

**UTILISATION OF HIV COUNSELLING AND TESTING SERVICES  
AMONG FEMALE ADOLESCENTS AND YOUNG WOMEN IN  
IKORODU, LAGOS STATE, NIGERIA**

**BY**

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**MATRICULATION NUMBER: 189153**

**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF  
EPIDEMIOLOGY AND MEDICAL STATISTICS, FACULTY OF PUBLIC  
HEALTH, UNIVERSITY OF IBADAN.**

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF MASTERS OF SCIENCE IN EPIDEMIOLOGY AND  
MEDICAL STATISTICS.**

## ABSTRACT

**Background:** Young people especially females are more vulnerable to HIV infection and are at high risk of new HIV infections due to differential exposure to sexual violence, early marriage, gender inequalities, peer pressures amongst others. However, utilisation of HIV Counselling and Testing (HCT) service remains low among young people despite its effectiveness in prevention of HIV transmission and linkage to treatment for infected individuals. Hence this study aimed at determining the prevalence of HCT service utilisation, perception of barriers/facilitators of HCT service utilisation and factors influencing HCT service utilisation among female adolescents and young women in Ikorodu, Lagos State.

**Methods:** This study was a cross-sectional survey using a multi-stage sampling technique to select 404 female adolescents and young women aged 15-24 years resident in Ikorodu, Lagos State. A self-administered questionnaire was used to collect information on knowledge of HIV/AIDS, perceived risk of HIV infection, sexual practices and HIV-related behaviours, benefits of HCT service utilisation, perceived barriers and facilitators to HCT service utilisation. Descriptive statistics, Chi square and binary logistic regression were used to analyse the data and level of significance was set at  $p < 0.05$ .

**Results:** The mean age of the respondents was  $19.3 \pm 2.6$  years. Many (52.9%) were between 15 and 19 years, 277 (68.6%) were Christians and a majority, 90.1% and 91.6% were single and Yoruba respectively. Only 48 (11.9%) had a good knowledge of HIV/AIDS while majority (368, 91.1%) perceived themselves at low or no risk of HIV infection and 167 (41.3%) were sexually active. Majority (289, 71.5%) had a high knowledge of the benefits of HCT service utilisation. Just above half (55.2%) knew where the service can be accessed in their locality, most of whom (65.9%) knew a secondary health facility in Ikorodu offering HCT. Only 148 (36.6%) had ever utilised HCT service with 60 (40.5%) of them being adolescents (15-19 years). Amongst those that had ever utilised HCT service, 89 (60.1%) did so less than 12 months before the study while only 50 (33.8%) initiated demand for testing by themselves. Isolation of HCT service, fear of stigmatisation and unavailability of access to treatment were identified by majority as barriers to HCT service utilisation. Age, level of education, persons living with, LCDA of residence, awareness of HCT centre, awareness of service utilisation by friends/family members, sexual activity were significantly associated with utilisation of HCT service ( $p < 0.05$ ). Logistic regression showed that awareness of HCT centre (AOR: 4.08, 95% CI: 2.52-6.60), high perceived risk of HIV infection (AOR: 2.38, 95% CI: 1.10-5.17) and sexual activeness (AOR: 1.86, 95% CI: 1.09-3.18) significantly predicted utilisation of HCT service.

**Conclusion:** Findings from this study revealed that client initiated HCT service utilisation is still low. The study also provides evidence that emphasis should be placed on the availability of HCT centres in localities, sensitization on the risk of HIV infection and integration of HCT service with other health services in order to encourage HCT service utilisation among female adolescents and young women.

**Keywords:** HIV Counselling and Testing Service utilisation, Female adolescents, Young women, HIV risk perception

**Word Count:** 492

## DEDICATION

I dedicate this work to the unwavering mercies of God and His steadfast love that never cease.

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## ACKNOWLEDGEMENTS

I give thanks to Almighty God for His faithfulness and mercy to me always.

I would like to appreciate my parents and siblings for their continued support and investment in making me who I am and for their unending prayers for me to become who I desire to be. May God continue to show himself in your lives in ways beyond your imagination.

I also wholeheartedly appreciate my supervisors, Dr. M. D. Dairo and Dr. B. O. Yusuf for their immense guidance, friendship, support and encouragement that made this work possible. Thank you very much, sir and ma.

I remember my aunt, Mrs. O. O. Oyenusi and her family for their support during the course of this programme. May God reward you and your family abundantly.

My sincere appreciation goes to my friends, Dr. Olakojo O., Dr. Ajayi T., Mr. Ajayi D., Dr. Akwada O., Dr. Eedris T., Mr. Obi-Nwafor U., Mr. Bamidele O., Mr. Abegunde E.B., Miss Olajojo O.O., for your empathy and support in one way or the other during the course of this programme.

Finally, I acknowledge the efforts of those that volunteered to participate to be a part of this study and those who helped in data collection, Yemi Amoo, Mrs Adebayo Labake and Mr. Samuel Adekanmbi; I pray God in His infinite mercy will not forget your labour of love.

## CERTIFICATION

We certify that this work was carried out in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, University of Ibadan under our supervision.



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## DECLARATION

I hereby declare that this work is original. The work was neither presented to any other faculty for the purpose of the award of a degree nor has it been submitted elsewhere for publication.



A handwritten signature in blue ink, appearing to read 'Amoo', is positioned above a horizontal dotted line.

**Amoo, Babatunde A.**

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## LIST OF ABBREVIATIONS

AIDS	-	Acquired Immune Deficiency Syndrome
ART	-	Anti Retroviral Therapy
FMOH	-	Federal Ministry of Health
HCT	-	HIV Counselling and Testing
HIV	-	Human Immunodeficiency Virus
LBS	-	Lagos Bureau of Statistics
LGA	-	Local Government Area
LSACA	-	Lagos State Agency for the Control of AIDS
MARPS	-	Most at Risk Populations
NACA	-	National Agency for the Control of AIDS
NARHS	-	Nigerian HIV and AIDS and Reproductive Health Survey
NDHS	-	Nigeria Demographic and Health Survey
NGO	-	Non-Governmental Organization
NPC	-	National Population Commission
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	-	Joint United Nations Programmes on HIV/AIDS
UNCEF	-	United Nations Children Fund
VCT	-	Voluntary HIV Counselling and Testing
WHO	-	World Health Organization

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

For more than 30 years now, the Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) epidemic has emerged as one of the major challenges for the world, going from a relatively small problem in the 1980s to one of the leading causes of mortality and burden over the last decade (Lozano et al, 2012). HIV/AIDS still remain to be the most important infectious disease that poses great challenge to public health. According to the World Health Organization (WHO), non-communicable diseases contribute a large share to burden of diseases and injuries globally; HIV/AIDS is however an exception (WHO, 2016). In contrast to a decline in the global trend of infectious disease burden, HIV/AIDS mortality increased steadily until around 2004 with about 186 countries reporting cases or deaths of HIV in 2012 (UNICEF, 2013).

Since the beginning of HIV epidemic, tens of millions of people have died of AIDS-related causes. An estimated 36.9 million people were living with HIV/AIDS at the end of 2014 which shows an increase in incidence from 29.8 million persons in 2001 (UNAIDS, 2015). This is attributable to continuing new infections, population growth and longer survival time among HIV infected individuals. About 70% of all new infections are found in sub-Saharan Africa which make up an estimated 1.4 million (1.2 million – 1.5 million) new infections in the region in 2014 (UNAIDS, 2015).

Over the years, interventions targeted at HIV/AIDS have evolved. HIV counselling and testing (HCT) is an essential component of efforts to achieve universal access to HIV prevention, treatment, care and support. HIV counselling has been defined as “a confidential dialogue between a person and a care provider aimed at enabling the person to cope with stress and make personal decisions related to HIV/AIDS” (WHO, 1994). It motivates persons who test either negative or positive to HIV infection to embrace positive behavioural change. HCT has been shown by research to be a cost-effective intervention in generalized epidemics (one of which is Nigeria) (Sweat et al., 2000; Menzies et al., 2009; Bassett et al., 2014).

In many low and middle income countries, the primary model for HIV testing has been the provision of client-initiated voluntary counselling and testing services (WHO, 2012a). Increasingly, provider-initiated approaches in clinical settings are being promoted, i.e. health care providers routinely initiating an offer of HCT service such that the provision of, or referral to, effective prevention and treatment services is assured. To reach people in need of treatment, tens of millions of tests will have to be conducted among those who may have been exposed to HIV. Under-utilization of HCT services results in late diagnosis, irrespective of the route of HIV acquisition while increasing the uptake of the service could lead to earlier diagnosis which presents an opportunity of provide people with HIV with information and tools to prevent HIV transmission to others (WHO, 2013).

## 1.2 Problem Statement

HIV is the leading cause of mortality among women of reproductive age (WHO, 2013). A third of the currently infected individuals are youth aged 15 to 24 years, 85% of whom are in sub-Saharan Africa; a region where young women also account for 63% of young people living with HIV (UNAIDS, 2015). Despite the importance of HCT in the control of HIV/AIDS, many people do not know utilise HCT services. About 60% of People Living with HIV (PLWHV) globally do not know their status (WHO, 2013). Survey data collected from 2005 to 2010 in sub-Saharan Africa shows that only 15% of young women (15-24 years) were aware of their HIV status (UNICEF, 2012).

Generally, the uptake of HCT in Nigeria is low. As reported by National HIV/AIDS and Reproductive Health Survey, NARHS (2012), only 26.3% of Nigerians have ever tested for HIV. The 2013 National Demography and Health Survey (NDHS) showed that only 10% of Nigerians utilised HCT service 12 within 12 months preceding the survey; though an improvement from only 7% in 2008 (National Population Commission, NPC, 2013). The situation among young women (15-24 years) in the country is even more appalling. Almost about half of them do not know where to test for HIV and that only 19.2% of them have ever tested for HIV (7.9% in the 12 months preceding the survey) (NPC, 2013).

Other studies among young people in Nigeria show that the prevalence of HIV testing among this category range from as low as 7% among young persons in Ibadan (Ajuwon et al, 2011),

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44.2% among tertiary institution students in Abia state (Onyeonoro et al, 2014) to as high as 50.7% among medical students in Jos (Daniyam et al, 2010). These are less than the target set by the National Action Committee on AIDS (NACA) in the National HIV Prevention Plan 2014-2015 that; at least 50% of adolescents and young people (15-24 years) must have accessed HCT services by 2015 and know their status (NACA, 2014a).

### 1.3 Justification

Young women, 15–24 years old in Sub-Saharan Africa are twice as likely as young men to be living with HIV (UNICEF, 2011) due to factors which include; gender inequalities, differential access to HCT service, early child marriage and sexual violence (likely unprotected sex). Such individuals who are more at risk or living with HIV infection need client-centered counselling and information about the disease. HCT increases knowledge of HIV status which can in turn help to initiate or maintain behaviours that can prevent acquisition or further transmission of HIV, gain early access to HIV care, treatment and support and also access to interventions to prevent transmission from mothers to their infants (WHO, 2013). Adolescents and young persons are tomorrow's parents, their HIV/AIDS related knowledge will influence the sexual and reproductive health decisions they will make today. These decisions will in turn affect the health and well being of their homes, communities and of the country for decades to come. Thus their access to and perspective of HIV interventions such as HCT should be constantly monitored and evaluated.

In Nigeria, the National HIV/AIDS Prevention Plan 2014-2015 identified women of reproductive age and out of school youths in Lagos state to be at high priority level in HIV prevention efforts (NACA, 2014a). Unfortunately, most of the studies (Onyeonoro et al, 2014; Daniyam et al, 2010; ) done on HCT among young people in Nigeria tend to only identify the proportion of those that have ever utilised HCT services and are often conducted among in-school youths only; they do not seek to determine how various factors influence HCT utilisation. Also, in most cases, there was no disaggregation into sex and age (especially 15- 19 years for adolescents) in order to have a better understanding of the situation among young women who are increasingly at risk of new infections and disproportionately living with HIV (UNICEF, 2013).



Thus, this study aimed at identifying how various factors contribute to the utilisation of HCT services among female adolescents and young women in Ikorodu, Lagos State. Recommendations that may come out from this study can serve as evidence-base that will help in informing strategies and policies at mobilizing more young women for HIV testing, thereby ultimately reducing incidence of new infection and contribute to early linkage of those already infected to care.

#### **1.4 Research Questions**

The research questions that guided the conduct of this study were:

1. What is the level of knowledge about HIV/AIDS among female adolescents and young women in Ikorodu, Lagos State
2. What is the prevalence of HIV counselling and testing service utilisation among female adolescents and young women in Ikorodu, Lagos State?
3. What is the level of knowledge of the benefits of HIV counselling and testing service utilisation among female adolescents and young women in Ikorodu, Lagos State?
4. What are the perceptions of female adolescents and young women in Ikorodu, Lagos state to barriers and facilitators of HIV counselling and testing service utilisation?
5. What are the factors associated with the utilisation of HIV counselling and testing service among female adolescents and young women in Ikorodu, Lagos State?

#### **1.5.1 Broad Objective**

1. To determine the factors influencing with utilisation of HIV counselling and testing service among female adolescents and young women in Ikorodu, Lagos State.

#### **1.5.2 Specific Objectives**

1. To assess the knowledge of the female adolescents and young women on HIV/AIDS
2. To determine the pattern of HIV counselling and testing service utilisation among the female adolescents and young women
3. To assess the perceived benefits of HIV counselling and testing service utilisation among the female adolescents and young women

4. To examine the perceptions of the female adolescents and young women on barriers and facilitators to HIV counselling and testing service utilisation
5. To identify the factors associated with the utilisation of HIV counselling and testing services among female adolescents and young women in Ikorodu, Lagos State.

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## CHAPTER TWO

### LITERATURE REVIEW

This section for this study covers the general overview of HIV/AIDS (which include its transmission, burden, and prevention), the role and benefits of VCT, the prevalence of HCT services utilisation, knowledge about HCT and factors contributing to HCT service utilisation and a theoretical framework for the study. These concepts were explored in the global, African, and Nigerian context (with a bias for youths and adolescents where possible).

#### 2.1 Brief Overview of HIV/AIDS

Studies as far back as the late 1800s show that HIV may have been transmitted originally from apes to humans (Sharp et al, 2005). The virus has since then succeeded over the decades to spread from Africa to other parts of the world. A type of Chimpanzee in Central Africa was identified to be the source of HIV infection in humans (Huet et al, 1990).

The virus first attaches itself to the CD4+ lymphocytes before making its way inside it. The virus replicates itself after entering the cell thereby destroying the cell. As the CD4+ cells are depleted, the immune system weakens and becomes less incapable of fighting infections thus making the infected person more susceptible to a wide range of opportunistic infections. Even though such persons may look healthy, they can transmit the virus to others. These opportunistic include *Pneumocystis carinii* pneumonia which rarely occurs in persons with normal immune system. HIV-positive individuals are also more prone to Tuberculosis (TB) especially in areas of the world where Tuberculosis and HIV infection are increasing at alarming rates (WHO, 2015). A number of TB carriers who might otherwise be free of active tuberculosis but are HIV-infected are now developing the disease because of their weakened immune system. TB is now the leading killer of HIV-infected Africans (WHO, 2015).

Since the epidemic began, an estimated 71 million people have been infected with HIV, out of which 34 million people have died (WHO, 2016). According to WHO, there were approximately 36.9 million people worldwide living with HIV/AIDS at the end of 2014 out of which 2.6 million were children (<15 years old) (WHO, 2016). In 2014, an average of 1.2 million people

died from HIV-related causes globally (WHO, 2016). Also, there was an average of 2 million new HIV infections globally in 2014, showing a 33% decline in the number of new infections from 3.1 million in 2000. At the same time the number of AIDS deaths is also declining with 1.6 (1.4-1.9) million AIDS deaths in 2012, down from 2.3 (2.1-2.6) million in 2005 (UNAIDS, 2013). About 1% (approximately 0.8%) of adults aged 15–49 years worldwide are living with HIV (WHO, 2016):

### **2.1.1 Burden of HIV/AIDS in Sub-Saharan Africa**

Ten percent of the total world population is in sub Saharan Africa, however, about 70% of all HIV infected adults and children are found in the region (UNAIDS, 2015). In 2014, there were 25.8 million (24.0 million–28.7 million) people living with HIV in sub-Saharan Africa and it was estimated that 1.4 million [1.2 million–1.5 million] new HIV infections occurred that year in the region (UNAIDS, 2015). The adult HIV prevalence rate in the region is estimated to be 5.0% and between 21.6 million and 24.1 million persons in total are affected with women accounting for more than half of people living with HIV (UNAIDS, 2013). In 2009, it was estimated that 370,000 African children began their lives with HIV through mother-to-child transmission (UNICEF, 2011).

Some countries in this region are said to be experiencing a pandemic-level HIV infection rates especially in southern Africa, with extreme levels in the countries of Botswana, Lesotho, South Africa, Namibia, Zimbabwe, Swaziland, and Zambia. In the Southern Africa sub-region, adult prevalence of HIV is as high as 20% in most countries in the region, with Swaziland and Botswana having about 30% prevalence (WHO, 2012b). By contrast, some countries in North Africa have lower HIV prevalence rates. HIV prevalence rates in 2009 were lower than 0.1% in Egypt and Tunisia, 0.1% in Morocco and Algeria, 0.7% in Mauritania, and 0.5% in Sudan (Idele et al, 2014).

In 2007, 1,600,000 people in sub-Saharan Africa died of AIDS while a lesser number, about 790 000 people died of AIDS-related causes in 2014(WHO, 2012b). Between 2004 and 2014 the number of AIDS-related deaths in sub-Saharan Africa fell by 48%, though the average life expectancy in sub-Saharan Africa also dropped from 62 years to 51 years due to HIV (UNAIDS, 2015).

### 2.1.2 Burden of HIV/AIDS in Nigeria

The prevalence rate of HIV infection was on the increase for some time in Nigeria; it rose from 1.8% in 1991 and peaked at 5.8% in 2001 (FMOH, 2013). The national prevalence is currently estimated to be 3.4% as from the National HIV/AIDS and Reproductive Health Survey (NARHS) 2012 (FMOH, 2013). Estimates by the Federal Ministry of Health (FMOH) indicated that for 2014, about 3,391,546 are living with HIV in Nigeria while it is estimated that 227,518 new HIV infections occurred in 2014 (male 103,917 and female 123,601) (UNAIDS & NACA, 2014).

After South Africa, Nigeria has the second highest number of People Living with HIV (PLWH) in Sub-Saharan Africa. The prevalence of HIV varies from state to state. Prevalence is as high as 15.2% in Rivers state but relatively low in Ekiti state with 0.2% prevalence (FMOH, 2012). Lagos State has a prevalence of 2.2%. Geographically, the HIV prevalence was highest in the South-south zone (5.5%) and lowest in the South-east (1.8%) while the South-south zone had a higher prevalence of 5.5%. Females relatively had higher prevalence rates in the regions, only the North-west zone is an exception where the prevalence among males is 3.6% and 2.8% among females (FMOH, 2013).

The commonest factors that contribute largely to HIV transmission and its epidemic in Nigeria include early sexual debut, low condom use, transactional sex and multiple sexual partners, low perception of risk, transfusion of poorly screened blood and poor injection safety (FMOH, 2008). Sexual transmission remains the major transmission route which accounts for about 80 percent of HIV infections in Nigeria through heterosexual activities (FMOH, 2013), 10% of the new HIV infections are transmitted through blood transfusions while another 10% HIV infections are transmitted through mother-to-child transmission and other HIV risk behaviours, such as circumcisions and incision of tribal marks (AVERT, 2009).

### 2.1.3 Burden of HIV among Adolescents and Young Persons

HIV has been identified to be the leading cause of mortality among women of reproductive age (WHO, 2013). One-third of currently infected individuals are youth aged 15 to 24 years; the majority of young people living with HIV are in low- and middle-income countries, with 1.7

million (85%) in sub-Saharan Africa where young women account for 63% of young people living with HIV (UNAIDS, 2015). At the end of 2013, 4 million [3.6 million–4.6 million] young people 15–24 years old living with HIV, 29% of whom are adolescents aged 15–19 years in the same year (UNAIDS, 2013). On the average, there were about 5,600 new infections per day; out of which 2,100 new infections were among young people and adolescents (UNAIDS, 2013).

Idele et al, (2014) estimated that 82% of the estimated 2.1 million adolescents aged 10–19 years living with HIV in 2012 were in sub-Saharan Africa. About 1.3 million adolescents living with HIV in sub-Saharan Africa are in Eastern and Southern Africa and 390,000 in the West and Central Africa (UNICEF, 2012). Half of the adolescents (15–19 years) living with HIV are in just six countries: South Africa, Nigeria, Kenya, India, Mozambique and Tanzania (UNICEF, 2013).

In 2012, approximately two-thirds of all new HIV infections in adolescents were among girls, mainly in sub-Saharan Africa (UNICEF, 2013). In some countries within the region, more than 80% of the adolescents newly infected with HIV in 2012 were adolescent girls; South Africa (82% female), Sierra Leone (85% female), Gabon (89% female) (UNICEF, 2013). The number of AIDS-related deaths among adolescents rose by 50% between 2005 and 2012. This is in comparison to a 30% fall among people of all ages living with HIV (UNICEF, 2013).

#### **2.1.4 HIV Burden among Adolescents and Young Persons in Nigeria**

The first case of AIDS was reported in Nigeria in 1987 in a sexually active adolescent, a 13-year-old girl (FMHH, 1992). In youths (15–24 years), rates declined from 6.0% in 2001 to 4.1% in 2010 (NACA, 2011). NARHS plus 2012 showed that young people aged 20–24 years had the same prevalence as in 2007 which was 3.2% while there was an increase from 1.7% in 2007 to 2.9% in 2012 in the 15–19 years age group (FMOH, 2013). More than 30% of currently infected individuals are youths aged 15 to 24 years, and half of all new infections occur in this same age (FMOH, 2013).

The 2008 HIV/Syphilis Sentinel Survey in Nigeria revealed that 3.3% of adolescents aged 15 – 19 years are infected with HIV. According to UNAIDS, Nigeria has estimated 280,000 adolescents living with HIV/AIDS, consisting of 180,000 females and 100,000 males (UNAIDS & NACA, 2014). The number of new infections among young people in Nigeria aged 15 – 24

years in 2009 was 120, 000 which was nearly 60% of all new infections among young people in West and Central Africa (Idele et al, 2014).

## **2.2 HIV transmission in Adolescents and Young People**

Young people are vulnerable to HIV infection at two stages of their lives; the first decade of life when HIV can be transmitted from mother-to-child, and the second decade of life when adolescence brings new vulnerability to HIV. It has been reported that many adolescents living with HIV were born with the virus (UNAIDS, 2012). Most of the approximately 712 new cases of HIV that are diagnosed each day in children under 15 years of age were due to vertical transmission, while a small percentage (less than 20%) were the result of horizontal transmission, including sexual transmission through sexual abuse or coercion, or early sex (UNAIDS, 2012).

### **2.2.1 Vertical Transmission of HIV (Mother-to-Child)**

Adolescents living with HIV include long-term survivors of vertical transmission, some who are on treatment, as well as those not on treatment, often regarded as “slow progressors” (WHO, 2013). Some of these adolescents are receiving care having been followed through PMTCT programmes (WHO, 2013), however, a significant proportion has not been diagnosed due to loss to follow-up (LTFU) or poor coverage of PMTCT Programme.

Proportions of children entering adolescence who acquired HIV infection from their mother and were never diagnosed have been reported to keep increasing in generalized epidemics (where the prevalence of HIV is greater than 1% among pregnant women) (Ferrand et al, 2010). They are referred to as “slow progressors”. The provision of prevention of Mother-to-Child transmission of HIV (PMTCT) interventions have increased over the years, however in many african countries, most mothers still do not have access to them; as coverage of effective antiretroviral regimens for PMTCT reached only 57% in 2011 (UNAIDS, 2013). In some cases where these services are available they may not be totally effective in preventing vertical transmission of HIV infection.

A major concern in preventing vertical transmission of HIV is late diagnosis of HIV infection among adolescents who were infected perinatally because of delay in accessing treatment and

care (Nduati et al, 2000). Some parents also contribute to this by refusing diagnosis in their children because of fear of potential stigmatization (Nduati et al, 2000).

## **2.2.2 Horizontal Transmission of HIV**

Horizontal transmission of HIV among adolescents and young people can occur in two major ways explained in the subsequent sections.

### **2.2.2.1 Sexual transmission**

Sexual activity begins during adolescence in most parts of the world, although age and conditions vary greatly. Studies in Nigeria have reported an average of 13-15 years at sexual debut (John et al, 2014; Sabageh et al, 2014; Olugbenga-Bello et al, 2009). Risks for acquisition of HIV include sex without condom use, early coerced sex and sexual exploitation involving coercion and sometimes violence.

The main mode of HIV transmission among male and female adolescents in generalized epidemic settings is unprotected heterosexual sex (sometimes forced or coerced) (Agardh et al, 2011). Evidence has shown that experience of sexual coercion is quite prevalent among young people and is associated with high-risk sexual behaviour later in life (Agardh et al, 2011). A review of nationally representative surveys in different African countries showed that 15-38% of girls between 12 and 19 years had sexual coercion at sexual debut (Moore et al, 2007). A study in Nigeria puts the prevalence of non-consensual sex among adolescents at 42.5% (John et al, 2014).

### **2.2.2.2 Parenteral transmission**

Non-sexual transmission among adolescents and young people can involve injecting drug use (IDU), traditional practices (e.g. female genital mutilation (FGM), scarification with shared razor blades and traditional treatments requiring cutting of the skin) and certain medical procedures such as unsafe surgical procedures, injections and blood transfusions. Adolescents and young people are also vulnerable to HIV infection through injecting drug use and sexual exploitation—which include unprotected heterosexual and homosexual sex (Moore et al, 2007).



## **2.3 Prevention of HIV/AIDS Transmission**

Prevention efforts can be broadly categorized into those relevant for all modes of transmission and those specific for a particular mode of transmission. Quite a number of prevention efforts have been introduced in Nigeria to combat the HIV epidemic which has translated to halting the epidemic and stabilizing it to around 4% from 2005 till date (FMOH, 2013).

### **2.3.1 Prevention of mother-to-child transmission of HIV**

Mother to Child transmission of HIV (MTCT) accounts for over 90% of HIV infection in children less than 15 years (NACA, 2014b). In the absence of interventions, the risk of MTCT is 30-45%. With intervention, the risk of MTCT can be reduced to less than 2%. The PMTCT program in Nigeria commenced in 2002 with only six tertiary facilities in the country. As at December 2014, there are 5,546 PMTCT sites in Nigeria (FMOH, 2013). Inadequate uptake of PMTCT services by pregnant women; minimal male involvement and poor community participation in PMTCT are the major challenges facing PMTCT in Nigeria (FMOH, 2013). Efforts at strengthening the PMTCT program in Nigeria include the following: Improved coordination of all relevant partners; accelerate implementation of the PMTCT scale up plan; demand creation; promote greater community involvement and in particular integrate TBAs care for pregnant women as part of the national effort to address PMTCT (FMOH, 2013).

### **2.3.2 Safe Male Medical Circumcision**

Studies have shown that Voluntary Medical Male Circumcision reduces the risk of HIV transmission by as much as 60% (Gray et al, 2007; Bailey et al, 2007). The practice exists in almost all countries of the world with little variation across age groups, ethnicity, zones and educational levels. The Nigerian Demography and Health Survey (2013) reported that 99% of men in Nigeria aged 15-49 were circumcised. Male Circumcision is a common practice in many parts of Nigeria for traditional, health and other reasons. In Nigeria, it serves as a rite of passage to adulthood (NACA, 2014b). However, the concern with male circumcision as an HIV/AIDS biomedical prevention strategy is about ensuring that the practice is safe and sterile.

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### 2.3.3 HIV and Education

This intervention includes education on HIV/AIDS and condom use through pamphlets, brochures, and other promotional materials in classroom or clinic settings or through the radio, television, or press. In Nigeria, Family Life and HIV Education (FLHE) lessons are part of the school curriculum (NACA, 2014b). The requirements include a comprehensive list of topics related to HIV, including the basic facts about HIV transmission and prevention, alongside more complex issues such as stigma and gender-based violence.

### 2.4 HIV Counselling and Testing (HCT)

HIV counselling and testing (HCT), also often referred to as HIV Testing and Counselling (HTC) is an important prevention strategy. The counselling process includes an evaluation of personal risk of HIV transmission and facilitation of preventive behaviour (WHO, 1994). WHO has defined five key components tagged the “5 Cs” which must be respected and adhered to by all HCT services. These components are: Consent, Confidentiality, Counselling, Correct test results and Connection/linkage to prevention, care and treatment (WHO, 2013).

In many low and middle income countries, the primary model for HIV testing has been the provision of client-initiated voluntary counselling and testing services (WHO, 2013). Increasingly, provider-initiated approaches in clinical settings are being promoted, i.e. health care providers routinely initiating an offer of HIV testing and counselling in a context in which the provision of, or referral to, effective prevention and treatment services is assured. In order to reach people in need of treatment, a lot of tests will have to be conducted among those who may have been exposed to HIV. UNAIDS/WHO recommend that the following four types of HIV testing be clearly distinguished:

- **Diagnostic HIV testing:** This is done whenever a person shows signs or symptoms that are consistent with HIV-related disease or AIDS to aid clinical diagnosis and management. This includes HIV testing for all tuberculosis patients as part of their routine management.
- **Mandatory HIV screening:** mandatory screening for HIV and other blood borne viruses of all blood to be used for transfusion or for manufacture of blood products. Mandatory

screening of donors is required prior to all procedures involving transfer of bodily fluids or body parts, such as artificial insemination, corneal grafts and organ transplant.

- **Voluntary counselling and testing (VCT)**

This is a Client-initiated HIV testing to know HIV status in which an individual shows up voluntarily at the testing site and is taken through a process of counselling before and after the test. Since 1986, VCT has become one of the responses to the pandemic (WHO, 2013). It was initially implemented as an individual-level, clinic-based procedure. It has however evolved over time to include community-based and couple-based approaches.

- **Provider-initiated HIV testing**

A routine offer of HIV testing by health care providers (known as provider-initiated) should be made to all patients being: assessed in a sexually transmitted infection clinic or elsewhere for a sexually transmitted infection; seen in pregnancy clinics – to facilitate an offer of antiretroviral prevention of mother-to-child transmission; and seen in clinical and community based health service settings where HIV is prevalent and antiretroviral treatment is available (injecting drug use treatment services, hospital emergencies, internal medicine hospital wards, consultations etc.) but who are asymptomatic (WHO, 2013).

In many countries, investment in HIV testing services remains concentrated in stand-alone testing sites that require individuals to recognize their risk and voluntarily seek to learn their serostatus (Mabuto et al, 2014). Several countries, including Nigeria have shown the way towards more proactive and more effective approaches by using multiple low-threshold strategies to extend the reach and impact of testing services (WHO, 2012a).

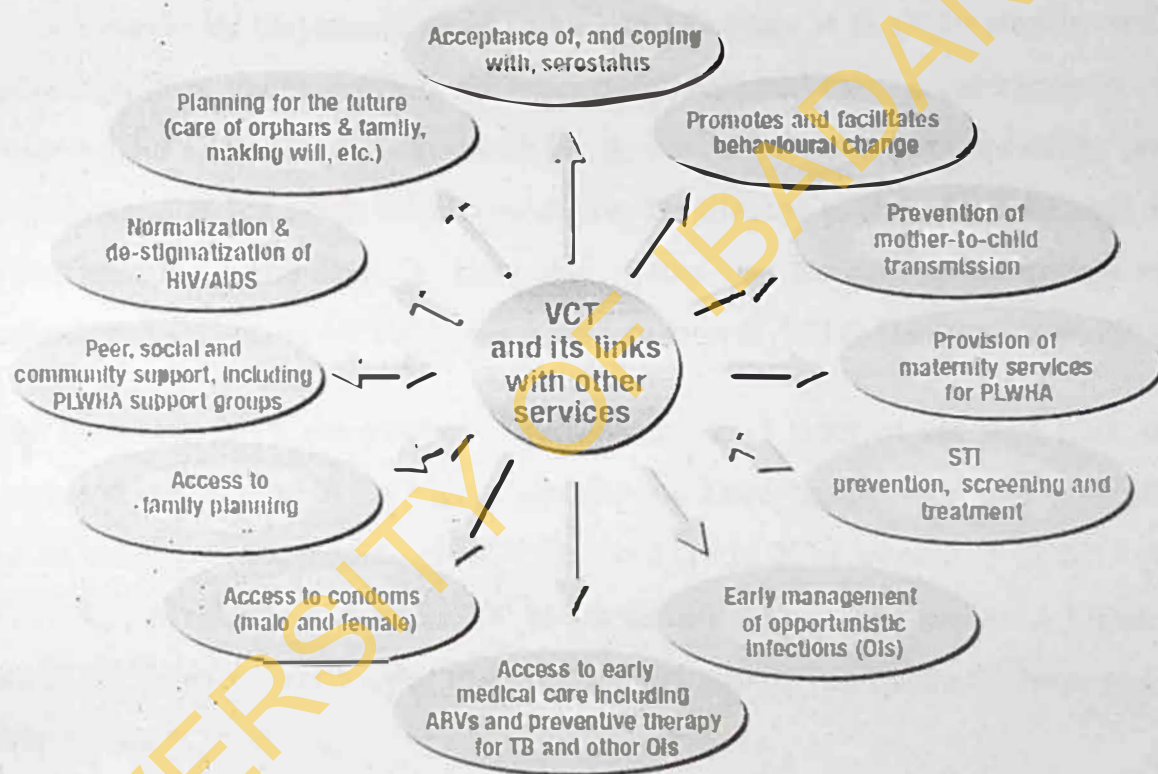
#### **2.4.1 Benefits of HCT**

The expected effect of HCT is to lower HIV transmission through reduction in high-risk sexual behaviour, improved medical care (particularly for sexually transmitted infections), and improved access to care and support services for both HIV-positive and HIV-negative persons. HCT can lead to use of other services including prevention and clinical management of HIV-related illnesses, tuberculosis control, psychosocial and legal support, and prevention of mother to child transmission of HIV. It offers benefits to those who test positive or negative, alleviates

anxiety, increases clients' perception of their vulnerability to HIV, promotes behaviour change, and facilitates early referral for care and support— including access to ARV therapy (WHO, 2013).

A study in Zimbabwe identified that the low perceived benefits of HCT reduced the likelihood of HIV testing in women (Chimoyi et al, 2015). Another study however suggested increasing knowledge on the benefits for HIV testing could result into an increase in the uptake of HCT. This was experimented among women attending an antenatal care clinic in India (Rogers et al, 2006).

The benefits of HIV testing are shown in Figure 1.0.



*Fig 1.0 VCT as an entry point for prevention and care (Source: UNAIDS, 2000).*

#### 2.4.2 HIV Counselling and Testing in Nigeria

As reported by NARHS (2012), majority of Nigerians are not aware of their HIV status. The report shows that respondents that have ever tested for HIV was as low as 26.3% (23.5% and 29.2% were males and females respectively). However not all of them received their test results

as only 63% of female and 68% of males that tested for HIV received their results and knew their status. Of those that ever tested, 30% voluntarily requested for a test, 37% were offered an HIV test and they accepted to be tested, 24% took the test because they were mandated to do so (FMOH, 2013). Only 62% of males and 61% of females know where to get an HIV test (NACA, 2014b). Amongst adolescents aged 15-19 years old, the percentage that have ever tested for HIV was 12.7% ; 12.4% male and 13% female (FMOH, 2013).

Another survey, NDHS (2013) reported that the amongst adolescents and young people aged 15-24 years, 9.9% of males and 19.2% of the females have ever tested for HIV (though more females than males in this age group were interviewed). A study by Adeomi et al (2014) among 370 secondary school adolescents between ages 10 and 19 years in Osogbo, Osun State observed a lower utilisation of HCT services as only 4% of the respondents have ever utilised HCT service. Studies by Onyeonoro et al, 2014 and Daniyam et al, 2010 among tertiary institution students (medical students only in the latter study) reported that a greater proportion of 40% have ever tested for HIV. This is relatively high; however, HCT facilities are easily assessable to the respondents in their schools which could have contributed to the relatively high uptake of HCT service utilisation. The desire to know their status was the commonest reason reported by the respondents for utilising HCT services (Onyeonoro et al, 2014; Daniyam et al, 2010).

As at December 2014, the number of persons above 15 years of age who have undergone HIV testing and counselling in the past 12 months and know their results was 6,716,482. There was also an increase in the number of HCT sites to 8114 in 2014 from 7075 in 2013 (NACA, 2015). This is low in relation to over 22,000 health facilities across the nation. A higher proportion of current HCT services are located in secondary and tertiary healthcare facilities and in urban areas (NACA, 2015).

## **2.5 Determinants of HIV Testing and Counselling Services Utilisation**

Various factors have been identified in different literatures to influence the utilisation of HIV counselling and testing service among all age groups. These factors are briefly identified in the subsequent sub-sections.

### 2.5.1 Socio-demographic characteristics and HCT Service Utilisation

HIV testing is said to be lower than expected among all age groups. However, studies have shown that willingness to test in the future is higher among young individuals compared to those in the older age group (Fylkesnes & Siziya, 2004; Jereni & Muula, 2008). A randomized trial on acceptability of voluntary HIV counselling and testing conducted in Chelston, a residential area of the capital city of Zambia in 1999 among individuals aged 15-49 years showed that readiness for VCT was higher among younger age group compared to the older ones (Fylkesnes & Siziya, 2004). In the study, a total of 2445 participants showed readiness to undergo the saliva-based HIV test. It was observed that 49% of those aged 20-24 years as compared to only 23% in age group 40-49 years were ready to undergo the test. The factors associated with readiness between the younger and older persons were different, they were self-perceived risk of HIV infection and self-rated health status respectively. Among the older age group, history of being tested and poor self-rated health was found to contribute positively to willingness to test as oppose to high self-perceived risk of HIV infection in the younger age group (Fylkesnes & Siziya, 2004). Similarly, a study in Blantyre city of Malawi where 102 VCT clients and 26 VCT service providers were interviewed on the availability of supplies and motivations for accessing voluntary HCT service observed that 74% of the VCT clients were less than 30 years old (Jereni & Muula, 2008). High perceived risk of HIV infection due to involvement in risky sexual behaviours and easier amenability of young people to health messages compared to older persons were identified as reasons for this observation (Jereni & Muula, 2008).

The relationship between gender and HCT service utilisation has been shown to differ across studies (Odimegwu et al. 2013; Sebudde & Nangendo, 2009; Salako et al. 2012). A qualitative survey using Focus Group Discussion (FGD) sessions and interviews among participants (18 years and above drawn from two major ethnic groups) in Imo and Osun states of Nigeria observed that the female participants were less likely to have used VCT service compared to their male counterparts (Odimegwu et al. 2013). The fear of the consequences of being HIV positive which include abandonment and stigmatization by the family and community, denial of infection by their male partners were the major reasons given by the female respondents for not utilizing VCT services (Odimegwu et al. 2013). On the other, another qualitative study conducted in Rakai district of Uganda among 250 young people (in and out of school youths



between 15 and 24 years) involving 24 FGDs found out that more females utilise VCT services compared to males. The female respondents reported that they heard about VCT and utilised the service either when attending health centres for ante-natal care or for the treatment of their children unlike the men who rarely visit health centres due to their quest for survival and sometimes lack of patience to follow through with the testing process (Sebudde & Nangendo, 2009). A similar reason for more women testing compared to men as found in the Ugandan study was also observed in a study by Salako et al. (2012) among clients accessing HIV counselling and testing services in a tertiary hospital in Sagamu, Southwestern Nigeria where 54.3% of the clients were females compared to 45.7% males (Salako et al, 2012).

Residential setting (urban or rural) has also been linked with the likelihood of HIV testing (Fikadie et al, 2014; Hutchinson & Mahlalela, 2006). Individuals in urban areas are more likely to be tested compared to those from rural areas. A cross-sectional study conducted in Ethiopia among 772 University students (mean age: 21.3 years) showed that respondents who were from urban area were almost two times more likely to have utilised VCT service compared to those from rural origin (Fikadie et al., 2014). The study attributed increased access to HIV/AIDS information through various media such as print and electronic media and concentration of VCT services in urban locations (Fikadie et al., 2014). Also, Hutchinson & Mahlalela (2006) in a study in Eastern Cape, South Africa attributed the higher rate of testing in urban areas compared to rural ones to; better education among urban residents which in turn improves their judgement of their perceived health status, their higher economic status which makes testing affordable to them and also opined that smaller communities size could affect anonymity and thus resulting in fear of compromised confidentiality and hence stigmatization among the rural residents (Hutchinson & Mahlalela, 2006).

Marital status is also crucial in determining uptake of HCT service (Asante, 2013; Odimegwu et al, 2013). A cross-sectional study by Asante (2013) on HIV/AIDS knowledge and uptake of HIV counselling and testing service among 324 conveniently selected undergraduate university students (Age =  $22.91 \pm 3.79$  years) enrolled at a private university in Accra, Ghana showed that 59% and 66% of the single students have ever tested for HIV and were willing to test in the future respectively as compared to only 16% and 8% of married students that have ever tested and that were willing to test in the future respectively (an association found to be statistically

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significant). A similar finding was also made in the qualitative study by Odimegwu et al (2013) where odds of utilizing VCT services in the future among the unmarried compared to the married respondents was more than two times higher. Odimegwu et al (2013) also further stated that most of the married respondents were majorly concerned about the probable reaction of their partner if they test positive.

Findings have shown that religion has a relative impact on HIV counselling and testing (Asante, 2013; Leta et al., 2012). The study by Asante (2013) showed that more Christians compared to Muslims were likely to have utilised HCT service and also willing to utilise the service in the future. He opined that HIV testing as a requirement for marriage among Christians could be a possible explanation for their willingness to utilise HCT service in the future. In another study based on the analysis of the Ethiopian demographic and health survey data which included 6,033 men (with a median age of 29 years) also found out that more Christians (75.6%) in the urban area compared to only 24.4% Muslims had utilised HCT service (Leta et al., 2012). The urban Muslims were found to be two times less likely to have utilised HCT service compared to their Christians counterparts. The study attributed the lower testing rates among the urban Muslims to better adherence to the precepts of their religions which prohibits risky behaviours and the practise of circumcision which decreases HIV transmission. These are likely to make them perceive themselves at lower risk of HIV infection and thus could be less likely to be motivated for testing (Leta et al., 2012).

Studies have shown that utilisation of HCT services increase with higher educational attainment (Fikadie et al., 2014; Chimoyi et al., 2015). The study by Fikadie et al (2014) among university students showed that likelihood of undergoing HIV testing when compared to those in first year increased significantly from almost three times higher among those in second year to about six times higher among those in fifth year. The increase in likelihood of HIV testing with years in school was said to be traceable to increased access to HIV/AIDS information over time in school, increased sexual activity which could result in higher perceived HIV vulnerability. The study by Chimoyi et al (2015) which was conducted among 1,146 persons drawn from a commuter population in Johannesburg, South Africa also showed that those who had secondary and tertiary education were 1.48 and 1.58 times more likely to have utilised HCT service respectively compared to those that have only a primary level of education after adjusting for other factors.

However, a contrary observation was made in the study among university students in Ghana by Asante (2013) where more students in their first year (53.7%) indicated to have ever tested for HIV than those in their second year (16.3%) and third year (24.5%) respectively ( $p=0.416$ ). This was not statistically significant and could be attributable to a lower sample size of 324 students in the later study compared to 772 students in the first study and 1,146 participants in the second study.

### **2.5.2 Knowledge and perception of HIV and HCT Service Utilisation**

Research has indicated that although knowledge about a disease is a prerequisite for change of behaviour, an increase in knowledge about HIV does not predict behavioural change (Onoh et al, 2004). A good knowledge on the benefits of HIV testing has been identified to result in only a slight increase in the uptake of HCT (Rogers et al, 2006). The study was conducted among 202 pregnant women assessing ante-natal services in rural Southern India where a majority (83%) of the women knew that getting medical help is a benefit of a positive test result. However, only 57% of them have utilised HCT service. This was attributed to some widespread myth, misconceptions such as stigmatization and discrimination against infected individuals in their community (Rogers et al, 2006).

The study by Asante (2013) in Ghana showed that a high knowledge of HIV/AIDS does not translate into a corresponding high level of HCT service utilisation. Seventy-two percent of the respondents had a high knowledge of HIV/AIDS, only 45% had utilised HCT service. Although, respondents with high HIV knowledge made up 73.5% of those that have ever tested compared to those with low level of HIV knowledge, however no significant association was found between HIV/AIDS knowledge and HCT service utilisation. In the study by Leta et al (2012), those who had a high level of HIV/AIDS-related knowledge were equally likely as those with a low level of HIV/AIDS knowledge to have utilised VCT service (Leta et al, 2012).

### **2.5.3 Awareness and Knowledge of HCT service and HCT service Utilisation**

Contrary to the finding in a study involving 16 FGDs and 1281 randomly selected young persons (15-25years) in Ibadan where only 15.8% of the respondents have heard about HCT (Ajuwon et al, 2011), a higher proportion (59%) of the respondents in a study among 320 Polytechnic

students (mean age 23 years for males and 22 years for females) in Abia state, South East Nigeria were aware of HCT with media being the commonest source of information about HCT (Onyeonoro et al., 2014). It is to be noted that the mean age of respondents in the second study was higher and could be responsible for the wide disparity in awareness of HCT. On the other hand, the level of awareness in these two previous studies was very much lower to the finding among medical students in Northern Nigeria in the city of Jos where all the respondents were aware of VCT (Daniyam et al., 2010). This could be attributed to the presence of a VCT centre in the medical school as pointed out in the study and the expected high knowledge on the subject of HIV/AIDS among medical students (Daniyam et al., 2010). In the South African study by Chimoyi et al. (2015), it was observed that 83% of the respondents were aware of HCT.

Some of these studies however reported that only small proportion of those that were aware of HCT knew where to access the service (Ajuwon et al., 2011; Onyeonoro et al., 2014). The study in Ibadan reported that only 30% of those that knew HCT also knew where to access the service (Ajuwon et al., 2011), while 56% of those in Jos knew where the service could be accessed (Onyeonoro et al., 2014). Unfortunately, the Nigerian studies did not investigate the relationship between HCT service utilisation and awareness of HCT service except the study in Ethiopia by Chimoyi et al (2015). The study found out that 85% of those that were aware of HCT service have utilised the service and they were four times more likely to have utilised the service than those who were not aware of it (AOR, 95%CI= 4.01, 2.77-5.81). Also, the study by Asante (2013) in Ghana reported a similar finding where majority (96%) of those that have ever utilised HCT service knew a place where it is being offered and this also significantly predicted utilisation of HCT service after adjusting for other factors (Asante, 2013).

#### **2.5.4 Perception of HIV Vulnerability and HCT service Utilisation**

Perceived high risk of HIV infection and risky sexual behaviours have also been reported to increase likelihood of HIV testing (Fylkesnes & Siziya, 2004; Jereni & Muula, 2008). The first study observed that the younger individuals were more likely to show readiness for HIV testing compared to the older ones, a major reason being their high self perceived risk of HIV infection. Furthermore, the study by Jereni & Muula (2008) also found out that 16% of the VCT clients accessed the service because of self assessment of their own behaviour as risky. Another study

conducted in South Africa on the four models of HCT: Utilisation and Test Result among 118, 358 HCT clients, also discovered that 54% of those that utilised HCT service perceived themselves at-risk of HIV infection as opposed to 46% for those that did not perceive themselves to be at risk of HIV infection in all the HCT sites (Mabuto et al, 2014).

On the contrary however, some studies conducted among women attending antenatal care in Nigeria and Zambia found out that women who perceive themselves to be at lower risk of being infected are more likely to accept HIV testing than those who thought they may be infected (Daniel & Oladapo, 2006; Thierman et al, 2006). The argument was that such women are not afraid of a positive test result unlike those who perceive they are at high risk and are afraid that they might test positive to HIV, being stigmatized and discriminated against. Thus, it can be inferred the motivation for testing could differ among a group of people, their location and the timing of the availability of HCT service (Thierman et al, 2006).

#### **2.5.5 Peer Pressure/Education and HCT Service Utilisation**

It has been reported that peers give support to each other to go for VCT services (Sebudde & Nangendo, 2009). The study by Sebudde and Nangendo (2009) was a qualitative one, done among youth (15-24 years) in Rakai district of Uganda using a convenience sampling method. It was found out that peers encourage themselves to go for HIV testing thus resulting in a positive effect on utilisation of VCT. Similarly, an experimental study conducted in Ibadan on the Effects of Peer Education on the Knowledge and use of HIV Counselling and Testing services among Young Persons showed that the use of peer educators was effective in referring more young persons to use HCT services. A total of 1281 students drawn from six schools and 100 apprentices in four Local Government Areas of Ibadan were assigned into experimental and control groups. At baseline, only 7% and 6% of the control and experimental groups respectively have ever utilised HCT services. After follow-up, the prevalence of HCT service utilisation still remained at 7% in the control group compared to an increase to 20% in the experimental group.

#### **2.5.6 HCT Service related factors and HCT service Utilisation**

Location of HIV counselling and testing centres could affect accessibility and hence uptake of the service. Most testing centres are tertiary health facilities, NGOs which are concentrated in

urban locations as reported by Fikadie et al (2014). Other studies have shown that urban residents are more likely to have tested for HIV or heard about HCT compared to those in rural communities due to easier access to HCT centres and information (Fikadie et al, 2014). A related finding was made in the study by Chimoyi et al (2015) which found out that those living more than 20 km from the nearest clinic were less likely to have utilised HCT service than those who live within 20 km from the nearest clinic (Chimoyi et al, 2015).

An important underlying reason for the low response to clinic-based VCT is likely to be associated with issues relating to confidentiality. Some of the reasons reported in most studies for not visiting HIV testing centres among respondents include; fear of breach of confidentiality by clinic staff, likelihood of meeting someone known to the individual at the local clinic, perception of being immoral or suffering from HIV/AIDS by other community members/health workers (Fylkesnes & Siziya, 2004; Jereni & Muula, 2008; Onyeneoro et al. 2014). A study among tertiary institution students in Ghana showed that a majority were afraid to know their status (Gadegbeku & Saka, 2013) due to fear of disclosure of confidential information of their test result by 24% of the respondents and thus suggested introduction of home testing kits in their country.

Stigmatization has also been found to hinder utilisation of HCT services (Leta et al. 2012; Odimegwu et al, 2013, Chimoyi et al, 2015). In the study by Leta et al (2012), those who had low/no HIV/AIDS-related stigma index make up 81% of those that have ever utilised HCT service among the urban respondents while those having moderate/high stigma index make up the remaining 19% of those that have ever utilised the service. However, the reverse was the case among the rural respondents where 73% of those that have ever utilised HCT service had moderate/high stigma index compared to 27% for those that had no/low stigma index. The reason for this finding was that urban areas were home to majority of HIV transmission occurring in Ethiopia until recent spread to rural areas and thus the urban dwellers have gained more experience at coping with reducing stigmatization of people living with HIV/AIDS (Leta et al, 2012).

Provision of free HCT services is vital to increasing uptake of HIV test, yet many health facilities in Nigeria still charge a fee for the test (Iyaniwura & Oloyede, 2006). A study among

medical students in Nigeria showed that acceptability of VCT among respondents was high due to easy access to free VCT service and also availability of a comprehensive HIV/AIDS care and treatment program (Daniyam et al, 2010).

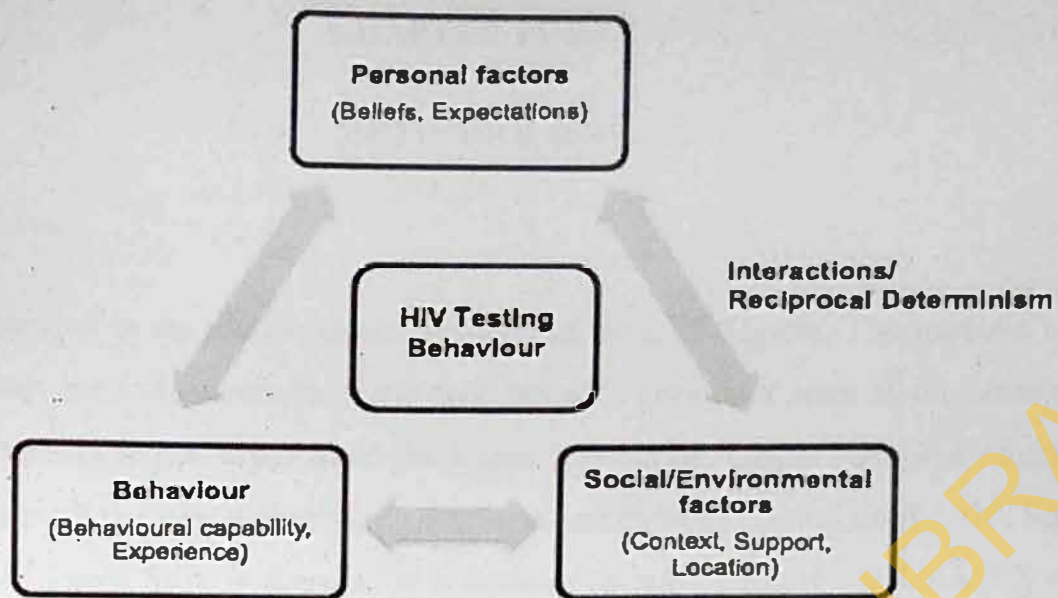
Integration of HCT services with other services such as STI screening services, ARV therapy, blood transfusion in the facility where the HIV counselling and testing is being conducted have also been reported to increase rate of HIV testing (Sebudde & Nangendo, 2009; Onyeonoro et al, 2014).

## 2.6 Theoretical Framework

There are different theories that are relevant to anchor this study and can also serve as guide in the analysis to understand the use of HIV counselling and testing services among adolescents and young persons. However, the social cognitive theory will be adopted in this study due to its particular relevance to health communication. It explains how people acquire and maintain certain behavioural patterns, while also providing the basis for intervention strategies (Bandura, 1994).

The social cognitive theory emphasizes the dynamic interaction (also called Reciprocal Determinism) between people (personal factors), their behaviour, and their environments. In the context of HIV counselling and testing, the social cognitive theory tends to determine the extent to which personal, behavioural and environmental factors continuously interact to influence testing for HIV (Bandura, 1994).





*Figure 2.0 Social Cognitive Theory/Social Cognitive Framework for HIV Testing (Strauss et al, 2015).*

Personal and behavioural level of influence includes both intra- and interpersonal factors while the environmental factors include community and organizational factors, and public policies. Variables that might influence HCT may be intrapersonal factors such as socio-demographics, HIV knowledge, and stigmatizing attitudes toward HIV/AIDS, HIV risk perception, perceived benefits of HCT (Strauss et al., 2015). Interpersonal factors such as risky sexual behaviours which include unprotected sex, having multiple sexual partners; community or organizational factors such as prevalence of HIV in the community or social norms within their community manifested as stigma and discrimination against people living with HIV, Structure of HCT services; or public health policies including those that regulate confidential and anonymous HCT (Strauss et al., 2015) This current study examined individual factors (e.g., socio-demographics, perceived HIV Vulnerability, HIV knowledge, and perception of barriers and facilitators of HCT service utilisation) and interpersonal factors (e.g., having multiple sexual partners, unprotected sex, Peer pressure influence on HIV testing) among female adolescents and young women in Ikorodu, Lagos State.

## CHAPTER THREE

### METHODOLOGY

#### 3.1 Study Area

Lagos State is located in the south-western geopolitical zone of Nigeria. The smallest in area of Nigeria's 36 states but is however the most economically important state of the country which comprises of Nigeria's largest urban area; the Lagos Metropolis. Lagos State was created on 27 May 1967 and served the dual role of being the State and Federal Capital until 1976. Situated to the North East of Lagos State is Ikorodu, at a distance of approximately 36 km north of Lagos Metropolis. Ikorodu is a city in Lagos State bounded on the South by the Lagoon, on the north shares common boundary with Ogun State while in the East, it has common boundary with Agbowa-Ikosi, a town in Epe Division of Lagos State. Ikorodu is located on longitude 6°36'N and latitude 3°30'E, it covers the land mass of about 345 km<sup>2</sup> (133 sq mi).

The relative closeness of Ikorodu to Lagos metropolis encourages influx of people to Ikorodu from Ikorodu's surrounding towns and villages. The 2006 National Census shows that Ikorodu has a population of 535,619 persons with the population of females between ages 15 and 24 years being 52, 474 (NPC, 2010). The Lagos Bureau of Statistics (LBS) estimated in 2013 that the population of Ikorodu is 914, 882. Administratively, Ikorodu is made up of one local government area (LGA) and five local council development areas (LCDAs) recognised by the state government which include Ikorodu North, Ikorodu West, Ijede, Imota and Igbogbo/Bayeiku LCDAs.

According to the LBS, there is a secondary health care facility, 36 primary health centres and over 90 accredited privately owned health facilities which include hospitals, clinics, diagnostic laboratories, maternity centres and convalescents homes. Two HCT centres recognized by Lagos State Action Committee on AIDS (LSACA) are in Ikorodu and also about 5 NGOs committed to HIV/AIDS are in the region.

## 3.2 Study Population

The study population comprised of female residents of Ikorodu aged between 15 and 24 years; the age group 15-19 years referred to as female adolescents and the 20-24 years age group is regarded as young women.

### 3.2.1 Inclusion criteria

Ikorodu resident females between ages 15 - 24 years from whom informed consent was obtained and were willing to participate in the study.

### 3.2.2 Exclusion criteria

Female residents who were either outside of the 15 - 24 years age range or who did not consent to participate in the study were excluded from this study. Female adolescents less than 15 years of age were not included in order to include more adolescent at increasing risk of new HIV infection in Nigeria (FMOH, 2013)

## 3.3 Study Design

The study was a descriptive cross-sectional study that extended over a period of three months (from July to September, 2016). A Community based study was preferred in order to include out-of-school adolescents which would not be possible if the study was school based. This also created room for a detailed study as there was no hurry in participating as compared to when approached under a school based study.

## 3.4 Sample Size Estimation

The sample size was calculated using the formula for single proportions:

$$n = (Z_a)^2 p q / d^2$$

Where:  $n$  = desired sample size

$a$  = desired level of significance of 5%

$Z_{\alpha}$  = the standard normal deviate set at 1.96 which corresponds to the 95% confidence level.

$p$  = proportion of the females 15 to 24 years old that have the ever tested for HIV, which is 19.2% (NPC, 2013)

$$q = 1 - p = 1.0 - 0.192 = 0.808$$

$d$  = level of precision set at 0.05

Thus;

$$n = 1.96^2 \times 0.192 \times 0.808 / 0.05^2$$

$$n = 238.39$$

Using a design effect of 1.5 to adjust the sample size:

$$N = 238.39 \times 1.5 = 357.6$$

Adjusting for a 10% Non-response rate

$$N_{ncw} = N / (1 - 0.10)$$

$$= 357.6 / 0.9$$

$$= 397.3$$

Sample size was therefore estimated as 398.

### 3.5 Sampling Technique

A multistage cluster sampling technique was used to select the sample population as follows:

**Stage 1:** Using the Independent National Electoral Commission Directory of Polling Units (INEC, 2015), a total of 330 polling units are spread across the Political wards in Ikorodu. The polling unit areas were used as the sampling units for maps were obtained from the INEC website and the local government office. An average of 500 individuals (voters) is expected to

register in a typical polling unit (INEC, 2015). Thus, a total of 8 polling units were decided to be included the study since the study population is estimated to comprise of about 10% of the Study Sampling population (i.e 50 females between 15-24 years per polling unit area) as stated in section 3.1.

**Stage 2:** The 8 polling units were proportionately allocated to five wards that randomly selected from the 17 political wards in Ikorodu. The wards include; Isele III, Aga/Ijimu, Igbogbo II, Ipakodo and Agbada. These wards extend across the Ikorodu central local government area and 3 Local Council Development Areas (LCDAs); Igbogbo/Bayeiku, Ikorodu West and Ikorodu North LCDAs as described below:

POLITICAL WARDS	TOTAL NUMBER OF POLLING UNITS	SELECTED POLLING UNITS
Aga/Ijimu	44	$44/121 * 8 \approx 3$
Igbogbo II	19	$19/121 * 8 \approx 1$
Ipakodo	43	$43/121 * 8 \approx 3$
Odogunyan	15	$18/121 * 12 \approx 1$
<b>TOTAL</b>	121	8

Polling Units were randomly drawn from each ward by balloting using the Polling Unit Codes.

The Polling units selected include:

**Ward : Aga/Ijimu**

1. Alh: Borokinni/Olukotun St. Junction Gbasemo (009)
2. Oriwu College Ikd. (031)
3. Junction of Awolowo Road/Ireshe Rd./Oruwu Road, Ota-Ona, Ikd. (040)

**Ward: Ipakodo**

1. Junction Of Ajagunna/Adedeji Odubote/Olokodana St. Majidun (011)

2. Junction Of Taiwo Molajo/Prince Adewale Ogunleye St. Owutu (027)
3. Agbadi Bus-Stop Owutu (034)

**Ward: Igbogbo**

1. Miliky Close/Kosebinu Orepekan/Babalola Aroyewun Crescent Junction Surulere Estate, Igbogbo 1 (011)

**Ward: Odogunyan**

1. In front of 333, Shagamu rd. Tigbebo Odogunyan (010)

NOTE: Polling Unit Codes are in parenthesis.

**Stage 3:** The starting house in each polling unit area was purposively selected and selection of the study participants followed in a predefined direction. One adolescent (15-19 years) and one young woman (20-24 years) were selected in each house where available until the estimated sample size was attained (i.e. 50 persons per polling unit area). Where there were more eligible individual in the house, respondents were selected by balloting and where the number of eligible individual could not be ascertained, the available eligible persons were interviewed.

### 3.6 Data Collection

Data was collected using self administered, semi-structured questionnaires. The questionnaire was designed in English language for ease of administration since the majority of the respondents were expected to have some degree of English language literacy; about 95% (NPC, 2006). The flow of questions was modified and ambiguous questions were corrected following a pre-test in Ibadan.

The questionnaire was divided into five sections which include: socio-demographic characteristics, knowledge of HIV/AIDS prevention (UNGASS, 2000 Indicator 13 items) (WHO/UNAIDS, 2004), HIV related behaviour and practises, awareness, utilisation and benefits of HIV counselling and testing services and the factors influencing utilisation of the services

2. Junction Of Taiwo Molajo/Prince Adewale Ogunleye St. Owutu (027)
3. Agbadi Bus-Stop Owutu (034)

**Ward: Igbogbo**

1. Miliky Close/Kosebinu Orepekan/Babalola Aroyewun Crescent Junction Surulere Estate, Igbogbo 1 (011)

**Ward: Odogunyan**

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based on related literatures and national surveys (Daniyam et al, 2010; Orisakwe et al, 2015; NPC, 2013; FMOH, 2013).

### 3.6.1 Study Variables

The following variables were used to evaluate the study:

#### Outcome Variables:

- HIV/AIDS knowledge
- Ever utilised HCT service (Yes/No),
- Knowledge of benefits of HCT service utilisation,
- Barrier and Facilitators of HCT service utilisation.

**Independent Variables:** Based on the social demographic framework in the previous chapter, the independent variables were broadly classified as follows:

1. Socio-demographic characteristics: age, religion, marital status, level of education, ethnicity, occupation, LCDA of residence, person living with.
2. Behavioural factors: ever had sex, inconsistent condom use, multiple sexual partners, history of STDs
3. Cognitive factors: knowledge of HIV prevention and transmission, perceived risk of HIV infection, benefits of HCT.

### 3.7 Data Management Techniques

Data was entered, cleaned and analyzed using Statistical Package for Social Science version 16 software. Means, standard deviations, range and proportions were used to summarize data. Data was disaggregated based on age into two groups; 15-19 years for the female adolescents and 20-24 years for the young women.

Knowledge of HIV/AIDS (route of transmission, prevention and control) was assessed using UNGASS Indicator 13 and the questions that addressed this were:



1. Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?
2. Can a person reduce the risk of getting HIV by using a condom every time they have sex?
3. Can a healthy-looking person have HIV?
4. Can a person get HIV from mosquito bites?
5. Can a person get HIV by sharing food with someone who is infected?
6. Can a person become HIV infected by practicing unprotected sex?
7. Can HIV be transmitted from mother to child (during pregnancy or birth)?
8. Can HIV be transmitted by shaking hands?
9. Can a person get HIV by sharing needle or syringe?
10. Can a person get HIV through blood transfusion?
11. AIDS have a cure
12. HIV transmission can be avoided by a blood test before marriage?

Also, knowledge of the benefits of HCT service utilisation was assessed using the following adapted from a study by Orisakwe et al (2015);

1. Can someone acquire more information about HIV/AIDS and HCT by knowing their status? .
2. Can testing for HIV help one to seek early medical help?
3. Do you the infection of an unborn baby can be prevented if one knows her HIV status?
4. Do you think your partner can be protected from HIV infection if you know your status
5. Do you think you can indirectly know the status of your partner if you know your own status?
6. Do you think testing for HIV can allay/reduce fears of test outcome?

For each of the questions on knowledge of HIV/AIDS and the benefits of HCT service utilisation, the options were “Yes”, “No” and “I don’t know”. Based on UNGASS scoring, a score of “1” was assigned to a correct response and “0” to incorrect response (including “I don’t know”) for HIV/AIDS knowledge Items. The sum of the scores was used to calculate the total

1. Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?
2. Can a person reduce the risk of getting HIV by using a condom every time they have sex?
3. Can a healthy-looking person have HIV?
4. Can a person get HIV from mosquito bites?
5. Can a person get HIV by sharing food with someone who is infected?
6. Can a person become HIV infected by practicing unprotected sex?
7. Can HIV be transmitted from mother to child (during pregnancy or birth)?
8. Can HIV be transmitted by shaking hands?
9. Can a person get HIV by sharing needle or syringe?
10. Can a person get HIV through blood transfusion?
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5. Do you think you can indirectly know the status of your partner if you know your own status?
6. Do you think testing for HIV can allay/reduce fears of test outcome?

For each of the questions on knowledge of HIV/AIDS and the benefits of HCT service utilisation, the options were “Yes”, “No” and “I don’t know”. Based on UNGASS scoring, a score of “1” was assigned to a correct response and “0” to incorrect response (including “I don’t know”) for HIV/AIDS knowledge Items. The sum of the scores was used to calculate the total

knowledge score; the maximum obtainable score was 12. T-test and F-test were used to compare the difference in mean HIV/AIDS knowledge score by socio-demographic characteristics. Respondents that had up to the maximum obtainable score (i.e. those that identified correct response to all the items) were referred to as having “good” knowledge of HIV while those that provided incorrect response to at least one knowledge item were referred to as having “poor” knowledge.

Similarly, a score of “1” was assigned to a correct response and “0” to incorrect response (including “I don’t know”) for knowledge items on the benefits of HCT service utilisation. The sum of the scores was used to calculate the total knowledge score; the maximum obtainable score was 6. T-test and F-test were used to compare the difference in knowledge of the benefits of HCT by socio-demographic characteristics. Respondents that had at least a score of 5 out of the maximum obtainable score were referred to as having “high” knowledge of the benefits of HCT service utilisation while those that provided incorrect response to more than one knowledge items were referred to as having “low” knowledge of HCT service utilisation benefits.

Chi-square test was used to investigate associations between HIV/AIDS knowledge, Knowledge of the benefits of HCT service utilisation and socio-demographic characteristics. A Chi-square test was also used to investigate associations between socio-demographic characteristics, cognitive and behavioural factors and the dependent variable; HCT service utilisation. P-values less than 0.05 were considered as statistically significant. The Chi-square findings which showed significant association were further analyzed using Logistic regression to measure the strength of the association and to identify factors influencing HCT utilisation among the adolescents.

### **3.8 Ethical Consideration**

Ethical approval was obtained from the Health Research and Ethics Committee, Lagos State University Teaching Hospital. Participation was voluntary after each respondent has received detailed information on the purpose of the study. Then, a written informed consent was obtained from each respondent before questionnaires were administered. Names and addresses were not included in the data collection instrument and thus the collected data cannot be linked to any person.

## CHAPTER FOUR

### RESULTS

A total of 404 questionnaires were duly completed and analysed; representing an 89.8% response rate.

#### 4.1 Socio-demographic characteristics of respondents

The mean age of the respondents was  $19.3 \pm 2.6$  years. Many of the respondents, 213 (52.7%) were between 15 and 19 years, 277 (68.6%) were Christians and a majority 364 (90.1%) were single. About half, 205 (50.7%) of the respondents had secondary education while only 20 (5.0%) had primary education. Yorubas constituted a larger proportion of the respondents as 370 (91.6%) of them were of this ethnic group. More than half of the respondents were still students in school, 214 (53.0%) and a similar proportion of them were living with their parent(s), 212 (52.5%). Table 4.1 shows the socio-demographic characteristics of the respondents.

**Table 4.1: Socio-demographic Characteristics of the Respondents (N=404)**

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>%</b>
<b>Age group (years)</b>		
15-19	213	52.7
20-24	191	47.3
<b>Religion</b>		
Christianity	277	68.6
Islam	119	29.5
Traditional	8	2.0
<b>Marital Status</b>		
Single	364	90.1
Married	40	9.9
<b>Level of Education</b>		
Primary	20	5.0
Secondary	205	50.7
Tertiary	179	44.3
<b>Ethnicity</b>		
Yoruba	370	91.6
Igbo	31	7.7
Hausa	3	0.7
<b>Schooling Status</b>		
In-School	214	53.0
Out-of-School	190	47.0
<b>Occupation</b>		
Student	214	53.0
Apprentice*	148	36.6
Trader	15	3.7
Sales Girl	13	3.2
Office/Hospital Assistant	7	1.7
Teaching	2	0.5
<b>LCDA</b>		
Igbogbo/Bayeku	177	43.8
Ikorodu Central	116	28.7
Ikorodu West	63	15.6
Ikorodu North	48	11.9
<b>WHO RESPONDENT LIVED WITH</b>		
Parent	212	52.5
Alone	93	23.0
Relative	67	16.6
Husband	30	7.4
Employer	2	0.5

\*include fashion designers, hair dressers, bead makers, etc

## 4.2 Knowledge of HIV/AIDS and Benefits of HCT Service Utilisation

HIV/AIDS knowledge was assessed using 12 knowledge items as shown in Table 4.3 below, on three thematic areas; knowledge of mode of transmission, prevention of transmission and HIV/AIDS related beliefs. On mode of transmission, 287 (71.0%) of the respondents disagreed with mosquito bites being a mode of transmission of HIV while a higher proportion (358, 88.6%) also disagreed with shaking hands with an infected person. Two hundred and fifty eight (63.9%) respondents indicated that AIDS does not have a cure.

Furthermore, based on the six items used to assess the knowledge of the benefits of HCT service utilisation, majority (379, 93.8%) of the respondents agreed that utilisation of HCT service is a means of acquiring information on HIV/AIDS and HCT while 260 (64.4%) respondents agreed to utilizing the service as a means of indirectly knowing one's partner's status as shown on Table 4.2.

**Table 4.2: Knowledge of HIV/AIDS and Benefits of HCT Service Utilisation**

N=404	Correct (%)	Incorrect (%)
<b>Mode of Transmission</b>		
Mosquito Bites	287 (71.0%)	117 (29.0%)
Sharing food	324 (80.2%)	80 (19.8%)
Unprotected sex	367 (90.8%)	37 (9.2%)
Mother to Child Transmission	270 (66.8%)	134 (33.2%)
Shaking hands	358 (88.6%)	46 (11.4%)
Blood Transfusion/Infected Blood products	375 (92.8%)	29 (7.2%)
Sharing needle or syringe	369 (91.3%)	35 (8.7%)
<b>Prevention of Transmission</b>		
Fidelity	234 (57.9%)	170 (42.1%)
Regular Condom Use	299 (74.0%)	105 (26.0%)
HIV Testing prior to Marriage	336 (83.2%)	67 (16.5%)
<b>HIV-Related Beliefs</b>		
Carrier possibly healthy looking	330 (81.7%)	74 (18.3%)
AIDS is Curable	258 (63.9%)	146 (36.1%)
<b>Benefits of HCT</b>		
Acquiring information on HIV/AIDS and HCT	379 (93.8%)	25 (6.2%)
Seeking medical help early	371 (91.8%)	33 (8.2%)
Protecting one's partner	355 (87.9%)	49 (12.1%)
Preventing infection of an unborn baby	357 (88.4%)	47 (11.6%)
Allaying fears of HIV test outcome	261 (64.6%)	143 (35.4%)
Indirectly knowing partner's status	260 (64.4%)	144 (35.6%)

### 4.3 Self Perceived Risk of HIV Infection, Sexual Activity and Related Practices

Majority (368, 91.1%) of the respondents rated themselves to be at low or no risk of HIV infection, the reasons given were also presented in Table 4.5 below. More than half (239, 64.9%) of those that perceived themselves to be at low risk of HIV infection practiced abstinence while 85 (23.1%) said they ensure they use condom while having sex. On the other hand, respondents who rated themselves at high risk of HIV infection were only 36 (8.9%), all of which did so because they share sharp objects while 29 (80.6%) of them were of the opinion that they do not always use condom when having sex (see Table 4.3).

Also, less than half, 167 (41.3%) of the respondents have ever had sex. Majority (163, 97.6%) of the sexually active respondents practised vaginal sex while only 9 (5.4%) of them practised anal sex. Other risky sexual practices among the sexually active respondents included; “Sex with different partners”, 20 (12.0%), “Inconsistent/No condom use”, 69 (41.3%) and “Sex with a casual partner (not husband)”, 98 (58.7%) as shown in Table 4.3 below:



**Table 4.3: Perceived Risk of HIV Infection, Sexual Activity and Related Practices**

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>%</b>
<b>Self Perceived Risk (N=404)</b>		
Low/No Risk	368	91.1
High Risk	36	8.9
<b>Low/No Risk (n=368)</b>		
Abstinence	239	64.9
Ensures Safe Injection	132	35.9
Consistent Condom Use	85	23.1
Single sexual partner	65	17.7
Trust Partner	44	11.9
Limited sexual partners	31	8.4
Ensured Safe blood transfusion	9	2.4
<b>High Risk (n=36)</b>		
Shares Sharp objects	36	100.0
Inconsistent condom use	29	80.6
Multiple sexual partners	24	66.7
Had (unsafe) Injections	10	27.8
Healthcare worker	2	5.6
<b>Ever had sex (N=404)</b>		
Yes	167	41.3
No	237	58.7
<b>Sexual Practices (n=167)</b>		
Vaginal Sex	163	97.6
Anal Sex	9	5.4
With Casual Partner	98	58.7
With Inconsistent/No Condom	69	41.3
With Multiple sexual Partners	20	12.0
With Commercial Sex worker	3	1.8

**Table 4.3: Perceived Risk of HIV Infection, Sexual Activity and Related Practices**

VARIABLE	FREQUENCY	%
<b>Self Perceived Risk (N=404)</b>		
Low/No Risk	368	91.1
High Risk	36	8.9
<b>Low/No Risk (n=368)</b>		
Abstinence	239	64.9
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Single sexual partner	65	17.7
Trust Partner	44	11.9
Limited sexual partners	31	8.4
Ensured Safe blood transfusion	9	2.4
<b>High Risk (n=36)</b>		
Shares Sharp objects	36	100.0
Inconsistent condom use	29	80.6
Multiple sexual partners	24	66.7
Had (unsafe) Injections	10	27.8
Healthcare worker	2	5.6
<b>Ever had sex (N=404)</b>		
Yes	167	41.3
No	237	58.7
<b>Sexual Practices (n=167)</b>		
Vaginal Sex	163	97.6
Anal Sex	9	5.4
With Casual Partner	98	58.7
With Inconsistent/No Condom	69	41.3
With Multiple sexual Partners	20	12.0
With Commercial Sex worker	3	1.8

#### 4.4 Awareness and Utilisation of HCT Service

A total of 308 (76.2%) of the respondents were aware of HIV Counselling and Testing. The commonest source of information was Healthcare worker among 144 (46.8%) of the respondents that were aware of HCT. However only 223 (55.2%) respondents were aware of a HCT centre within Ikorodu, whereas, majority 334 (82.7%) of them were willing to utilise HCT service in the future, with the reasons presented in Table 4.4.

In addition, 148 (36.6%) respondents indicated to have ever gone for HIV test, most (89, 6.1%) of whom did so less than 12 months ago as shown on Table 4.5. The uptake of the test was by self-demand among 50 (33.8%) of those that have ever tested and mandatory among 98 (66.2%) of them. Only a few, nine (6.1%) of those that have tested for HIV did not get their test result.

**Table 4.4: Awareness and Utilisation of HCT Service**

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>%</b>
<b>Awareness of HCT (N=404)</b>		
Yes	308	76.2
No	96	23.8
<b>Source of HCT Information (N=308)</b>		
Healthcare worker	144	46.8
Teacher	116	37.7
Parent	92	29.9
Mass media (e.g TV, Radio)	92	29.9
Internet	82	26.6
Print media (e.g books, magazines)	80	26.0
Friend	67	21.8
<b>Willingness to test in the future (N=404)</b>		
Yes	334	82.7
No	70	17.3
<b>Awareness of HCT centre in locality (N=404)</b>		
Yes	223	55.2
No	181	44.8
<b>Utilised HCT Service (N=404)</b>		
Yes	148	36.6
No	256	63.4
<b>Received Result (n=148)</b>		
Yes	139	93.9
No	9	6.1
<b>Time last tested (n=148)</b>		
<12 months ago	89	60.1
12-23 months ago	29	19.6
>24 months ago	30	20.3
<b>Reason for Testing (n=148)</b>		
Self Demand	50	33.8
Mandatory	98	66.2

**Table 4.4: Awareness and Utilisation of HCT Service**

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>%</b>
<b>Awareness of HCT (N=404)</b>		
Yes	308	76.2
No	96	23.8
<b>Source of HCT Information (N=308)</b>		
Healthcare worker	144	46.8
Teacher	116	37.7
Parent	92	29.9
Mass media (e.g TV, Radio)	92	29.9
Internet	82	26.6
Print media (e.g books, magazines)	80	26.0
Friend	67	21.8
<b>Willingness to test in the future (N=404)</b>		
Yes	334	82.7
No	70	17.3
<b>Awareness of HCT centre in locality (N=404)</b>		
Yes	223	55.2
No	181	44.8
<b>Utilised HCT Service (N=404)</b>		
Yes	148	36.6
No	256	63.4
<b>Received Result (n=148)</b>		
Yes	139	93.9
No	9	6.1
<b>Time last tested (n=148)</b>		
<12 months ago	89	60.1
12-23 months ago	29	19.6
>24 months ago	30	20.3
<b>Reason for Testing (n=148)</b>		
Self Demand	50	33.8
Mandatory	98	66.2

#### 4.5 Reasons for HCT Uptake by Age group

Only 19 (38.0%) of those that initiated utilisation of HCT service by themselves were adolescents (15-19 years) while the 31 (62.0%) were young women (20-24 years). Majority of the self-demanded testing done during HIV prevention and outreach treatment programme were among young women (27, 60.0%) while only 18 (40.0%) of HCT uptake during HIV prevention and outreach treatment programme were among adolescents.

On the other hand, 41 (41.8%) of those that did a mandatory HIV testing were adolescents while 57 (58.2%) of them were young women. Also, most (7/10, 70.0%) of the mandatory testing as part of employment requirements was among the young women (see Table 4.5).

Table 4.5: Reasons for HCT Uptake by Age group

REASONS	FREQUENCY (%)		TOTAL
	15- 19 years	20 -24 years	
<b>Self-Demand</b>			
Personal visit to health facility	1 (20.0%)	4 (80.0%)	5
HIV prevention & treatment outreach Programme	18 (40.0%)	27 (60.0%)	45
	<b>19 (38.0%)</b>	<b>31 (62.0%)</b>	<b>50</b>
<b>Mandatory</b>			
Part of treatment	32 (42.7%)	43 (57.3%)	75
Blood Transfusion	5 (45.5%)	6 (54.5%)	11
Employment Requirement	3 (30.0%)	7 (70.0%)	10
Admission Requirement	1 (100.0%)	0 (0.0%)	1
Marriage Purpose	0 (0.0%)	1 (100.0%)	1
	<b>41 (41.8%)</b>	<b>57 (58.2%)</b>	<b>98</b>
<b>TOTAL</b>	<b>60 (40.5%)</b>	<b>88 (59.5%)</b>	<b>148</b>

#### 4.6 Perception of Respondents on barriers to HCT Service Utilisation

Majority of the respondents aged 15-19 years, (148, 69.5%) and 20-24 years, (112, 58.6%) agreed that lack of money is a factor that can prevent people from utilizing HCT services. However, more than half, [125 (58.7%)] of the adolescents and 120 (62.8%) of the young women did not agree with the opinion that ignorance of the location of a HCT centre is a factor that can prevent people from utilizing HCT service. Majority (179, 84.0%) of the adolescents and 156 (81.7%) of the young women agreed that to “Fear of discrimination if HIV positive” as being a factor that prevents utilisation of HCT service. A high proportion [150 (70.4%)] and 124 (64.9%) of the adolescents and young women respectively also agreed that “fear that there may be no access to treatment if HIV positive” could hinder people from HIV testing. Table 4.6 shows the perception of the respondents on barriers to utilisation of HCT services by age group.



**Table 4.6: Perception of Respondents on barriers to HCT Service Utilisation by Age group**

	15 - 19 years (n = 213)	20 -24 years (n = 191)
<b>Barriers</b>		
Lack of money	148 (69.5%)	112 (58.6%)
Ignorance of HCT Centre	88 (41.3%)	71 (37.2%)
Proximity Of HCT Centre to residence	69 (32.4%)	61 (31.9%)
Visiting HCT centre alone	103 (48.4%)	77 (40.3%)
Gender Incompatibility with service provider	100 (46.9%)	79 (41.4%)
Integration of Other services with HCT	105 (49.3%)	112 (58.6%)
Poor attitude of service provider.	134 (62.9%)	98 (51.3%)
Breach of confidentiality of result	76 (35.7%)	67 (35.1%)
Fear of discrimination if HIV positive	179 (84.0%)	156 (81.7%)
Fear of unavailability of access to treatment	150 (70.4%)	124 (64.9%)

#### 4.7 Perception of Respondents on facilitators of HCT Service Utilisation

More than half, [119 (55.9%)] of the adolescents and 100 (52.4%) of the young women did not agree with separation of HCT from other services as a facilitator of service utilisation. However, a majority, 181 (85.0%) of the adolescents and 166 (86.9%) of the young women agreed that conducting counseling before testing will encourage more people to test for HIV. A similar proportion 185 (86.9%) and 159 (83.2%) of the adolescents and young women respectively also agreed that marriage or job requirements will make more people test for HIV. Respondents that disagreed with self-testing as facilitator for HCT service utilisation were more than those who reported otherwise, 134 (62.9%) of the adolescents and 126 (66.0%) of the young women respectively (See Table 4.7 below).

**Table 4.7: Perception of Respondents on facilitators of HCT Service Utilisation by Age Group**

	15 - 19 years (n = 213)	20 -24 years (n = 191)
<b>Facilitators</b>		
Separation of HCT from other services	94 (44.1%)	90 (47.1%)
NGO management of HCT centre	147 (69.0%)	116 (60.7%)
Government ownership of HCT centre	159 (74.6%)	131 (68.6%)
Prior Counselling before Testing	181 (85.0%)	166 (86.9%)
Mandatory testing in health facilities	167 (78.4%)	143 (74.9%)
Job/Marriage Requirements	185 (86.9%)	159 (83.2%)
Utilisation of service by friend/family member	147 (69.0%)	135 (70.7%)
Death of close relative/partner due to HIV/AIDS	161 (75.6%)	128 (67.0%)
Organising community outreaches	168 (78.9%)	147 (77.0%)
Self testing	79 (37.1%)	65 (34.0%)

#### 4.8 HIV/AIDS Knowledge Score by Socio-demographic Characteristics

The mean HIV/AIDS knowledge score was  $9.42 \pm 1.93$ . The young women (20-24 years) had a mean score of  $9.45 \pm 1.86$  while the adolescents (15-19 years) who had a mean score of  $9.39 \pm 1.99$ ; ( $t=0.26$ ,  $p = 0.79$ ). The Singles had a higher mean HIV/AIDS knowledge score than their married counterparts ( $t=3.633$ ,  $p=0.001$ ) (See Table 4.8). Also, the Yorubas had a mean score of  $9.46 \pm 1.89$  while the Igbos had a mean score of  $9.00 \pm 2.30$  and the Hausas had a mean score of  $8.67 \pm 2.08$  ( $F=1.04$ ,  $0.35$ ). Those mean knowledge score of those who had a tertiary level of education was  $9.57 \pm 1.81$ , for those who had secondary education, it was  $9.37 \pm 2.03$  and was  $8.55 \pm 1.70$  for those who had primary education ( $F=2.67$ ;  $p = 0.071$ ). Table 4.8 shows the difference in knowledge of HIV/AIDS across socio-demographic characteristics.

**Table 4.8: Difference in HIV/AIDS knowledge by socio-demographic characteristics**

VARIABLES	MEAN (SD)	TEST VALUES	P-VALUE
<b>Age (Years)</b>		0.26 <sup>a</sup>	0.792
15 – 19	9.39 (1.99)		
20 – 24	9.45 (1.86)		
<b>Marital Status</b>		3.19 <sup>a</sup>	0.003
Single	9.52 (1.89)		
Married	8.42 (2.04)		
<b>Religion</b>		2.79 <sup>b</sup>	0.063
Christian	9.42 (2.03)		
Islam	9.53 (1.63)		
Traditional	7.88(2.03)		
<b>Level of Education</b>		2.67 <sup>b</sup>	0.071
Primary	8.55 (1.70)		
Secondary	9.37 (2.03)		
Tertiary	9.57 (1.81)		
<b>Ethnicity</b>		1.04 <sup>b</sup>	0.35
Yoruba	9.46 (1.89)		
Igbo	9.00 (2.30)		
Hausa	8.67 (2.08)		
<b>Schooling Status</b>		1.64 <sup>a</sup>	0.102
In-School	9.57 (1.98)		
Out-of-School	9.25 (1.85)		
<b>Who Respondent Lived With</b>		2.13 <sup>b</sup>	0.076
Parents	9.43 (1.91)		
Relative	9.39 (1.89)		
Husband	8.53 (2.01)		
Alone	9.70 (1.90)		
Employer	9.00 (2.83)		

<sup>b</sup> F-values from one-way ANOVA.

<sup>a</sup> Independent *t*-test values.

#### 4.9 Knowledge of HIV/AIDS by Socio-demographic characteristics

Only 48 (11.9%) of the respondents had a good knowledge of HIV/AIDS while a majority (356, 88.8%) had a poor knowledge of HIV/AIDS. Twenty-seven (12.7%) of the adolescents (15-19 years) had a good level of HIV/AIDS knowledge compared to 29 (11.0%) of the young women (20-24 years) ( $\chi^2=0.27$ ,  $p=0.602$ ). None of the married respondents had a good knowledge of HIV/AIDS as opposed to 38 (13.1%) of their single counterparts (Fisher's exact  $p$ -value =0.014). According to level of education, 29 (14.1%) of those that had a secondary level of education had a good knowledge of HIV/AIDS compared to 18 (10.1%) of those with that had tertiary education and only one (5.0%) of those that had primary education ( $\chi^2=2.48$ ,  $p=0.318$ ). Table 4.9 further shows the Knowledge of HIV/AIDS by socio-demographic characteristics.

Table 4.9: Association Knowledge of HIV/AIDS and Socio-demographic characteristics

VARIABLE	HIV/AIDS Knowledge		TOTAL	$\chi^2$	p-value
	Good	Poor			
<b>Age (years)</b>				0.27	0.602
15-19	27 (12.7%)	186 (87.3%)	213		
20-24	29 (11.0%)	170 (89.0%)	191		
<b>Marital Status</b>				5.66	0.014*
Single	48(13.1%)	318 (86.9%)	366		
Married	0 (0.0%)	38 (100.0%)	38		
<b>Religion</b>				1.12	0.570
Christianity	36 (13.0%)	241 (87.0%)	277		
Islam	11 (9.2%)	108 (90.8%)	119		
Traditional	1 (12.5%)	7 (87.5%)	8		
<b>Level of Education</b>				2.48	0.318
Primary	1 (5.0%)	19 (95.0%)	20		
Secondary	29 (14.1%)	176 (85.9%)	205		
Tertiary	18 (10.1%)	161 (89.9%)	179		
<b>Ethnicity</b>				0.22*	0.848*
Yoruba	44 (11.9%)	326 (88.1%)	370		
Igbo	4 (12.9%)	27 (87.1%)	31		
Hausa	0 (0.0%)	3 (100.0%)	3		
<b>Schooling Status</b>				1.21	0.271
In-School	29 (13.6%)	185 (86.4%)	214		
Out-of-School	19 (10.0%)	171 (90.0%)	190		
<b>Who Respondent Lived With</b>				6.16*	0.169*
Parents	25 (11.8%)	187 (88.2%)	212		
Relative	9 (13.4%)	58 (86.6%)	67		
Husband	0 (0.0%)	30 (100.0%)	30		
Alone	14 (15.1%)	79 (84.9%)	93		
Employer	2 (100.0%)	0 (0.0%)	2		

\* Fisher's exact test value

#### 4.10 Knowledge Score of the Benefits of HCT Service Utilisation by Socio-demographic Characteristics.

The mean knowledge score of HCT service utilization benefits score was  $4.90 \pm 1.36$ . The married respondents had a score of  $5.13 \pm 1.27$  while those who were single scored  $4.87 \pm 1.37$  ( $t=1.17$ ,  $p = 0.267$ ). Across level of education, those who had tertiary level of education had a score of  $5.02 \pm 1.24$ , secondary level of education;  $4.46 \pm 1.37$  while those who had a primary level of education had a score of  $4.20 \pm 1.99$  ( $F=3.52$ ,  $p = 0.030$ ). The mean knowledge score of the In-school respondents was  $4.92 \pm 1.36$  while those that of those who were out-of-school was  $4.88 \pm 1.36$  as shown on table 4.10.



**Table 4.10: Difference in Knowledge of the Benefits of HCT Service Utilisation by Socio-demographic Characteristics**

VARIABLES	MEAN (SD)	TEST VALUES	P-VALUE
<b>Age (Years)</b>		3.76 <sup>a</sup>	<0.001
15 – 19	4.67 (1.55)		
20 – 24	5.16 (1.05)		
<b>Marital Status</b>		1.17 <sup>a</sup>	0.267
Single	4.87 (1.37)		
Married	5.13 (1.27)		
<b>Religion</b>		1.371 <sup>b</sup>	0.255
Christian	4.833 (1.404)		
Islam	5.067 (1.226)		
Traditional	4.667 (1.500)		
<b>Level of Education</b>		3.52 <sup>b</sup>	0.030
Primary	4.20 (1.99)		
Secondary	4.86 (1.37)		
Tertiary	5.02 (1.24)		
<b>Ethnicity</b>		3.30 <sup>b</sup>	0.051
Yoruba	4.92 (0.69)		
Igbo	4.87 (1.43)		
Hausa	3.00 (2.65)		
<b>Schooling Status</b>		0.27 <sup>a</sup>	0.785
In-School	4.92 (1.36)		
Out-of-School	4.88 (1.36)		
<b>Who Respondent Lives With</b>		4.79 <sup>b</sup>	0.001
Parents	4.63 (1.51)		
Relative	5.12 (1.21)		
Husband	5.13 (1.28)		
Alone	5.28 (0.94)		
Employer	5.00 (0.00)		

<sup>b</sup> F-values from one-way ANOVA.

<sup>a</sup> Independent *t*-test values.

#### 4.11 Knowledge of the Benefits of HCT Service Utilisation by Socio-demographic Characteristics

Respondents that had a “high” knowledge of HCT service utilisation benefits were 289 (71.5%) while only, 115 (28.5%) had a “low” knowledge of HCT service utilization benefits. Majority (135, 63.4%) and (154, 80.6%) of the adolescents and young women respectively had high knowledge of the benefits of HCT service utilisation ( $\chi^2=14.71$ ,  $p<0.001$ ). Similarly, high knowledge of HCT service utilisation benefits was observed among 258 (70.5%) single respondents and 31 (81.6%) of those who were married ( $\chi^2=2.08$ ,  $p=0.149$ ). Only 104 (28.1%) of Yorubas and 9 (29.0%) of the Igbos had a low knowledge of the benefits of HCT service utilisation compared to 2 (66.7%) of the Hausas (Fisher’s exact test = 2.21,  $p=0.34$ ). The association knowledge of the benefits of HCT service utilisation and socio-demographic characteristics are shown on Table 4.11.

**Table 4.11: Association between Knowledge of the Benefits of HCT Service Utilisation and Socio-demographic Characteristics**

VARIABLE	Knowledge of HCT Service Utilisation benefits		TOTAL	$\chi^2$	p-value
	High	Low			
<b>Age (years)</b>				14.71	<0.001
15-19	135 (63.4%)	78 (36.6%)	213		
20-24	154 (80.6%)	37 (19.4%)	191		
<b>Marital Status</b>				2.08	0.149
Single	258 (70.5%)	108 (29.5%)	366		
Married	31 (81.6%)	7 (18.4%)	38		
<b>Religion</b>				5.05	0.080
Christianity	192 (69.3%)	85 (30.7%)	277		
Islam	93 (78.2%)	26 (21.8%)	119		
Traditional	4 (50.0%)	4 (50.0%)	8		
<b>Level of Education</b>				4.99	0.083
Primary	10 (50.0%)	10 (50.0%)	20		
Secondary	147 (71.7%)	58 (28.3%)	205		
Tertiary	132 (73.7%)	47 (26.3%)	179		
<b>Ethnicity</b>				2.21*	0.340
Yoruba	266 (71.9%)	104 (28.1%)	370		
Igbo	22 (71.0%)	9 (29.0%)	31		
Hausa	1 (33.3%)	2 (66.7%)	3		
<b>Schooling Status</b>				0.06	0.811
In-School	152 (71.0%)	62 (29.0%)	214		
Out-of-School	137 (72.1%)	53 (27.9%)	190		
<b>Who Respondent Lives With</b>				21.39	<0.001
Parents	131 (61.8%)	81 (38.2%)	212		
Relative	54 (80.6%)	13 (19.4%)	67		
Husband	24 (80.0%)	6 (20.0%)	30		
Alone	78 (83.9%)	15 (16.1%)	93		
Employer	2 (100.0%)	0 (0.0%)	2		

\* Fisher's exact test value

#### 4.12 Socio-demographic characteristics and HCT Service Utilisation

According to Table 4.12, only 60 (28.2%) of the adolescents have utilised HCT service compared to 88 (46.1%) of young women ( $\chi^2=13.91$ ,  $p < 0.001$ ). A total of 16 (42.1%) of the married respondents on the other hand have utilised the service compared to only 132 (36.1%) of their single counterparts ( $\chi^2=0.54$ ,  $p= 0.462$ ). One hundred and nine (39.4%) of the Christians have ever utilised HCT service, compared to only four (50.0%) of the respondents who practiced traditional religion who have also utilised the service but higher compared to 35 (29.4%) of respondents who belonged to the Islam faith. ( $\chi^2=4.17$ ,  $p= 0.124$ ). More (84/179, 46.9%) respondents who had up to a tertiary level of education had tested for HIV compared to those six (30.0%) of those who had primary and 58 (28.3%) of those who had secondary level of education respectively ( $\chi^2=14.69$ ,  $p= 0.001$ ). Table 4.12 further shows HCT service utilisation by socio-demographic characteristics.

Table 4.12: Association Socio-demographic characteristics and HCT Service Utilisation

VARIABLE	Ever tested for HIV		$\chi^2$	p-value
	Yes	No		
<b>Age (years)</b>			13.91	<0.001
15-19	60 (28.2%)	153 (71.8%)		
20-24	88 (46.1%)	103 (53.9%)		
<b>Marital Status</b>			0.54	0.462
Single	132 (36.1%)	234 (63.9%)		
Married	16 (42.1%)	22 (57.9%)		
<b>Religion</b>			4.17	0.124
Christianity	109 (39.4%)	168 (60.6%)		
Islam	35 (29.4%)	84 (70.6%)		
Traditional	4 (50.0%)	4 (50.0%)		
<b>Level of Education</b>			14.69	0.001
Primary	6 (30.0%)	14 (70.0%)		
Secondary	58 (28.3%)	147 (71.7%)		
Tertiary	84 (46.9%)	95 (53.1%)		
<b>Ethnicity</b>			1.19	0.552
Yoruba	135 (36.5%)	235 (63.5%)		
Igbo	11 (35.5%)	20 (64.5%)		
Hausa	2 (66.7%)	1 (33.3%)		
<b>Schooling Status</b>			1.25	0.264
In-School	73 (34.1%)	141 (65.9%)		
Out-of-School	75 (39.5%)	115 (60.5%)		
<b>Who Respondent Lives With</b>			22.45	<0.001
Parent(s)	57 (26.9%)	155 (73.1%)		
Relative	34 (50.7%)	33 (49.3%)		
Husband	11 (36.7%)	19 (63.3%)		
Alone	44 (47.3%)	49 (52.7%)		
Employer	2 (100.0%)	0 (0.0%)		
<b>LCDA of Residence</b>			11.03	0.012
Igbogbo	54 (30.5%)	123 (69.5%)		
Ikorodu Central	50 (43.1%)	66 (56.9%)		
Ikorodu West	19 (30.2%)	44 (69.8%)		
Ikorodu North	25 (52.1%)	23 (47.9%)		

Table 4.12: Association Socio-demographic characteristics and HCT Service Utilisation

VARIABLE	Ever tested for HIV		$\chi^2$	p-value
	Yes	No		
<b>Age (years)</b>				
15-19	60 (28.2%)	153 (71.8%)	13.91	<0.001
20-24	88 (46.1%)	103 (53.9%)		
<b>Marital Status</b>			0.54	0.462
Single	132 (36.1%)	234 (63.9%)		
Married	16 (42.1%)	22 (57.9%)		
<b>Religion</b>			4.17	0.124
Christianity	109 (39.4%)	168 (60.6%)		
Islam	35 (29.4%)	84 (70.6%)		
Traditional	4 (50.0%)	4 (50.0%)		
<b>Level of Education</b>			14.69	0.001
Primary	6 (30.0%)	14 (70.0%)		
Secondary	58 (28.3%)	147 (71.7%)		
Tertiary	84 (46.9%)	95 (53.1%)		
<b>Ethnicity</b>			1.19	0.552
Yoruba	135 (36.5%)	235 (63.5%)		
Igbo	11 (35.5%)	20 (64.5%)		
Hausa	2 (66.7%)	1 (33.3%)		
<b>Schooling Status</b>			1.25	0.264
In-School	73 (34.1%)	141 (65.9%)		
Out-of-School	75 (39.5%)	115 (60.5%)		
<b>Who Respondent Lives With</b>			22.45	<0.001
Parent(s)	57 (26.9%)	155 (73.1%)		
Relative	34 (50.7%)	33 (49.3%)		
Husband	11 (36.7%)	19 (63.3%)		
Alone	44 (47.3%)	49 (52.7%)		
Employer	2 (100.0%)	0 (0.0%)		
<b>LCDA of Residence</b>			11.03	0.012
Igbogbo	54 (30.5%)	123 (69.5%)		
Ikorodu Central	50 (43.1%)	66 (56.9%)		
Ikorodu West	19 (30.2%)	44 (69.8%)		
Ikorodu North	25 (52.1%)	23 (47.9%)		

#### 4.13 Association between Cognitive/Behavioural Factors and HCT Service Utilisation

Fifteen (31.2%) of the respondents with a good knowledge of HIV have utilised HCT service compared to 133 (37.4%) of those poor have a poor knowledge of HIV that have utilised the service ( $\chi^2 = 0.68$ ,  $p = 0.410$ ) as shown on Table 4.13. About half (113, 50.7%) of those that were aware of HCT centre in their locality have ever utilised the service while only 35 (19.3%) of those that were not aware of an HCT centre in their locality have ever utilised the service ( $\chi^2 = 42.26$ ,  $p < 0.001$ ).

Only 127 (34.5%) of those who perceived themselves to be at low or no risk of HIV infection have utilised HCT service more than half (36, 31.3%) of those who perceived themselves to be at high risk of HIV infection have utilised the service ( $\chi^2 = 8.02$ ,  $p = 0.005$ ). Other knowledge and behaviour related factors were compared with history of HIV tested as presented on Table 4.13.

**Table 4.13: Association between Cognitive/Behavioural Factors and HCT Service Utilisation**

	Ever tested for HIV		$\chi^2$	p-value
	Yes	No		
<b>HIV Knowledge</b>			0.68	0.410
Good	15 (31.2%)	33 (68.8%)		
Poor	133 (37.4%)	223 (62.6%)		
<b>Awareness of HCT Centre</b>			42.26	<0.001
Yes	113 (50.7%)	110 (49.3%)		
No	35 (19.3%)	146 (80.7%)		
<b>Awareness of service utilization by friend/family member</b>			3.74	0.053
Yes	64 (42.7%)	86 (57.3%)		
No	84 (33.1%)	170 (66.9%)		
<b>Self Perceived Risk of HIV Infection</b>			8.02	0.005
High	21 (58.3%)	15 (41.7%)		
Low/ No risk at all	127 (34.5%)	241 (65.5%)		
<b>Knowledge of HCT benefits</b>			1.97	0.161
High	112 (38.8%)	177 (61.2%)		
Low	36 (31.3%)	79 (68.7%)		
<b>Sexually Active</b>			17.28	<0.001
Yes	81 (48.5%)	86 (51.5%)		
No	67 (28.3%)	170 (71.7%)		
<b>Ever Had STI</b>			3.42	0.065
Yes	20 (50.0%)	20 (50.0%)		
No	128 (35.2%)	236 (64.8%)		



#### 4.14 Predictors of HIV Counselling and Testing Service Utilisation

Multivariable analysis using logistic regression was used to further investigate association between variables in the bivariate analysis that associated significantly with HCT service utilisation as shown on Table 4.14 revealed that those who knew where HCT service is being offered were four times more likely to have ever utilised HCT service than those who did not (AOR=4.08,  $p < 0.001$ ). Also, sexually active respondents were three times more likely to ever utilised HCT service compared to those who were not sexually active. (AOR=3.18,  $p = 0.024$ ) (Table 4.14). The goodness of fit of the model was tested using a Hosmer and Lemeshow Test ( $\chi^2 = 4.22, p = 0.836$ ).

**Table 4.14. Logistic Regression on predictors of HIV Counseling and Testing Service Utilisation**

<b>VARIABLE</b>	<b>AOR</b>	<b>95% CI LOWER</b>	<b>95% CI UPPER</b>	<b>P Value</b>
<b>Age (Years)</b>				
15 – 19 (REF)	1.00			
20 – 24	1.33	0.78	2.26	0.290
<b>Level of Education</b>				
Primary (REF)	1.00			
Secondary	0.89	0.30	2.70	0.839
Tertiary	1.91	0.62	5.93	0.263
<b>Know where to test</b>				
Yes	4.08	2.52	6.60	<0.001
No (REF)	1.00			
<b>Self Perceived Risk of HIV Infection</b>				
Low/ No risk at all (REF)	2.38	1.10	5.17	0.028
High	1.00			
<b>Sexually Active</b>				
Yes	1.86	1.09	3.18	0.024
No (REF)	1.00			
<b>Who Respondent Lives With</b>				
Parent (REF)	1.00			
Relative	1.66	0.87	3.17	0.124
Husband	0.69	0.26	1.85	0.458
Alone	0.96	0.46	2.03	0.922
Employer	<0.01	<0.01		0.999
<b>Resident LCDA</b>				
Igbogbo/Baiyeku (REF)	1.00			
Ikorodu Central	1.42	0.82	2.47	0.212
Ikorodu West	1.00	0.49	2.06	0.992
Ikorodu North.	1.53	0.64	3.65	0.338

## CHAPTER FIVE

### DISCUSSION

The socio-demographic characteristics of the respondents showed that majority of them were single and also belong to the Yoruba ethnic group. This is unexpected as more than half of them were either students or live with their parents and the fact that Lagos state is in the south west region of Nigeria, a region dominated by Yorubas could be responsible for the high proportion of respondents from this ethnicity in the study. It was also observed that more respondents were from Igbogbo/Bayeiku and Ikorodu central LCDAs. These two LCDAs are centrally located within Ikorodu compared to the other two LCDAs which have boundaries with some parts of Ogun state and other parts of Lagos State.

#### 5.1.1 Knowledge of HIV/AIDS

Findings from this study showed that the respondents had a laudable knowledge of HIV/AIDS prevention and transmission as majority provided the right responses to the knowledge items asked. A similar observation was made in a study by Adeomi et al (2014) among adolescents attending secondary schools in Osogbo where not less than 70% of the respondents provided correct responses to questions relating to HIV/AIDS knowledge. However, misconceptions about the mode of transmission of HIV still exists, these misconceptions include the belief that mosquito bites can result in HIV infection and unawareness of mother to child transmission of HIV by a fifth of the respondents. This is similar to findings in a qualitative study by Odimegwu et al (2013) among respondents in Imo and Osun states where a fifth of the respondents believed that HIV can be transmitted through mosquito bites while on the other hand only 15% did not know that HIV can be transmitted from mother to child during pregnancy.

On categorising level of knowledge of HIV/AIDS, few respondents in this study had a good knowledge of HIV/AIDS. Adeomi et al (2014) reported that slightly more than half of the respondents in their study had a good knowledge. This could be attributed to the difference in scoring. The study by Adeomi et al (2014) assigned a score of "1" to a "don't know" response whereas a score of "0" was allotted to the same response in this study.

Also, it was found out in this study that the married respondents had a significantly lower mean HIV/AIDS knowledge score compared to their single counterparts. The bivariate analysis also showed a significant association between marital status and knowledge of HIV/AIDS where none of the married respondents had a good HIV/AIDS knowledge unlike a few of the single ones. It can therefore be inferred that the single respondents had a better knowledge of HIV/AIDS compared to the married respondents. The study among university students in Ghana by Asante (2013) also made a similar observation where married respondents had a significantly lower mean HIV/AIDS score compared to the singles. This could be attributed to the fact that most of the married respondents could have married early, thus having a low level of education (Erulkar & Bello, 2007) as it was observed that HIV/AIDS knowledge score increased with level of education in this study even though no statistically significant association was found.

In this study, in-school respondents had a higher HIV/AIDS knowledge score and also more proportion of them had a good knowledge of HIV/AIDS compared to those out of school. The association was however not significant and no association was also observed between schooling status and HIV/AIDS knowledge. This is similar to the observation in a study conducted in Ibadan where students had a higher level of HIV/AIDS knowledge than apprentice though a significantly significant association was not found (Ajuwon et al, 2010).

### **5.1.2 Perceived Risk of HIV Infection and HIV related behaviours**

It was observed that an overwhelming majority of the respondents considered themselves to be at low or no risk of HIV infection. The commonest reason for this low/no risk perception of HIV infection was abstinence. This finding is similar to findings of a study conducted among medical students in Jos where 82% of the respondents indicated that they were at no or small risk of HIV acquisition (Daniyam et al., 2010) and a much higher proportion (97%) perceived themselves at no risk of HIV infection in an Indian study among pregnant women (majority of whom were between 19-29 years) attending antenatal care clinic (Rogers et al., 2006). However, it is quite worrisome that some respondents, even though they have more than one sex partners have the belief that they are not at risk of HIV infection.

Sexual activity was found to have occurred in less than half (41%) of the respondents in this study. This is within the range of two studies conducted among similar age group in Plateau

state, Nigeria (Envuladu et al. 2013; Daniyam et al. 2013). In the study by Envuladu et al. (2013) among 384 female adolescents between 12 and 19 years in a rural community in Plateau State, 48% were sexually active, while another study among 368 medical students (mean age 24 years) in Jos reported that 38% of the respondents were sexually active (Daniyam et al., 2013). The low prevalence of sexual activity observed among the respondents in this study could be an explanation for a high proportion of them perceiving themselves at low risk of HIV infection, although inconsistent condom use was reported among about half of the sexually active respondents and also more than half of them engage in sex with casual partners (who may have other partners).

### 5.1.3 Knowledge of Benefits of HIV Counselling Service Utilisation

The knowledge of the benefits of HCT service utilisation was quite high among the respondents. Majority of the respondents correctly identified the benefits of HCT service utilisation as reported in the study by Rogers et al, (2006). Also, this is consistent with findings among patients in a rural hospital in South Africa where the benefits of HIV counselling and testing was perceived to be high among the study participants (Orisakwe et al., 2015). The proportion of respondents that agreed with most knowledge items was similar and high as in the study by Orisakwe et al. (2015). Though a similar finding was observed, more than half of the respondents in the study were above 40 years of age thus could make this study a bit less comparable with this present study.

The result of this study showed that there was a difference in knowledge of the benefits if HCT service utilisation by age, level of education and who respondent lives with. Statistical association was also found to exist between these variables and knowledge of the benefits of HCT service utilisation except for level of education. More proportion of respondents in the older age group (20-24 years) compared to those that were younger had a high knowledge of HCT service utilisation benefits. Increasing access to HCT related information as age increases and at higher level of education could be responsible for this finding especially in tertiary institutions where most reproductive health campaigns are used as target sites.

Also, it was observed that who respondent lives with contributes significantly to their knowledge of HCT benefits. Fewer respondents living with their parents had a high knowledge of the

benefits of HCT service utilisation compared to those who were not and also had the lowest mean knowledge score compared to the others. Most of the respondents living with their parents were younger ones and are less likely to have accessed sexual and reproductive health services (because parental consent could be needed in a healthcare setting) compared to those living alone or with relatives since healthcare workers were the most common source of HCT related information in this study. This point out to the need to intensify efforts at creating more awareness on HCT through media platforms which are easily assessable by all irrespective of who such individuals live with

#### **5.1.4 Awareness and Utilisation of HIV Counselling and Testing Service**

More than half (55%) of the respondents knew where to access HCT service in their locality, this is higher than the slightly more than 30% reported among female students and apprentices (15-24 years) that knew HCT centre in their communities in a study by Ajuwon et al. (2010) in Ibadan and also the 33% reported in a more recent study by Onyeonoro et al (2014) among tertiary institution students in Abia State. Though the study by Ajuwon et al (2010) did not inquire about source of HIV information, the study by Onyeonoro et al (2014) showed that media and friends were the common sources of information about HCT as opposed to healthcare workers and teachers in this study who could have probably given a more comprehensive information about HCT including testing centres in the locality than media and friends.

The most commonly known HCT centre was a government-owned secondary healthcare facility unlike the findings in the study by Onyeonoro et al (2014) where a secondary healthcare facility was the second most known HCT centre after primary health centre. This could be attributable to the central location of the secondary health centre in Ikorodu and availability a wide range of other health services in the health facility at subsidized rates unlike the other HCT centres identified by the respondents. However, it was observed that despite a high awareness of HCT centre, only approximately four in every ten respondents have ever utilised HCT service. This is within the range of previous studies in other parts of the country among respondents in similar age category in which prevalence between 4%-50% was reported (Adeomi et al. 2014; Ajuwon et al., 2010; Envuladu et al. 2013; Daniyam et al., 2013).

benefits of HCT service utilisation compared to those who were not and also had the lowest mean knowledge score compared to the others. Most of the respondents living with their parents were younger ones and are less likely to have accessed sexual and reproductive health services (because parental consent could be needed in a healthcare setting) compared to those living alone or with relatives since healthcare workers were the most common source of HCT related information in this study. This point out to the need to intensify efforts at creating more awareness on HCT through media platforms which are easily assessable by all irrespective of who such individuals live with

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It was also observed in this study that mandatory utilisation of HCT service was quite high, as it made up 66% of the testing model reported. Most of the respondents utilised the service either as part of a treatment, requirement for employment, blood transfusion or as a marriage requirement. A lower proportion (46%) of those that have utilised HCT service in the study by Onyeonoro et al (2010) were mandated to undergo the test. Perceived risk of HIV infection was higher among the students in the study by Onyeonoro et al (2014) as opposed to this study. This could be responsible for more voluntary testing reported in their study.

Among socio-demographic characteristics, utilisation of HCT service has been reported to be significantly associated with age (Chimoyi et al., 2015; Fylkesnes and Siziya, 2004). The result of this study where more young women (20-24 years) have significantly utilised HCT service compared to adolescents (15-19 years) is also consistent with these previous studies. In the study by Chimoyi et al (2015) among a commuter population in South Africa, individuals more than 25 years were almost two times more likely to have utilised HCT service. On the other hand, though there was a significant association between age and utilisation of HCT service in the study by Fylkesnes & Siziya (2004), older individuals were less likely to utilise HCT service compared to younger individuals in the study unlike the findings in this study due to their lesser perceived risk of HIV infection. However, the younger individuals as defined in the study by Fylkesnes & Siziya were those between 15-24 years. The study did not explore likelihood of HCT service utilisation within the 15-24 years age group which a majority of the reported readiness to utilised HCT service could have been among those between 20-24 years.

Also, a significant association was observed between level of education and HCT service utilisation. Studies by Fikadie et al (2014) and Chimoyi et al (2015) have shown that level of education (in no particular order) significantly associated with HCT uptake. However, a contrary observation was made in the study by Asante (2013) where there was no significant association between years in school and utilisation of HCT service. The relatively smaller number of respondents in the study by Asante (2013) compared to the other studies could be responsible for the finding.

In this study, it was found out that respondents living with parents have least utilised HCT service compared to those who were either living on their own, with their husbands or with their



employer. An explanation for this finding could be the limited liberty of accessing HCT service without parental consent among those living with their parents while those living their employers could have undergone HIV testing as part of employment requirements.

Also, Local Council Development Area (LCDA) of residence significantly affected HCT service utilisation in this study. Within LCDA of residence, HCT service utilisation was higher among respondents living within Ikorodu North LCDA than those in any other LCDA. A tertiary institution, Lagos State Polytechnic is located within the LCDA and some of the respondents there were students of the school who have benefitted from HIV prevention and treatment programme at one time or the other.

It was observed that the knowledge of HIV/AIDS does not significantly influence utilisation of HCT service. A study among men in rural Ethiopia also made a similar observation where there was no significant difference between those who have low, high, comprehensive knowledge of HIV/AIDS and utilisation of HCT service until after adjustment for stigma (Leta et al. 2012). Similarly, a study among university students in Ghana did not find significant association between knowledge of HIV/AIDS and utilisation of HCT service (Asante, 2013).

On the contrary, significant association between self perceived risk of HIV infection and utilisation of HCT service was found to exist in this study. A similar observation was made in a randomized controlled trial by Fylkesnes and Siziya (2004) where respondents who perceived themselves to be at high risk of HIV infection were two times more likely to have utilised the service than those who did not. This is unexpected because an individual's perception of their vulnerability to an infection could spark curiosity about their status pertaining to such infection.

The results of this study also showed that knowledge of the benefits of HCT service utilisation did not significantly influence the utilisation of the service though more proportion with high knowledge of the benefits of HCT service utilisation compared to those with low knowledge of the benefits of utilising the service have tested for HIV. The study by Chimoyi et al. (2015) also found out that individuals with a high level of perceived benefit for HIV testing were more likely to have undergone HIV testing and as in this study, no significant association was observed between HIV testing and its perceived benefits.

In consonance with a study among University in Ethiopia (Fikadie et al, 2014), it was observed in this study that respondents who knew a friend or family member that have tested for HIV were likely to utilise HCT service. This was attributed to the fact that those respondents get to be informed more about HCT services by their friend/family member.

#### 5.1.5 Perception of Respondents on Barriers and Facilitators to HCT service Utilisation

Fear of discrimination and fear of access to treatment of HIV positive was perceived by majority of the respondents as factors that could serve as barrier to HCT service utilisation irrespective of age. A study by Odimegwu et al. (2013) showed that stigmatization is a major factor that hinders utilisation of HCT services. It was also found out in the study that majority of the respondents do not think that confidentiality of test result and nearness of HCT centre to their residence are barriers to HCT service utilisation. This is similar to the study by Fikadie et al (2014) where only about a quarter of the respondents indicated that fear of confidentiality may prevent them from testing in the future.

Separate location of testing centre outside hospital facilities was perceived by majority not to be a facilitator of HCT service utilisation. In consonance with the finding of this study, another study among university students in South Africa by Ndabarora and Mehunu (2014) observed that the fear of breach of privacy at testing site was a reported barrier among the respondents. This could be because respondents feel those who see them entering such centres could discriminate against them even if they do not test positive. On the other hand, majority of the respondents agreed to testing in the community as part of outreach programme as a facilitator to HCT service utilisation. Similar finding were observed in a study by Mabuto et al (2014) where the urban mobile HCT units were more significantly utilised than the other units.

HIV self testing has been reported to be an important means of increasing HIV testing uptake due to its assured privacy and confidentiality (Krause et al., 2013). However in this study, less than half of the respondents in either age group did not perceive it as a facilitator of HCT service utilisation. The possible risks associated with self testing such as suicide, partner violence and most especially poor linkage to care (which was identified as a barrier to HCT service utilisation in this study) reported by a significant number of respondents in a study among researchers and

academics (Brown et al., 2015) could be a responsible for this perception among the participants in this study.

### 5.1.6 Factors Influencing HCT Service Utilisation

This study shows that awareness of a testing centre influence utilisation of HCT service after adjusting for the effect of other variables. Majority of the respondents knew the only secondary healthcare facility in Ikorodu as a HCT centre. This could be linked with the fact that other reproductive health services are available at the facility and thus the respondents could have been aware of the availability of HCT services there.

Also, self rated health status is an important predictor for the utilisation of healthcare services (Fylkenes and Siziya, 2004). In this study, perceived risk of HIV infection was found significantly predict utilisation of HCT service. Respondents who perceived themselves to be at high risk of HIV infection were likely to satisfy their curiosity by accessing HCT services. This could also be a reasonable explanation for sexual activeness as a predictor of HCT service utilisation. Leta et al. (2012) in a study that involved only men found out those of them who think were at some risk of HIV infection based on their risky sexual behaviour index utilised HCT service more than those at no risk.

Majority of the respondents agreed to prior counselling before testing and community outreaches as facilitators to HCT service utilisation. Counselling before testing is mainly achievable in the client-initiated model of HCT service provision which will also improve knowledge about reproductive health issues. Most HIV prevention and treatment outreach programme engage in prior counselling before testing, thus it could be inferred that the respondents will be willing to participate in such programmes as observed in the study by Mabuto et al (2014) where more respondents utilised HCT service from the urban mobile model of testing.

## 5.2 Conclusion

Findings from this study revealed that self demanded testing (*i.e.* client initiated testing model of HCT service utilisation) is still low as only few of the respondents who have ever utilised HCT service were not mandated. This may hinder the achievements of the objectives of the National

A good knowledge of HIV/AIDS or the benefits of HCT service did not result in a corresponding high level of HCT service utilisation. Self perceived risk of HIV infection and knowledge of a testing site can be used to significantly predict utilisation of the service. This shows that lack of awareness of centre where HCT services are provided could affect them accessing and also utilising the service.

Majority of the respondents feel more confident accessing HCT service in centres where other health services are being offered in order to avoid stigmatisation in their community. Also, breach of confidentiality of their HIV status was not seen as a major threat to utilisation of HCT service, however, stigmatisation and probable lack of access to treatment and care remains a major concern that hinder HCT service utilisation as perceived by majority of the respondents.

### 5.3 Recommendations

1. Faith based organizations and the internet e.g. social media platforms should be used optimally to disseminate HCT information to young people.
2. Focusing on more HIV Prevention and Treatment Outreach Programmes as a means of accessing HCT service can enhance utilisation of HCT service because most respondents who initiated testing by themselves benefitted from such programmes in this study.
3. Also, existing HCT sites should engage more in creating awareness of the availability of HCT services as it was observed that knowledge of a testing location contributed to utilisation of the service.
4. HIV/AIDS campaigns should focus more on perception of HIV vulnerability among individuals in order to make them see need for adopting necessary preventive measures.
5. HCT service provision should be integrated with other services as in healthcare facilities as opposed to stand-alone VCT centres; however this should not discourage promotion of community testing.

#### 5.4 Limitations of the study

1. This study employed an explorative cross-sectional method of data collection and as such there may be slight difference between what was reported and what the respondents actually know or did especially on sexually practices.
2. This study is limited to female adolescents and young women between ages 15-24 years in Ikorodu, Lagos State and the results may not be applicable to all female adolescents and young women in Nigeria.
3. Due to inability to obtain enumeration area data from National Population Commission, INEC Directory of Polling Units which contains list of Polling Units spread across Ikorodu was used to identify clusters from which households included in the study were selected.

## REFERENCES

- Adeomi, A. A., Adeoye, O. A., Bamidele, J. O., Olarewaju, S. O., Abdulsalam, S. T. 2014. HIV Preventive Measures among Adolescents attending Secondary Schools in an Urban Community in Southwestern Nigeria. *Medicine Science* 3(4):1614-26
- Agardh A., Odberg-Pettersson, K., Ostergren, P. O., 2011 Experience of sexual coercion and risky sexual behavior among Ugandan university students. *BMC Public Health* 11:527
- Ajuwon, A.J., Titiloye, M., Oshiname, F., Oyewole, O. 2011 Knowledge And Use Of HIV Counselling. And Testing Services Among Young Persons In Ibadan, Nigeria. *Int'l. Quarterly of Community Health Education*, 31(1) 33-50.
- Ajuwon, A.J., Titiloye, M., Oshiname, F., 2015. Effects of Peer Education on the Knowledge and use of HIV Counselling and Testing services among Young Persons in Ibadan, Nigeria. *African Journal of Biomedical Research* 18: 161 - 170
- Asante, K. O., 2013. HIV/AIDS knowledge and uptake of HIV counselling and testing among undergraduate private university students in Accra, Ghana. *Reproductive Health* 10:17.
- Askew, I., Berer, M., (2003) The contribution of sexual and reproductive health services to the fight against HIV/AIDS: a review. *Reprod Health Matters* 11(22):51-73.
- AVERT 2009. Sub-Saharan African HIV/AIDS Statistics. <http://www.avert.org/subadults.htm>.
- Bailey, R.C., Muga, R., Poulussen, R., Abicht, H., 2002. The acceptability of male circumcision to reduce HIV infections in Nyanza Province, Kenya. *AIDS Care*. 14(1):27-40.
- Bandura, A., 1994. Social Cognitive theory and exercise of control over HIV infection. In: DiClemente, R., Peterson, J., (ed). Preventing AIDS: Theories and methods of behavioural interventions. New York; Plenum Press. P. 25-54
- Bassett, I.V., Govindasamy, D, Erlwanger, AS, Hyle, E. P., Kranzer, K., Van Schaik, N., Noubary, F., Paltiel, A. D., Wood, R., Walensky, R. P. , Losina, E., Bekker, L.G., Freedberg, K. A., 2014. Mobile HIV screening in Cape Town, South Africa: clinical impact, cost and cost-effectiveness. *PLoS One* 9: e85197.
- Brown, B., Folayan, M.O., Imosili, A., Durueke, F., Amuamuziam, A., 2015. HIV self-testing in Nigeria: public opinions and perspectives. *Glob Public Health* 10(3):354-65.

- Chimoyi, L., Tshuma, N., Muloongo, K., Setswe, G., Sarfo, B., Nyasulu, P.S., 2015. HIV-related knowledge, perceptions, attitudes, and utilisation of HIV counselling and testing: a venue-based intercept commuter population survey in the inner city of Johannesburg, South Africa. *Global Health Action* 8: 26950
- Daniel, O. J., Oladapo, O. T., 2006. Acceptability of Prenatal HIV Screening at Primary Care level in Nigeria. *Journal of Obstetrics Gynaecology*, 26(3): 191-194.
- Chimoyi, L. et al., 2015. HIV-related knowledge, perceptions, attitudes, and utilisation of HIV counselling and testing: a venue-based intercept commuter population survey in the inner city of Johannesburg, South Africa. *Global health action*, 8, p.26950. Available at: [http://www.globalhealthaction.net/index.php/gha/article/view/26950/xml\\_54](http://www.globalhealthaction.net/index.php/gha/article/view/26950/xml_54).
- Daniyam, C.A., Agaba, P.A. & Agaba, E.I., Original Article Acceptability of voluntary counselling and testing among medical students in Jos , Nigeria. , pp.2–6.
- Envuladu, E.A. et al., 2013. Social factors associated with teenage sexual behavior : A risk factor for STI / HIV among female adolescents in a rural Community in Plateau State , Nigeria. *Journal of Medical Research*, 2(2), pp.117–122.
- Fikadie, G., Bedimo, M. & Alamrew, Z., 2014. Prevalence of Voluntary Counseling and Testing Utilization and Its Associated Factors among Bahirdar University Students. *Advances in Preventive Medicine*, 2014, pp.1–9. Available at: <http://www.hindawi.com/journals/apm/2014/906107/>.
- Fylkesnes, K. & Siziya, S., 2004. A randomized trial on acceptability of voluntary HIV counselling and testing. , 9(5), pp.566–572.
- Jereni, B.H. & Muula, A.S., 2008. Availability of supplies and motivations for accessing voluntary HIV counseling and testing services in Blantyre , Malawi. , 6, pp.1–6.
- Leta, T.H., Sandoy, I.F. & Fylkesnes, K., 2012. Factors affecting voluntary HIV counselling and testing among men in Ethiopia : a cross-sectional survey.
- Odimegwu, C., Adedini, S.A. & Ononokpono, D.N., 2013. HIV/AIDS stigma and utilization of voluntary counselling and testing in Nigeria. *BMC public health*, 13, p.465. Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3662628&tool=pmcentrez&rendertype=abstract>.
- Onyeonoro, 2014. Knowledge and utilization of HIV counseling and testing services among students of a tertiary institution in Abia State, South East Nigeria. *Journal of HIV and Human Reproduction*, 2(1), p.8. Available at: <http://www.j-hhr.org/article.asp?issn=2321-9157;year=2014;volume=2;issue=1;spage=8;epage=14;aulast=Onyeonoro>.

Orisakwe, E., Ochiogu, S. & Ocholla, P., 2015. Perceptions of the hiv counselling and testing programme by patients in a rural regional hospital in south africa. *South African Family Practice*, 57(6), pp.374–380. Available at: <http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L607800366>.

Salako, A.A. et al., 2012. Characteristics of clients accessing HIV counseling and testing services in a tertiary hospital in Sagamu, Southwestern Nigeria. *Nigerian Journal of Clinical Practice*, 15(4), pp.391–396.

Sebudde, S. & Nangendo, F., 2009. Voluntary Counseling and Testing Services: Breaking Resistance to Access and Utilization among the Youths in Rakai District of Uganda. *Educational Research and Reviews*, 4(10), pp.490–497. Available at: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ888248&site=ehost-live> \n [http://academicjournals.org/ERR2/PDF/Pdf 2009/Oct/Sebudde and Nangendo.pdf](http://academicjournals.org/ERR2/PDF/Pdf%202009/Oct/Sebudde%20and%20Nangendo.pdf).

Daniyam, C.A., Agaba, P. A. , Agaba. E. I., 2010. Acceptability of voluntary counselling and testing among medical students in Jos, Nigeria. *Journal Infection Developing Countries*, 4:357-61.

Envuladu E.A, Agbo H.A , Ohize V.A, Zoakah A., 2013. Social factors associated with teenage sexual behavior: A risk factor for STI / HIV among female adolescents in a rural Community in Plateau State , Nigeria. *Journal of Medical Research*, 2(2):117–122.

Erulkar AS, Bello M (2007) The Experience of Married Adolescent Girls in Northern Nigeria. Ed: The Population Council, Inc.

Federal Ministry of Health (FMOH) 2013. National HIV/AIDS and Reproductive Health Survey, 2012 (NARHS Plus). Federal Ministry of Health Abuja, Nigeria

Federal Ministry of Health [FMOH], 2008. National HIV/AIDS and Reproductive Health Survey, 2007 (NARHS Plus). Federal Ministry of Health Abuja, Nigeria

Federal Ministry of Health and Human Services FMHH (FMHHS), 1992. Focus on AIDS in Nigeria. *Nigeria Bulletin of Epidemiology* 2(2): 1-10.

Ferrand, R., Lowe, S., Whande, B., Munaiwa, L., Langhaug, L., Cowna, F., Mugurungi, O., Gibb, D., Munyati, S., Williams, B. G., Corbett, E. L.. 2010. Survey of children accessing HIV services in a high prevalence setting: time for adolescents to count? *Bulletin of the World Health Organization*. 88(6):428–34. Chimoyi, L. et al., 2015. HIV-related knowledge, perceptions, attitudes, and utilisation of HIV counselling and testing: a venue-based intercept commuter population survey in the inner city of Johannesburg, South



- Africa. *Global health action*, 8, p.26950. Available at: [http://www.globalhealthaction.net/index.php/gha/article/view/26950/xml\\_54](http://www.globalhealthaction.net/index.php/gha/article/view/26950/xml_54).
- Daniyam, C.A., Agaba, P.A. & Agaba, E.I., Original Article Acceptability of voluntary counselling and testing among medical students in Jos , Nigeria. , pp.2–6.
- Envuladu, E.A. et al., 2013. Social factors associated with teenage sexual behavior : A risk factor for STI / HIV among female adolescents in a rural Community in Plateau State , Nigeria. *Journal of Medical Research*, 2(2), pp.117–122.
- Fikadie, G., Bedimo, M. & Alamrew, Z., 2014. Prevalence of Voluntary Counseling and Testing Utilization and Its Associated Factors among Bahirdar University Students. *Advances in Preventive Medicine*, 2014, pp.1–9. Available at: <http://www.hindawi.com/journals/apm/2014/906107/>.
- Fylkesnes, K. & Siziya, S., 2004. A randomized trial on acceptability of voluntary HIV counselling and testing. , 9(5), pp.566–572.
- Jereni, B.H. & Muula, A.S., 2008. Availability of supplies and motivations for accessing voluntary HIV counseling and testing services in Blantyre , Malawi. , 6, pp.1–6.
- Leta, T.H., Sandøy, I.F. & Fylkesnes, K., 2012. Factors affecting voluntary HIV counselling and testing among men in Ethiopia : a cross-sectional survey.
- Odimegwu, C., Adedini, S.A. & Ononokpono, D.N., 2013. HIV/AIDS stigma and utilization of voluntary counselling and testing in Nigeria. *BMC public health*, 13, p.465. Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3662628&tool=pmcentrez&rendertype=abstract>.
- Onyeonoro, 2014. Knowledge and utilization of HIV counseling and testing services among students of a tertiary institution in Abia State, South East Nigeria. *Journal of HIV and Human Reproduction*, 2(1), p.8. Available at: <http://www.j-hhr.org/article.asp?issn=2321-9157;year=2014;volume=2;issue=1;spage=8;epage=14;aulast=Onyeonoro>.
- Orisakwe, E., Ochiogu, S. & Ocholla, P., 2015. Perceptions of the hiv counselling and testing programme by patients in a rural regional hospital in south africa. *South African Family Practice*, 57(6), pp.374–380. Available at: <http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L6078003>
- 66.
- Salako, A.A. et al., 2012. Characteristics of clients accessing HIV counseling and testing

- Africa. *Global health action*, 8, p.26950. Available at: [http://www.globalhealthaction.net/index.php/gha/article/view/26950/xml\\_54](http://www.globalhealthaction.net/index.php/gha/article/view/26950/xml_54).
- Daniyam, C.A., Agaba, P.A. & Agaba, E.I., Original Article Acceptability of voluntary counselling and testing among medical students in Jos , Nigeria. , pp.2–6.
- Envuladu, E.A. et al., 2013. Social factors associated with teenage sexual behavior : A risk factor for STI / HIV among female adolescents in a rural Community in Plateau State , Nigeria. *Journal of Medical Research*, 2(2), pp.117–122.
- Fikadie, G., Bedimo, M. & Alamrew, Z., 2014. Prevalence of Voluntary Counseling and Testing Utilization and Its Associated Factors among Bahirdar University Students. *Advances in Preventive Medicine*, 2014, pp.1–9. Available at: <http://www.hindawi.com/journals/apm/2014/906107/>.
- Fylkesnes, K. & Siziya, S., 2004. A randomized trial on acceptability of voluntary HIV counselling and testing. , 9(5), pp.566–572.
- Jereni, B.H. & Muula, A.S., 2008. Availability of supplies and motivations for accessing voluntary HIV counseling and testing services in Blantyre , Malawi. , 6, pp.1–6.
- Leta, T.H., Sandøy, I.F. & Fylkesnes, K., 2012. Factors affecting voluntary HIV counselling and testing among men in Ethiopia : a cross-sectional survey.
- Odimegwu, C., Adedini, S.A. & Ononokpono, D.N., 2013. HIV/AIDS stigma and utilization of voluntary counselling and testing in Nigeria. *BMC public health*, 13, p.465. Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3662628&tool=pmcentrez&rendertype=abstract>.
- Onyeonoro, 2014. Knowledge and utilization of HIV counseling and testing services among students of a tertiary institution in Abia State, South East Nigeria. *Journal of HIV and Human Reproduction*, 2(1), p.8. Available at: <http://www.j-hhr.org/article.asp?issn=2321-9157;year=2014;volume=2;issue=1;spage=8;epage=14;aulast=Onyeonoro>.
- Orisakwe, E., Ochiogu, S. & Ocholla, P., 2015. Perceptions of the hiv counselling and testing programme by patients in a rural regional hospital in south africa. *South African Family Practice*, 57(6), pp.374–380. Available at: <http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L6078003>
- 66.
- Salako, A.A. et al., 2012. Characteristics of clients accessing HIV counseling and testing

- services in a tertiary hospital in Sagamu, Southwestern Nigeria. *Nigerian Journal of Clinical Practice*, 15(4), pp.391–396.
- Sebudde, S. & Nangendo, F., 2009. Voluntary Counseling and Testing Services: Breaking Resistance to Access and Utilization among the Youths in Rakai District of Uganda. *Educational Research and Reviews*, 4(10), pp.490–497. Available at: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ888248&site=ehost-live> \n[http://academicjournals.org/ERR2/PDF/Pdf 2009/Oct/Sebudde and Nangendo.pdf](http://academicjournals.org/ERR2/PDF/Pdf%202009/Oct/Sebudde%20and%20Nangendo.pdf).
- Fikadie, G., Bedimo, M., Alamrew, Z., 2014. Prevalence of Voluntary Counselling and Testing Utilisation and Its Associated Factors among Bahirdar University Students. *Advances in Preventive Medicine*. 2014:2090-3480.
- Fylkesnes, K., Siziya S., 2004. A randomized trial on acceptability of voluntary HIV counselling and testing. *Tropical Medicine International Health* 9: 566-72
- Gadegbeku, C., Saka, R., Mensah, B., 2013. Attitude of the Youth towards Voluntary Counselling and Testing (VCT) of HIV/AIDS in Accra, Ghana. *Journal of Biology, Agriculture and Healthcare*. 3(11): pp 133-140
- Gray, R. H., Kiwanuka, N., Quinn, T. C., Sewankambo, N. K., Serwadda, D., Mangan, F. W., Lutalo, T., Nalugoda, F., Kelly, R., Meehan, M., Chen, M. Z.; Li, C., Wawer, M. J., 2000. Male circumcision and HIV acquisition and transmission: cohort studies in Rakai, Uganda. *AIDS*. 14 (15):2371-2381.
- Greene, W. C., 2007. A history of AIDS: Looking back to see ahead. *Eur J Immunol* Vol. 37 Suppl. 1: S94–S102.
- Huet, T., Cheynier, R., Meyerhans, A., Roelants, G., Wain-Hobson, S., 1990. Genetic organization of a chimpanzee lentivirus related to HIV-1. *Nature* 345: 356–359
- Hutchinson, P. L., Mahlalela, X., 2006. “Utilisation of voluntary counselling and testing services in the Eastern Cape, South Africa,” *AIDS Care*, vol. 18, no. 5, pp. 446–455
- Idele, P., Gilléspeie, A., Porth, T., Suzuki, C., Mahy, M., Kasedde, S., Luo, C., 2014. Epidemiology of HIV and AIDS Among Adolescents: Current Status, Inequities, and Data Gaps. *Journal of Acquired Immune Deficiency Syndrome*. 66:S144–S153
- Independent National Electoral Commission, INEC, 2015. Federal Republic of Nigeria Directory of Polling Units Lagos State .Revised January 2015. Downloaded

from;[http://www.inecnigeria.org/wpcontent/uploads/2015/04/PU\\_Directory\\_Revised\\_January\\_2015\\_Kogi.pdf](http://www.inecnigeria.org/wpcontent/uploads/2015/04/PU_Directory_Revised_January_2015_Kogi.pdf)

- Irwin, K. L., Valdiserri, R.O., Holmberg, S.D., 1996 The acceptability of voluntary HIV antibody testing in the United States: a decade of lessons learned. *AIDS* Vol. 10:1707–1717
- Jereni, B. H., Muula, A. S., 2008. Availability of supplies and motivations for accessing voluntary HIV counselling and testing services in Blantyre, Malawi. *BMC Health Service Research* 8:17.
- John, C., Okolo, S. N., Isichei, C., 2014. Sexual risk behavior and HIV infection among adolescents in secondary schools in Jos, Nigeria. *Nigerian Journal of Paediatrics*. 41 (2): 86 – 89.
- Joint United Nations Programme on HIV/AIDS (UNAIDS), 2000 VCT: UNAIDS Technical Update, May 2000.
- Joint United Nations Programme on HIV/AIDS (UNAIDS), 2012. Report on the Global AIDS Epidemic: Geneva, Switzerland: World Health Organization (WHO) <http://www.who.int/mediacentre/factsheets/fs360/en/> Accessed on: 29<sup>th</sup> April, 2016.
- Joint United Nations Programme on HIV/AIDS (UNAIDS), 2015. UNAIDS: Ending the AIDS Epidemic: Factsheet 2015-2030
- Joint United Nations Programme on HIV/AIDS (UNAIDS), NACA, 2014. Spectrum Estimate and Projection Package, Abuja
- Krause, J., Subklew-Sehume, F., Kenyon, C., Colebunders, R., 2013. Acceptability of HIV self-testing: a systematic literature review. *BMC Public Health* 13(1):735.
- Leta TH, Sandoy IF, Fylkesnes K., 2012. Factors affecting voluntary HIV counselling and testing among men in Ethiopia: a cross-sectional survey. *BMC Public Health* 12: 438.
- Lagos Bureau of Statistics (LBS), 2013. Abstract of Local Government Statistics, 2013. Ed: Lagos State Ministry of Economic Planning and Budget. [http://www.lagosbudget.org/pdf/files/119109\\_Abstract%20of%20Local%20Govt%20Stat%202013CDcopy.pdf](http://www.lagosbudget.org/pdf/files/119109_Abstract%20of%20Local%20Govt%20Stat%202013CDcopy.pdf). Accessed: 14/09/2016
- Lagos State Action Committee on AIDS (LSACA), 2016. LSACA NGOs Directory. : <http://lsaca-nigeria.org/wp-content/uploads/2012/03/LSACA-NGO-Directory.pdf>. Accessed: 02/02/2016

- Lozano, R., Naghavi, M., Foreman, K., Lim, S., Shibuya, K., Aboyans, V., et al. 2012. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 380:2095–2128.
- Mabuto, T., Latka, M.H., Kuwane, B., Churchyard, G.J., Charalambous, S., Hoffmann, C.J. 2014. Four Models of HIV Counselling and Testing: Utilisation and Test Results in South Africa. *PLoS ONE* Vol. 9 (7): 1-7.
- Menzies, N., Abang, B., Wanyenze, R., Nuwaha, F., Mugisha, B., Coutinho, A, Bunnell, R, Mermin, J, Blandford, J. M., 2009. The costs and effectiveness of four HIV counseling and testing strategies in Uganda. *AIDS* 23: 395–401
- Moore, A. M., et al. 2007. Coerced first sex among adolescent girls in sub-Saharan Africa: prevalence and context. *African Journal of Reproductive Health*, 2007, 11(3):62–82.
- NACA, 2011. Nigeria National AIDS Spending Assessment (NASA) 2009-2010; Level and flow of resources and expenditures of the national HIV and AIDS Response. NACA, 2014a. National HIV/AIDS Prevention Plan 2014-2015. Downloaded from: [http://sbccvch.naca.gov.ng/sites/default/files/National%2520HIV%2520PrevPlan%25202014-2015\(1\).pdf](http://sbccvch.naca.gov.ng/sites/default/files/National%2520HIV%2520PrevPlan%25202014-2015(1).pdf). Accessed on 25<sup>th</sup> May, 2016.
- NACA, 2014b. Federal Republic of Nigeria: Global AIDS Response Country Progress Report Nigeria. GARPR2014. [http://www.unaids.org/sites/default/files/country/documents/NGA\\_narrative\\_report\\_2014.pdf](http://www.unaids.org/sites/default/files/country/documents/NGA_narrative_report_2014.pdf). Accessed on 28<sup>th</sup> June, 2016.
- NACA, 2015. Global AIDS Response Country Progress Report Nigeria. GARPR 2015: [http://www.unaids.org/sites/default/files/country/documents/NGA\\_narrative\\_report\\_2015.pdf](http://www.unaids.org/sites/default/files/country/documents/NGA_narrative_report_2015.pdf). Accessed on 4<sup>th</sup> July, 2016
- NACA, 2016. National HIV Strategy for Adolescents and Young People 2016-2020. Accessed from: <http://naca.gov.ng/sites/default/files/National%2520HIV%2520Strategy%2520For%2520Adolescents%2520and%2520Young%2520People.pdf>. Accessed on: 29<sup>th</sup> July, 2016
- National Population Commission (NPC), 2010. Population Distribution by Age & Sex (State & Local Government Area). Federal Republic of Nigeria 2006 Population and Housing Census. Priority Table Volume Iv: Table Ds5. <http://www.population.gov.ng/images/Vol%2003%20Table%20DSx%20LGAPop%20by%20SDistrict-PDF.pdf>. Accessed on 22<sup>nd</sup> June, 2016.

- National Population Commission (NPC), ICF Macro, 2014. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria; National Population Commission Nigeria and ICF Macro.
- Ndabaroraa, E., Gugu Mchunu, G., 2014. Factors that influence utilisation of HIV/AIDS prevention methods among university students residing at a selected university campus. *Journal of Social Aspects of HIV/AIDS* 11(1):202-210
- Nduati R., John G., Mbori-Ngacha D., Richardson B., Overbaugh J., Mwatha A., et al., 2000. Effect of breastfeeding and formula feeding on transmission of HIV-1: A randomized clinical trial. *JAMA*.283(9):1167-74.
- Odimegwu, C., Adedini, S.A. & Ononokpono, D.N., 2013. HIV/AIDS stigma and utilization of voluntary counselling and testing in Nigeria. *BMC Public Health*, 13, p.465
- Olugbenga-Bello, A.I., Adebimpe, W. O., Abodunrin, O. L.. 2009. Sexual Risk Behaviour Among In-School Adolescents in Public Secondary Schools in a Southwestern City in Nigeria. *International Journal of Health Research*. 2(3): 243.
- Onoh, H. E., Mbal, A. U., Chukwuka, J. C., Ikeme, A. C., 2004. HIV/AIDS awareness and sexual practices among undergraduates in Enugu, Nigeria. *Nigerian Postgraduate Medical Journal*. 11(2):121-125
- Onyeonoro, U. U., Emelumadu, O. F., Chuku, A., Kanu, O. O., Ebenebe, U. E., Onwukwe, N., Uwakeme, C. , Ndukwe, E., 2014. Knowledge and utilisation of HIV counselling and testing services among students of a tertiary institution in Abia State, South East Nigeria. *Journal of HIV & Human Reproduction*. 2:8-14.
- Orisakwe, E., Ochiogu, S. & Ocholla, P., 2015. Perceptions of the hiv counselling and testing programme by patients in a rural regional hospital in south africa. *South African Family Practice*, 57(6), pp.374-380
- Oyo-Ita, A.E., Ikpeme, B.M., Etokidem, A.J., Offor, J.B., Okokon, E.O., Etuk, S.J., 2005. Knowledge of HIV/AIDS Among Secondary School Adolescents in Calabar –Nigeria. *Annals of African Medicine*. 4(1): 2 – 6.
- Rogers, A, Meundi, A, Amma, A, Rao, A., Shetty P, Antony, J., Sebastian, D., Shetty, P., Shetty, A. K., 2006. HIV-related knowledge, attitudes, perceived benefits, and risks of HIV testing among pregnant women in rural Southern India. *AIDS Patient Care STDS* 20: 803-11.

- Sabageh, A. O., Fatusi, A. O., Sabageh, D., Babatunde, O. A. 2014. Condom use: prevalence among rural and urban sexually active adolescents in Osun state, Nigeria. *Science Journal of Public Health*. 2(4): 270-274.
- Salako, A. A., Jeminusi, O. A., Osinupebi, O. A., Sholeye, O. O., Abiodun, A. O., Kuponiyi, O. T. 2012. Characteristics of clients accessing HIV counselling and testing services in a tertiary hospital in Sagamu, Southwestern Nigeria. *Nigerian Journal of Clinical Practice*. 15(4):391-6.
- Sebudde, S., Nangendo, F. 2009. Voluntary counselling and testing services: Breaking resistance to access and utilisation among the youths in Rakai district of Uganda. *Educational Research and Review*. 4(10):490-497
- Sharp, P. M. , Shaw, G. M., Hahn B.H., 2005. Simian Immunodeficiency Virus Infection of Chimpanzees *Journal of Virology*.79: 73891-3902
- Strauss, M., Rhodes, B., George, B., 2015. A qualitative analysis of the barriers and facilitators of HIV counselling and testing perceived by adolescents in South Africa. *BMC Health Services Research*. Vol. 15:250.
- Sweat M, Gregorich S, Sangiwa G, Furlonge C, Balmer D, Kamenga C, Grinstead O, Coates T. 2000. Cost- effectiveness of voluntary HIV-1 counseling and testing in reducing sexual transmission of HIV-1 in Kenya and Tanzania. *Lancet* 356: 113-121.
- Tenkorang, E. Y., Owusu, G. A., 2010. Correlates of HIV testing among women in Ghana: some evidence from the Demographic Health Survey. *AIDS Care* Vol. 23(3):296–307.
- Thierman, S., Chi, B., Levy, J. W., Sinkala, M., Goldenberg, R. L., Stringer, J. S. 2006. Individual-level predictors for HIV testing among antenatal attendees in Lusaka, Zambia. *Am J Med Sci* Vol. 332:13-7
- UNAIDS, 2012. UNAIDS Report on the Global AIDS Epidemic: Geneva, Switzerland: World Health Organization (WHO) <http://www.who.int/mediacentre/factsheets/fs360/en/>  
Accessed on 4<sup>th</sup> July, 2016
- UNAIDS, 2013. Global report on the global AIDS epidemic. Geneva,[http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS\\_Global\\_Report\\_2013\\_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf). Accessed on 4<sup>th</sup> July, 2016.

UNAIDS, 2015. UNAIDS: Factsheet 2015.2030: Ending the AIDS Epidemic. [http://www.unaids.org/sites/default/files/media\\_asset/20150901\\_FactSheet\\_2015\\_en.pdf](http://www.unaids.org/sites/default/files/media_asset/20150901_FactSheet_2015_en.pdf)  
Accessed on 19<sup>th</sup> July, 2016

United Nations Children's Fund (UNICEF), 2011. Opportunity in Crisis: Preventing HIV from early adolescence to young adulthood. New York: [http://www.unicef.org/media/files/Opportunity\\_in\\_Crisis\\_LoRes\\_EN\\_05182011.pdf](http://www.unicef.org/media/files/Opportunity_in_Crisis_LoRes_EN_05182011.pdf).  
Accessed on 3<sup>rd</sup> May, 2016.

United Nations Children's Fund (UNICEF), 2012. Progress for Children: A Report Card on Adolescents, Number 10. New York, NY. [http://www.unicef.org/media/files/PFC2012\\_A\\_report\\_card\\_on\\_adolescents.pdf](http://www.unicef.org/media/files/PFC2012_A_report_card_on_adolescents.pdf). Accessed on 28<sup>th</sup> May, 2016.

United Nations Children's Fund (UNICEF), 2013. UNICEF Analysis of UNAIDS 2012 HIV and AIDS Estimates. New York, NY. [http://www.unaids.org/sites/default/files/media\\_asset/UNAIDS\\_FactSheet\\_en.pdf](http://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf).  
Accessed on 3<sup>rd</sup> May, 2016.

WHO/UNAIDS (2004). Guide to Monitoring and Evaluating National HIV/AIDS Prevention Programmes for Young People. Geneva: WHO.

World Health Organization (WHO), 1994. Counselling for HIV/AIDS: A key to caring. For policy makers, planners and implementers of counselling activities. Geneva, World Health Organization/GPA.

World Health Organization (WHO), 2012a. Service delivery approaches to HIV testing and counselling (HTC): A strategic HTC programme framework. Geneva, Switzerland.

World Health Organization (WHO), 2012b. Voluntary medical male circumcision for HIV prevention. Geneva. [http://www.who.int/hiv/topics/malecircumcision/fact\\_sheet/en/index.html](http://www.who.int/hiv/topics/malecircumcision/fact_sheet/en/index.html). Accessed on 28<sup>th</sup> May, 2016.

World Health Organization (WHO), 2013. HIV and adolescents Geneva. [https://www.youngpeopleandhiv.org%2Ffiles%2FHIV\\_Testing\\_guideline.pdf](https://www.youngpeopleandhiv.org%2Ffiles%2FHIV_Testing_guideline.pdf). Accessed on 3<sup>rd</sup> May, 2016

World Health Organization (WHO), 2015. Global Tuberculosis Report 2014. Geneva, Switzerland



World Health Organization (WHO), 2016. Global Health Observatory data: HIV/AIDS.

Accessed from <http://www.who.int/gho/hiv/en/> Accessed on 19<sup>th</sup> September, 2016.

Yahaya, L. A. , Jimoh, A. A. G., Balogun, O. R., 2010. Factors hindering acceptance of HIV/AIDS Voluntary Counselling and Testing (VCT) among youths in Kwara State.

*Nigeria Journal of AIDS and HIV Research.* 2(7):138-143.

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## INFORMED CONSENT FORM

### TITLE: UTILISATION OF HIV COUNSELLING AND TESTING SERVICES AMONG FEMALE ADOLESCENTS AND YOUNG WOMEN IN IKORODU, LAGOS STATE.

Dear Respondent,

My name is Amoo, Babatunde Abiodun, a postgraduate student of the Faculty of Public Health, University of Ibadan. I am carrying out a study on the utilization of HIV counselling and Testing (HCT) services among female adolescents and young women (aged 15-24 years) in Ikorodu, Lagos State. I will be recruiting 400 participants into this study.

I will need to ask you some questions which may be difficult to answer, but please note that your answers will be kept confidential. Your name will not be written on the form so that your name will not be used in connection with any information given. The information you and other people gives will be used by Government and other health organizations to help find a solution to increasing awareness about HIV/AIDS and mobilize more women for testing.

Your honest answers to the questions will help to better understand what people think about HCT services and how to make it more assessible.

However, this study is entirely voluntary, you have no risk or any form of disadvantage if you do not want to participate. Please, in order to be sure that you actually accepted to take part in the study voluntarily, kindly sign or thumbprint your signature in the space provided.

Thank you for your audience.

#### Statement of person giving consent:

Now that the study has been well explained to me and I fully understand the content of the study process, I hereby agree to be part of the study.

.....  
Signature of Respondent

.....  
Date

.....  
Signature/Thumbprint of Witness (if applicable)

The phone number and email address of the researcher are; 08161260973 and amoobabatundey@gmail.com. You can also contact the supervisor of this project (Dr M.D. Dairo) at the Department of Epidemiology and Medical Statistics on 08035664708 and drdairo@yahoo.com

## QUESTIONNAIRE

### Utilisation of HIV Counselling and Testing Services among Female Adolescents and Young Women in Ikorodu, Lagos, State.

#### Introduction

Good day,

I am a masters student from the University of Ibadan and I am carrying out a research on Utilisation of HIV Counselling and Testing Services among Female Adolescents and Young Women. Your sincere response will help to better understand what people think about HCT services and how to make it more assessible.

I would be grateful if you participate

1. S/N..... (for official use only)

#### SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

2. Age (at last birthday): \_\_\_\_\_ years
3. Marital Status: 1. Single [ ] 2. Married [ ] 3. Others (Please Specify).....
4. Religion: 1. Christianity [ ] 2. Islam [ ] 3. Traditional [ ] 4. Others (Please Specify).....
5. Level of Education: 1. Primary [ ] 2. Secondary [ ] 3. Tertiary [ ] 4. Others (*Please Specify*).....
6. Area of Residence .....
7. Tribe: 1. Yoruba [ ] 2. Igbo [ ] 3. Hausa [ ] 4. Others (Please Specify).....
8. Occupation: .....
9. Where do you live in Ikorodu? .....

#### SECTION B: KNOWLEDGE OF HIV/AIDS

10. Have you ever heard of HIV or AIDS? 1. Yes [ ] 2. No [ ]
11. Which of these sources have you obtained HIV/AIDS related information from? [You can tick more than one option]
  1. Teacher/Lecturer [ ] 2. Friends [ ] 3. Parents [ ]
  4. Doctor/Health Worker [ ] 5. Book/Magazine [ ] 6. TV/Radio/Film [ ]
  7. Internet [ ] 8. Others (*Please Specify*).....

8. PLEASE KINDLY TICK THE CORRECT ANSWER

	YES	NO	DON'T KNOW
a. Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?			
b. Can a person reduce the risk of getting HIV by using a condom every time they have sex?			
c. Can a healthy-looking person have HIV?			
d. Can a person get HIV from mosquito bites?			
e. Can a person get HIV by sharing food with someone who is infected?			
f. Can a person become HIV infected by practicing unprotected sex?			
g. Can HIV be transmitted from mother to child (during pregnancy or birth)?			
h. Can HIV be transmitted by shaking hands?			
i. Can HIV be transmitted through blood transfusion or infected blood products?			
j. Can a person get HIV by sharing needle or syringe?			
k. AIDS have a cure			
l. HIV transmission can be avoided by a blood test before marriage?			

SECTION C: RISK PERCEPTION & RISKY BEHAVIOURS

9. How will you rate your chance of getting HIV? 1. High [ ] 2. Low [ ] 3. No Chance at all [ ]

10. Why do you think you have a high chance of getting HIV? [You can tick more than one option]

- 1. I share sharp objects [ ]
- 2. I have had blood transfusions [ ]
- 3. I do not often use condoms when I have sex [ ]
- 4. I have more than one sex partner [ ]
- 5. I know someone that has HIV [ ]
- 6. I work in the hospital/clinic/laboratory [ ]
- 7. Others (*Please Specify*).....

11. Why do you think you have a low chance or no chance at all of getting AIDS (or the virus that causes AIDS)? [You can tick more than one option]

- 1. I abstain from sex [ ]
- 2. I ensure use of condoms while having sex [ ]
- 3. I trust my partner [ ]
- 4. I have a limited number of sex partners [ ]
- 5. I have only one sex partner [ ]
- 6. I ensure safe blood transfusion [ ]
- 7. I ensure injection with sterile needles [ ]
- 8. Others (*Please Specify*).....

12. Have you ever had sex? 1. Yes [ ] 2. No [ ]

13. What kind of sex do you engage in? [You can tick more than one option]

- 1. With a casual Partner [ ]
- 2. With Commercial sex worker [ ]
- 3. With different partners [ ]
- 4. Without condom [ ]
- 5. Anal sex [ ]
- 6. Vaginal Sex [ ]

14. Have you ever had STI (*Sexually transmitted infection*)? 1. Yes [ ] 2. No [ ]

**SECTION D: HIV COUNSELLING AND TESTING**

15. Do you know that someone can do a test to know his/her HIV status? 1. Yes [ ] 2. No [ ]

16. Do you know where someone can be tested for HIV infection in your locality? 1. Yes [ ] 2. No [ ]

17. If you know where someone can be tested for HIV infection, where do you know?  
.....

18. Have you ever been tested to find out if you have HIV infection? 1. Yes [ ] 2. No [ ] (*If you select "No", please skip to question 22*)

19. When was the last time you were tested?

- 1. Less than 12 months ago [ ]
- 2. 12 to 23 months ago [ ]
- 3. 24 months or more ago [ ]
- 4. Others (*Please Specify*).....

20. The last time you had the test, did you yourself ask for it, was it offered to you or were you required to have the test?

- 1. I asked for the test [ ]
- 2. I was offered [ ]
- 3. I was required to have it [ ]
- 4. Others (*Please Specify*).....

21. Why was the test offered/requested?

- 1. Part of treatment [ ]
- 2. Visited somebody in the facility [ ]
- 3. Blood transfusion [ ]
- 4. HIV prevention and treatment outreach programme [ ]
- 5. Part of Employment [ ]
- 6. Routine Screening [ ]
- 7. Others (*Please Specify*).....

22. Did you get the results of the test? 1. Yes [ ] 2. No [ ]

23. Where did you obtain information about HIV counseling and testing from? [You can tick more than one option]

- 1. School teacher [ ]
- 2. Friends [ ]
- 3. Parents [ ]
- 4. Doctor/Health Worker [ ]
- 5. Book/Magazine [ ]
- 6. TV/Radio/Film [ ]
- 7. Internet [ ]
- 8. Others (*Please Specify*).....

24. If you have never tested for HIV, will you be willing to do so if you have the opportunity?  
1. Yes [ ] 2.No [ ]

25. What is/are the main reason why you would like to have a test? [You can tick more than one option]

- 1. To reduce fear and anxiety [ ]
- 2. To know my HIV status [ ]
- 3. For marriage purposes [ ]
- 4. Others (*Please Specify*).....

26. Do you know if any of your friend or family member has tested for HIV before? 1. Yes [ ] 2. No [ ]

27. Why would you not like to be tested for HIV? [You can tick more than one option]

1. Fear and anxiety that I may be positive [ ] 2. I feel it is not necessary [ ] 3. I cannot afford it [ ]  
 5. I have tested before [ ] 6. Others (*Please Specify*).....

**SECTION E: PERCEIVED BENEFITS OF HIV COUNSELLING AND TESTING**

28. Kindly tick in the correct response to the following questions;

	TRUE	FALSE	DON'T KNOW
a. Can someone acquire more information about HIV/AIDS and HCT by knowing their status?			
b. Can testing for HIV help one to seek early medical help?			
c. Do you the infection of an unborn baby can be prevented if one knows her HIV status?			
d. Do you think your partner can be protected from HIV infection if you know your status			
e. Do you think you can indirectly know the status of your partner if you know your own status?			
f. Do you think testing for HIV can allay/reduce fears of test outcome?			

29. Which of these people do you feel will benefit if you know your HIV status? [You can tick more than one option]

	TRUE	FALSE	DON'T KNOW
Myself alone			
My partner			
My family			
My unborn baby			
My sexual partner			
Nobody			

30. Will you feel confident to invite your partner to support you during testing? 1. Yes [ ] 2. No [ ]

**SECTION F: PERCEPTION OF THE DESIGN AND OPERATION OF HCT SERVICES AND OTHER TESTING RELATED FACTORS**

31. Many different factors prevent people from getting tested for HIV

	AGREE	DISAGREE
a. Getting money to go		
b. They don't know where the test is done		
c. The test centre is near where they live		
d. Not wanting to go alone/no one to accompany you to the facility		
e. The provider is not of the same sex as you.		
f. The test can only be taken in a hospital which offers other service besides HIV testing.		
g. The attitude of the health provider.		
h. The health provider will tell other people about your test result		
i. Fear of discrimination if HIV positive		
j. Fear that there may be no access to treatment if HIV positive		

32. Which of these reasons will make people consider testing for HIV?

	AGREE	DISAGREE
a. The test centre is on its own, not located in a hospital		
b. The test centre is managed by an NGO		
c. The test centre is owned by government		
d. Counseling is conducted before the test is done		
e. The test must be conducted even if they go to a health facility for other problem		
f. If they want to marry or for Job requirements		
g. If a friend/family member has done the test before		
h. Death of a close relative/partner caused by HIV/AIDS		
i. Testing in the community as part of an outreach programme		
j. The test can be conducted at home by oneself without the help of a healthcare provider		

33. Should HIV testing service be separated or be part of other services?

1. Yes, should be separate [ ]

2. No, should be Integrated [ ]

3. Don't know [ ]

34. What do you think can be done to encourage more young women to go for HIV counseling and testing? \_\_\_\_\_  
\_\_\_\_\_

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HEALTH RESEARCH AND ETHICS COMMITTEE  
REG.NO. NHREC04/04/2008  
(www.nhrec.net)

PROJECT TITLE: UTILISATION OF HIV COUNSELLING AND TESTING SERVICES  
AMONG FEMALE ADOLESCENTS AND YOUNG WOMEN IN IKORODU, LAGOS  
STATE.

REF. NO.: LREC /06/10/699

PRINCIPAL INVESTIGATOR: AMOO, BABATUNDE ABIODUN

ADDRESS: DEPT. OF EPIDEMIOLOGY AND MEDICAL STATISTICS, UCH, IB'ADAN

DATE OF RECEIPT OF VALID APPLICATION: 28/06/16

DATE OF APPROVAL: 12/07/16

This is to inform you that the research described here in the submitted  
protocol, the consent forms, advertisements and other participant  
information materials have been reviewed and given full approval by the  
Health Research and Ethics Committee of LASUTH. (LREC)

This approval dates from 12/07/2016 to 17/10/2016. If there is any delay in  
starting the Research, Please inform the HREC LASUTH so that the dates of  
approval can be adjusted accordingly. Note that no participant accrual or  
activity related to this research may be conducted outside of these dates. All  
informed consent forms used in this study must carry the HREC LASUTH  
assigned number and duration of HREC approval. In a multiyear research,  
endeavor to submit your annual report to the HREC early in order to obtain  
renewal of your approval and avoid disruption of your research.

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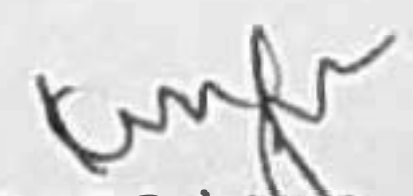
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