structured Interview schedule, consisting of five sections:

Section 1: Respondents' socio-demographic profile.

Section 2: Respondents' HIV knowledge, perceptions and practices.

Section 3: Respondents' understanding of the design, organisation and operation of VCT and the wider health services.

Section 4: Respondents' perceptions of family and community support for HIV testing.

Section 5: Respondents' perception of stigma.

The study population was persons living in and around Karu and Bwari satellite towns of Abuja FCT at the time of the research. A sample of 180 respondents was randomly

selected from 180 households in the two communities, and data was collected from the 180 respondents, using a structured interview schedule.

### **5.3 DATA ANALYSIS**

A statistician analysed the 180 questionnaires using a computer program, the SPSS, version 17.0, and converted the output into percentages collated in the form of tables, graphs and figures to make the data presentation meaningful.

The first level of analysis was largely descriptive, using tables and charts to present the frequencies of independent variables previously agreed on. These variables were statistically tested against the dependent variable of VCT uptake (defined in this study as accessing VCT and receiving the test result), using the Chi-square test at 5% level of significance to determine whether the differences in the responses were statistically significant or not.

Thereafter a second level of analysis was carried out. It was mainly inferential using logistic regression. Only variables that were found to be statistically significant in the first round of analysis were regressed to ascertain how significant the variables were in shaping VCT uptake.

The data was analysed according to the sections and items of the questionnaire, and presented in the same way below.

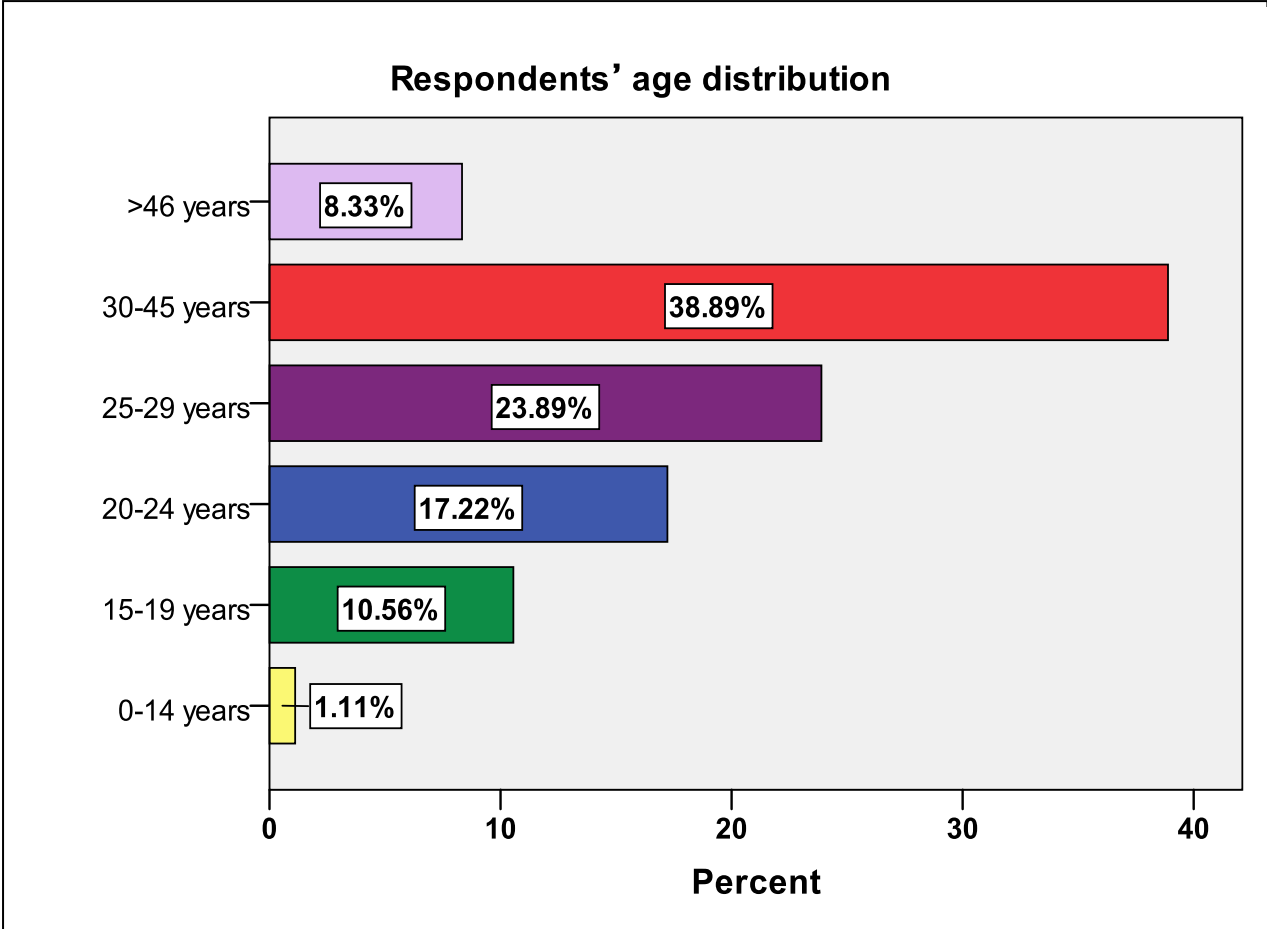
#### **5.3.1 Section 1: Demographic data**

This section covered the respondents' age, gender, highest level of education, marital status, and socio-economic status.

##### **5.3.1.1 Age distribution**

The respondents were asked to indicate their actual age on the questionnaire. This was re-coded into age groupings. Figure 5.1 depicts the respondents' age distribution.

Of the respondents, 1.11% (n=2) were under 14 years of age, 10.56% (n=19) were between 15 and 19; 17.22% (n=31) were between 20 and 24; 23.89% (n=43) were between 25 and 29; 38.89% (n=70) were between 30 and 45; and 8.33% (n=15) were older than 46.



**Figure 5.1 Respondents' age distribution (N=180)**

The age of sexual debut in Nigeria falls in the 15 to 19 years age group, with females at 16 and males at 17 years of age (Nigerian Federal Ministry of Health 2008:35). One of the inclusion criteria for this study was sexual activity, with the sexually active age ranging from 14 to 64 — 14 to 64 in the case of males, and 14 to 49 years in the case of females. Young people aged 15 to 24 account for 45% of new infections globally (UNAIDS 2008:33). In the generalised epidemic found in Africa, women in this age group account for 60% of such new HIV infections. In this study the 15 to 24 age group account for 27.78% of the respondents.

In a second level of analysis, VCT uptake was the dependent variable. VCT is defined as the number of persons who accessed VCT and received their result. Table 5.1 below shows the percentage of males and females in the study population who

accessed VCT and collected their result. With a p-value of 0.722, the result suggests that there was no significant statistical relationship between age and VCT uptake in the study population.

**Table 5.1 Respondents’ age distribution and VCT uptake (N=180)**

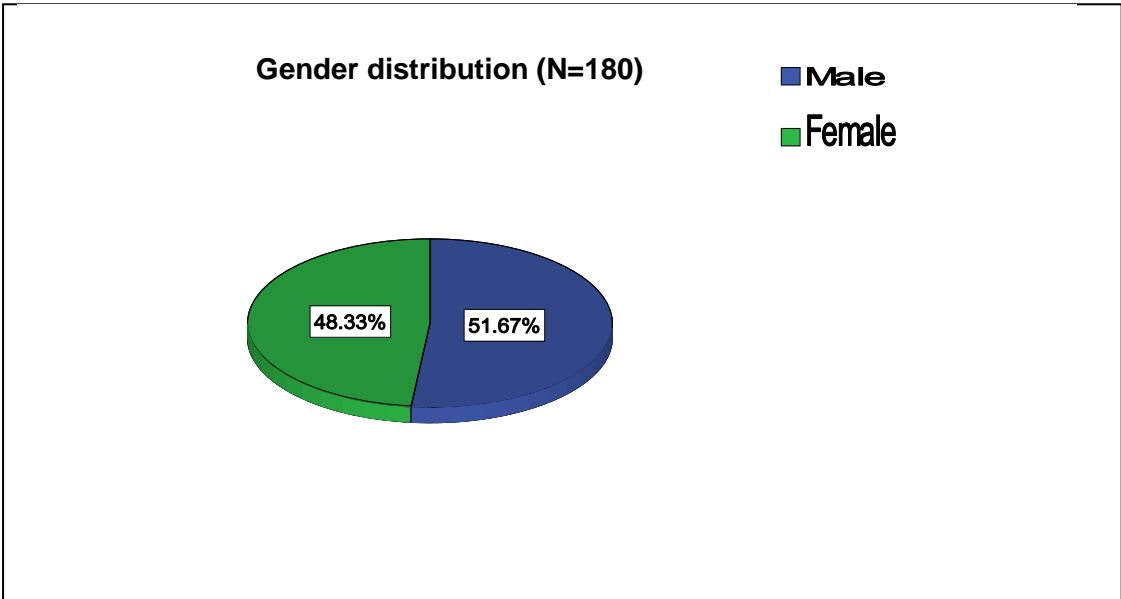
	15–19 years	20–24 years	25–29 years	30–45 years	>45 years
Yes	5.3%	15.8%	27.4%	42.1%	9.4%
No	10.3%	10.3%	13.8%	51.7%	13.9%

P-value: 0.722

Bwambale *et al* (2008:263), Gaje and Ali (2005:162), and Jereni and Muula (2008:17) all argue that younger age predicts a positive attitude to testing. In a randomised trial on acceptability of VCT in Zambia, Fylkesnes and Siziya (2004:566) concluded that readiness for VCT was higher in age group 20 to 24 years (at 47%) than in age group 40 to 49 (at 18%). The finding of this study, however, suggests that there is no relationship between age and VCT uptake.

**5.3.1.2 Gender distribution**

The respondents were asked to indicate their gender. Figure 5.2 depicts the respondents’ gender distribution.



**Figure 5.2 Respondents’ gender distribution (N=180)**

Of the respondents, 51.67% (n=93) were males and 48.33% (n=87) were females. This reflects the general demography of Nigeria, in which the population has equal numbers of males and females.

With regard to the question whether there is any significant statistical relationship between gender and uptake of VCT as the dependent variable, table 5.2 below shows no statistically significant difference in male and female uptake of VCT, with a p-value of 0.701.

**Table 5.2 Respondents’ gender and VCT uptake (N=180)**

	<b>Male</b>	<b>Female</b>
Yes	48.4%	51.6%
No	55.2%	44.8%

P-value: 0.701

In the literature the relationship between gender and VCT uptake is largely contentious. Mmbaga *et al* (2007:160) argued that being male or female had no effect on VCT completion in Tanzania, while Iiyasu *et al* (2006:1919) concluded that the female gender was more likely to complete VCT in Nigeria. Weiser *et al* (2006:261) also reported that females were more likely to go for an HIV test in Botswana. In their study of clients using VCT services in Malawi, Jereni and Muula (2008:17) found that 59% were women. The finding of this study suggests that there is no relationship between gender and VCT uptake in the study population.

**5.3.1.3 Highest level of education**

The respondents were asked to indicate the highest educational level they achieved (see table 5.3 below). Respondents’ highest educational qualification can be an indication of access to health and HIV information, disposable income and better living status. In this regard it was found that 36.1% (n=65) of the respondents had secondary school education, and 43.3% (n=78) had some tertiary education. In addition, 6.7% (n=12) and 8.9% (n=16) of the respondents respectively had primary and quranic



education as their highest level of educational attainment. There were 5.0% (n=9) of the respondents that had no formal education at all.

**Table 5.3 Respondents’ highest level of education (N=180)**

	Frequency	Percentage
No formal education	9	5.0
Quranic only	16	8.9
Primary education	12	6.7
Secondary Education	65	36.1
Tertiary education	78	43.3
<b>Total</b>	<b>180</b>	<b>100.0</b>

The findings regarding the respondents’ highest level of education indicate that more than three quarters of the respondents had basic education. The fact that Abuja is a cosmopolitan and purpose-built city with mainly public servants and service industries may explain this higher proportion of people with secondary education and post-secondary education compared to the national average of 12.35% (secondary) and 7.0% (post-secondary) of the population (Nigerian National Population Commission and ICF Macro 2009:14).

When exploring whether there is a significant statistical relationship between level of education and VCT uptake as the dependent variable, it is found that the data in table 5.4 below show a statistically significant relationship between educational level and uptake of VCT, with a p-value of 0.000.

**Table 5.4 Respondents' highest level of education and VCT uptake (N=180)**

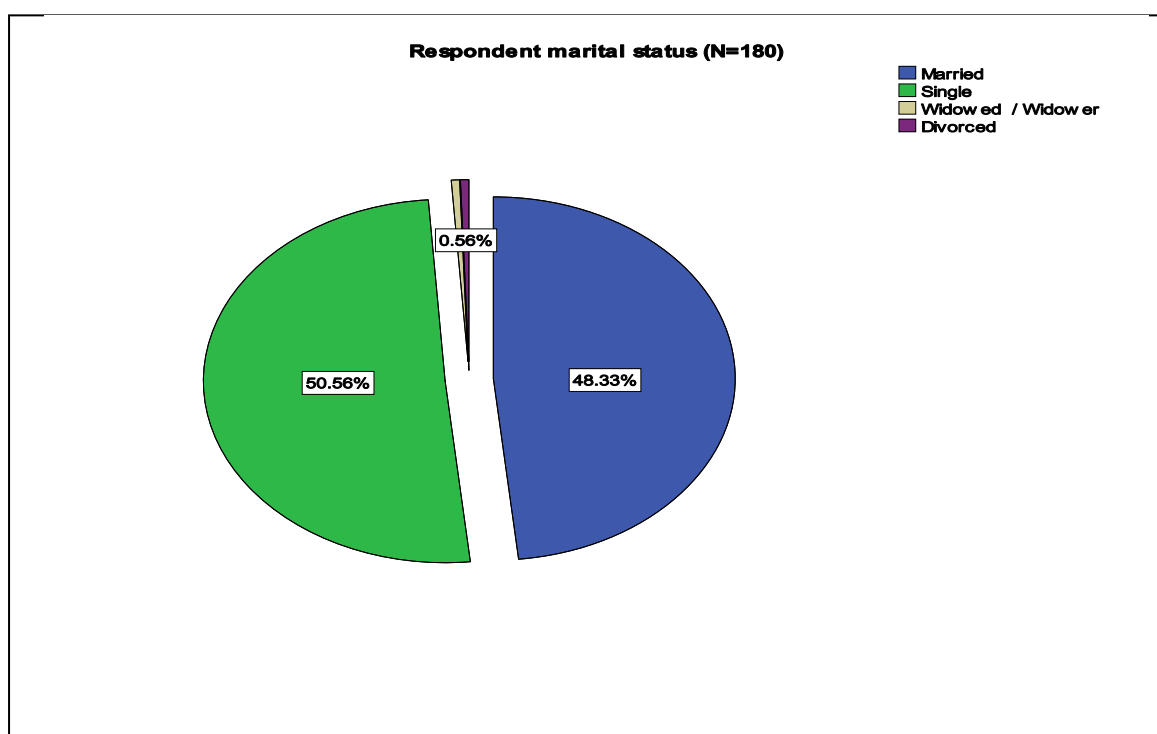
	No formal education	Quaranic education	Primary education	Secondary education	Tertiary education
Yes	4.2%	4.2%	2.1%	38.9%	50.6%
No	3.4%	6.9%	3.4%	27.6%	58.7%

P-value: 0.000

This finding agrees with the literature, which suggests that there is a significant relationship between educational level and VCT uptake (Gaje and Ali 2005:153; Iiyasu, Abubakar, Kabir and Aliyu 2006:19; Iyaniwura and Oloyede 2006:29; Jereni and Muula 2008:17; Sherr *et al* 2007:851).

#### **5.3.1.4 Marital status**

The respondents were asked to indicate their marital status in the questionnaire. Figure 5.3 below shows that 50.56% (n=91) of the respondents were single, 48.33% (n=87) were married, 0.56% (n=1) were widows/widowers, and 0.56% (n=1) were divorced.



**Figure 5.3 Respondents' marital status (N=180)**

Findings in the literature on the relationship between marital status and VCT uptake are mixed. Iyaniwura and Oloyede (2006:27-31) and Simbayi *et al* (2003:223) argue that unmarried young people were more likely to desire an HIV test. Jereni and Muula (2008:17), on the other hand, found no difference in VCT uptake between married and unmarried clients.

When the statistical relationship between marital status and VCT uptake was analysed (see table 5.5), the p-value was 0.205, which suggests no statistical significance between marital status and VCT uptake in the study population, at 5% significance level as shown in table 5.5. This aligns with the findings by Jereni and Muula (2008:17), who found no difference in uptake of VCT between married and unmarried persons.

**Table 5.5 Respondents’ marital status and VCT uptake (N=180)**

	<b>Married</b>	<b>Single</b>	<b>Divorced</b>
Yes	52.6%	47.4%	0%
No	55.2%	41.4%	3.4%

P-value: 0.205

### **5.3.2 Section 2: HIV knowledge, perception and practices**

This section examined the respondents’ HIV knowledge, awareness and practices, and explored whether there was any statistically significant relationship between uptake of VCT and the described variables.

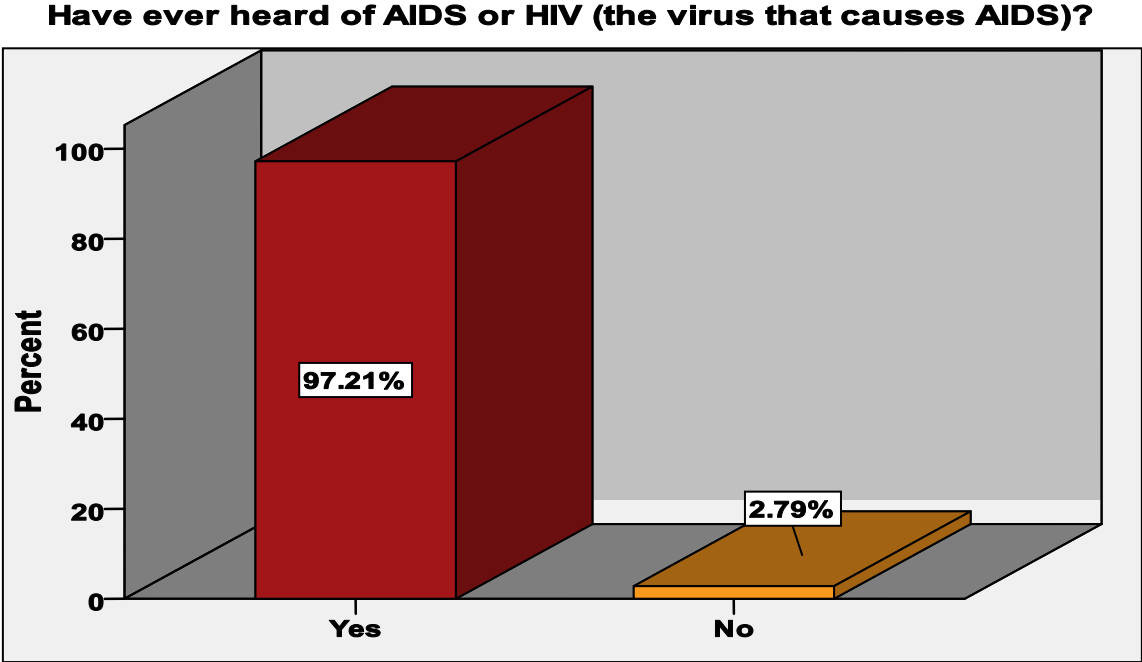
#### **5.3.2.1 Respondents’ who have ever heard of AIDS or HIV**

This is a measure of how successful awareness and education programmes on HIV/AIDS have been in the study communities. Figure 5.4 on the next page shows respondents who have ever heard of AIDS or HIV. There were 97.21% (n=174) of the respondents that had heard of HIV or AIDS, and only 2.79% (n=6) stated that they had not heard of AIDS or HIV.

Adewole and Lawoyin (2004:167), Gaje and Ali (2005:162), Iiyasu *et al* (2006:1917), Mmbaga *et al* (2009:160), Weiser *et al* (2006:261), and Sherr *et al* (2007:851) have all argued that higher HIV knowledge significantly predicted a positive attitude toward VCT. In Blantyre, Malawi, recent knowledge about HIV was the most important reason given for getting an HIV test (Jereni & Muula 2008:17).

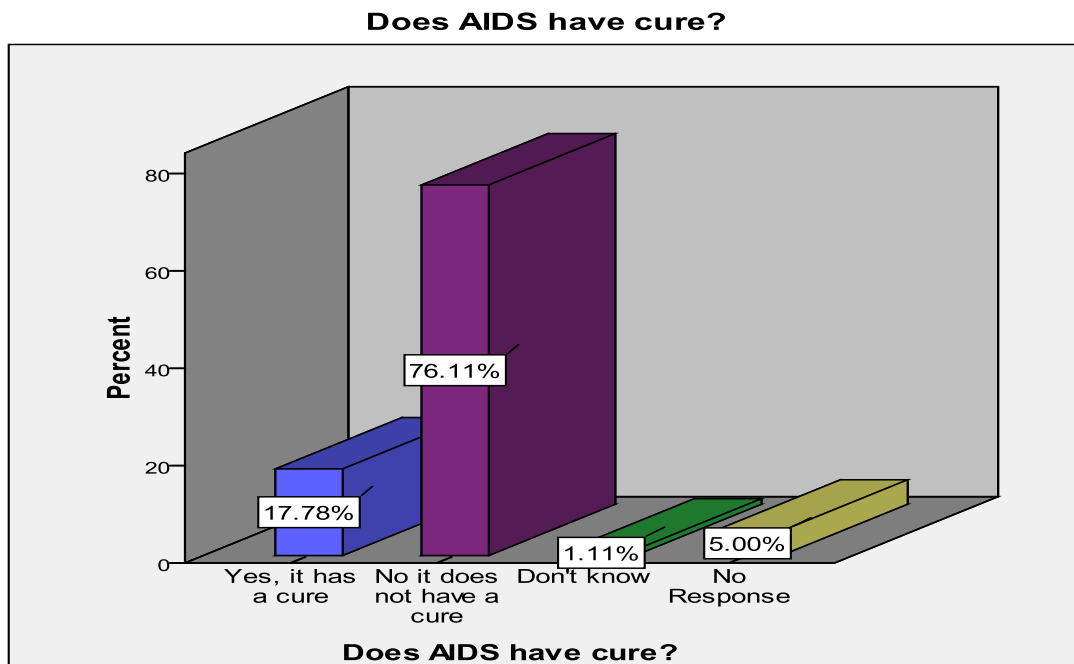
**5.3.2.2 Does AIDS have a cure?**

On the question “Does AIDS have a cure?”, which is one measure of complete knowledge of HIV/AIDS, 76.11% (n=137) correctly responded that it does not have a cure and 17.78% (n=32) believed that HIV/AIDS does have a cure, as depicted in figure 5.5 below. There were 1.11% (n=2) who indicated not knowing whether AIDS or HIV could be cured, and 5% (n=9) gave no response to this question.



**Figure 5.4 Respondents’ who have heard of AIDS or HIV (N=180)**

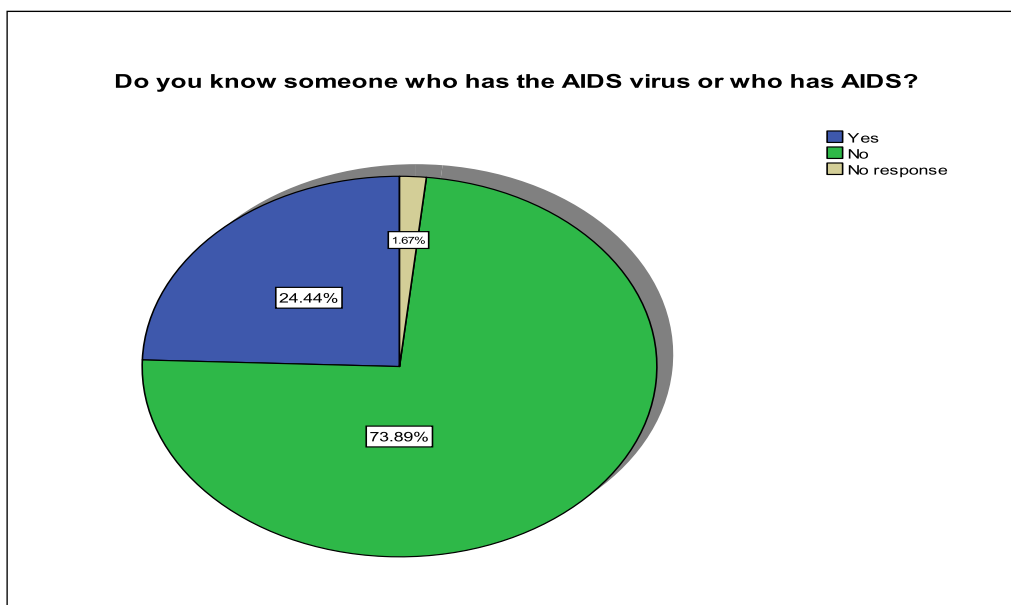
This would suggest that almost one in five persons in the study population thinks AIDS has a cure. The finding agrees with national figures which report that 74.9% of respondents in the Nigerian HIV/AIDS and Reproductive Health Survey agreed that AIDS had no cure. (Nigerian Federal Ministry of Health 2008:50).



**Figure 5.5 Respondents' view on a cure for AIDS (N=180)**

**5.3.2.3 Knowledge of someone who has the AIDS virus or who has AIDS**

Figure 5.6 shows that 73.89% (n=133) of the respondents had no personal knowledge of someone with HIV or AIDS. However, 24.44% (n=44) knew of someone who was infected with HIV or had AIDS, and 1.67% (n=3) of respondents had no response to this question.

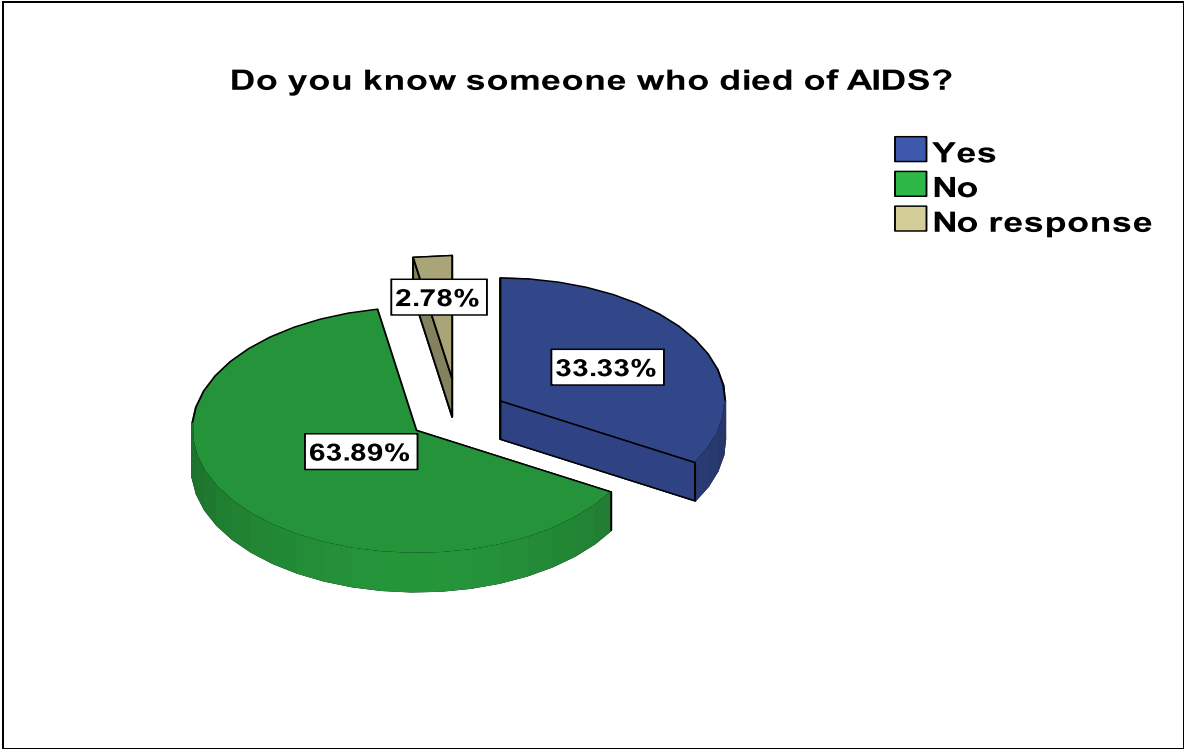


**Figure 5.6 Respondents who knew someone with HIV or AIDS (N=180)**

In one study, Iyaniwura and Oloyede (2006:30) found that youths who knew someone with HIV were more likely to desire and take an HIV test. The finding, therefore, that 74% of the respondents had no personal knowledge of someone with HIV or AIDS may be implicated in the limited uptake of VCT by the test group.

**5.3.2.4 Knowledge of someone who died of AIDS**

On the knowledge of someone who had died of AIDS, 33.33% (n=60) reported “yes” while 63.89% (n=115) claimed no knowledge of someone who had died of AIDS, as depicted in figure 5.7. There were 2.78% (n=5) of the respondents that gave no response.



**Figure 5.7 Respondents’ knowledge of someone who had died of AIDS (N=180)**

### 5.3.2.5 Knowledge of modes of transmission

When the respondents were questioned about how a person could be infected with the virus that causes AIDS (see table 5.6), 82.20% spontaneously agreed when asked whether sexual intercourse is a mode of transmission. A further 16.7% also responded in the affirmative on prompting by the interviewer. There were 40.60% who indicated that blood transfusion could transmit HIV, and 29.40% agreed that HIV infected mothers could transmit the virus to their unborn child. On the sharing of infected sharp objects, 21.10% of the respondents agreed that razors could transmit HIV, and 16.70% agreed that needles could transmit the virus. This increased by a further 54.40% (razor) and 57.20% (needles) on prompting by the interviewer.

On the misconception side, only 5.00% agreed that sharing eating utensils could transmit HIV, and 2.80% believed that the virus could be transmitted by mosquitoes and bed bugs. The latter two percentages, however, increased to 33.90% and 25.60% respectively on prompting by the interviewer. This result would suggest that knowledge of transmission of HIV infection by mother to unborn children, and by sharing of needles and other sharp objects, may be limited in the study population.

**Table 5.6\* Respondents' views on how HIV is transmitted (N=180)**

<b>Can a person be infected with the virus that causes AIDS by —</b>	<b>Spontaneous YES</b>	<b>Prompted YES</b>
Sexual intercourse	82.20%	16.70%
Blood transfusion	40.60%	41.70%
Mother to unborn child	29.40%	46.70%
Sharing sharp objects such as razors	21.10%	54.40%
Sharing needles	16.70%	57.20%
Sharing toilets	9%	35.00%
Sharing eating utensils	5.00%	33.90%
Being bitten by mosquitoes and bed bugs	2.80%	25.60%
Witchcraft	2.20%	23.30%
Kissing	1.10%	17.20%
Hugging	1.10%	16.20%

\* Multiple-response question, sum not equal to 100%

### **5.3.2.6 Possibility of a healthy-looking person being infected with the HIV virus**

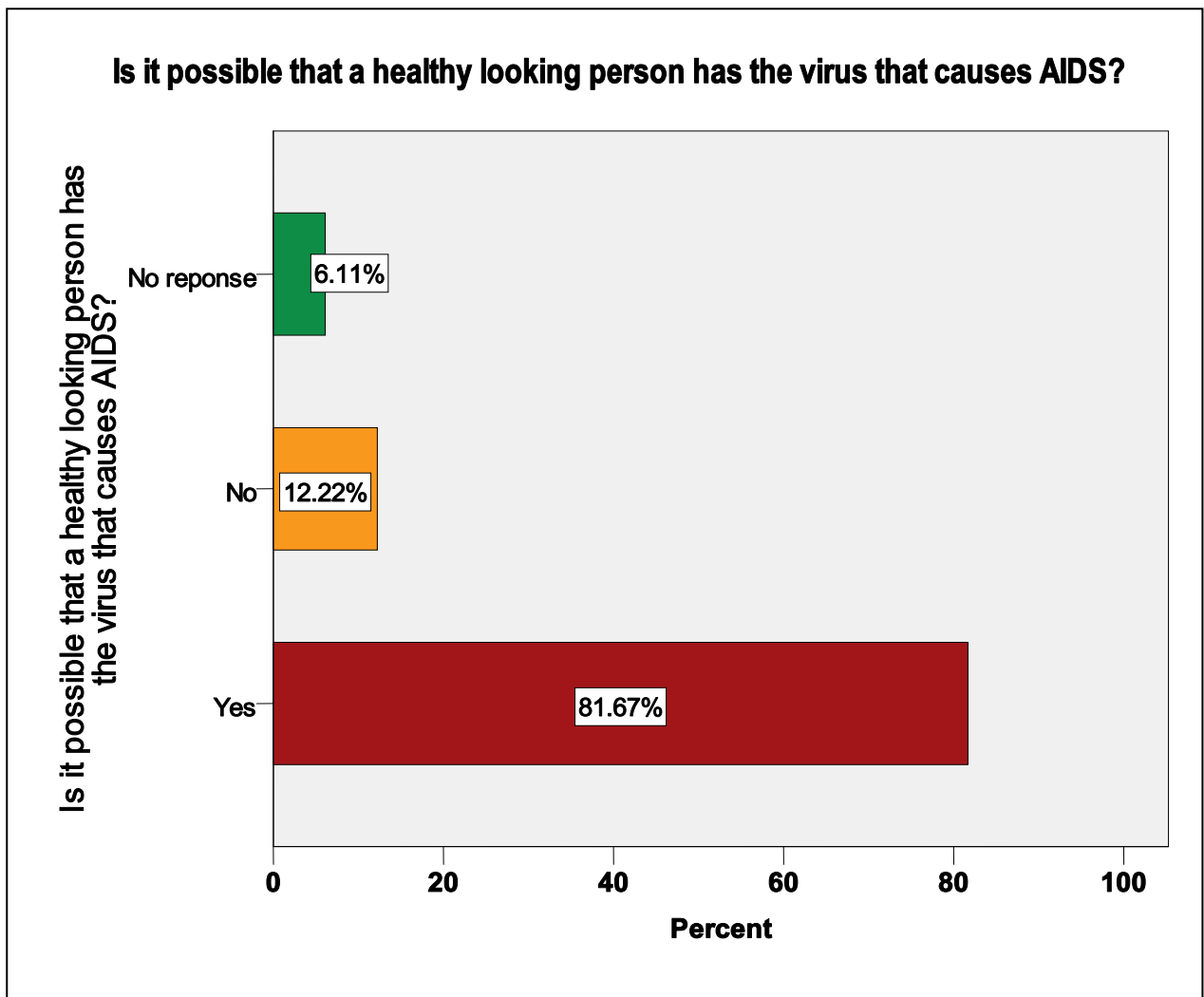
The respondents were asked if it was possible for a healthy-looking person to be infected with the virus that causes AIDS (see figure 5.8 on the next page). There were 81.67% (n=147) of the respondents who indicated that it was possible for a healthy-looking person to be infected. However, 12.22% (n=22) indicated that, on the contrary, it was not possible for a healthy-looking person to be infected with the HIV virus, and 6.11% (n=11) did not respond to this question. Judgement on the basis of a person's appearance often leads people to take sexual risks and not taking the HIV test.

### **5.3.2.7 Knowledge of how to avoid the virus that causes AIDS**

The respondents were asked how a person could avoid getting the virus that causes AIDS (see table 5.7 below). Of the respondents, 59.4% (n=107) spontaneously said that staying with one uninfected partner protects a person against HIV infection. This number increased by a further 32.20% (n=58) on prompting by the interviewer.

A further 27.2% (n=49) of the respondents indicated that using condoms consistently protects one from being infected with HIV, and 45.0% (n=81) stated that abstaining from sex provides protection against infection.





**Figure 5.8 Respondents’ knowledge of appearance and HIV infection (N=180)**

These numbers increased by 53.3% (n=96) (condom use) and 36.1% (n=65) (abstinence) on prompting by the interviewer. Only 10.6% (n=19) of those interviewed indicated that reducing the numbers of sexual partners is an effective prevention method against getting infected with HIV; this increased by 62.8% (n=113) on further prompting. On the use of antibiotics and seeking protection from a traditional healer as protection from getting infected with HIV, only 1.1% (n=2) felt that antibiotics worked, and 0.6 % (n=1) stated that traditional healers would be able to provide protection. This increased to 22.2% (n=40) and 22.8% (n=41) respectively on prompting by the interviewer.

**Table 5.7 Respondents' views on the prevention of HIV infection (N=180)**

<b>What can a person do to avoid being infected with the virus that causes AIDS?</b>	<b>Spontaneous YES</b>	<b>Prompted YES</b>
Stay with one faithful uninfected partner	59.40%	32.20%
Use condoms consistently	27.20%	53.30%
Abstain from sex	45.00%	36.10%
Delay the onset of sexual intercourse	8.30%	53.90%
Avoid sex with commercial sex workers	17.80%	58.90%
Reduce the number of sexual partners	10.60%	62.80%
Avoid sex with people who have many sexual partners	14.40%	60.00%
Avoid sharing sharp objects like needles and razors	16.10%	58.90%
Pray to God	20.00%	51.10%
Go for check ups	6.10%	30.60%
Use antibiotics	1.10%	22.10%
Seek protection from a traditional healer	0.60%	22.90%
Nothing	11.30%	55.00%

\* Multiple-response question, sum not equal to 100%

### **5.3.2.8 HIV prevention method (UNAIDS)**

To explore the relationship between HIV knowledge and VCT uptake, responses obtained by applying the UNAIDS composite indicator for complete knowledge (assessing correct responses to questions about reducing the risk of contracting HIV by (1) using condoms and (2) restricting sex to one uninfected partner) were taken from the data and analysed against VCT uptake. See table 5.8. The finding suggests that there is a statistically significant relationship between correct HIV prevention knowledge and uptake of VCT in the study participants.

**Table 5.8 Knowledge of prevention (using UNAIDS indicator) and VCT uptake**

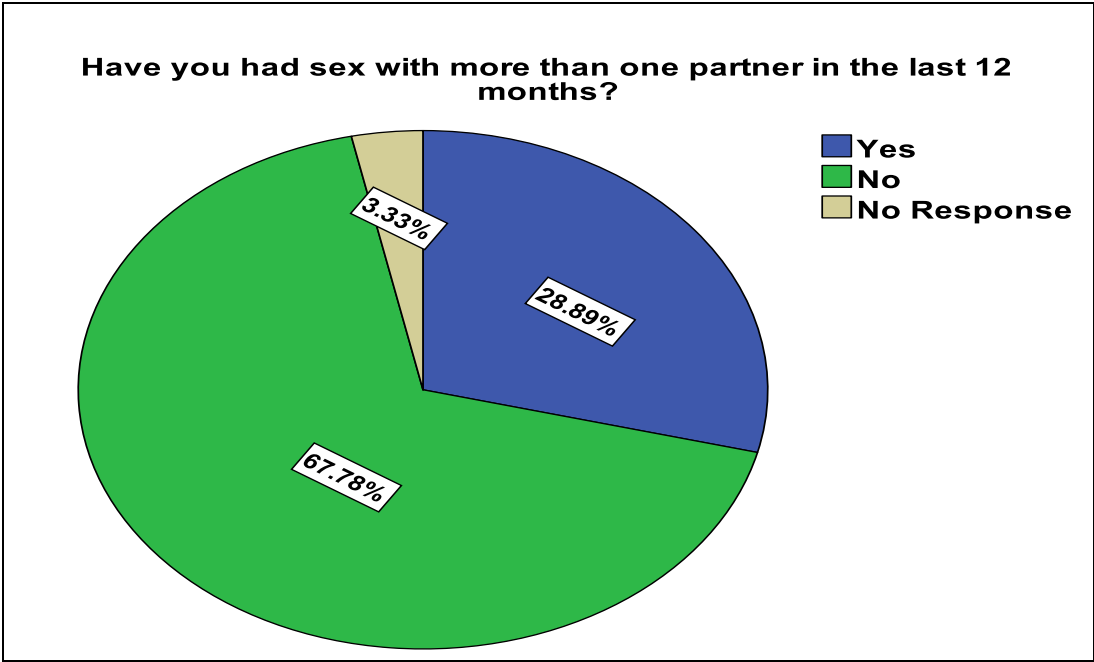
	Correct knowledge	Incorrect knowledge
Yes	83.2%	16.8%
No	100%	0%

P-value: 0.051

In the literature, studies by Adewole and Lawoyin (2004:167), Gaje and Ali (2005:162), Iliyasu *et al* (2006:1917), Mmbaga *et al* (2009:160) and Sherr *et al* (2007:851), all conclude that correct HIV knowledge predicts a positive attitude toward VCT. The finding of this study is in alignment with this finding as higher correct HIV prevention knowledge correlates with higher uptake of VCT among the respondents.

**5.3.2.9 Sex with more than one partner in last twelve months**

When respondents were questioned about their sexual practices, 67.78% (n=122) indicated not having had more than one sexual partner in the twelve months before the survey, 28.89% (n=52) indicated having had more than one sexual partner, while 3.33% (n=6) either did not respond or indicated not knowing. See figure 5.9.



**Figure 5.9 Respondents who had sex with more than one partner in last twelve months (N=180)**

The statistical analysis of the study variable “sex with more than one sex partner in twelve months prior to the study” was carried out against uptake of VCT as dependent variable (see table 5.9 below). The p-value of 0.590 suggest that there is no statistical significant relationship between uptake of VCT and respondent’s reported sex with more than one partner in twelve months.

**Table 5.9 Sex with more than one partner (in twelve months) and VCT uptake**

	Yes	No
Yes	98.9%	1.1%
No	96.6%	3.4%

P-value: 0.590

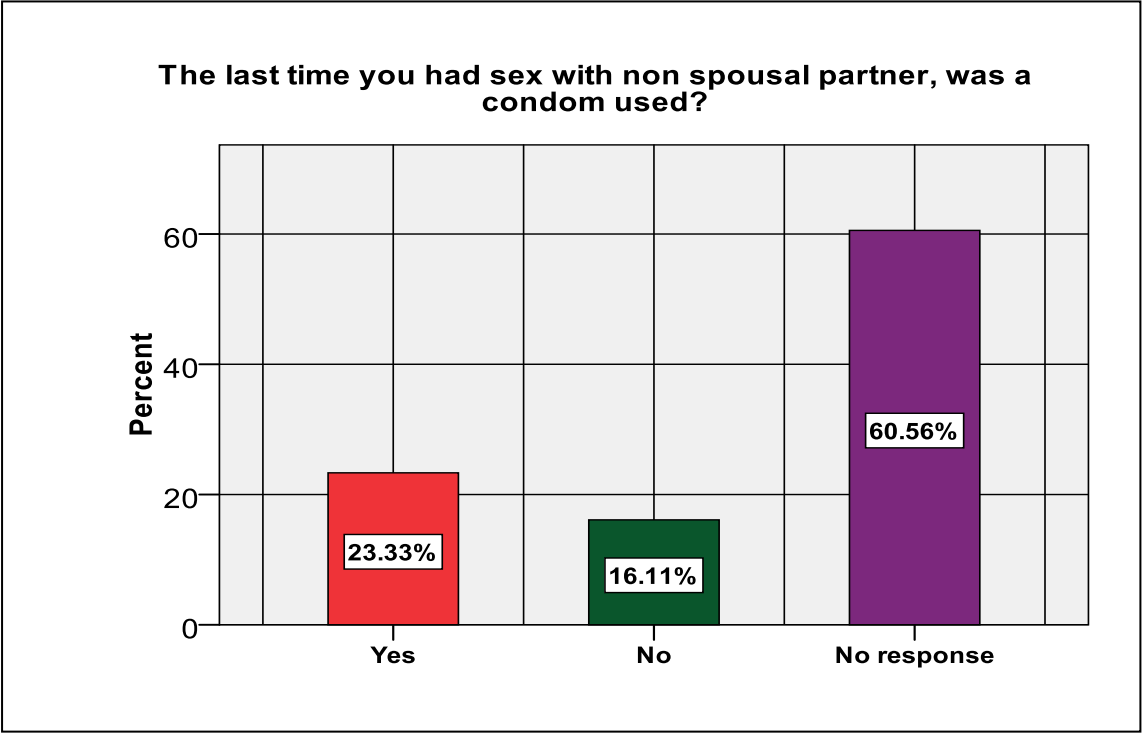
The relationship between risk behaviour and HIV testing is conflicting in the literature. While Gaje and Ali (2005:153) contend that a history of sexual risk behaviour, including paying for sex, increased uptake of VCT, Mmbaga *et al* (2009:160) in a study in Tanzania argued that recent sexual risk behaviour was implicated in non-completion of HIV testing.

**5.3.2.10 Condom use in last non-spousal sex**

Respondents were asked if a condom was used in their last non-spousal sexual encounter. Figure 5.9 shows that 60.56% (n=109) of the respondents gave no response to this question, while 23.33% (n=42) indicated having used a condom, and 16.11% (n=29) indicated that they had not used condoms in their last non-spousal sex.

Condom use on last non-spousal sex is the critical measure of sexual risk and vulnerability. This is in the context that 36% of females and 24% of males are in polygamous marriages in Nigeria (Nigeria Federal Ministry of Health 2008:28).

A p-value of 0.120 was obtained when condom use in the last sex act with a non-spousal partner outside marriage was compared statistically with VCT uptake (see table 5.10). This suggests that there is no significant relationship between condom use in last sex act and uptake of VCT.



**Figure 5.10 Respondents condom use with last non-spousal partner (N=180)**

**Table 5.10 Respondents’ condom use in last sex act and VCT uptake**

	Yes	No	No response
Yes	35.6%	15.1%	49.3%
No	20%	28%	52%

P-value: 0.120

**5.3.2.11 Consistent condom use with non-spousal partners**

Respondents were asked if they used condoms consistently with non-spousal partners every time they had sex in the last three months before the study. Table 5.11 reveals that 13.3% (n=24) indicated that they used condoms every time during sexual encounters, 23.9% (n=43) indicated using condoms sometimes, and 3.9% (n=7) reported

never having used condoms in the last three months with non-spousal partners. There were 58.9% (n=106) of the respondents who did not respond to this question.

**Table 5.11 Respondents' condom use with non-spousal partners in the three months before the study**

	<b>Frequency</b>	<b>Valid percent</b>
Every time	24	13.3
Sometimes	43	23.9
Never	7	3.9
No Response	106	58.9
Total	180	100.0

Comparing consistent condom use and VCT uptake statistically, table 5.12 below indicates a significant relationship between consistent condom use and VCT uptake, with a p-value of 0.019. The result seems to suggest that respondents who used condoms consistently were unlikely to take an HIV test and receive the result. This agrees with the literature, which suggests that inconsistent condom use is associated with increased testing uptake (Weiser *et al* 2006:261).

**Table 5.12 Condom use with non-spousal partners in the last three months and VCT uptake**

	<b>Every time</b>	<b>Sometimes</b>	<b>Never</b>	<b>No response</b>
Yes	20.5%	23.3%	8.2%	48.0%
No	8%	40%	0%	52%

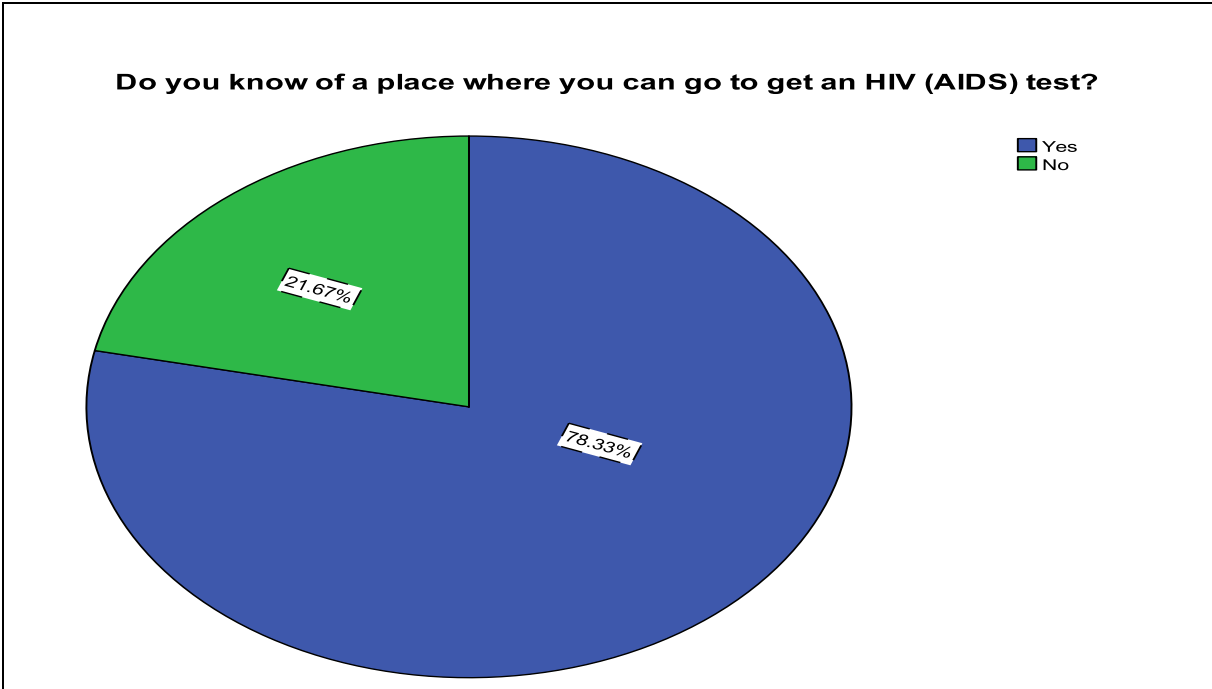
P-value: 0.019

**5.3.3 Section 3: Respondents' understanding of the design, organisation and operation of VCT and the wider health services**

This section of the study examined the respondents' understanding of the design, organisation and operation of VCT services, and its impact on VCT uptake. Various studies conducted by Bateganya *et al* (2007:1002), Fylkesnes and Siziya (2004:569), Irungu *et al* (2008:111), Matovu and Makumbi (2007:1315), Nyblade *et al* (2003:53), and Prost *et al* (2007:549) all clearly showed that the location and design of the VCT facility is central in determining acceptability of VCT by various clients.

**5.3.3.1 Knowledge of HIV test centre**

The respondents were asked about their knowledge of where they could take an HIV test. As depicted in figure 5.10, 78.33% (n=141) knew of a test facility and 21.67% (n=39) said that they did not to know where to go for an HIV test.



**Figure 5.11 Respondents' knowledge of HIV test centres (N=180)**

Gaje and Ali (2005:161) argue that those who had knowledge of a neighbourhood HIV test site were more likely to go for an HIV test. In another study, only 63% of a group of sampled students in one Nigerian tertiary institution were aware of VCT (Ikechebelu, Udigwe, Ikechebelu & Imoh 2006:247). On the basis of this finding, it seems extensive programmatic work on branding HIV testing facilities, including the installation of signage across the country, is working, with 141 of the respondents having knowledge of where to go for a test. However, a sizeable population (n=39) is still not aware of the locations of such facilities.

Respondents’ knowledge of where to go for an HIV test was statistically analysed against uptake of VCT, as shown in table 5.13 below. The p-value obtained was 0.251, which suggests that there is no statistically significant relationship between VCT uptake and respondents’ knowledge of where to go for an HIV test.

**Table 5.13 Respondents’ knowledge of where to be tested and VCT uptake**

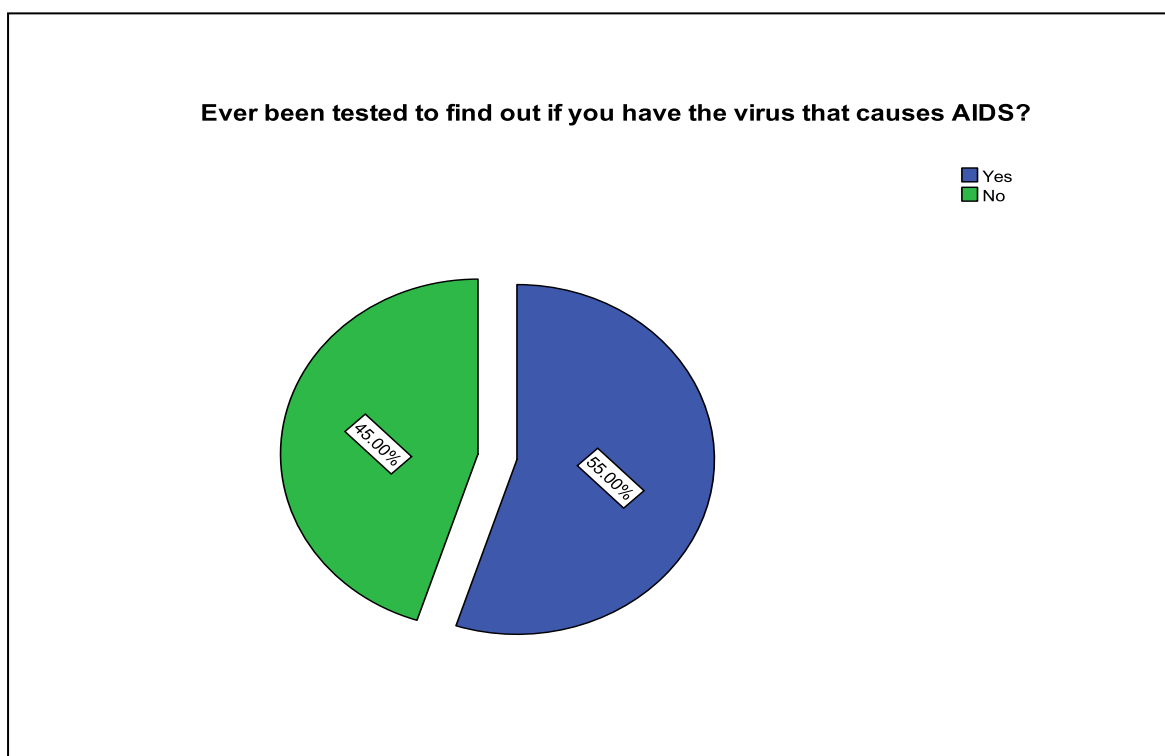
	<b>Yes</b>	<b>No</b>
Yes	90.5%	9.5%
Yes	79.3%	20.7%

P-value: 0.251

**5.3.3.2 Previous history of HIV testing**

The respondents’ response to the question on any previous history of HIV testing showed that 55.0% (n=99) of the respondents have had a previous HIV test, while another 45.0% (n=81) have never had an HIV test (see figure 5.11). This suggests that a large number of the population were still not aware of their HIV status.



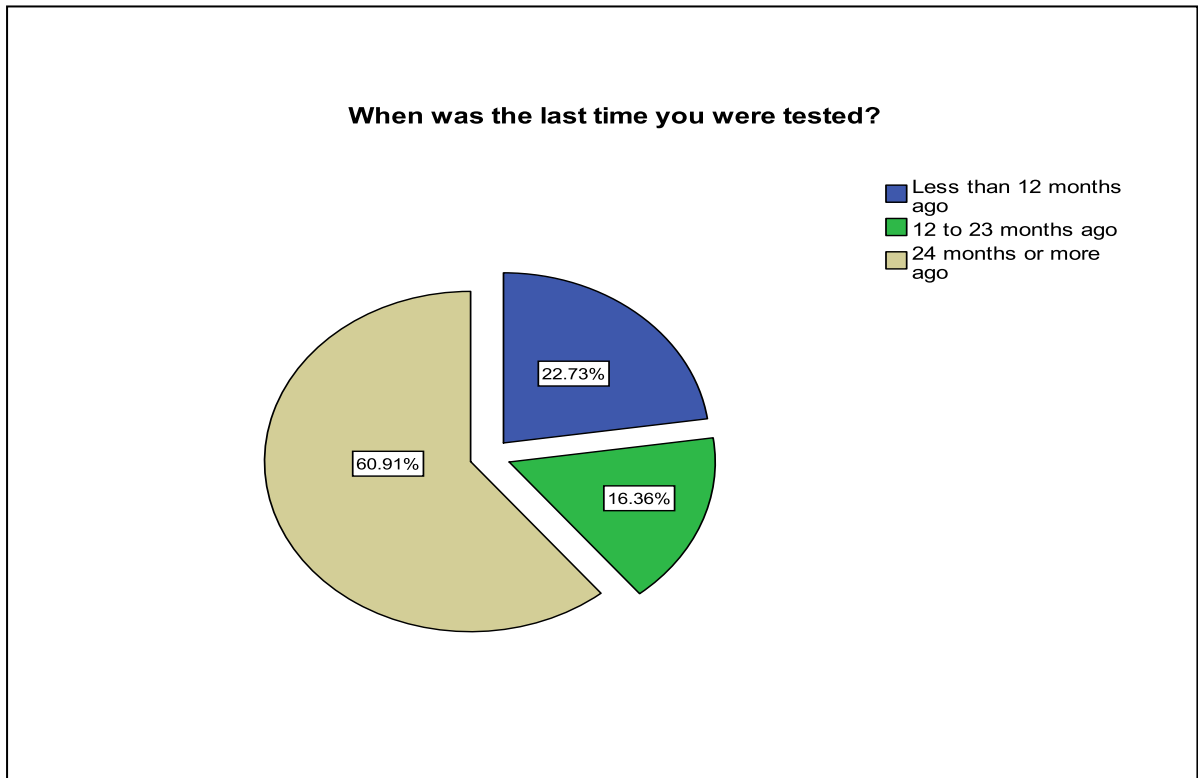


**Figure 5.12 Respondents' previous history of HIV testing (N=180)**

This study finding suggests that a higher proportion (55%) of the respondents knew their HIV status than the national average VCT uptake of only 10% (6.4% of men and 13.6% of women) (Nigerian National Agency for the Control of AIDS 2008:20). In another Nigerian study that explored VCT uptake in a Nigerian university, Ikechebelu *et al* (2006: 248) found that only 26.4% had ever had an HIV test.

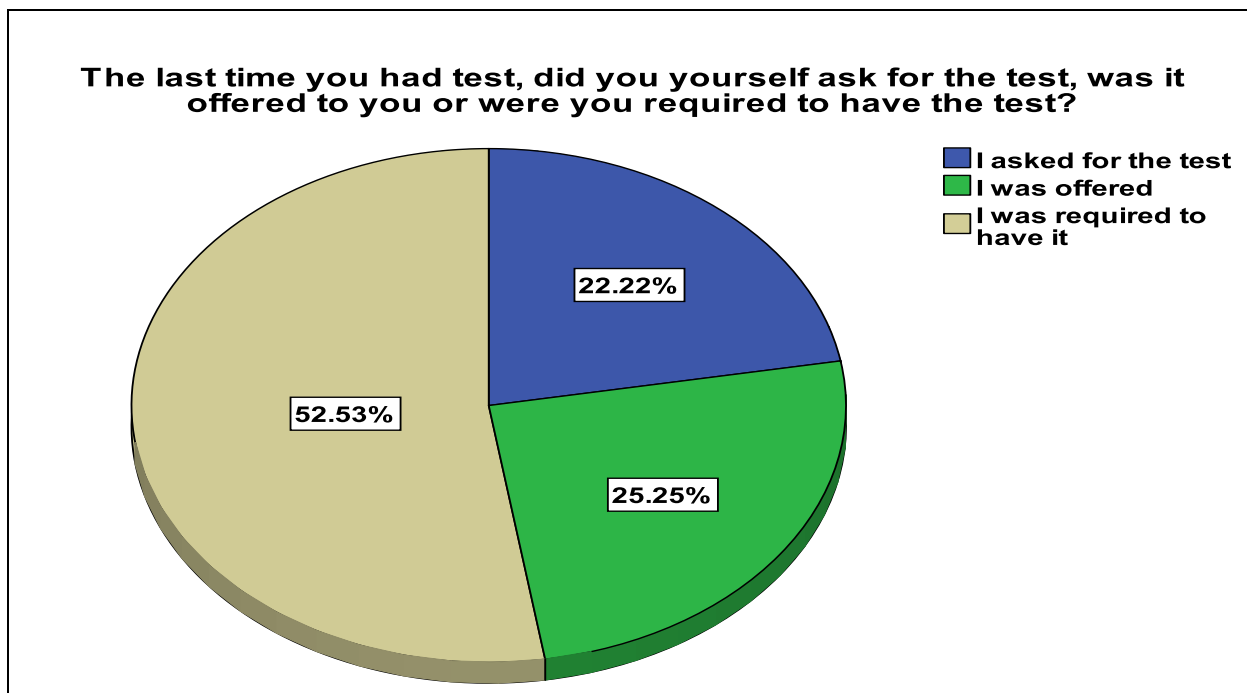
The 99 respondents who had taken a previous HIV test were asked how long ago they had taken the test. Figure 5.12 shows that 22.73% (n=23) of the respondents indicated that they took the test less than 12 months prior to the study, 16.36% (n=16) said that they took it in the last 12 to 23 months, and about two thirds (60.91%) (n=60) of the respondents had had an HIV test more than 24 months before the study.

As maintained by Fylkesnes and Siziya (2004:566), knowing the previous history of VCT uptake is important in shaping future use. They argued that a previous history of taking an HIV test was an important factor in shaping readiness for HIV testing. Mmbaga *et al* (2009:160) also contend that prior HIV testing predicts uptake of HIV testing.



**Figure 5.13 Respondents' last HIV test (n=99)**

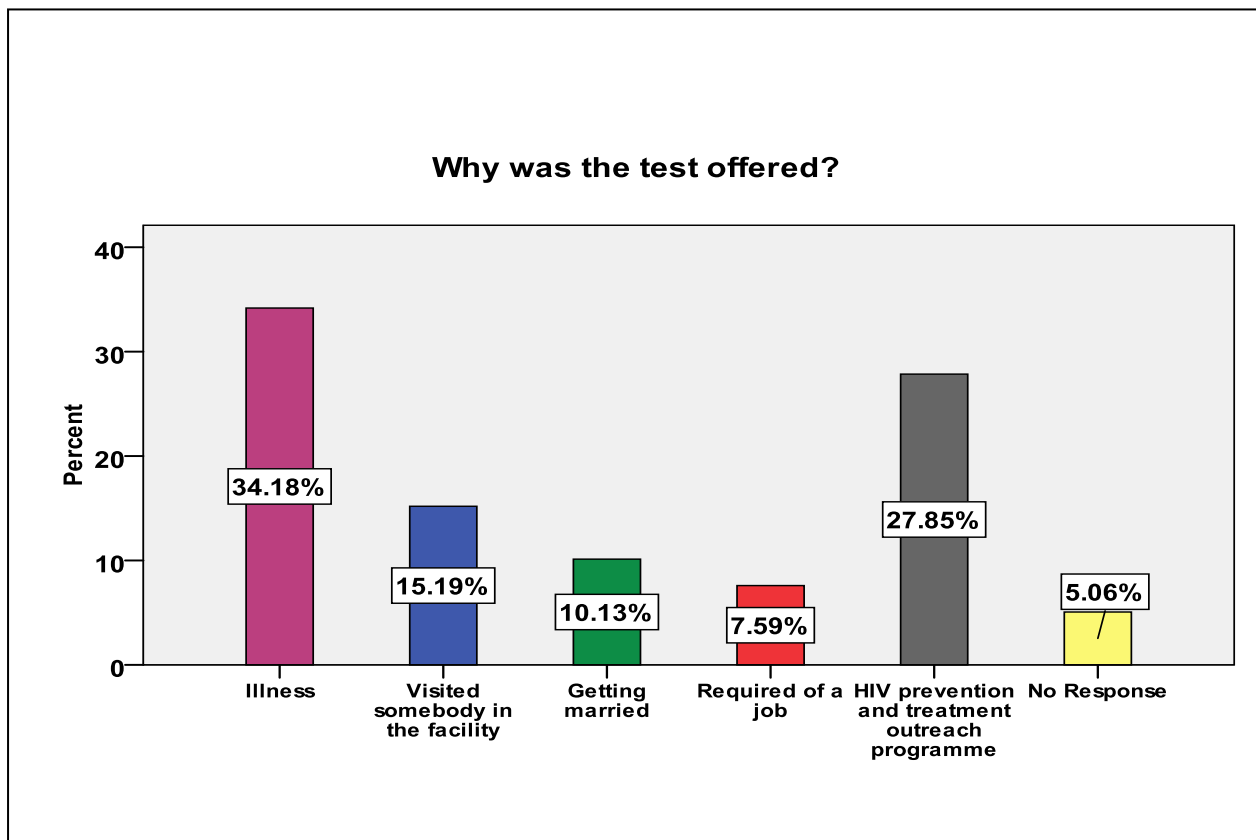
To probe what made them take the test, the respondents were asked how they came to be tested — whether they had asked voluntarily for the test, whether it had been offered by a healthcare worker, or whether they had been required to take it as part of any process they were involved in. Figure 5.13 below indicates that 52.53% (n=52) claimed that they had been required to take the test, 25.25% (n=25) had been offered the test, and only 22.22% (n=22) of the respondents indicated that they had voluntarily asked for the test.



**Figure 5.14 Who suggested taking last HIV test? (n=99)**

This is consistent with the findings of Ikechebelu *et al* (2006: 248) who state that, in a group of Nigerian university students, only 26.4% had ever had an HIV test, with more than half this number claiming they had been required to take the test.

The 77.78% (n=77) of respondents who were offered the HIV test or required to take the test, were asked the reason for being offered or required to be tested. According to the study, 34.18% and 27.85% respectively indicated that they had been ill or attended HIV prevention and treatment outreach programmes, and had the test offered to them; 15.19% of the respondents said that they had visited somebody in a health facility, and were offered the test, while 10.13% indicated that the test had been offered as part of preparing to get married, 7.59% were required to be tested in order to be employed, while 5.06% of respondent did not offer an answer.

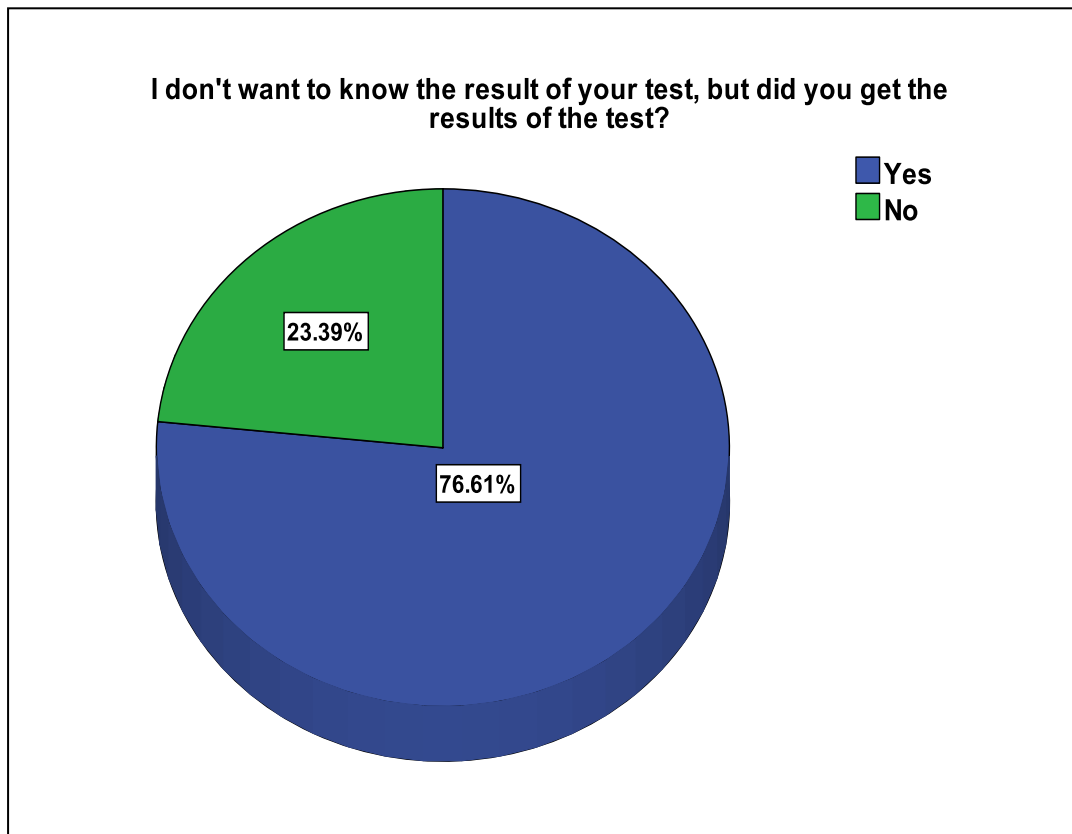


**Figure 5.15 Reason last HIV test was offered (n=77)**

That such a large number of respondents had been required to take an HIV test, may be a reflection of Nigeria's implementation of the WHO recommendation on provider-initiated VCT (WHO/UNAIDS 2008:55; Matovu and Makumbi 2007:1318). In addition, Weiser *et al* (2006:261) found that more frequent healthcare visits predicted increased likelihood to use VCT services, and this may explain why a number of those visiting relatives in healthcare facilities were also taking up testing. HIV prevention and treatment outreach programmes also seem to be a cue for people to take up testing. However, it is worth noting that a study by Denison *et al* (2008:103) showed that young people's VCT access is less linked to accessing care and support services. It therefore means that more studies are needed to understand if this target group is being reached by existing intervention routes.

### 5.3.3.3 Completion of HIV testing

When respondents were asked whether they had collected their HIV results when they took the test, 76.61% (n=76) indicated that they had collected the results, while 23.39% (n=23) said that they had not collected the results.

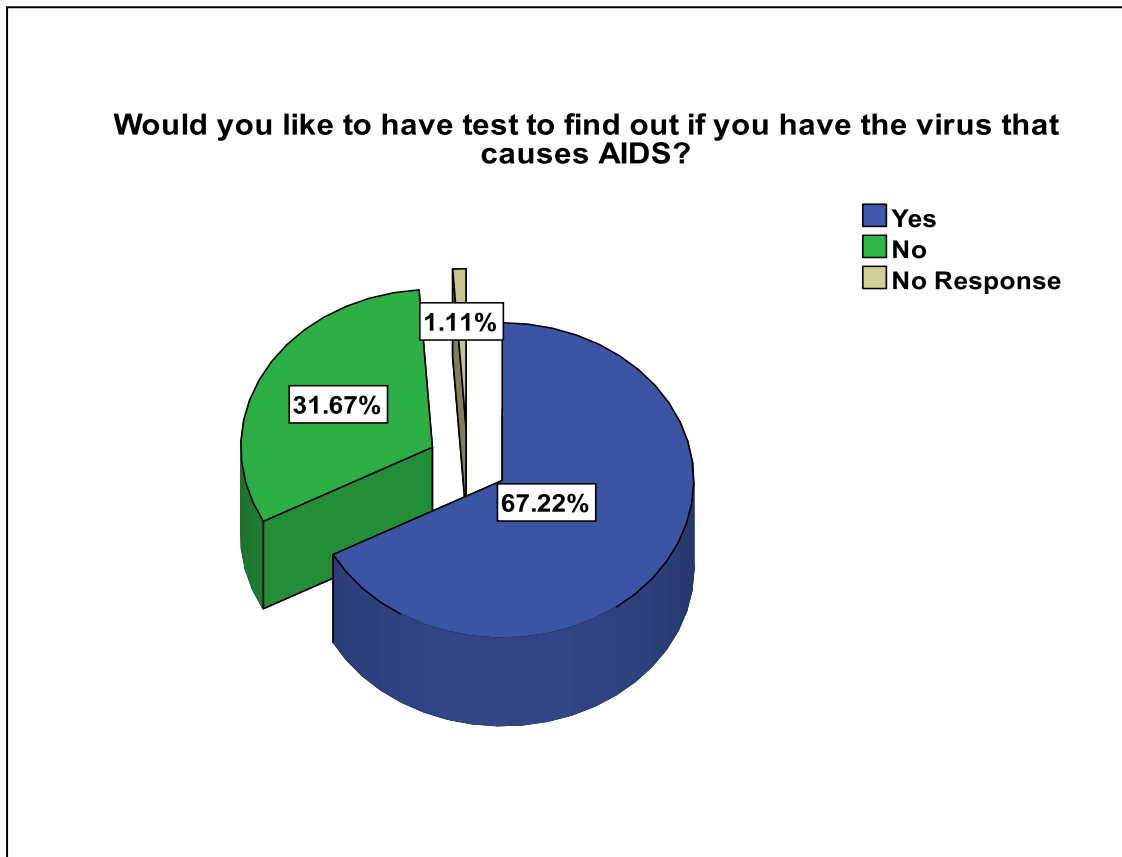


**Figure 5.16 Respondents' who took HIV test and collected the results (n=99)**

Mmbaga *et al* (2009:165) argued that older aged people are less likely to return for HIV test results and post-test counselling.

### 5.3.3.4 Respondents' willingness to take an HIV test

The respondents were asked if they would like to have an HIV test (figure 5.16 ). According to the study outcomes, 1.11% (n=2) of the respondents did not respond to this question, 67.22% (n=121) indicated they would like to take an HIV test, while 31.67% (n=57) indicated that they would not want to take an HIV test. This suggests that a third of the respondents would not willingly take an HIV test. Considering that about 45% of the respondents also indicated never having had an HIV test, much needs to be done to make testing more acceptable to this population.

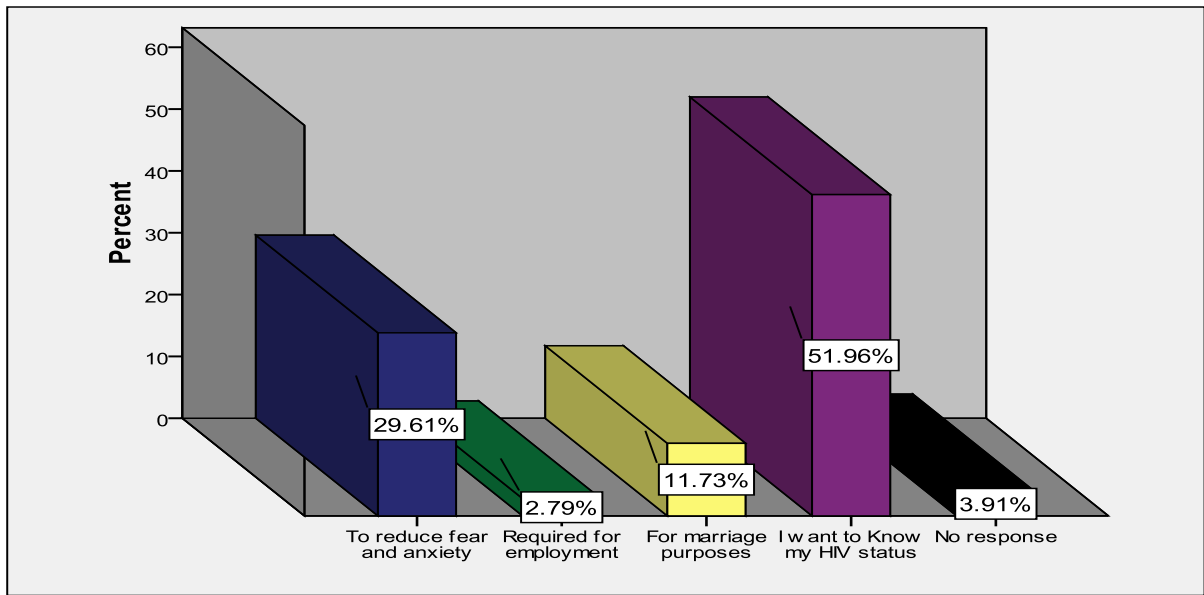


**Figure 5.17 Respondents' willingness to take an HIV test (N=180)**

When the 121 respondents who indicated interest in taking an HIV test were asked what their main reason was for wanting to take the test (figure 5.17 below), 51.96% (n=63) of the respondents indicated that they wanted to know their HIV status, 29.61% (n=36) said that they wanted to take the test to reduce fear and anxiety, 11.73% (n=14) indicated that they wanted to take the test for marriage purpose, and 2.79% (n=3) said that they would like to take it for employment purposes. Finally, 3.91% (n=5) of the respondents provided no response.

Considering that Fylkesnes and Siziya (2004:566) argue that self-perceived risk of being HIV infected predicted the likelihood to go for an HIV test, this study finding would suggest that about 82% of the respondents who expressed willingness to be tested were able to self-asses their HIV risk.

**What is the main reason why you would like to have a test?**



**Figure 5.18 Reasons respondents' would like to take an HIV test (n=121)**

Respondents were asked to indicate what would make them consider going for an HIV test (see table 5.14). A test centre within a hospital seemed to be preferred by 92.20% (n=165) of the respondents. This was followed by 91.60% (n=164) of respondents who indicated that their next likely preference would be a government test centre, and 91.10% (n=163) whose next likely preference would be a test centre managed by an NGO.

In descending order, the following were indicated as least likely to influence the decision whether to take an HIV test: HIV self-testing at 50.60% (n=86), community-based testing at 76.40% (n=136), and a healthcare worker deciding when to give an HIV test at 76.50% (n=137). Self-testing may have been assessed as the least likely because it was poorly understood by the respondents.

In the context of emerging countries, and specifically Africa where provider-initiated testing has been gaining prominence (UNAIDS, UNICEF & WHO 2008:56), the study found that provider-initiated testing coupled to pre-test counselling appeared to be acceptable to the respondents, with 87.20% (n=157) indicating that they would have no problem taking the HIV test in such a context.

**Table 5.14\* Respondents' reasons for considering to take or not to take an HIV test**

<b>Which of these reasons will make you consider taking or not taking an HIV test?</b>	<b>Taking</b>	<b>Not taking</b>
The test centre is on its own	79.90%	15.60%
The test centre is within a hospital	92.20%	6.10%
The test centre is managed by an NGO	91.10%	6.70%
The test centre is a government one	91.60%	4.50%
HIV testing is carried out after counselling anytime I go to a health facility for other problems	87.20%	7.80%
A healthcare worker decides when to give me an HIV test	76.50%	16.80%
I decide when to go for an HIV test	84.90%	10.10%
Testing in the community	76.40%	18.00%
Self-testing	50.60%	27.60%

\* Multiple-response question, sum not equal to 100%

There appears to be consensus in the literature that there is a relation between the location and design of the VCT facility and acceptability of VCT (Bateganya *et al* 2007:1002; Irungu *et al* 2008:111; Matovu & Makumbi 2007:1315; Prost *et al* 2007:549). However, the relationship tends to be contradictory. In their Zambian study, Fylkesnes and Siziya (2004:568) found that acceptability of VCT at out-of-community locations was 55.8%, as compared to 11.8% for the local clinic. This is, however, in contrast to a study by Irungu *et al* (2008:111) in Kenya, who found that the choice of a nearby facility was preferred by 54.4% of the study population, as compared to 45.6% for anonymous provision. Iliyasu *et al* (2006:1919) described clinical facilities, especially those within the community, as inappropriate for youth VCT.

When respondents' preference for type of provider was statistically analysed against VCT uptake, the p-value was 0.000. This suggests a statistically significant relationship between respondents' preference for type of provider and VCT uptake.



**Table 5.15 VCT uptake and respondents' preference for HIV test provider**

	State facility	NGO facility	Others	No response
Yes	62.1%	26.3%	1.1%	10.5%
No	61.9%	19%	4.8%	14.3%

P-value: 0.000

### 5.3.3.5 Respondents' unwillingness to take an HIV test

The fifty-seven respondents, who indicated unwillingness to take an HIV test, were asked the reason for their unwillingness (see table 5.16). Of these respondents, 42.0% (n=24) indicated that they were afraid and anxious about taking the test, 30.0% (n=17) said they could not afford the test, and 28.0% (n=16) said that they did not want to know their HIV status.

**Table 5.16 Respondents' reasons for unwillingness to take an HIV test (n=57)**

Reasons for unwillingness to take an HIV test		Frequency	Valid percent
Valid	Do not want to know my HIV status	16	28.0
	Fear and anxiety	24	42.0
	I cannot afford it	17	30.0
	Total	57	100.0

### 5.3.3.6 Factors that impact on respondents' decision to take an HIV test

In order to further explore the reasons for the unwillingness of some of the respondents (n=57) to take an HIV test, respondents were asked to indicate whether a range of impediments was a big problem or not a big problem for them to get tested for HIV (see table 5.17). The three most serious problems that limited access were given as getting money to go for HIV testing at 40.40% (n=23), followed by distance from a health facility at 36.80% (n=21), and availability of transport to a health facility at 29.80% (n=17).

Concerns either about the fact that the test would be taken in a hospital where many other services were provided (87.70%, n=50), or about the fact that the facility conducted only HIV testing (87.70%, n=50), were found to score highest as “not a big problem”, suggesting that, whether the facility was a standalone centre or one where integrated HIV services were available, may not have had much impact on the decision to take an HIV test.

The study finding highlighting perceived direct and associated indirect costs of accessing VCT services as key factors that impact on respondents’ decision whether to be tested for HIV, is in consonance with the literature. In the study by Irungu *et al* (2008:111) and Bateganya *et al* (2007:4), limited access arising from affordability and distance to the facility, in addition to the design of the VCT facilities, was identified as a prime determinant shaping respondents’ decision to take an HIV test.

**Table 5.17\* Factors considered by respondents as preventing people from getting tested for HIV**

<b>Many different factors prevent people from getting tested for HIV, is each of the following a big problem or not?</b>	<b>Big problem</b>	<b>Not a big problem</b>	<b>No response</b>
Obtaining permission from spouse to go	19.30%	75.40%	5.30%
Getting money to go	40.40%	57.80%	1.80%
Distance from health facility	36.80%	61.40%	1.80%
Availability of transport to health facility	29.80%	68.40%	1.80%
Not wanting to go alone/no one to accompany you to facility	10.50%	82.50%	7.00%
Worry that provider is not same sex	14.0%	84.20%	1.80%
Worry that the test can only be taken in a hospital with many other services	7.0%	87.70%	5.30%
Worry about the attitude of the health provider	17.60%	78.90%	3.50%
Worry that the health provider will tell other people about your test result	19.30%	77.20%	3.50%
Worry that the facility only conducts HIV tests	8.80%	87.70%	3.50%

\*Multiple-response question, sum not equal to 100%

In the literature, fear of confidentiality at facilities is cited as being a major barrier to accessing VCT. Ekanem and Gbadegesin (2004:91-100) and Iliyasu *et al* (2006:1917) argue that many women will not voluntarily go for an HIV test in Nigeria, even with high knowledge of PMTCT, if there is a likelihood of the result being shared with relatives. The study findings seem to suggest that concerns about health providers sharing results with other people was not a prime source of unease or anxiety for the respondents.

#### **5.3.4 Section 4: Respondents' perceptions of family and or community support for HIV testing**

This section examined the respondents' perception of the importance of family and community support for HIV testing.

##### **5.3.4.1 *Discussing HIV testing with various persons***

In table 5.18 below, responses to the question "Have you discussed HIV testing with the following people in the past twelve months?" show that the category friends was indicated by 41.90% (n=75) of the respondents as the people they had discussed HIV testing with the most in the twelve months before the study. Spouse and sex partners, at 34.60% (n=62), and a healthcare worker, at 24.60% (n=44), were indicated as the next two groups respondents had discussed HIV testing with. Those groups that respondents indicated they had not discussed HIV testing with, were parents, with 76.50% (n=137) of the respondents answering "no" when asked whether they talked about HIV testing with their parents. These were followed by "other relatives" at 70.40% (n=126), religious leaders at 69.80% (n=125), health-care workers at 68.20% (n=122), and school teachers at 66.50% (n=119).

These findings would suggest that respondents had discussed HIV testing more with friends and spouses or sexual partners than with others. This aligns with the literature, which suggests that spousal communication about HIV prevention (Gaje & Ali 2005:153; Habte *et al* 2004) predicts higher uptake of HIV testing. This may be as a result of the support such communication conveys. Denison *et al* (2008:104) contend that young people prefer to disclose their HIV status predominantly to family and friends, and infrequently to sex partners.

**Table 5.18\* Persons with whom respondents have discussed HIV testing in the past twelve months (N =180)**

<b>Have you discussed HIV testing with the following people in the past twelve months?'</b>	<b>Yes</b>	<b>No</b>
Parents	19.60%	76.50%
Spouse or sex partners	34.60%	61.50%
Sons	11.20%	50.80%
Daughters	12.00%	50.30%
Other relatives	18.40%	70.40%
Health-care workers	24.60%	68.20%
Friends	41.90%	56.40%
Religious leaders	21.80%	69.80%
School teachers	15.10%	66.50%

\* Multiple-response questions, sum not equal to 100%

**5.3.4.2 Perceived impediments to discussing HIV testing**

The study further explored what made discussing HIV testing difficult with some of the groups. According to the study, 47.8% (n=86) indicated that they did not know how to broach the subject matter, or felt embarrassed discussing HIV testing; 27.8% (n=50) indicated that they were not sure that they would get the support of the other party they wished to discuss HIV testing with, and 10.6% (n=19) said that religious reasons made it difficult to discuss HIV testing. Only 7.2% (n=13) of respondents cited fear of the spouse or sexual partner’s reaction, or rejection as the reason that prevented them from discussing HIV testing; and 6.7% (n=12) of the respondents did not answer this question.

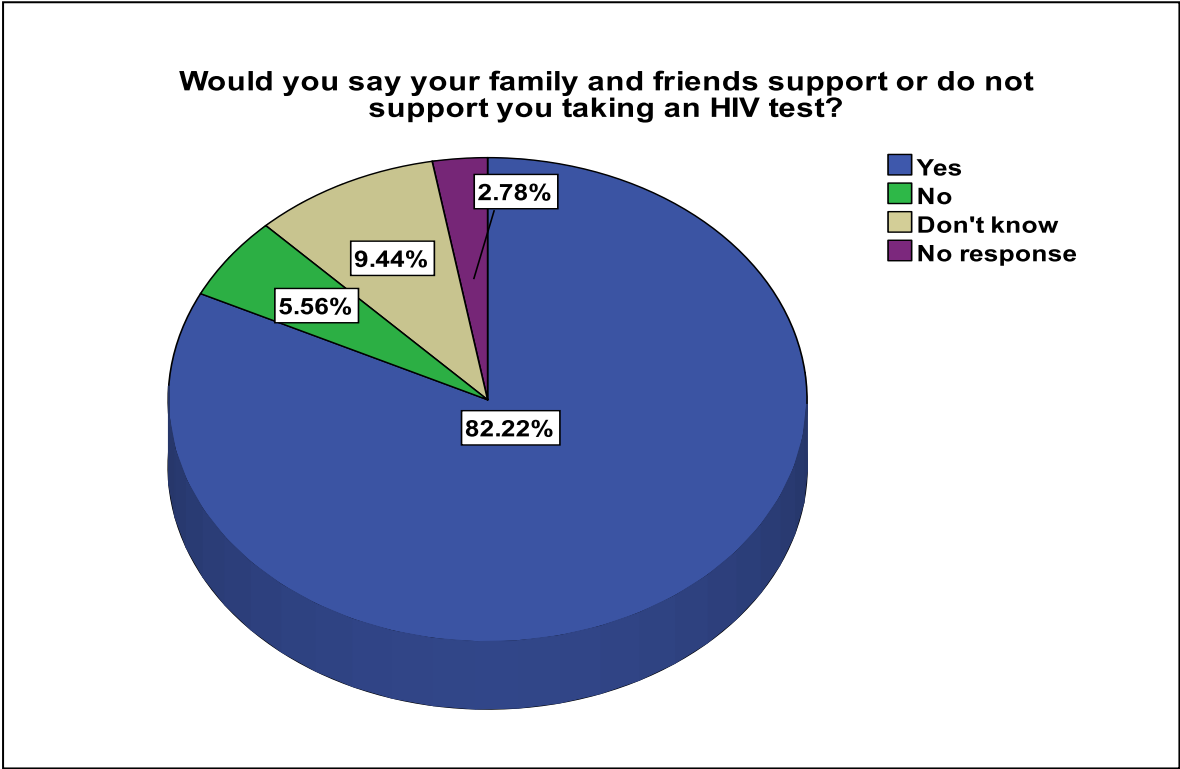
Communication challenges seem to be the major impediment preventing respondents from discussing HIV testing.

**Table 5.19 Respondents' perceived impediments to discussing HIV testing**

What prevented you from discussing HIV testing?	Frequency	Valid Percent
Don't know how to start / embarrassed	86	47.8
Fear of spouse's / sex partner's reaction	13	7.2
Religious reasons	19	10.6
Not sure of getting support	50	27.8
No response	12	6.7
Total	180	100.0

**5.3.4.3 Support of family and friends for taking an HIV test**

All the respondents were asked if their families and friends supported or did not support their going for an HIV test.



**Figure 5.19 Respondents' perception of family and friends support for HIV testing (N=180)**

According to the data in figure 5.18, 82.22% (n=148) of the respondents indicated that their families and friends supported their going for an HIV test, while 5.56% (n=10) indicated that their family and friends did not support their going for an HIV test. There were 9.44% (n=17) who indicated not knowing how their family and friends would respond to their going for an HIV test, and 2.78% (n=5) of the respondents did not respond to the question.

MacPhail *et al* (2008:99) contend that youth would be inclined to disclose their HIV status to family members who, they felt, would be most supportive. This implies that the perception of young people of how supportive family members would be, is central in their decision whether to disclose their HIV status and discuss it with them.

When the relationship between VCT uptake and the support of family and friends for VCT, was statistically calculated, a p-value of 0.525 was obtained. This suggests that there is no statistically significant relationship between VCT uptake and perception of family and friends' support for VCT.

**Table 5.20 VCT uptake and support of family and friends for taking an HIV test**

	Yes	No	Don't know	No response
Yes	88.4%	2.1%	6.3%	3.2%
No	79.3%	13.8%	6.9%	0%

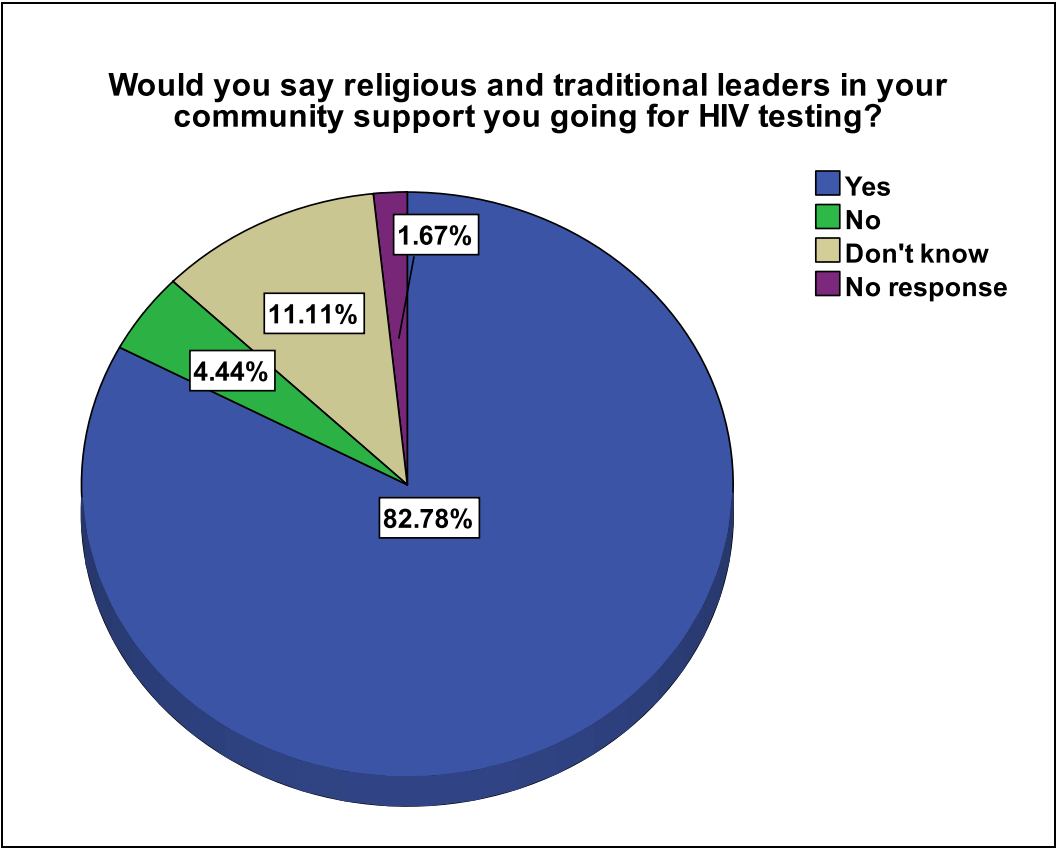
P-value: 0.525

**5.3.4.4 Religious and community leaders' support for taking an HIV test**

To probe religious and community leaders' support for HIV testing, the respondents were asked if religious and traditional leaders in their communities supported their taking an HIV test.

Figure 5.19 shows that 82.78% (n=140) of the respondents regarded religious and traditional leaders as being supportive of HIV testing, while 4.44% (n=8) indicated that these leaders were not supportive of their going for HIV testing. In addition, 11.11%

(n=20) indicated that they did not know whether these leaders were supportive of HIV testing, and 1.67% (n=3) of the respondents provided no response.



**Figure 5.20 Respondents’ perception of religious and traditional leaders’ support for HIV testing (N=180)**

However, when religious and community leaders’ support for VCT and VCT uptake by the study respondents was statistically analysed, it showed a significant statistical relationship with a p-value of 0.020, as shown in table 5.21 below.

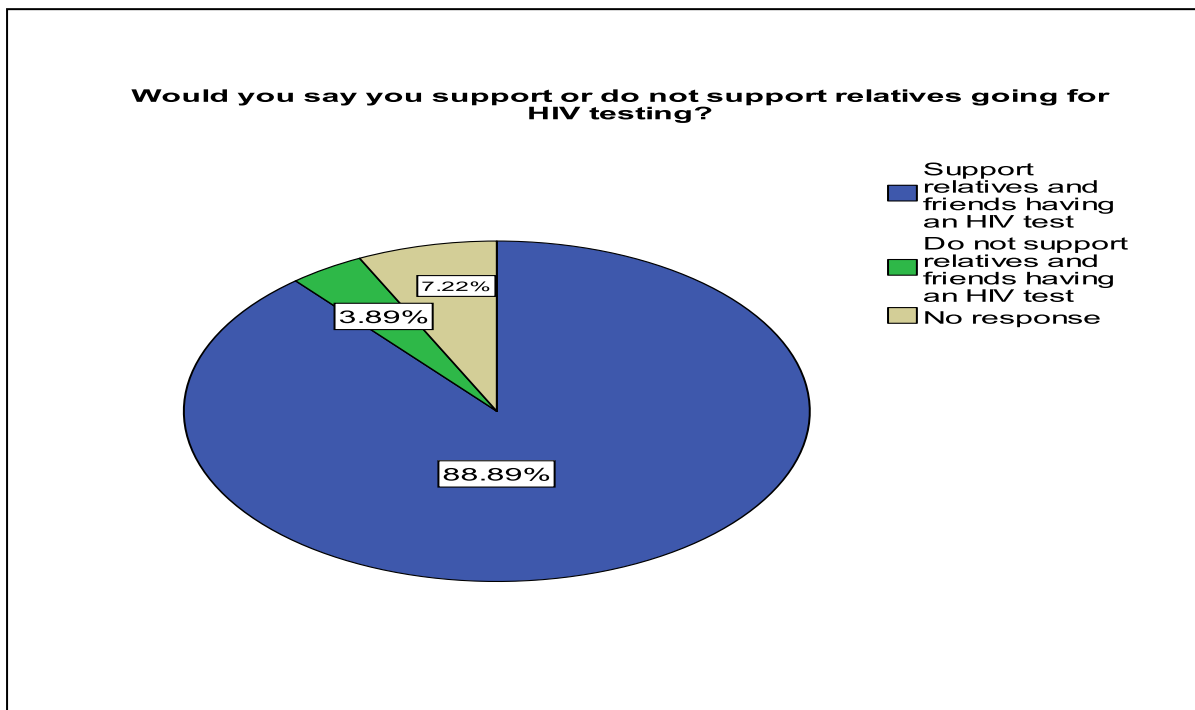
**Table 5.21 VCT uptake and religious and traditional leaders’ support for taking an HIV test**

	Yes	No	Don't know	No response
Yes	88.4%	0%	9.5%	2.1%
No	75.9%	13.8%	6.9%	3.4%

P-value: 0.020

### 5.3.4.5 Respondents' support for family members and friends taking an HIV test

The results reflected in figure 5.20, show that 88.89% (n=160) of the respondents indicated that they would be supportive of relatives and friends going for an HIV test, while 3.89% (n=7) responded in the negative — that is, that they would not support friends and relatives taking an HIV test. As shown in the same figure, 7.22% (n=13) of the respondents provided no response to the question, “Would you say you support or do not support relatives and friends going for HIV testing?”



**Figure 5.21 Respondents' support for family members and friends taking an HIV test (N=180)**

A comparison of respondents' support for a relative taking up VCT and their uptake of VCT gave a p-value of 0.007. This suggests a significant statistical relationship between the respondents' willingness to support friends and relatives taking up VCT, and their own uptake of VCT services.



**Table 5.22 Respondents’ support for family members and friends taking an HIV test and their own VCT uptake**

	<b>Yes</b>	<b>No</b>	<b>No response</b>
Yes	95.8%	0%	4.2%
No	79.3%	10.3%	10.4%

P-value: .007

**5.3.4.6 Importance of opinion of key relatives, community and religious leaders in decision to take an HIV test**

Respondents were asked how important the opinion of key relatives and religious and community gatekeepers were in shaping their decision to take an HIV test. Table 5.23 shows that the opinion of spouses at 91.70% (n=165), parents at 89.40% (n=161), religious leaders at 86.10% (n=155), and healthcare workers at 86.10% (n=155) were indicated by most respondents as been important in shaping their decision to use HIV test services. On the other hand, school teachers at 20.0% (n=36), community leaders at 17.80% (n=32), and other relatives (non-spouse, non-parent and non-children) at 17.20% (n=31), were rated by a higher proportion of respondents as not important in shaping their decision to take an HIV test.

**Table 5.23\* How the opinion of key persons shaped respondents' use of HIV testing services**

<b>How important to you personally are the opinions of the following in the use of HIV test services?</b>	<b>Important</b>	<b>Not Important</b>	<b>Not applicable/ No Response</b>
Spouse	91.70%	6.10%	2.20%
Parents	89.40%	7.80%	2.80%
other relatives	78.30%	17.20%	4.50%
Sons	70.60%	13.30%	16.10%
Daughters	68.30%	15.60%	16.10%
religious leaders	86.10%	8.90%	5.00%
healthcare workers	86.10%	10.00%	3.90%
community leaders	77.80%	17.80%	4.40%
school teachers	71.70%	20.00%	8.30%
Friends	79.40%	14.40%	6.20%

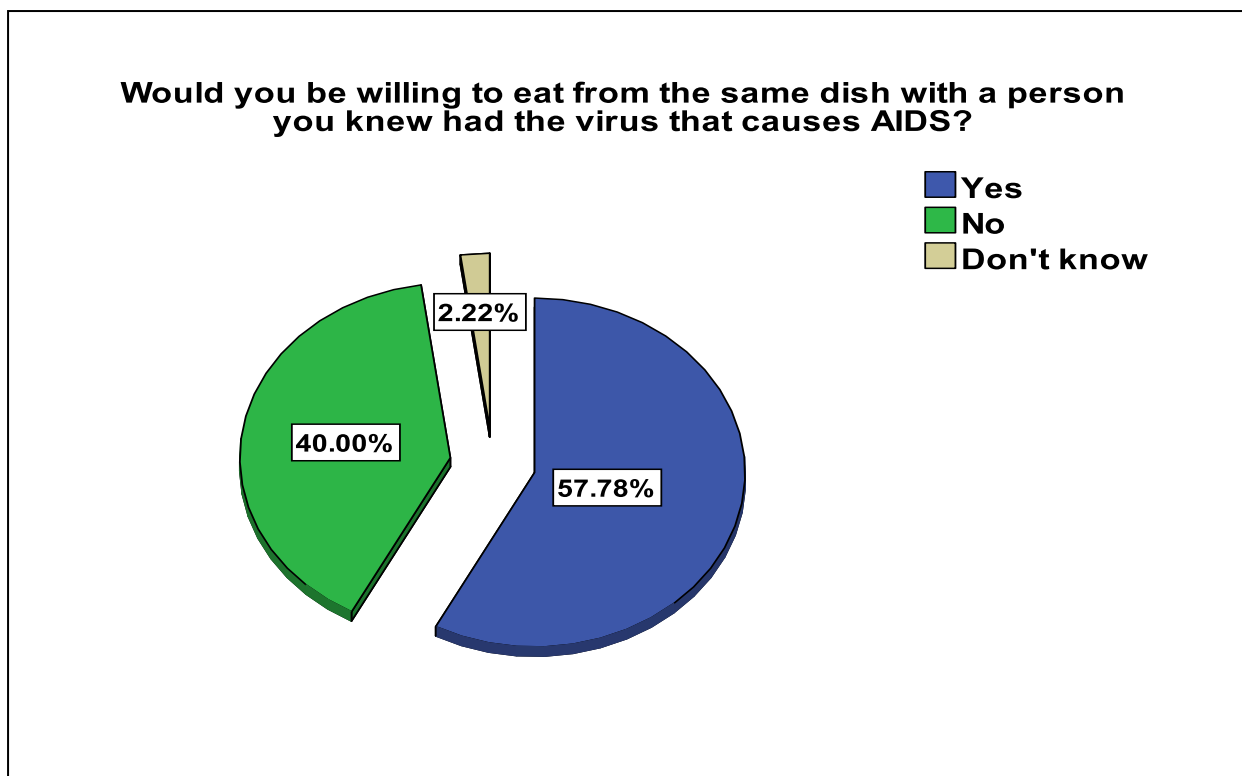
\* Multiple-response question, sum not equal to 100%

### **5.3.5 Section 5: Respondents' perception of stigma**

This section examined the respondents' perception of stigma, and its implication for HIV testing. Bwambale *et al* (2008:263); Zhou *et al* (2009:23); Jereni & Muula (2008:17); Iyaniwura and Oloyede (2006:29) and Mmbaga *et al* (2009:166) in their studies concluded that stigma was one of the major determinants of HIV testing and counselling uptake.

#### **5.3.5.1 Willingness to eat with a person living with HIV/AIDS**

Respondents were asked if they would be willing to eat from the same dish as a person who had HIV. According to the data reflected in figure 5.21, 57.78% (n=104) of the respondents indicated that they would be willing to eat from the same dish as a person living with HIV/AIDS, 40.0% (n=72) indicated that they would not want to eat from the same dish, and 2.22% (n=4) answered that they did not know whether they would be willing to do so.

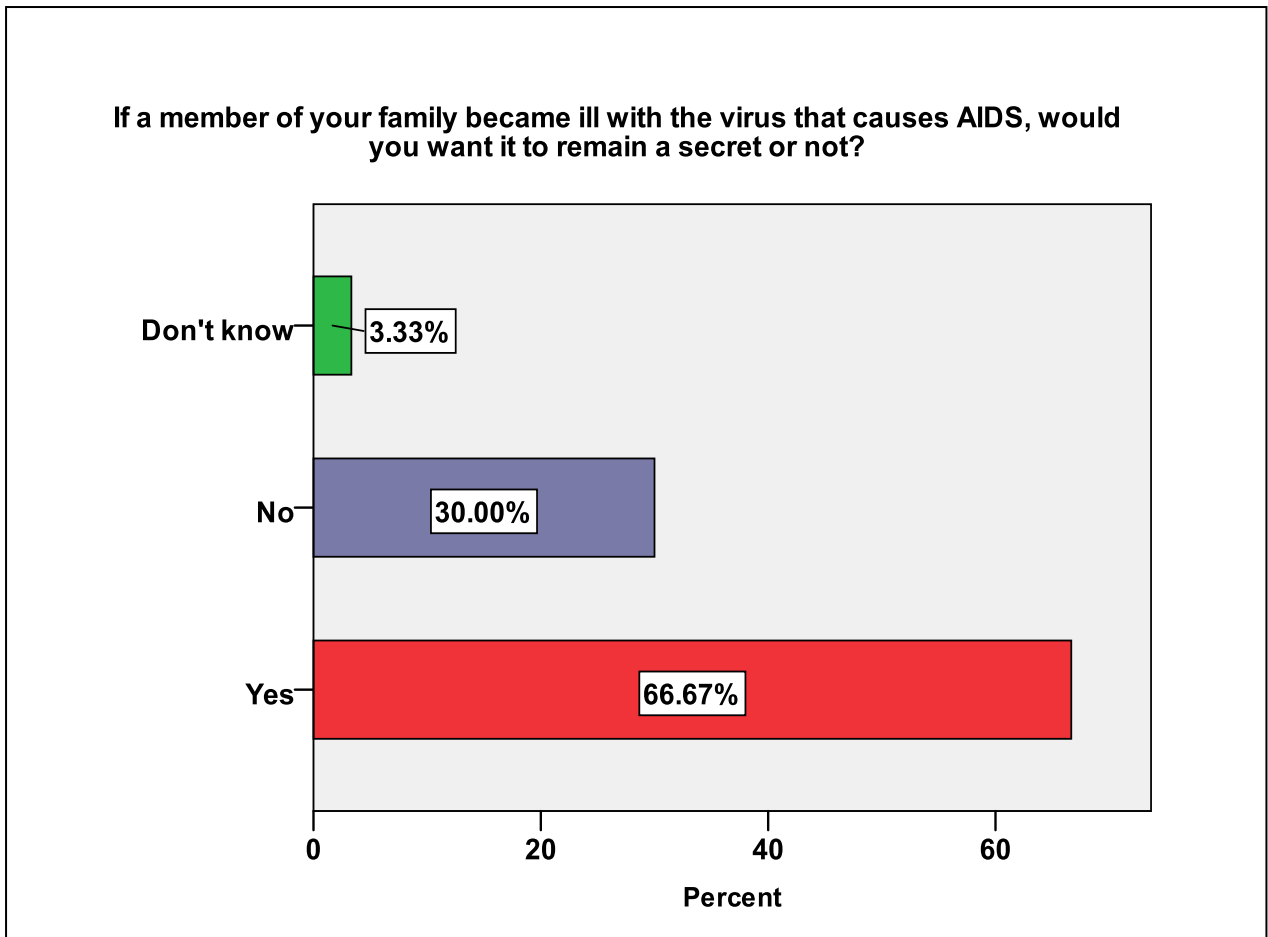


**Figure 5.22 Respondents' willingness to eat from the same dish as a person living with HIV/AIDS (N=180)**

In their study, Weiser *et al* (2006:261) argued that people with a stigmatising attitude towards people living with HIV/AIDS are less likely to use VCT. The findings from this study suggest that more than half of all respondents were willing to share the same dish with an HIV positive person. However, 40% indicated that they would not want to eat from the same dish. This highlights the level of stigma in the environment.

### **5.3.5.2 Openness about family members' HIV status**

Building on the previous question, the study respondents were asked if, in the event that a family member becomes ill with the virus that causes AIDS, they would want it to remain a secret. As shown in figure 5.22, 66.67% (n=120) of respondents said that they would want it to remain a secret, while 30.00% (n=54) indicated that they would not want it to remain a secret, and 3.33% (n=6) indicated that they did not know whether they would want it to remain a secret or not.

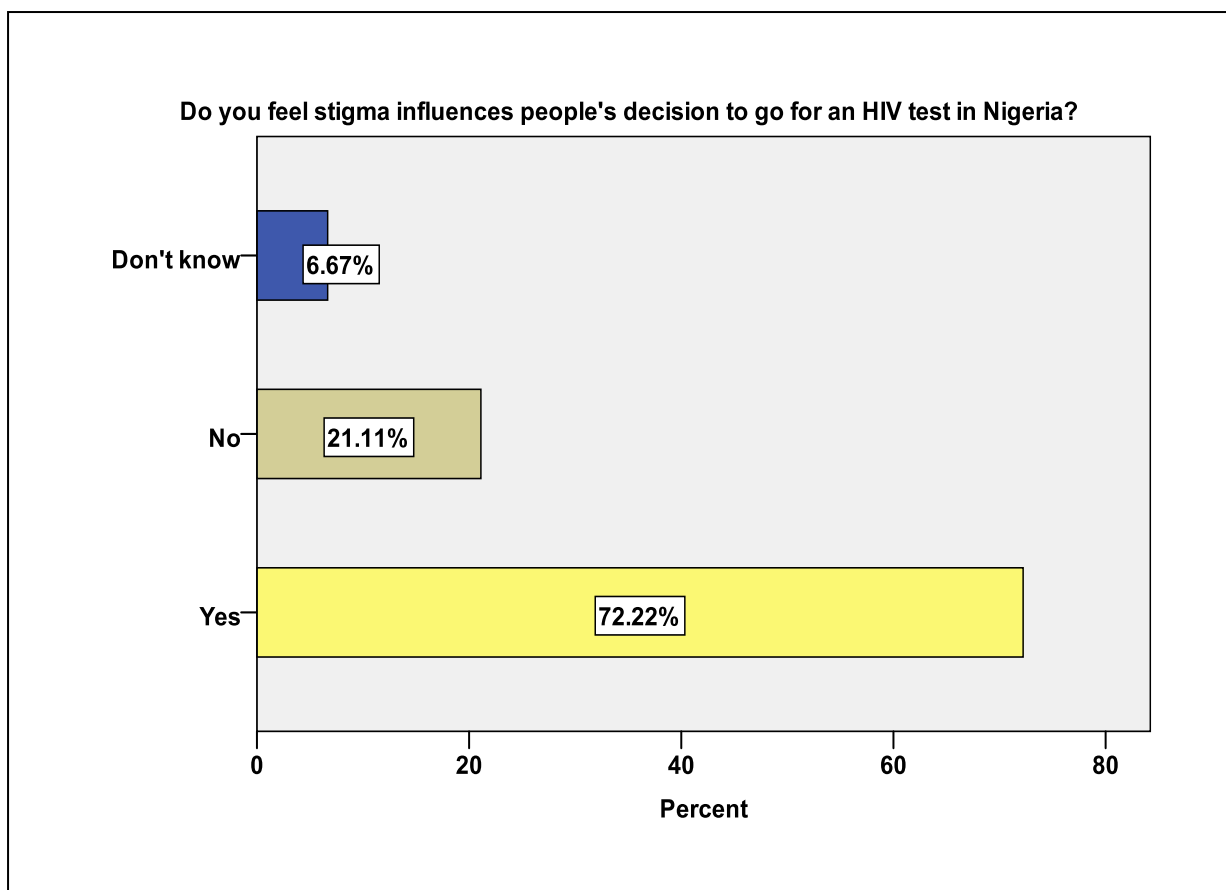


**Figure 5.23 Respondents' willingness to be open about the HIV status of a family member (N=180)**

Openness about the HIV status of a family member is often a good measure of the stigma level in the community. The findings of this study show that two out of three of the respondents would want the positive HIV status of a family member to be kept secret. This may often result in isolation and substandard care. Iliyasu *et al* (2005:28) argue that the fear of isolation, and the need to maintain marriage security in the community, was key reasons for not accessing VCT in northern Nigeria.

### **5.3.5.3 The influence of stigma on HIV testing**

On the question, “do you feel stigma influences people’s decision to go for an HIV test in Nigeria?” 72.22% (n=130) of the respondents indicated that sigma does influence people’s decision, while 21.11% (n=38) indicated that stigma does not influence the decision, and 6.67% (n=12) answered that they did not know whether stigma influenced the decision.



**Figure 5.24 Respondents' view on whether stigma influences people's decision to take an HIV test (N=180)**

The respondents' views on whether stigma influenced people's decision to take an HIV test were analysed statistically against the respondents' VCT uptake to ascertain whether there was any significant relationship. A p-value of 0.195 was obtained, as shown in table 5.24, suggesting that there is no significant statistical relationship between respondents' views on how stigma shapes HIV testing and their own uptake of VCT.

Krueger (1996:536) argues that fear of being stigmatised in the community, and even at health facilities, reduces testing, even where treatment is available. Stigma in health facilities is highlighted in a study by Reis *et al* (2005:246) which argued that 9% of healthcare workers they interviewed in Nigeria, said that they had refused admitting HIV/AIDS patients to their facilities, and 59% of the health workers interviewed felt that people with HIV/AIDS should be in a separate ward. Ekanem and Gbadegesin (2004:93) in their study argued that even in the context of PMTCT, many women still

prefer to breastfeed — even if they know their HIV positive status, because of fear of being seen as different and being stigmatised in the community.

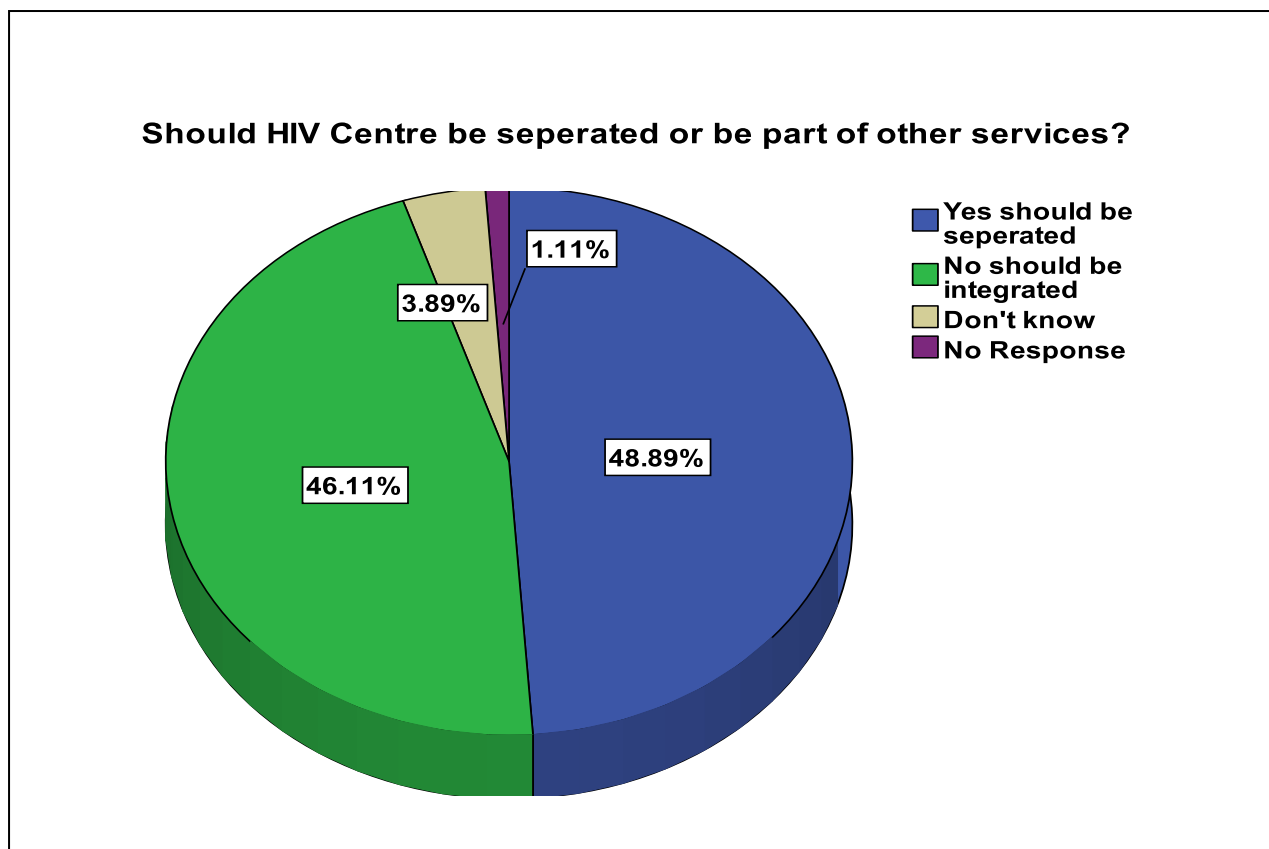
**Table 5.24 Respondents’ own VCT uptake and their views on whether stigma influences people’s decision to take an HIV test**

	<b>Yes</b>	<b>No</b>	<b>No response</b>
Yes	74.7%	21.1%	4.2%
No	86.2%	10.3%	3.5%

P-value: 0.195

**5.3.5.4 Should HIV testing centres be separate or part of other health services?**

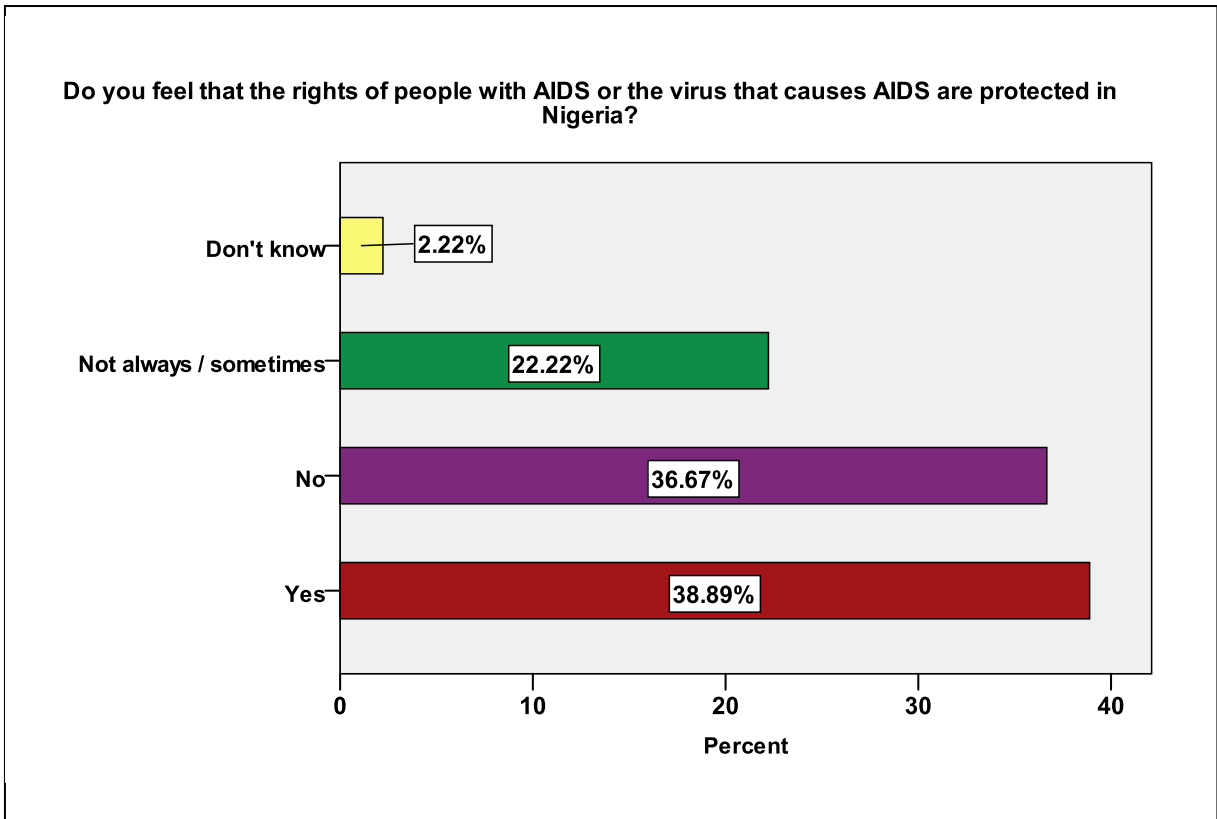
Respondents were also asked “should HIV test centres be separate- or part of other services?” Figure 5.24 shows that 48.89% (n=88) of the group indicated that the HIV test centre should be separated from the general hospital or clinic, and 46.11% (n=83) expressed the view that the HIV test centre should be integrated in the hospital or clinic. In addition, 3.89% (n=7) of the respondents were not sure whether it should be integrated or separated, while 1.11% (n=2) of the respondents did not respond to the question.



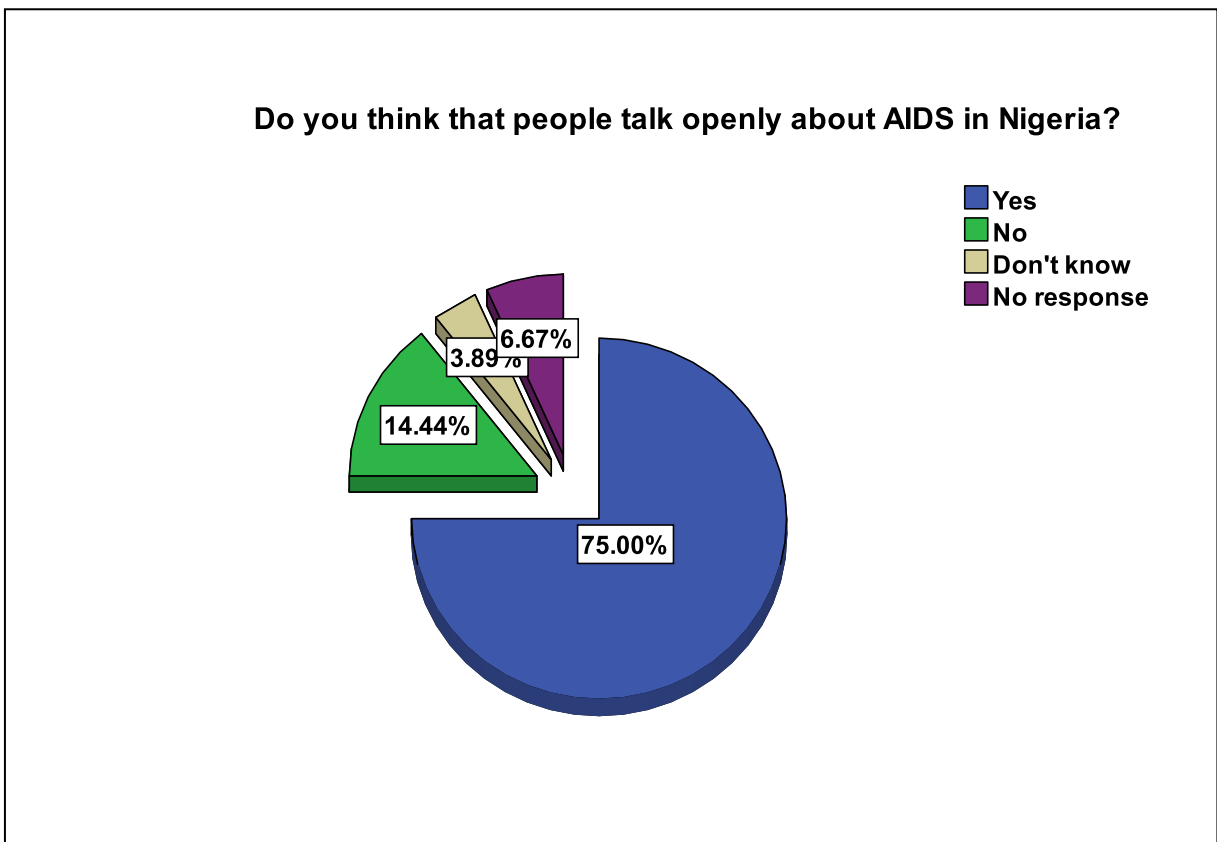
**Figure 5.25 Respondents' views on whether HIV test centre be seperated or part of other services (N=180)**

### **5.3.5.5 Protection of human rights of people with HIV/AIDS**

The respondents were asked whether they thought that the rights of people with AIDS, or who are infected by the HIV virus that causes AIDS, are protected in Nigeria. According to 38.89% (n=70) of respondents, the rights of people living with HIV/AIDS are protected in Nigeria, while 36.67% (n=66) believed that their rights are not protected, and 22.22% (n=40) said that these rights were sometimes protected, but not always, and 2.2% (n=4) answered that they did not know whether these rights were protected (see figure 5.25).



**Figure 5.26 Respondents' views on whether the rights of people with AIDS or the virus that causes AIDS are protected in Nigeria (N=180)**



**Figure 5.27 Respondents' views on whether people talk openly about HIV/AIDS in Nigeria (N=180)**



### **5.3.5.6 Openness about HIV/AIDS issues in Nigeria**

The study respondents were asked if they felt people talk openly about AIDS in Nigeria. As shown in figure 5.26, 75.00% (n=135) felt that people do talk openly about AIDS in Nigeria, while 14.44% (n=26) said that people do not talk openly about the subject in Nigeria; 3.89% (n=7) were not sure and 6.67% (n=12) of respondents did not respond to the question.

### **5.3.5.7 Likely HIV test practice of respondents**

On the question, “which of the following would you likely do if you wanted to take an HIV test“, 86.10% (n=155) of respondents indicated that they would go to a special HIV test centre close to home, while 76.70% (n=138) would prefer a big hospital around where they live; 43.30% (n=78) indicated that they would only go to a special HIV test centre, and 40.00% (n=72) would only go to a test centre in a big hospital in the next town. Of the respondents, 78.30% (n=141) indicated that they would have no problem using their name at an HIV test centre to take their HIV test, and 75.00% (n=135) indicated that they would go to the test centre alone, with 57.20% (n=103) indicating that they would go with their spouse or sexual partner, and 52.20% (n=94) indicating that they would go with friends.

These findings are in agreement with the literature. For example, in a community study in Nakuru, Kenya, the choice of a nearby facility was preferred by the study population as compared to anonymous provision or a more remote facility (Irungu *et al* 2008:111).

**Table 5.25 Respondents' likely practice if they want to take an HIV test (N=180)**

<b>Which of the following will you likely do, if you want to take an HIV test?</b>	<b>Likely</b>	<b>Not Likely</b>	<b>No Response</b>
Go to a special HIV test centre around where I live.	86.10%	11.70%	2.20%
Go to a special HIV test centre in the next town.	43.30%	51.70%	5.0%
Go to a test centre in a big hospital near my house.	76.70%	21.60%	1.70%
Go to a test centre in a big hospital in the next town.	40.00%	53.30%	6.70%
Go for the test with my spouse or sexual partner.	57.20%	37.20%	5.60%
Go for the test alone.	75.00%	18.90%	6.10%
Go for the test with friends.	52.20%	40.60%	7.20%
Use my name at the test centre.	78.30%	19.40%	2.20%
Use a fake name to register at the test centre.	40.20%	58.70%	1.10%

**5.3.6 Second level of analysis (logistic regression)**

As explained earlier, selected study variables were statistically compared with the VCT uptake of the respondents at 5% (N=180). Five of the variables were statistically significant, with p-values at less than 0.05. These five variables were:

1. Prevention knowledge using the UNAIDS indicator.
2. Consistent condom use.
3. Place of testing.
4. Religious and community leaders' support for VCT.
5. Respondents' support for family members and friends taking HIV test.

The first four of these variables were subjected to a further round of statistical analysis to determine to what extent the significant variables influence access to VCT. This second level of analysis was inferential, using logistic regression.

Table 5.26 summarises the result of the logistic regression when the four variables were analysed using SPSS 17.0. A discussion of each of these findings follows.

**Table 5.26 Variables in the logistic regression equation**

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
Step 1 <sup>a</sup>	PreUna	18.779	16917.456	.000	1	.999	1.431E8
	CDevr	-.530	21943.491	.000	1	1.000	.588
	PITest	19.979	12586.572	.000	1	.999	4.753E8
	Relsp	21.896	40192.969	.000	1	1.000	3.231E9
	Constant	-20.673	45792.921	.000	1	1.000	.000
a. Variable(s) entered on step 1: PreUna, CDevr, PITest, Relsp.							

**5.3.6.1 Prevention knowledge using UNAIDS indicator:**

Table 5.26 shows that, the more knowledgeable people are (using the UNAIDS prevention indicator), the more likely it is that they will access VCT services, and that knowledgeable persons are almost twice as likely to access VCT as the non-knowledgeable persons in the study population. In a study conducted by Sherr *et al* (2007:851) and Mmbaga *et al* (2009:160), they argued that HIV knowledge is a significant predictor of a positive attitude toward VCT. In Blantyre, Malawi, for example recent knowledge about HIV was the most important reason given for getting an HIV test (Jereni & Muula 2008:17).

**5.3.6.2 Consistent condom use**

Consistent condom use and invariable non-use were regressed against uptake of VCT by the respondents. The results in table 5.12 show that, among the respondents, persons who use condoms every time are less likely to access VCT than those who never use condoms. Those who never use condoms are almost five times more likely to access VCT than those who use condoms consistently. This finding seems to align with the findings of Gaje and Ali (2005:153) and Weiser *et al* (2006:261) which argued that a history of sexual risk behaviour and inconsistent condom use increased testing uptake.

### **5.3.6.3 Place of testing**

The preference of respondents' for HIV test centres in government facilities was regressed against the preference for HIV test centres in NGO facilities. The result in table 5.25 shows that people are five times more likely to access VCT in state facilities than in NGO provided centres. Studies conducted by Bateganya *et al* (2007:1002), Irungu *et al* (2008:111), Matovu and Makumbi (2007:1315), and Prost *et al* (2007:549) all clearly showed that the location and design of the VCT facility is central in determining acceptability of VCT by various clients.

### **5.3.6.4 Religious and community leaders' support for VCT**

Table 5.25 shows that the support of religious and community leaders is significant in determining access to VCT. With a value of 3.2, this implies that those who feel supported by religious and community leaders are almost four times more likely to access VCT than those who do not receive the same support. Denison *et al* (2008:103) showed that positive attitude of community increased testing uptake by young people.

## **5.4 CONCLUSION**

This chapter discussed the data analysis and interpretation of the findings with reference to the literature review. The results were presented in tables and figures. Some attempt was made to statistically analyse the findings about several independent variables in relation to the dependent variable of VCT uptake by the respondents. In addition, logistic regression was carried out on four of the independent variables which showed significant relationships with uptake of VCT, and the result of this analysis was presented.

Chapter 6 concludes the study by discussing the limitations of the research, and makes recommendations for practice and further research.

## **Chapter 6**

### **Conclusions, limitations and recommendations**

#### **6.1 INTRODUCTION**

The purpose of the study was to understand the determinants of VCT uptake among the population in the federal capital territory of Abuja in Nigeria. The study sought to investigate the perceptions of the community with regard to VCT services and to determine reasons for the use and non-use of VCT services in Nigeria.

VCT is considered the critical link in the HIV prevention and treatment continuum. However, despite increasing availability of HIV testing services, uptake has been limited. In order to acquire deeper insight into this phenomenon, the researcher used the Health Belief Model (HBM) as a theoretical framework to understand what shapes the uptake of VCT in Nigeria.

This chapter discusses the findings and the limitations of the study, and makes recommendations for practice and further research.

#### **6.2 FINDINGS**

The findings are discussed according to the sections of the questionnaire. The questionnaire consisted of the following sections:

- Section 1: Respondents' socio-demographical profile.
- Section 2: Respondents' HIV knowledge, perception and practices.
- Section 3: Respondents' understanding of the design, organisation and operation of VCT and the wider health services
- Section 4: Respondents' perceptions of family and or community support for HIV testing
- Section 5: Respondent perception of stigma

## **6.2.1 Respondents' socio-demographic profile and VCT uptake**

### **6.2.1.1 Age distribution and VCT uptake**

The respondents' age distribution had no significant statistical relationship with VCT uptake in the study population (p-value 0.722). This finding suggests that age-specific targeted interventions may not be needed in promoting VCT uptake.

### **6.2.1.2 Gender distribution and VCT uptake**

Fifty-two percent of the respondents were males and forty-eight percent were females. On the relationship between gender as an independent variable, and VCT uptake as the dependent variable, the study showed that there was no statistically significant difference in male and female VCT uptake, with a p-value of 0.701.

This finding is in alignment with some of the arguments in the literature that being male or female has no effect on VCT completion, which suggests that VCT uptake may be gender blind.

### **6.2.1.3 Highest level of education and VCT uptake**

More than 75% of the study respondents had basic education; 36% (n=65) had secondary school education, and 43% (n=78) had tertiary education. The proportion of the respondents that had primary education was 6.7% (n=12), and 8.9 % (n=16) had quranic education as their highest level of educational attainment. A further 5.0% (n=9) of the respondents had no education at all.

Overall the results show that there was a strong statistically significant relationship between highest educational level and uptake of VCT, with a p-value of 0.000. This finding correlates with the literature which suggests that a higher educational level significantly increases VCT uptake.

This finding makes an argument for the continuation of the multi-sectoral approach to HIV/AIDS, one component of which is the continuous investment by government in the

provision of basic education as a necessary basis for higher education which, in turn, impacts on the health-seeking behaviour of the population.

#### **6.2.1.4 Marital status**

Nearly half — 50.56% — of the respondents were single, 48.33% were married, 0.6% were widows or widowers, and 0.6% were divorced. The relationship between marital status and VCT uptake revealed no statistical significance between marital status and VCT uptake in the study respondents at 5% significance level (p-value 0.205).

This finding is supported by some previous studies in the literature which found no difference in VCT uptake between married and unmarried clients.

### **6.2.2 Respondents' HIV knowledge, perception, practices and VCT uptake**

#### **6.2.2.1 Respondents' awareness of HIV/AIDS**

A large percentage (97.2%; n=174) of respondents had heard about HIV or AIDS, and only 2.79% (n=6) said that they had not heard of AIDS or HIV.

Relating HIV/AIDS awareness of the study group to those among the respondents who personally knew someone who was living with HIV/AIDS showed that 73.90% (n=133) of the respondents had no personal knowledge of someone with HIV/AIDS. Only 24.44% (n=44) of the respondents knew of someone who was infected with HIV or had AIDS. In addition, the question on respondents' personal knowledge of someone who had died of AIDS had 33.71% (n=60) responding in the affirmative and 64.61% (n=115) indicating no knowledge of someone who had died of AIDS.

Comparing the data on respondents who had ever heard about HIV/AIDS (97.2%) and those who either knew somebody living with HIV/AIDS (24.44%), or who had died of HIV/AIDS (33.71%), would suggest that the high awareness of HIV/AIDS in the former can be attributed to health and HIV information coming from other sources beyond just personal contact.

This high awareness of HIV/AIDS can be attributed to the many educational programmes that have taken place over the years. However, the fact that about 3% of the study population claimed not to have heard about HIV/AIDS suggests that health and HIV/AIDS awareness programmes may need to be better targeted to reach this population.

#### ***6.2.2.2 Respondents' HIV knowledge including knowledge of mode of transmission***

Regarding respondents' HIV/AIDS knowledge, particularly their knowledge of the availability or absence of a cure for the epidemic, it is instructive that 76.10% (n=137) correctly responded that HIV has no cure, while 17.80% (n=32) indicated that HIV had a cure. On the negative side, this finding would suggest that almost one in five persons in the study population think HIV has a cure. HIV education programmes need to deal with this in their messages to ensure that the population has accurate knowledge of the epidemic, particularly as the life prolonging anti-retroviral therapy, now widely available in Nigeria, may be misconstrued as a cure for HIV by a section of the population.

With regard to knowledge of the mode of transmission of the HIV virus, which is crucial for HIV prevention awareness and skills, 82.20% of respondents spontaneously agreed that sexual intercourse with an infected partner was one mode of transmission. On prompting by the interviewer, a further 16.7% of the respondents also agreed that sexual intercourse could transmit the virus.

With regard to blood transfusions and mother-to-child transmission, 40.60% indicated that blood transfusion could transmit HIV, but only 29.40% agreed that HIV infected mothers could transmit the infection to their unborn children. Even with the interviewer's prompting, only a further 46.70% of the respondents agreed that an infected mother could transmit the HIV virus to their unborn child.

On the sharing of infected sharp objects, 21.10% of the respondents spontaneously agreed that razors could transmit HIV, and 16.70% agreed that needles could transmit the virus. This increased by a further 54.40% (razor) and 57.20% (needles) on prompting by the interviewer.



These results would suggest that the risk of transmitting HIV infection by an infected mother to her unborn child, and by sharing needles and other sharp objects, is not as widely understood as that of sexual transmission of the epidemic. This may explain the low uptake of PMTCT programmes in the country at 10%. HIV prevention interventions therefore need to prioritise messaging around these modes of infection.

On the misconception side, only 5.00% and 2.80% respectively agreed that sharing eating utensils, and being bitten by mosquitoes and bed bugs could transmit HIV. However, on prompting by the interviewer, this increased to 33.90% and 25.60% respectively.

We gain a deeper understanding of some attitudes associated with the sexual transmission of HIV when we consider that 81.11% of the respondents rightly indicated that it was possible for a healthy-looking person to be infected with the virus that causes AIDS, while 11.67% indicated that it was not possible for a healthy-looking person to be infected with the virus. No response to this question was provided by 5.6% of the group.

Judgement on the basis of a person's appearance often leads people to take sexual risk. The finding above would suggest that about 20% of the study population may have taken sexual risks because they assumed that a healthy-looking partner would not be infected with HIV. Intervention therefore needs to target this group on the theme that HIV infection may not be reflected in physical appearance.

On specific HIV prevention knowledge, when respondents were asked how a person could avoid getting the virus that causes AIDS, 59.4% responded spontaneously that staying with one uninfected partner protects one from being infected with HIV. This number increased by a further 32.2% on prompting by the interviewers.

Condoms and abstinence: 27.2% and 45.0% of the respondents respectively indicated that using condoms consistently and abstaining from sex would provide protection against getting infected with HIV. These numbers increased by 53.3% and 36.1% on prompting by the interviewers. Only 10.6% of those interviewed indicated that reducing the numbers of sexual partners is an effective prevention method against getting infected with HIV, this increased by 62.8% on further prompting.

These findings suggest that much still needs to be done to popularise consistent condom use and partner reduction as effective HIV prevention methods in the study population.

On the use of antibiotics and seeking protection from a traditional healer as protection from getting infected with HIV, only 6.1% and 0.6% respectively indicated that these methods provide protection against getting infected with HIV. This shows that the majority of the study respondents now discount some of the previously held beliefs on how HIV can be prevented.

### **6.2.2.3 Respondents' HIV prevention knowledge and VCT uptake**

The study used the UNAIDS composite indicator for complete knowledge (designed to assess correct individual responses to reducing risk of contracting HIV, by (1) using condoms and (2) only having sex with one uninfected partner) to explore the relationship between HIV knowledge and VCT uptake.

The finding, with a p-value of 0.051, suggests that there is a statistically significant relationship between correct HIV prevention knowledge and uptake of VCT among the study participants. This finding agrees with the argument in various published papers that higher HIV knowledge predicts a positive attitude toward VCT.

Further inferential analysis to determine to what extent HIV prevention knowledge predicts VCT uptake shows that respondents in the study population with higher HIV prevention knowledge are almost twice more likely to access VCT than respondents with lower HIV prevention knowledge.

This finding suggests that interventions that increase HIV prevention knowledge can also expand VCT uptake and should thus be promoted.

### **6.2.2.4 Respondents' HIV sexual practice and VCT uptake**

On respondents' sexual practices, 29.05% (n=52) indicated having more than one sexual partner in the twelve months before the survey, and 68.16% (n=122) indicated not having more than one sexual partner, while 2.7% (n=5) either did not respond or indicated not knowing.

Statistical analysis of the variable “sex with more than one sex partner in twelve months” prior to the study against VCT uptake had a p-value of 0.590. This suggests that there is no statistically significant relationship between VCT uptake and respondents’ reported sex with more than one partner in twelve months.

This finding may suggest that having more than one sexual partner may not necessary increase or decrease HIV test uptake.

#### **6.2.2.5 Respondents’ condom use and VCT uptake**

When the use of condoms in non-spousal sexual contact was examined, 28.97% (n=42) of respondents indicated having used condoms in their last non-spousal sexual contact, while 20.0% (n=29) reported not having used condoms. However, 51% (n=74) of respondents did not respond to this question.

A p-value of 0.120 was found when condom use in the last sexual contact with a non-spousal partner was compared statistically with VCT uptake. This suggests that there is no significant relationship between condom use in the last sex act and VCT uptake.

However, when respondents were asked about consistent condom use with non-spousal partners every time they had sex in the last three months before the study, 16.6% (n=24) indicated that they used condoms every time, 29.7% (n=43) indicated using condoms sometimes, and 4.8% (n=7) reported never having used condoms in the last three months with non-spousal partners, while 49% (n=71) of the respondent proffered no response to this question.

Statistically comparing consistent condom use and VCT uptake among the respondents indicated a significant relationship between consistent condom use and uptake of VCT, with a p-value of 0.019.

When consistent condom use and consistent non-use were regressed against VCT uptake by the study respondents, the result showed that persons who uses condoms every time are less likely to access VCT than those who never use condoms, with the

latter almost five times more likely to access VCT than those who used condoms consistently.

These findings suggest that respondents who used condoms consistently were unlikely to take and receive an HIV test result. This agrees with the literature which suggests that inconsistent condom use increases the likelihood of testing uptake. Programme interventions may need to develop messages that motivate consistent condom user to still do an HIV test as part of good health-seeking behaviour.

### **6.2.3 Respondents' understanding of the design, organisation and operation of VCT and VCT uptake**

#### ***6.2.3.1 Respondents' knowledge of HIV test centres and VCT uptake***

When the significance of knowledge of test centres was probed, 78.33% of the study respondents indicated that they knew where to find an HIV test facility, and 21.67% indicated that they did not know where to go for an HIV test.

At a p-value of 0.251, statistical analysis suggests that there is no statistically significant relationship between VCT uptake and respondents' knowledge of where to go for an HIV test.

#### ***6.2.3.2 Respondents' HIV testing practice and VCT uptake***

The study found that 55.0% of the study participants had a previous HIV test, while 45.0% had never had a test; 22.73% of those who had taken an HIV test indicated that they took the test less than twelve months before the study, 16.36% claimed that they took it twelve to twenty-three months before the study, and 60.91% of the respondents had taken an HIV test more than twenty-four months before the study.

More than half of the respondents (50.89%) claimed that that they were required to have the test, while 25.89% were offered the test, and only 23.21% of the respondents indicated that they voluntarily asked for the test.

With regard to the reasons for being offered HIV testing, or being required to take the HIV test, 32.14% of the respondents indicated that they had the test offered to them because they had been ill, and 29.46% had attended HIV prevention and treatment outreach programmes. A further 17.86% of the respondents claimed that they were offered the test when they visited somebody at a health facility, while 10.71% indicated that they were offered the test as part of preparing to get married and 9.82% said they were required to undertake the test as a prerequisite for being employed.

These findings suggests that a large section of the population was still not aware of their HIV status and, of those that had taken a previous HIV test, more than 70% had taken it more than twenty-four months earlier, and then only about a quarter of them had voluntarily taken the test. Intervention needs to promote HIV testing as part of a hip lifestyle to make it more appealing.

As regards completion of the full HIV testing protocol, 69.85% of the respondents indicated that they had collected the result of the test, 21.32% said that they did not collect the result, and 8.82% had no response to the question. This finding point to the fact that completion of the whole HIV testing procedure is still a problem with about a quarter not collecting the results. Programme implementers may need to revisit the pre-HIV test counselling process with a view to motivating clients to complete the test procedure.

### ***6.2.3.3 Respondents' willingness or unwillingness to take an HIV test***

When willingness to take an HIV test was probed, 67.22% of the respondents indicated that they would like to take an HIV test, while 31.67% indicated that they would not want to take the test. This finding shows that there is a big window of opportunity to develop interventions to target about two-thirds of the population who would want to take an HIV test.

The main reason given by 51.96% of the respondents who indicated that they wanted to take an HIV test, was to know their HIV status; 29.61% indicated that they wanted to take the test to reduce fear and anxiety, 11.73% indicated that they wanted the test for marriage purpose, and 2.79% indicated they would like to take the test for employment purposes. These reasons, for example "wanting to know HIV status", can be used in

developing mass media cues to action that focus on perceived control of health. Messaging should also be designed to deal with the fear and anxiety associated with HIV testing.

Respondents' choice of a suitable location that would make them consider going for an HIV test showed that an HIV test centre within a hospital was the top favourite of 92.20% of the respondents. This was followed by the test centre being a government one (91.60%), or a centre managed by an NGO (91.10%).

HIV self-testing (50.60%), community based testing (76.40%), and instances where healthcare workers decide when to administer an HIV test (76.50%), were indicated as least likely to influence taking an HIV test. The reason for self-testing being rated among the least acceptable may have been that it was poorly understood by the respondents.

When respondents' preference for type of provider was statistically analysed against VCT uptake, the p-value was 0.000. This suggests a statistically significant relationship between respondents' preference for type of provider and VCT uptake. When respondents' choice of a government HIV test facility was regressed against their preference for an NGO HIV test facility for taking an HIV test, the result showed that respondents are five times more likely to access VCT in state facilities than in centres provided by NGOs.

This finding may need further research to improve understanding of why the respondents prefer public facilities. It is likely that perceptions of the differential cost between public and private health providers in other service areas may have influenced the preference for public facilities. Programme managers may need to monitor the VCT programme in private facilities to ensure services are truly being delivered free as stated in the national guidelines.

When the reasons for some respondents indicating unwillingness to take an HIV test are examined, it is seen that 55.08% of them did so on the basis that they felt it was not necessary, 18.64% indicated that they were afraid and anxious about taking the test, 14.41% stated that they could not afford the test, and 11.86% stated that they did not want to know their HIV status.

A VCT promotion programme needs to emphasise the proper perception of personal risk, and stress the need for messaging that minimises the fear and anxiety associated with taking an HIV test.

#### **6.2.3.4 Respondents' perception of impediments to taking an HIV test**

Lack of money to travel to an HIV test facility was cited by 31.10% of the respondents as one of the three big problems limiting access, followed by distance from a health facility (25.10%), and availability of transport to the testing facility (20.70%).

Concerns about whether an HIV test is provided in a hospital among many other health services (91.00% of respondents), or whether the facility conducts only HIV tests (90.40%), were most frequently assessed as “not a big problem”. This suggests that the choice between standalone and integrated HIV facilities may not have much impact on the decision to take an HIV test.

Perception of the cost of VCT and the associated ancillary costs involved in taking the HIV test, seems to be the key factor limiting uptake in a large proportion of the study population. Programme managers need to inform the citizens that HIV testing is free, and initiate policies to get testing to the primary healthcare level. This will minimise transport and associated ancillary costs involved in taking the test.

#### **6.2.4 Respondents' perceptions of family/community support for HIV testing and VCT uptake**

##### **6.2.4.1 Respondents' discussion of HIV testing with various persons**

Respondents are most likely to discuss HIV testing with their friends (41.90%), followed by their spouses or sex partners (at 34.60%), and health-care workers (at 24.60%). The least likely people respondents would discuss HIV testing with were the following, in order from least likely to moderately unlikely: parents (76.50%), other relatives (70.40%), religious leaders (69.80%), healthcare workers (68.20%) and school teachers (66.50%).

These findings suggest that peer messaging to promote VCT uptake may work. Couple counselling and testing may also be acceptable in the study population if well designed and efficiently delivered.

Exploring what made discussing HIV testing difficult with some of the people listed above, 48.0% of respondents indicated that they did not know how to broach the issue, or felt embarrassed, 27.9% indicated that they were not sure whether they would get the support they needed, and 10.6% stated that religious reasons made it difficult to discuss HIV testing. Only 7.3% of respondents cited fear of their spouses' or sexual partner's reaction or rejection.

Communication challenges seem to be the major impediment hampering respondents from discussing HIV testing.

#### ***6.2.4.2 Respondents' perception of the support of family and friends for taking an HIV test and VCT uptake***

Responses to questions probing perceptions of support from family and others, show that 83.15% of the respondents were of the opinion that their families and friends supported their going for an HIV test, 5.62% indicated that their family and friends did not support going for a test, 9.55% indicated that they did not know how their family and friends would respond, and 1.69% provided no response.

Positive attitude of family members and friends to VCT shapes VCT uptake. This finding suggests that family support for HIV testing is high in the study population.

When the relationship between the support of family and friends for VCT, and the actual VCT uptake was statistically calculated, a p-value of 0.525 was obtained. This suggests that there is no statistically significant relationship between the perception of family and friends and their support for VCT, and actual VCT uptake.



#### **6.2.4.3 Respondents' perception of religious and community leaders' support for taking an HIV test and VCT uptake**

When perceptions of the support of community leaders were probed, 83.24% of the respondents felt that religious and traditional leaders were supportive of HIV testing and 4.47% felt that religious and traditional leaders were not supportive, while 11.17% indicated that they did not know whether religious and traditional leaders were supportive of HIV testing and 1.12% provided no response.

However, when perceptions of religious and community leaders' support for VCT, and actual VCT uptake by the study respondents, were statistically analysed, it showed a significant statistical relationship with a p-value of 0.020.

When the variable "religious and community leaders' support for HIV testing" was regressed against uptake of VCT by the respondents, the findings showed that the respondents who felt supported by religious and community leaders were almost four times more likely to access VCT than those who felt that they did not receive the same support.

This finding suggests that religious and community leaders are critical gatekeepers in promoting uptake of testing. The bulk of the respondents feel that these gatekeepers are supportive of their taking an HIV test. Media messaging should be developed using some of these well-known leaders in providing the cue for people to go for an HIV test.

#### **6.2.4.4 Probing a possible correlation between respondents' support for family members and friends taking an HIV test and their own VCT uptake**

When respondents' support for relatives and friends taking an HIV test was probed, 88.89% of the study respondents indicated that they would be supportive of relatives and friends going for an HIV test, 3.89% indicated that they would not support friends and relatives taking an HIV test, and 7.22% of the respondents provided no response.

A comparison of respondents' support for a relative taking up VCT and their own uptake of VCT, produced a p-value of 0.007. This suggests a significant statistical relationship

between respondents' willingness to support friends and relatives taking up VCT and their own uptake of VCT services.

#### ***6.2.4.5 The bearing of respondents' perception of the opinion of key relatives, community and religious leaders on their decision to take an HIV test***

The opinion of the spouse (91.70%), parents (89.40%), religious leaders (86.10%) and healthcare worker (86.10%) were indicated by most respondents as being important in shaping their decision to use HIV test services. School teachers (20.0%), community leaders (17.80%), and other relatives (non-spouse, non-parent and non-children) (17.20%), were rated by a meaningful proportion of respondents as not important in shaping their decision to take an HIV test.

### **6.2.5 Respondents' perception of stigma and VCT uptake**

#### ***6.2.5.1 Respondents' willingness to eat with a person living with HIV/AIDS***

When asked about sharing a dish with someone who is living with HIV/AIDS, 58.33% of the respondents indicated that they would be willing to eat from the same dish as a person living with HIV/AIDS, while 39.44% indicated that they would not want to do so and 2.22% answered that they did not know whether they would be willing to eat from the same dish.

#### ***6.2.5.2 Respondents' openness with family about their HIV status***

When asked about disclosing a family member's HIV status, 67.22% of the respondents said that they would want a family member's HIV status to remain a secret, 29.44% indicated that they would not want it to remain a secret, and 3.33% indicated that they did not know whether they would want it to remain a secret or not.

#### ***6.2.5.3 Respondents' perception of stigma and its impact on HIV testing***

When asked about the impact of stigma, 72.22% of the respondents indicated that stigma influences people's decision to go for an HIV test, while 21.11% felt that it did not

influence the decision, and 6.67% were not sure whether stigma influenced people's decision to take an HIV test or not.

A p-value of 0.195 was found when the respondents' view on whether stigma influenced people's decision to take an HIV test was analysed statistically against the respondents' uptake of VCT. This suggests that there is no significant statistical relationship between the two variables.

The three findings above suggest that stigma is still relatively high in the study population and that the perception of being stigmatised or discriminated against is a concern for some of the respondents. However, there seems to be no evidence that such perception is preventing people from going for an HIV test.

#### ***6.2.5.4 Respondents' view on whether HIV testing centres should be separate from or part of other health services***

In response to a question about the integration of HIV testing centres, 49.16% of the respondents indicated that they felt that HIV test centres should be separate from other health facilities, and 46.37% felt that they should be integrated, while 3.91% were not sure whether they should be integrated or separate and 0.56% provided no response to the question.

#### ***6.2.5.5 Respondents' view on the human rights of people with HIV/AIDS***

When asked about human rights, 38.89% of respondents felt that the rights of people living with HIV/AIDS are protected in Nigeria, 36.67% felt that their rights were not protected, while 22.22% felt that their rights were sometimes protected but not always and 1.7% answered that they did not know.

#### ***6.2.5.6 Respondents' views on openness about HIV/AIDS issues in Nigeria***

When respondents were asked about openness about HIV/AIDS in Nigeria, 77.59% felt that people talk openly about HIV and AIDS in Nigeria, 14.94% believed that people do not talk openly about AIDS in Nigeria, while 4.02% were not sure and 3.45% of respondents did not respond to the question.

### **6.2.5.7 Respondents' likely VCT practice**

Of the respondents, 86.10% indicated that they would go for an HIV test at a special HIV centre near their home, 76.70% indicated that they would go to a hospital near their home. On the other hand, 43.30% indicated that they would go only to a special HIV test centre in the next town, and 40.00% indicated that they would go only to a test centre in a big hospital in the next town. When asked about anonymity, 78.30% indicated that they would have no problem using their name at an HIV test centre to take their HIV test. When asked about being accompanied to the test centre, 75.00% indicated that they would go to the test centre alone, 57.20% indicated that they would go with their spouse or sexual partner, and 52.20% would go with friends.

The findings above strengthen the argument that perception of stigma may not be limiting VCT uptake directly. Other reasons, such as cost, may be more important in hindering VCT uptake in the study population.

## **6.3 LIMITATIONS**

The study was conducted in Karu and Bwari (satellite towns around Abuja), and with mixed ethnic population groups. The area has had extensive media focus on HIV because of the high prevalence of the infection. The results may therefore not necessarily be generaliseable to other communities in Nigeria, that may not have had the same extensive HIV coverage in the media.

The study involved only 180 respondents out of an estimated population of about 131 500 people living in the two towns. Again, this being a cross-sectional study, means that the data collected could have been influenced by events and conditions occurring on the days the communities were visited and interviews conducted.

Despite these limitations, the study findings present interesting insights into what is shaping VCT uptake in Abuja, which could help in improved design and promotion of VCT in the federal capital territory of Abuja.

## **6.4 RECOMMENDATIONS**

Based on the findings, the researcher makes the following recommendations for practice and further research.

### **6.4.1 Practice**

The HBM indicates that, if individuals perceive themselves to be susceptible to a disease, and if they view the disease as sufficiently serious, they would take the needed action in the presence of various cues to action, such as HIV education and awareness programmes for the population, particularly those focusing on correct personal risk perception and HIV infection prevention, thus expanding VCT uptake.

Because religious and traditional leaders have a critical impact on shaping communities' views of HIV testing, intervention programmes should make use of their standing in society to pass the messaging for HIV testing on to the population.

Because there is a strong perception of the cost of accessing VCT, programme managers need to disseminate the messages that HIV testing is free. In addition, attempts should be made to provide VCT test centres closer to the communities, particularly at primary healthcare level.

Interventions promoting the perceived benefits of HIV testing need to be developed and communicated to the population to act as cues for uptake of VCT.

### **6.4.2 Further research**

Further research should be conducted on the following topics:

- An investigation into the preference for public facilities for VCT testing.
- The link between marital status and personal HIV risk assessment, and VCT uptake.
- An investigation into why persons, who consistently use condoms with non-spousal partners, have a lower VCT uptake.
- A comparison of the determinants of VCT uptake in a rural Nigerian community.

- Statistical analysis of the relationship between correct HIV prevention knowledge and VCT uptake in various age groups, using Nigerian national survey data.

## **6.5 CONCLUSION**

HIV voluntary counselling and testing form the core of intervention in the continuum of HIV prevention, treatment and impact mitigation. Uptake of VCT can accelerate Nigeria's quest for universal access to prevention of mother to child transmission of HIV (PMTCT), and to treatment and prevention of new HIV infection. This chapter concluded the study, discussed the findings and its limitations, made recommendations about possible means to expand VCT uptake, and put forward recommendations for further research in this area.

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# **ANNEXURE A**

**Permission asked and obtained to conduct the study**

# **ANNEXURE B**

**Data collection instrument**

**QUESTIONNAIRE FOR STUDY: DETERMINANTS OF VOLUNTARY HIV COUNSELLING AND TESTING UPTAKE IN FEDERAL CAPITAL TERRITORY ABUJA – NIGERIA  
INDIVIDUAL INTERVIEW SCHEDULE**

**Confidentiality and consent:** I am going to ask you questions some of which may be very personal. Your answers are completely confidential. Your name will not be written on this form, and will never be used in connection with any of the information you tell me. I would greatly appreciate your help in responding to this survey.

Participant no: \_\_\_\_\_

Date:.....

**SECTION 1: SOCIAL DEMOGRAPHIC CHARACTERISTICS**

No	Question	Options (choose one)	Code/skip
1.1	How old are you? Years  (Exact Age in box)	Under 30.....1 31–40.....2 41–50.....3 4. Over 50.....4	<input type="text"/> 1.1
1.2	What is your gender?	Male.....1 Female.....2	<input type="text"/> 1.2
1.3	What is your highest level of education?	No Formal education.....1 Quranic only.....2 Primary education.....3 Secondary education.....4 Tertiary level.....5	<input type="text"/> 1.3
1.4	What is your religion?	Islam..... 1 Protestant..... 2 Catholic..... 3 Traditional..... 4 No religion ..... 5 No Response.....6	<input type="text"/> 1.4
1.5	What is your occupation i.e. what kind of work do you mainly do?	Director/upper management.....1 Other management.....2 Sales representative/Insurance Broker.....3 Professional/Specialist.....4 Self employed/Own small business.....5 Self employed (informal sector /hawkers/vendors etc.)....6 Blue collar skilled & semi skilled.....7 Unskilled.....8 Clerk/clerical.....9 Civil Servant..... 10 Housewife..... 12 Pensioner/Retired..... 13 Unemployed..... 14 Student..... 15	<input type="text"/> 1.5
1.6	Respondent marital status	Married.....1 Single.....2 Widowed/Widower .....3 Separated .....4	<input type="text"/> 1.6
1.7	To which ethnic group do you belong?	Biom .....1 Bura .....2 Edo.....3 Efik..... 4 Fulani .....5 Gwari.....6	<input type="text"/> 1.7

		Hausa.....7 Ibibio.....8 Igala.....9 Igbo.....10 Ijaw .....11 Ikwere.....12 Itsekiri.....13 Kaje.....14 Kanuri.....15 Okrika.....16 Nupe .....17 Shuwa-Arab.....18 Urhobo.....19 Tiv.....20 Yoruba.....21 Idoma.....22	
1.8	Respondent's dwelling structure	Single family house.....1 Duplex.....2 2-3 bedroom flat.....3 Mini flat.....4 Room and Parlour.....5 Single room.....6 Mud house with thatched roof.....7 Mud house with zinc roof.....8 Wood and makeshift structures.....9	<input type="checkbox"/> 1.8
1.9	How many meals per day can you afford throughout an average month?	Cannot guarantee one meal a day throughout the month...1 Only afford one meal a day throughout the month.....2 Only afford two meals a day throughout the month .....3 Afford three meals a day throughout the month.....4 Can afford three meals a day throughout the month ....5	<input type="checkbox"/> 1.9

## SECTION 2: 2 RESPONDENT HIV KNOWLEDGE, PERCEPTION AND PRACTICES

No	Question	Option	Code/skip																																																																														
2.1	Have you ever heard of AIDS or HIV (the virus that causes AIDS)?	Yes.....1 No.....2	<input type="checkbox"/> 2.1																																																																														
2.2	Does AIDS have a cure?	Yes, it has a cure.....1 No, it does not have a cure.....2 Don't Know.....9	<input type="checkbox"/> 2.2																																																																														
2.3	Do you know someone who has the AIDS virus or who has AIDS?	Yes.....1 No.....2	<input type="checkbox"/> 2.3																																																																														
2.4	Do you know someone who died of AIDS?	Yes.....1 No.....2	<input type="checkbox"/> 2.4																																																																														
2.5	How can a person get the virus that causes AIDS?	<table border="1"> <thead> <tr> <th></th> <th></th> <th>Spontaneous</th> <th colspan="3">Prompted</th> </tr> <tr> <th></th> <th></th> <th>Yes</th> <th>Ye s</th> <th>N o</th> <th>Don't Know</th> </tr> </thead> <tbody> <tr> <td>2.5a</td> <td>Sexual Intercourse</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5b</td> <td>Blood transfusion</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5c</td> <td>Mother to unborn child</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5d</td> <td>Sharing toilets</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5e</td> <td>Sharing sharp objects like razors</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5f</td> <td>Sharing needles</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5g</td> <td>Sharing eating utensils</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5h</td> <td>Mosquito bites/bed bugs</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5i</td> <td>Witchcraft</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5j</td> <td>Kissing</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2.5k</td> <td>Hugging</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </tbody> </table>			Spontaneous	Prompted					Yes	Ye s	N o	Don't Know	2.5a	Sexual Intercourse	1	2	3	4	2.5b	Blood transfusion	1	2	3	4	2.5c	Mother to unborn child	1	2	3	4	2.5d	Sharing toilets	1	2	3	4	2.5e	Sharing sharp objects like razors	1	2	3	4	2.5f	Sharing needles	1	2	3	4	2.5g	Sharing eating utensils	1	2	3	4	2.5h	Mosquito bites/bed bugs	1	2	3	4	2.5i	Witchcraft	1	2	3	4	2.5j	Kissing	1	2	3	4	2.5k	Hugging	1	2	3	4	<input type="checkbox"/> 2.5 a - k
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2.6	Is it possible that a healthy-looking person has the virus that causes AIDS?	Yes.....1 No.....2 Don't know.....9	<input type="checkbox"/> 2.6																																																																														

2.7	What can a person do to avoid getting the virus that causes AIDS?			<b>Spontaneous</b>	<b>Prompted</b>			2.7 a - m
				Yes	Ye s	N o	Don't Know	
		2.7a	Staying with one Faithful uninfected partner	1	2	3	4	
		2.7b	Using condoms every time	1	2	3	4	
		2.7c	Abstaining from sex	1	2	3	4	
		2.7d	Delaying the onset of sexual intercourse	1	2	3	4	
		2.7e	Avoiding sex with CSWs	1	2	3	4	
		2.7f	Reducing number of sexual partners	1	2	3	4	
		2.7g	Avoiding sex with people who have many sexual partners	1	2	3	4	
		2.7h	Avoid sharing of sharp objects like needles, razors	1	2	3	4	
		2.7i	Praying to God	1	2	3	4	
		2.7j	Going for checkups	1	2	3	4	
		2.7k	Using antibiotics	1	2	3	4	
2.7l	Seek protection from a traditional healer	1	2	3	4			
2.7m	Nothing	1						
2.8	Why do you think you have a high chance of getting AIDS (or the virus that causes AIDS)? [ MULTIPLE CODES POSSIBLE]	Share sharp objects.....1 Do not use condoms.....2 I have more than one sex partner..... 3 Sex with sex workers.....4 My Spouse/partners has other partners..5 Had blood transfusions.....6 Have had injections.....7						2.8
2.9	Why do you think you have a low chance or no chance at all of getting AIDS (or the virus that causes AIDS)? MULTIPLE CODES POSSIBLE]			Yes	No	2.9 a - k		
	2.9a	I abstain from sex	1	2				
	2.9b	I use condoms	1	2				
	2.9c	I trust my partner	1	2				
	2.9d	I have a limited number of sex partners	1	2				
	2.9e	I have only one sex partner	1	2				
	2.9f	I avoid sex with sex workers	1	2				
	2.9g	Spouse/partners has no other partner	1	2				
	2.9h	I ensure safe blood transfusion	1	2				
	2.9i	I ensure injection with sterile needles	1	2				
	2.9j	I seek protection from a traditional healer	1	2				
	2.9k	God will protect me/It is not my destiny	1	2				
2.10	Have you had sex with more than one partner in the last twelve months	Yes.....1 No.....2 Don't know/No Response.....6						2.10
2.11	Is any of these partner non spousal (wife/ husband/ live together partner (than2 yrs)	Yes.....1 No.....2 Don't know/NoResponse.....9						2.11
2.12	This non spousal partner(s) are	Boyfriend/Girlfriend.....1 Sugar Daddy/Sugar Mummy..... 2 Sex worker.....3 No response.....4						2.12
2.13	The last time you had sex with your non spousal partner, was a condom used?	Yes.....1 No.....2 No Response.....9						2.13
2.14	During the last 3 months, was a condom used with your non spousal partner (s) every time you had sex?	Every time.....1 Sometimes.....2 Never.....3 No Response.....9						2.14
2.15	Do you know where you can obtain information about HIV/AIDS?	Yes.....1 No.....2						2.15
2.16	Where can you obtain information about HIV/AIDS?	1. Government hospital/health centre/post.....1 2. Private health centre/hospital.....2 3. Pharmacy.....3						2.16

<b>[ MULTIPLE RESPONSE ALLOWED</b>	4. Patent medicine store.....4 5. NGO office/hospital/clinic.....5 6. Church.....6 7. Mosque.....7 8. Relatives.....8 9. Friends.....9 10. Print media such as leaflets, newspapers.....10 11. Electronic media such as television, radio... 11	<input style="width: 50px; height: 50px;" type="checkbox"/>
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### SECTION3: RESPONDENT PERCEPTION OF THE DESIGN, ORGANISATION AND OPERATION OF VCT/THE WIDER HEALTH SERVICES

No	Question	Option	Code/skip
3.1	Do you know of a place where you can go to get an HIV (AIDS) test?	Yes.....1 No.....2	3.1 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.2	I don't want to know the results, but have you ever been tested to find out if you have the virus that causes AIDS?	Yes.....1 No.....2	3.2 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.3	Would you like to have a test to find out if you have the virus that causes AIDS?	Yes..... 1 No..... 2	3.3 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.4	What is the main reason why you would like to have a test?	To reduce fear and anxiety..... 1 Required for employment..... 2 For marriage purposes.....3 I want to know my HIV status..... 4	3.4 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.5	Why not?	Do not want to know my HIV status 1 Fear and anxiety..... 2 I feel it is not necessary.....3 I cannot afford it.....4	3.5 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.6	When was the last time you were tested?	Less than 12 months ago.....1 12 to 23 months ago.....2 24 months or more ago.....3	3.6 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.7	The last time you had test, did you yourself ask for the test, was it offered to you or were you required to have the test?	I asked for the test.....1 I was offered.....2 I was required to have it .....3	3.7 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.8	Why was the test offered/requested?	Illness.....1 Visited somebody in the facility.....2 Getting married.....3 Requirement of a job.....4 HIV prevention and treatment outreach programme...5	3.8 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.9	If the test was offered by who?	Healthcare worker (govt facility)..... 1 Healthcare/outreach worker (NGO facility)....2 Others specify[..... ]...6	3.9 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.10	If you were required to take the test - who?	Religious leaders/needs.....1 Employer.....2 Healthcare facility.....3 Others specify[..... ]...6	3.10 <input style="width: 50px; height: 30px;" type="checkbox"/>
3.11	I don't want to know the result of your test, but did you get the results of the test?	Yes.....1 No.....2	3.11 <input style="width: 50px; height: 30px;" type="checkbox"/>

3.12	Many different factors prevent people from getting tested for HIV, is each of these a big problem or not?			Big Problem	Not a big problem	3.12 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		3.12a	Obtaining permission to go from spouse	1	2	
		3.12b	Getting money to go	1	2	
		3.12c	Distance from health facility	1	2	
		3.12d	Availability of transport to the facility	1	2	
		3.12e	Not wanting to go alone/no one to accompany you to the facility	1	2	
		3.12f	Worry that the provider is not of the same sex with you	1	2	
		3.12g	Worry that the test can only be taken in a hospital with many other services	1	2	
		3.12h	Worry about the attitude of the health provider	1	2	
		3.12i	Worry that the health provider will tell other people about your test result	1	2	
3.13	Which of these reasons will make you consider taking or not taking a HIV test?  [MULTIPLE CODES POSSIBLE]			Taking	Not taking	3.13 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		3.13a	The test centre is on its own	1	2	
		3.13b	The test centre is within a hospital	1	2	
		3.13c	the test centre is managed by an NGO	1	2	
		3.13d	the test centre is a government one	1	2	
		3.13e	HIV test is carried out after counseling anytime I go to a health facility for other problem	1	2	
		3.13f	Healthcare worker decide when to give me a HIV test	1	2	
		3.13g	I decide when to go for a HIV test	1	2	
		3.13h	Testing in the community	1	2	
		3.13i	Self testing			

**SECTION4: PERCEPTION OF RESPONDENT AS TO THE AVAILABILITY OR NON AVAILABILITY OF FAMILY AND OR COMMUNITY SUPPORT FOR HIV TESTING**

No	Question	Option	Code/skip				
4.1	Have you discussed with any of the various persons about HIV & AIDS in the past 12 months...? [MULTIPLE CODES POSSIBLE] WILL		4.1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
		4.1a		Parents	Yes	No	Not Applicable
		4.1b		Spouse/Sex partners	1	2	3
		4.1c		Sons	1	2	3
		4.1d		Daughters	1	2	3
		4.1e		Other relatives	1	2	3
		4.1f		Health care workers	1	2	3
		4.1g		Friends	1	2	3
		4.1h		Religious leaders	1	2	3
		4.1i		School Teachers	1	2	3
4.2	How comfortable or uncomfortable would you feel talking about HIV testing to the following....?		Comfortable	Not Comfortable	Not Applicable	4.2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
		4.2a	Father	1	2		3
		4.2b	Mother	1	2		3
		4.2c	Brother	1	2		3
		4.2d	Sisters	1	2		3
		4.2e	Teachers	1	2		3
		4.2f	Religious leaders	1	2		3
4.3	Have you discussed with any of the various persons about HIV testing in the past 12 months...?[MULTIPLE CODES POSSIBLE]		Yes	No	Not Applicable	4.3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
		4.3a	Parents	1	2		3
		4.3b	Spouse/Sex partners	1	2		3
		4.3c	Sons	1	2		3
		4.3d	Daughters	1	2		3
		4.3e	Other relatives	1	2		3
		4.3f	Health care workers	1	2		3
		4.3g	Friends	1	2		3
		4.3h	Religious leaders	1	2		3
		4.3i	School teachers	1	2		3
4.4	What prevented you from discussing HIV testing?	Don't know how to start/Embarrassed.....1 Fear of spouse's/partner's reaction.....2 Religious reasons.....3 Not sure of getting support .....4	4.4 <input type="checkbox"/>				



4.5	Would you say your family and friends support or do not support you taking a HIV test?	Yes.....1 No.....2 Don't know.....6 No response .....9				4.5	<input type="checkbox"/>																																																												
4.6	Would you say religious and traditional leaders in your community support you going for HIV testing?	Yes.....1 No.....2 Don't know.....6 No response .....9				4.6	<input type="checkbox"/>																																																												
4.7	Would you say you support or do not support your relatives going for HIV testing?	Support relatives and friends having a HIV test.....1 Do not support relatives and friends having a HIV test...2 No response.....9				4.7	<input type="checkbox"/>																																																												
4.8	How Important to you personally are the opinions of ..... in the use of HIV test services?  <b>[OPTIONS TO BE READ OUT]</b>	<table border="1"> <thead> <tr> <th></th> <th></th> <th>Important</th> <th>Not important</th> <th>Not Applicable</th> </tr> </thead> <tbody> <tr><td>4.8a</td><td>Spouse</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8b</td><td>Parent</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8c</td><td>Other relatives</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8d</td><td>Son</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8e</td><td>Daughter</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8f</td><td>Religious leaders</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8g</td><td>Health care workers</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8h</td><td>Community leaders</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8i</td><td>School teachers</td><td>1</td><td>2</td><td>9</td></tr> <tr><td>4.8j</td><td>Friends</td><td>1</td><td>2</td><td>9</td></tr> </tbody> </table>			Important	Not important	Not Applicable	4.8a	Spouse	1	2	9	4.8b	Parent	1	2	9	4.8c	Other relatives	1	2	9	4.8d	Son	1	2	9	4.8e	Daughter	1	2	9	4.8f	Religious leaders	1	2	9	4.8g	Health care workers	1	2	9	4.8h	Community leaders	1	2	9	4.8i	School teachers	1	2	9	4.8j	Friends	1	2	9				4.8	<input type="checkbox"/>					
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4.11	Do you know of someone who has been required to have <b>Mandatory</b> testing for HIV, the virus that causes AIDS?	Yes.....1 No.....2  <b>[MANDATORY MEANS WHEN PEOPLE ARE REQUIRED TO GET TESTED FOR HIV BY THE AUTHORITIES.]</b>				4.11	<input type="checkbox"/>																																																												

## SECTION 5 PERCEPTIONS OF HIV STIGMA AND IMPACT ON TESTING

5.1	Would you be willing to eat from the same dish with a person you knew had the virus that causes AIDS?	Yes ..... 1 No ..... 2 Don't know ..... 8	5.1	<input type="checkbox"/>
5.2	If a student has the virus that causes AIDS but is not sick, should he or she be allowed to continue attending school?	Yes ..... 1 No..... 2 Don't know..... 8	5.2	<input type="checkbox"/>

5.3	If a female teacher has the virus that causes AIDS but is not sick, should she be allowed to continue teaching in school?	Yes ..... 1 No ..... 2 Don't know ..... 8			5.3	<input type="checkbox"/>
5.4	If a member of your family became ill with the virus that causes AIDS, would you want it to remain a secret or not?	I would want it to remain secret ..... 1 I would not want it to remain secret ..... 2 Don't know ..... 8			5.4	<input type="checkbox"/>
5.5	If a colleague in your work place has the virus that causes AIDS but is not sick, should he or she be allowed to continue working with you?	Yes, should be allowed to work 1 No, should not be allowed to work 2 Don't know ..... 8			5.5	<input type="checkbox"/>
5.6	Do you feel stigma influences people decision to go for a HIV test in Nigeria?	Yes ..... 1 No ..... 2 Don't know ..... 8			5.6	<input type="checkbox"/>
5.7	Should HIV testing centres be separated or be part of other services?	Yes, should be separate1 No, should be Integrated 2 Don't know ..... 8			5.7	<input type="checkbox"/>
5.8	Should people who have AIDS (or the virus that causes AIDS) be given more health care, equal health care or less health care than people with other serious diseases?	More health care ..... 1 Equal health care ..... 2 Less health care ..... 3 Don't Know.....8			5.8	<input type="checkbox"/>
5.9	Do you feel that the rights of people with AIDS or those with the virus that causes AIDS are protected in Nigeria?	Yes.....1 No.....2 Not Always/Sometime.....3 Don't Know.....8			5.9	<input type="checkbox"/>
5.10	Do you think that people talk openly about AIDS in Nigeria?	Yes.....1 No.....2 Don't Know.....8			5.10	<input type="checkbox"/>
5.11	Which of the following will you likely do if you wanted to take a HIV test?  MULTIPLE CODES POSSIBLE]		Likely	Not Likely	5.11	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.11a	Go to a special HIV test centre around where I live	1	2		
	5.11b	Go to a special HIV test centre in the next town	1	2		
	5.11c	Go a test centre in a big hospital around my house	1	2		
	5.11d	Go a test centre in a big hospital in the next town	1	2		
	5.11e	Go for the test with my spouse or sexual partner	1	2		
	5.11f	Go for the test alone	1	2		
	5.11g	Go for the test with my friends	1	2		
	5.11h	Use my name in the test centre	1	2		
	5.11i	Use a fake name to register in the test centre	1	2		

**THANK YOU FOR YOUR TIME AND INPUT.**

**DR OMOKHUDU IDOGHO**  
House 12, C-Close Kado Estate  
PO Box 1890; Garki 900001, Abuja, Nigeria

March 3<sup>rd</sup> 2009

Director of Policy, Strategy and Communication  
National Agency for the Control of AIDS  
The Presidency  
823 Ralph Shodiende Street  
Central Area  
Abuja Nigeria

Dear Sir,

**REQUEST FOR PERMISSION TO CONDUCT A RESEARCH ON DETERMINANTS OF VOLUNTARY HIV COUNSELLING AND TESTING UPTAKE IN THE FEDERAL CAPITAL TERRITORY OF ABUJA, NIGERIA AS PART OF MY UNIVERSITY OF SOUTH AFRICA MASTERS IN PUBLIC HEALTH PROGRAMME**

I hereby request for permission to carry out the above named research within Abuja Federal Capital Territory as my dissertation for the University of South Africa Masters in Public Health Programme. The research is non invasive and aims to use interview schedule to ascertain respondents views on what shapes their use or non use of VCT services and the policy and programmatic implication of this.

I have here attached the research proposal for your kind consideration. Please note that the proposal has been duly vetted and approved by Professor S.P Hattingh, my study supervisor and the University of South Africa Research and Ethics Board.

I look forward to your expedited action on my request.

Yours Sincerely

Omokhudu Idogho

**UNISA Student number: 35670096**