

**BARRIERS TO HIV COUNSELING AND TESTING AMONG WOMEN OF CHILD
BEARING AGE IN ABUJA, NIGERIA**

BY

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CERTIFICATION.

I certify that this work was carried out by Mr. Akinbiyi Olugbenga Akinyemi in the Department of Epidemiology and Medical Statistics, University of Ibadan.



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DEDICATION

To God almighty, who guided me in wisdom through this project and to my late mother, Mrs. Abiola Akinbiyi and my late wife Mrs. Bolarinwa Akinbiyi, for being the best could ever be.

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ABSTRACT

Awareness of HIV status, through HIV counseling and testing (HCT) programmes have been shown to increase safe sexual behavior and use of care and support services among adults. Despite the various strategies implemented by governmental and nongovernmental organizations to encourage voluntary testing, uptake of the services and awareness of HIV status is still low. Ignorance of HIV status by an individual may promote unsafe sexual behavior that drives HIV transmission. This study was conducted to assess the level of awareness and knowledge of HIV, identify barriers of HCT as well as the factors influencing it among women of child bearing age in Abuja, Nigeria.

A cross sectional study was conducted and a two stage sampling techniques was used to select women attending health facilities in Abuja. Simple random sampling technique was used to select 10 out of 203 health facilities in Abuja using balloting, thereafter, systematic sampling technique was used to select 1125 respondents among 2125 women attending the chosen facilities. Data on socio-demographic characteristics, awareness and knowledge about HCT, and reasons for non adoption were obtained using a pretested semi-structured interviewer administered questionnaires. Data were analysed using descriptive statistics, Chi-square test and logistic regression with level of significance set at 0.05.

The mean age of the respondents was 31.8years (SD=5.7). About 37.1% had no formal education while 27.0% had tertiary. About two thirds had two or more children while a third had received previous antenatal care. Most (80.2%) had ever heard of HIV/AIDS. The most commonly identified modes of transmission and prevention of HIV were sex with multiple sexual partners (88.2%) and abstinence (82.7%) respectively. The proportions who knew that HIV can be transmitted from mother to child during pregnancy, delivery and breastfeeding were 8.5%, 25.7% and 54.7% respectively. The proportion of women who had undergone VCT was 31.5% though 92.0% knew a place to get an HIV test. The commonest source of information about HCT was the radio (19.3%). Over half (57.5%) of those who ever tested asked for the test, another 16.0% were offered while 26.5% were required to do the test. Among those who never tested, the main reasons for not testing was not asked or required to take the test (35.8%). Significantly,

those that are <25 years (81.7%), with tertiary education (81.2%), that are Christians (70.9%), single (85.9%), from Yoruba tribe (50.0%) and those that have attended antenatal care previously (72.0%) had ever undergone HCT. The significant predictors of uptake of HCT were age (OR=5.1, 95% CI=2.1-12.2), higher education (OR =3.9, 95%CI=2.2 – 6.9), tribes (OR =2.5, 95% CI=1.3 – 5.0), religion (OR=8.9, 95%CI=4.4 – 17.9) and previous antenatal care (OR=13.6, 95% CI=5.5 – 33.3).

The proportion ever testing for HIV is still low though majority of the women know where to get the test. More women need to be offered HCT and interventions aimed at targeting women attending health facilities should focus more on women with lower educational status and without previous antenatal care.

Keywords: HIV Counseling and testing, women of childbearing age, safe sexual behavior

Word Count: 486

CHAPTER ONE

INTRODUCTION

1.1 Background

HIV/AIDS epidemic is one of the most destructive health crises of modern times ravaging families and communities throughout the world (Ashford, 2005), including increased morbidity rates, high infant, childhood and adult mortality, a high number of orphans and widows, deterioration of health sector, poorer households, reduced agricultural output, disrupted business activities adverse effect on education and fertility change. (WHO/UNAIDS, 2006).

The HIV/AIDS was first discovered in Nigeria in 1986 and the burden of the infection had steadily increased in the country from a sero prevalence rate of 1.8% in 1991 to 5.8% in 2001 and currently at 4.4% (WHO/UNAIDS 2006). Approximately about 2.6 million people aged 15-49 years old are living with HIV and AIDS (Nigerian National Planning Commission, Sentinel Survey 2005).

HIV Counseling and Testing (HCT) provides for all the segments of the population an opportunity to access complete and accurate information on HIV/AIDS. This is a critical entry point to prevention, care, support and treatment for all people and particularly for those already infected and affected. It enables a person to confidentially explore and understand his or her risk of HIV infection, provides an opportunity to fully comprehend the implications of sero-status and to learn about precautions for protection and for preventing the further spread of HIV infection. HCT facilitates personal and more informed decisions about HIV testing (NACA, 2004).

In the event of a positive HIV test result, counseling strengthens strategies for coping with the immediate stress, possible stigma, psychological and social impacts. It provides referrals to appropriate facilities for care, support and treatment and promotes more informed choices for the future (NASCP, 2004). The National AIDS/STI Control Program has supported the establishment of over 700 HIV counseling and Testing Centers in medical colleges and

hospital all over the country (NASCP, 2004). However, the impact of these facilities has not been documented.

1.2 Statement of Problem

The epidemic in Nigeria has extended beyond the commonly classified high risk groups and is now in the general population. With the adult prevalence rate at 4.4%, the nation was said to be in threshold of an exponential growth of the epidemic (NASCP, 2004). The government's response to the HIV/AIDS situation has passed through several phases in her response to the epidemic. The stages included an initial period of denial; a largely health response and now a multi-sectoral response that focus on prevention, treatment and mitigation disease response components. A central body is dedicated to leading and coordinating the response, while the various sectors, including Civil Society Organizations (CSO), Faith Based Organizations (FBOs), Persons Living With HIV/AIDS (PLWHA) support groups focus on packaging and implementing interventions based on a national action plan (FMOH, 2003).

Lately, there is increase in numbers of children being infected with the virus through mother to child transmission or are loosing one or both adult parent to the disease. The HIV/AIDS national estimate as at 2006 on the number of HIV infected children was 252,680. Till date, there has been no recent estimate. From all indication, the HIV/AIDS epidemic has continued to grow largely through heterosexual unprotected sexual exposures (NASCP, 2004). Women are disproportionately affected by the HIV/AIDS and are at high risk to the infection. They also shoulder most of the burden engendered by the epidemic (Skhosana, 2004). About 60% of all new HIV infection in sub-Saharan Africa however occurs among young people between the age 10-24year (UNAIDS, 2006). The Prevalence of HIV among young women was 17% compared with 4.4% among young men in Sub-Saharan Africa (Shisana et al, 2005). Majority of women become infected through heterosexual intercourse. Women progress to AIDS at lower viral loads level with higher CD4 counts than do men (UNAIDS, 2006). This impact has grave consequences on a women sexual and fertility decisions (Ntosi, 2000). Moreover women in most societies are the primary care providers for children and older people. So when young and middle aged women die from AIDS and its complications, they often leave dependants with no one to care for them (NIH, 2001).

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Access to HCT has been an issue when demand is created; people find it difficult and challenging to access services due to distance of the health facilities, attitude of the health personnel, wrong dissemination of information and lack of confidence in the health workers. Stigma and discrimination, lack of comprehensive and high quality services, and severe human resource constraints have limited the utilization of facility-based HIV services, including HIV Counseling and Testing (HCT) even when these are available (Adedoyin et al, 2007).

1.3 Justification for the study

Despite the various strategies employed by governmental and non-governmental organizations to encourage voluntary testing, the percentage of people that know their status from voluntary testing is quite low. Less than 10% know their status in the country (UNIADS 2007). This may not be unconnected with the high level of stigmatization accompanying HIV infection and HIV testing. In Africa, women are more vulnerable to such stigmatization and many are illiterate. Hence a higher percentage of women get tested for HIV as a result of death of spouse or HIV positive spouse, antenatal requirement and death or illness of their baby. More needs to be done in educating women about HIV/AIDS and their right to early HIV testing (Egieyeh et al, 2007).

HIV Counseling and Testing can be a motivating force for HIV-positive and negative people alike to adopt safer sexual behavior which enables sero-positives to prevent their sexual partners from getting infected and those who tested negative to remain negative. This intervention also facilitates access to prevention services for sero-negatives and is a key entry point to care and support services for those who are HIV infected (UNAIDS, 2002).

The present study examines the barriers among women of reproductive age group attending district hospitals in Abuja, the Federal Capital territory located in the North central geopolitical zone of Nigeria. The identification of those factors influencing testing is an important step in identifying those groups of women whom interventions should be directed to, especially in resource poor settings like Nigeria.

1.4 Objectives of the study

1.4.1 Broad objective

To determine the barriers to HIV Counseling & Testing (HCT) among women of reproductive age (15- 49 years) in Abuja.

1.4.2 Specific objectives

1. To assess the knowledge of women attending the antenatal clinics in Abuja on HIV/AIDS transmission.
2. To determine the coverage of HCT among women attending the antenatal clinics in Abuja
3. To determine factors affecting the utilization of HCT services among women attending the antenatal clinics in Abuja

CHAPTER TWO

LITERATURE REVIEW

2.1 Epidemiology of HIV and AIDS

Globally, the pandemic of HIV and AIDS has continued to constitute serious health and socio economic challenges for more than two decades. In underdeveloped and developing countries, it has reversed many of the health and developmental gains over the past three decades as reflected by indices such as life expectancy at birth and infant mortality rate among others. The epidemic has also facilitated the re-emergence of disease conditions such as pulmonary tuberculosis and other opportunistic infections.

As at the end of 2009, about 33.3 million persons were estimated to be infected with HIV globally. Of these, 22.5 million (i.e. 68% of the global total) were in Sub-Saharan Africa, and about 2.98 million in Nigeria (FMOH, 2010). Thus, Nigeria has the second highest number of people living with HIV in the world after South Africa (UNAIDS, 2010). Since the first case of AIDS in Nigeria was reported in 1986, the HIV and AIDS epidemics have continued to evolve. The first sentinel surveillance survey showed HIV prevalence rate of 1.8% in 1991. Subsequent sentinel surveys showed increasing prevalence rates of up to 5.8% in 2001 and then a decline to 4.4% in 2005. However, the 2008 prevalence of 4.6% showed a slight reversal in the downward trend, thereby generating some interest.

Estimates from the 2008 ANC survey showed that 2.87 million persons were living with HIV in Nigeria. The survey showed highest HIV prevalence among women aged 25-29 years (5.6%) followed closely by those aged 30-34 years (4.9%) (FMOH, 2010). Also, the survey showed highest prevalence among women with only secondary level education (5.8%). In 2007, the national population-based survey showed an overall HIV prevalence of 3.6% (4.0% among females and 3.2% males) (NARHS, 2007). The 2010 HIV sentinel sero-prevalence survey among pregnant women attending antenatal clinics in Nigeria revealed a

national HIV prevalence of 4.1%. The prevalence ranged from 1.0% in Kebbi State to 12.7% in Benue State. A total of 16 States and FCT had prevalence above 5% (Figure 2.1) (FMOH, 2010). Among the study site in the FCT included in the survey, Wuse/Garki had the highest prevalence rate of 12.3% (Table 2.1).

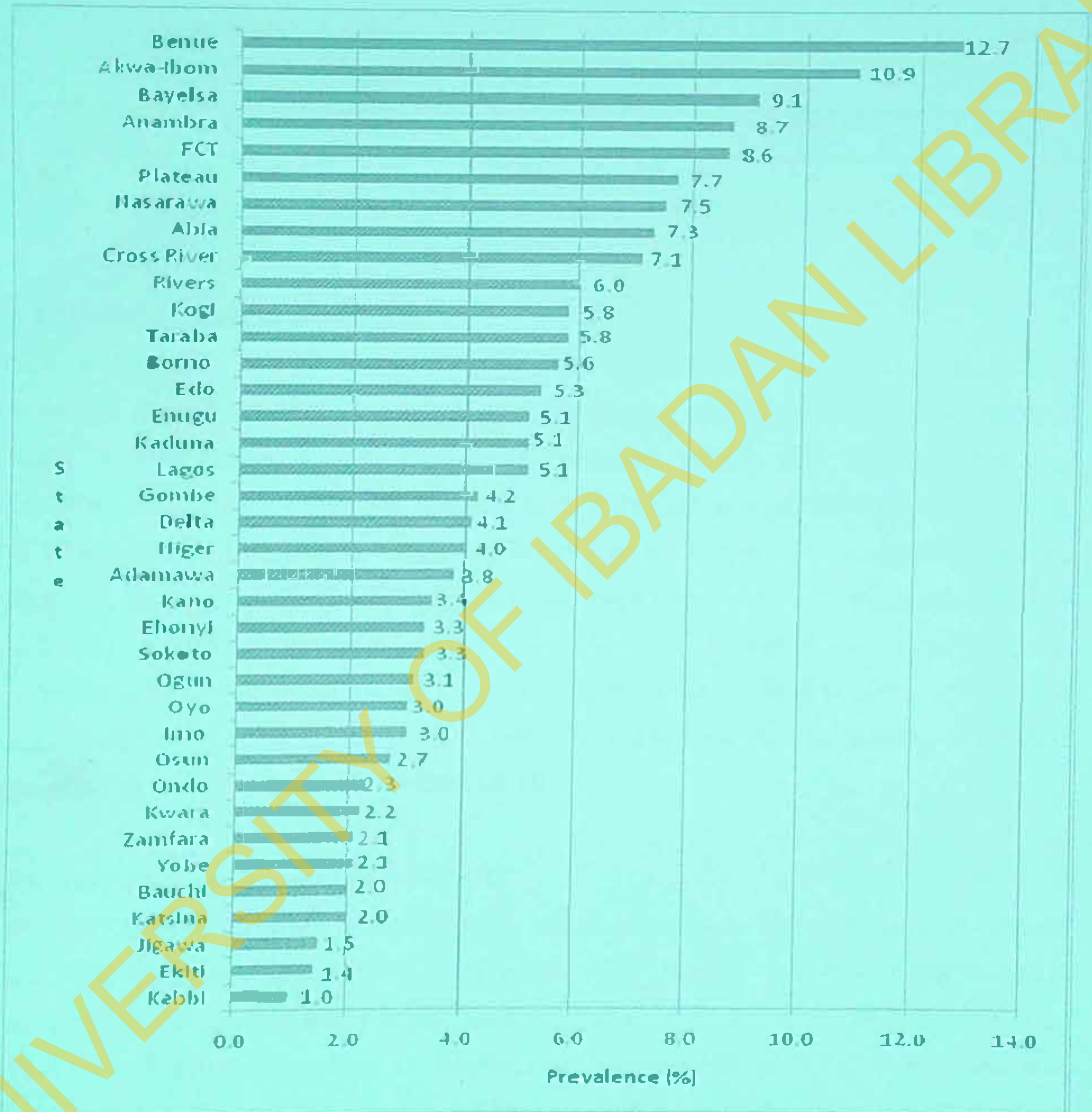


Figure 2.1 HIV Prevalence by State (FMOH, 2010)

Table 2.1 HIV prevalence in FCT (FMOH, 2010)

State	Site	Site Status	Total Sample	Number Positive	Prevalence (%)	Confidence Interval
FCT	Gwagwalada	Urban	300	19	6.3	3.6-9.1
	Nyanya	Urban	258	19	7.4	4.3-10.6
	Wuse/Garki	Urban	301	37	12.3	8.6-16.0
	Bwari	Rural	149	10	6.7	2.7-10.7
	Karshi	Rural	156	15	9.6	5.0-14.2
Total			1164	100	8.6	7.0-10.2

2.2 Modes of transmission of HIV

HIV is spread by sexual contact with an infected person and by blood or body fluid exchange through sharing of contaminated needles or transfusions of infected blood or blood clotting factors. Infants born to HIV-infected women may become infected in gestation, during birth, or through breastfeeding. Heterosexual transmission accounts for up to 80% of all HIV infection in Africa. Other transmission routes in Africa include injection drug use (2.8%), mother-to-child (2.6%), and blood products and transfusion (2.5%). Unknown modes of transmission result in 7% of HIV infections. In Nigeria, the heterosexual route of infection accounts for 82 percent of all transmissions and together with blood borne and mother to- child transmission account for the vast majority of different routes of HIV transmissions (UNAIDS, 2002).

2.3 Prevention and Control of HIV/AIDS

The NSF 2005-09 identified a number of key and mutually re-enforcing strategies to prevent new HIV infections and promote behavior change. Broadly classified, these strategies include HIV Counseling and Testing (HCT); Prevention of Mother-to-Child Transmission (PMTCT) of HIV; Prevention of Biomedical Transmission of HIV; Early Detection, Treatment, and Control of Sexually Transmitted Infections (STIs) (Condom Promotion); Communication Interventions targeting the general population on the one hand and most-at-risk populations (MARPs) on the other hand; and Integration of Sexual and Reproductive Health (SRH) and HIV Services (National HIV/AIDS strategic plan, 2010).

2.3.1 Prevention of mother to child transmission of HIV

Considerable efforts are being made by the national response to strengthen PMTCT interventions. The 11 experimental PMTCT sites in 2003 had increased to 640 by December 2008. According to WHO/UNAIDS/UNICEF (2008), a total of 207,107 pregnant women had been tested for HIV in 2007, an estimated coverage of 4% (National HIV/AIDS strategic plan, 2010). The coverage of PMTCT services in Nigeria for 2007 was also reported as 7% for administration of ART prophylaxis during pregnancy, and 2% for administration of ART prophylaxis to infants born to infected mothers. According to NACA (2009), in 2008 about 675,550 pregnant women received HIV counseling and testing for PMTCT of which 21,478 (3.2%) received ARV prophylaxis. The National AIDS and STD Control Program (NASCP) of the Federal Ministry of Health (FMOH) reported uptake of PMTCT services nationally at 11%, as at July 2009 up from 2% in 2004 (National HIV/AIDS strategic plan, 2010). The same NASCP report indicates the number of HIV exposed infants receiving ARV prophylaxis has increased from 516 in 2004 to 2,230 babies. Therefore, even if the PMTCT coverage was substantially increased before the end of the current NSF in December 2009, it will be impossible to reach the national PMTCT policy target of reducing “the transmission of the HIV virus through mother-to-child-transmission by 50%, by the year 2010” and a far cry from the national target of Universal Access of 80% by 2015.

To prevent the transmission of HIV from mother to baby, the World Health Organization (WHO) promotes a comprehensive approach, which includes the following four components: Primary prevention of HIV infection among women of childbearing age; Preventing unintended pregnancies among women living with HIV; Preventing HIV transmission from a woman living with HIV to her infant; and Providing appropriate treatment, care and support to mothers living with HIV and their children and families (WHO, 2010).

Table 2.1: WHO/UNICEF/UNAIDS Strategies for PMTCT

Prong	Strategies
Primary prevention of HIV infection	<ul style="list-style-type: none"> -Communication for behaviour change (ABC approach) to protect reproductive men and women from becoming infected with HIV and other STIs provide voluntary counselling and testing services following the National HIV Counselling and Testing Guidelines - Promote correct and consistent use of condoms - Encourage open discussion on reproductive health issues between parents and their children - Early diagnosis and treatment of STIs
Prevention of unintended pregnancies among HIV infected women	<ul style="list-style-type: none"> -Provide family planning counselling integrated into all potential PMTCT and VCT service sites
Prevention of HIV transmission from infected women to their infants	<ul style="list-style-type: none"> -Ensure availability of antiretroviral drugs and other appropriate supplies for PMTCT - Provide testing and counselling services integrated with ANC, labour & delivery and postnatal care - Safer obstetrical practices - Provide appropriate counselling on infant feeding and support exclusive breastfeeding
Treatment, care and support of HIV infected women, their infants and their families	<ul style="list-style-type: none"> -Provide ART for women with advanced disease - Provide pregnant women not eligible for ART with effective PMTCT regimens - Ensure appropriate follow-up of infants born to HIV positive women including: OI prophylaxis and early infant diagnosis - Provide HIV testing for family - Link PMTCT with care and support initiatives organized for infants and HIV infected women

Source: WHO, 2010.

2.3.2 Sexually Transmitted Infections control

Evidence abounds that sexually transmitted infections (STIs) facilitate HIV transmission. Early detection, treatment, and control of STIs is therefore a key strategy under NSF 2005-09 for HIV prevention. However, sufficient attention and resources have not been placed on early detection and treatment of STIs in the context of national response to HIV/AIDS epidemic.

2.3.2.1 Condom promotion

The NSF 2005-2009 place much premium on condom promotion and use as a dual mechanism for reducing HIV and other STI transmission as well as preventing unwanted pregnancies. Informed opinions indicate that condom distribution has been going up during the NSF 2005-09 period despite strenuous efforts by some religious groups to proscribe it; voluntary limitations on condom advertising are in place. This notwithstanding, in 2007 alone, nearly 180 million condoms were distributed through workplace programs, community mobilization, awareness events, health clinics, and through the private sector social marketing programs. Awareness of the male condom is quite high (71%); not so much is known about the female condom (13%). Ironically and worryingly, only 49% of those who engaged in sex with a non-marital partner in the preceding 12 months before the 2007 National Reproductive Health Survey (NARHS) survey used a male condom (National HIV/AIDS strategic plan, 2010).

2.3.3 Communication Interventions

The NSF 2005-09 placed much emphasis on the fact that communication interventions, including information, education and communication (IEC) and behavior change communication (BCC), hold a vital and indispensable place in HIV prevention interventions. Awareness of HIV/AIDS continues to be above universal levels 87.7% in 2003 and 93.8% in 2007 but comprehensive knowledge of HIV transmission continued to be low (24%) (National HIV/AIDS strategic plan, 2010). Relevant policy and program related documents on communication interventions have been developed including the National Behavior Change Communication Strategy 2009-14, which proposes a minimum package of strategic interventions for several vulnerable groups; and a 3- Year Prevention Plan which aims at according greater attention to HIV prevention. Greater stakeholder

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participation and involvement in communication interventions have enabled the provision of improved IEC through innovative and non-traditional approaches targeting the general and specific population segments.

2.3.4 Voluntary counseling and Testing (VCT)

Voluntary counseling and testing (VCT) is an effective means of addressing the psychological and socio-sexual aspects of HIV and AIDS. It is also an entry point for many forms of HIV and AIDS prevention and control interventions, including prevention of mother to child transmission. HCT also constitutes a good platform for linkage between reproductive health and HIV/ AIDS-related programmes.

HCT is the process by which a person undergoes counseling, enabling him or her to cope with stress and make informed choices about HIV testing. Confidentiality of counseling sessions, test results, and the voluntary choice to test are emphasized. HCT programs have demonstrated their ability to increase safe sexual behavior and use of care and support services among adults (Coates et al. 1998). By helping clients learn their HIV sero status and creating a personalized HIV risk reduction plan, HCT can provide the information and support necessary to change risky behaviors that could lead to HIV infection or transmission (CDC, 1994). Counseling, both before and after the test, and a risk reduction plan are the key features that distinguish HCT from other HIV testing services. HCT has become a widely advocated HIV/AIDS prevention strategy among adults. Most clients of HCT services are in their mid- to late twenties (Coates et al. 1998; Ladner et al. 1996; Allen et al. 1992).

The pretest counseling involves the test process, the implications of testing, risk assessment and risk prevention, coping strategies and decision to test. The post-test counseling for a HIV negative and positive person involves news given, risk reduction plan made, discussion about disclosure of HIV status. Follow up counseling and support occurs through medical care, emotional support, and social support. (TASO, 2001).

According to the National Training Manual for Voluntary Counseling Testing (VCT) services in Nigeria for all HIV positive individuals, counsel about "positive living" should

be rendered. This includes avoiding additional exposure to the virus and other STI's, early referrals for medical services even for minor illness, including Anti-Retro Viral (ARV) therapy, avoiding re-exposure to the virus and other STI's, maintaining their weight through good diet and avoiding diarrhea diseases, joining Persons Living with HIV/AIDS (PLWHA) organizations, and referral for Preventing Mother to Child Transmission (PMTCT) for all pregnant women (UNAIDS, 2014).

The importance of HIV Counseling and Testing services in Nigeria is rapidly growing (FHI, 2007). There is a guideline on HCT which is well communicated. (National HCT Guideline) The situation of HCT in Abuja has improved with time, HCT services are available in most government and non governmental organizations. Currently, Abuja has about 26 sites for HCT with trained professional counselors. The general population benefits from the services. The level of knowledge of health care providers about HCT has generally increased over years. They are becoming more aware on the importance of HCT. The HCT services can be assessed for free in all the sites especially sites that receive test kits from the Federal Government of Nigeria. After testing, the client's blood is usually sent to the laboratory for CD4 counts and viral load to assess the level of the virus. If the viral load is high the client will be referred to PEPFAR ART sites for free ARV drugs.

By December 2008, HCT service delivery sites increased to 908; about 3.37 million people (men and women) had ever been counseled, tested, and received their test results by this date. The rate of increase of access to HCT services for both men and women is similar: from about 7% in 2003 to 11% in 2005 to 14% in 2007 (National HIV/AIDS strategic plan, 2010). These contrasts sharply with the intent of the framework targeting 50% of Nigerians to access quality HCT services by 2010 and falls far short of the country's commitment to universal access target of at least 80% by the same year. Coupled with the fact that the number of HCT services delivery points are woefully inadequate to meet the needs of the population, most services are still facility-based and located in secondary and tertiary health facilities, often inaccessible to hard-to-reach communities and have insufficient targeting of most-at-risk populations (MARPs) (National HIV/AIDS strategic plan, 2010).

2.3.4.1 Findings from the 2005 National HIV/AIDS and Reproductive Health survey

The National HIV AIDS and Reproductive Health Survey (NARHS) is a biennial nationally representative household survey of HIV AIDS and other reproductive health issues. The survey involves males and females of reproductive age group. Concerning HIV counseling and testing the survey found that 55.7% of all respondents knew where to get a test with a higher proportion among males (59.1%) than females (51.7%). Among those who never tested for HIV, 42.6% indicated a willingness to test with the figures for males and females being 47% and 37.3% respectively. The reasons for not desiring an HIV test include: don't want to know (9.3%); fear of the result (8.9%); not necessary (71%); can't afford it (4.8%). About 10.8% of females ever tested for HIV. The reasons for having the test included voluntary (41.2%), offered (15.3%) and mandatory (33.9%). Further analysis revealed that urban dwellers, highly educated persons and those from southern zones were more likely to be tested. Respondents between the ages of 25 and 39 years were also more likely to go for an HIV test than the other age groups. Implications of the survey findings were that: expanding access to HCT backed with effective behavior change communication and utilizing radio has the potential to foster the emerging culture of HIV voluntary testing; policy and programme efforts to discourage mandatory HIV testing are needed to reduce the current high level of mandatory testing.

2.3.4.2 Other related local literature on HCT

Most hospital based studies on acceptability of voluntary counselling and testing among women in Nigeria have involved pregnant women attending antenatal clinics. Ekanem and Gbadegehin (2004) studied acceptability of VCT as a strategy for the uptake of Prevention of Mother to Child Transmission of HIV. They found a good knowledge of modes of HIV transmission but less than half knew about the association between breast milk and HIV transmission. The authors recommended the need to increase the level of knowledge, acceptability, and adoption of VCT. A similar study at the University of Nigeria Teaching Hospital found a high VCT uptake among pregnant women but observed delays in obtaining HIV test results (Onah et al 2008).

A study of pregnant women attending primary health care centres in Ilesa found about 80.6% underwent HIV testing and concluded that a successful integration of Voluntary

Counselling and Testing was feasible in developing countries like Nigeria (Afolabi et al 2007). In Awka, South-east Nigeria 80.6% of pregnant women interviewed approved of VCT. Refusal of VCT was attributed to social and cultural discrimination (Okonkwo et al 2007). Adeneye et al (2004) studied factors influencing willingness to seek VCT among pregnant women. They found that about 27% knew about vertical transmission of HIV while 6% had been tested. About 89% expressed willingness to test after being told about VCT. Factors identified as significantly affecting willingness include belief in AIDS reality, perception that clinic offered privacy, knowledge of HIV mode of spread and perceived social support. They concluded that the results provided an optimistic foundation for launching VCT in Nigeria.

Other studies on HCT include women seeking induced abortion in private clinics in Benin City (Enosolease and Ofor 2004). The proportion who accepted HIV testing among the women was 13%. Older women were found to be more likely to test than younger ones and housewives less likely than employed and unemployed.

Peltzer et al (2004) studied university students in four African countries -including Nigeria- concerning attitudes towards HCT. About 17.3% of the students had already been tested but 16.2% did not get results. Factors associated with positive attitude were having had an HIV test; intention to go for a test; self rated HIV knowledge; intention to go for a test; number of partners and knowing someone with HIV/AIDS.

Adults in a rural community in Northern Nigeria were interviewed concerning acceptability of HCT and majority of the respondents were willing to have an HIV test. However misconceptions, fear, gaps in knowledge and limited access to HCT were found to be prevalent. The need to scale up HCT services was a recommendation from the study (Iliyasu et al 2006).

2.4 Knowledge of HIV transmission

Knowledge of HIV infection is a prerequisite to initiating antiretroviral therapy a long-term treatment of people living with HIV, and most infected people in sub-Saharan Africa (SSA) are unaware of their status (USAIDS, 2010). In the past few years, there have been global efforts to attain universal access target for all HIV services, including HCT services. In Nigeria, measures taken to increase utilization of HCT services include, among others, dissemination of HCT-related behavior change communication messages through mass media, use of information, education and communication materials; and establishment of additional HCT centers particularly in remote areas.

Knowledge of HIV/AIDS in sub-Saharan Africa is still low (Asamoah-Odei et al., 2004). Generally, women are less informed about HIV than men in both urban and rural areas. This is the case even in the 10 countries where >1 out of 10 adults is infected (Asamoah-Odei et al., 2004). Data from 35 of the 48 countries in sub-Saharan Africa showed that, on average, young men were 20% more likely to have correct knowledge of HIV than young women. Education levels made a huge difference. For example, young women in Rwanda with secondary or higher education were five times as likely to know the main HIV transmission routes than were young women who had no formal education (Demographic and Health Surveys, 2001). In sub-Saharan Africa, the majority of HIV transmission occurs through heterosexual intercourse, mother to-child transmission and unsafe blood transfusion (Walker, 2004).

Between 2005 and 2007, the National HIV/AIDS Reproductive Health Survey (NARHS) (FMOH, 2007; FMOH, 2008) revealed an overall decline in knowledge of HIV in South East Nigeria, even though there was a marginal increase in uptake of HCT. Anecdotal evidence suggests that most people tested for HIV were pregnant women attending antenatal clinics, people who have been previously sick, or those intending to get married. The NARHS and Reproductive Health Survey and National Demographic and Health Survey also show high level of awareness (94%) and willingness to test (72%) for HIV/AIDS across demographic and social status. However, these surveys have consistently reported poor comprehensive knowledge of HIV and AIDS (22.2%) among young people in Nigeria in

2008 (National Population commission, 2009; Federal Ministry of Health, 2008). This is similar to less than 50% knowledge level reported by the WHO among young people globally in 2005 (WHO, 2006). Perhaps with greater knowledge of the benefits of counselling and testing more individuals, couple and communities would be willing to access the service.

A previous study, reported that the level of awareness and knowledge of HIV/AIDS in Nigeria is still low and thus, the attitudes of most Nigerians toward voluntary HIV/AIDS counseling and testing needs to be improved (Yahaya et al., 2010). For instance, UNAIDS (2008) revealed that in 2006, only 10% of HIV-infected women and men were receiving antiretroviral therapy and only 7% of pregnant women were receiving the treatment needed to reduce the risk of mother-to-child transmission of HIV (Lawal, 2008).

2.5 Knowledge of MTCT

Mother-to-child transmission (MTCT) of HIV remains a major public health problem and continues to account for a substantial proportion of new HIV infections among young children (WHO, 2010). The delivery of HIV counseling and testing (HCT) services toward pregnant women for prevention of mother-to-child transmission (PMTCT) is one of the most important HIV prevention strategies. Previous studies have reported high level of knowledge of MTCT among women (Deressa et al., 2014). In a study done among mothers in Addis Ababa, Ethiopia, about 90% of them knew that HIV can be transmitted from an infected mother to her child (Jebessa and Teka, 2005). This high level of knowledge may be attributed to various health education programmes being conducted both at health-facility and community levels and a broadcast through mass media in this urban setting.

In a health-facility study in Uganda, 80% of the women knew that a mother with HIV can transmit the virus to her child (Bajunirwe and Muzoora, 2005), similar report has been made by previous authors among pregnant women studied at ANC clinic in Khartoum, Sudan (Mahmoud et al., 2007) and Zimbabwe (Perez et al., 2008). The high level of knowledge of mothers about MTCT is very critical for preventing the transmission of the virus from HIV-positive women to her child, and programmes should utilize various means of increasing the awareness and knowledge of the community through proper IEC/BCC interventions.

2.6 Barriers to HCT uptake

Worldwide, it is estimated that over 90% of HIV-infected individuals still don't know their status (Ibrahim et al., 2013). Surveys in sub-Saharan Africa have shown that a median of just 12% of men and 10% of women had been tested for HIV and received the results. Only about 7% of young people in Nigerian have received test for HIV (National Population Commission, 2009). Low uptake of HCT service will mean that greater proportion of the infected are unidentified thereby limiting opportunity for prevention, treatment, care and support services for the young people (Ibrahim et al., 2013).

A Ghanaian study showed that 76% of the sampled women reported no prior HIV counselling and 78% had never undergone any HIV testing. The study also indicated that the majority of the respondents were not accessing the available HCT services. It was also found that education, prior HIV testing and history of Sexually Transmitted Diseases (STDs) promoted respondents' acceptance of VCT (Holmes et al., 2008). An NGO, AVERT has reported that the Nigerian government has set up the National HIV/AIDS Strategic Framework to manage the nation's response from 2005 - 2009. Thus, by 2010 Nigeria aims at providing antiretroviral therapy to 80% of adults and children with advanced HIV infection and to 80% of HIV – positive pregnant women (AVERT, 2009).

In Zambia a study showed that waiting times were an important component of overall VCT quality. Long waiting times, particularly while waiting for a HIV test result, deterred clients from learning their HIV status (Ron et al., 2009). In the same study the NGO sector recorded the shortest waiting time (15 minutes) while clients in the mission sector waited the longest (42.5 minutes). There were no significant differences between sectors in the median amount of time spent by clients in their pre-test or post-test counseling sessions, or in waiting for a HIV test result. There were relatively low wait times for HIV test results after testing and post-test counseling sessions were substantially shorter than pre-test counseling sessions. (Ron et al., 2009)

A study among young people in Lilongwe, Malawi showed that 72% males and 65% females were willing to have an HIV test and that willingness to have a test was largely

influenced by the cost, privacy, confidentiality and distance to testing centres (Munthali et al., 2004). This agrees with another study of youth in Zambia which found that youth are more likely to go for testing in areas where they could go in and out without being noticed (Yoder et al., 2004).

In a cross-sectional survey carried out by UNAIDS, twenty-two nurse counsellors and six community volunteers were interviewed (Ginwallaa et al., 2002). Twenty-four counselling sessions were observed and 24 client exit interviews were conducted. Although nine of the 22 nurse counsellors had only in-service rather than formal training for HIV counselling whereas all community volunteers had been formally trained, nurse counsellors demonstrated better interpersonal skills than did community volunteers. Both clients and counselors identified fear of a positive result as a major barrier to HIV testing. Clients also raised concerns about confidentiality. The study identified areas where training needs to be strengthened and suggested ways of improving the services (Ginwallaa et al., 2002).

2.7 Factors affecting utilization of HCT services

Several factors may be responsible for an individual's decision to accept HIV testing. These includes; Socio-demographic characteristics; Sexual behavioural; Stigma and discrimination; and Confidentiality and HCT service organisation factors. A study among Latinos in America and other similar studies show that men who are at risk and who are educated are more likely to intend to test than those who are not (Desgrées-DuLoû et al., 2006; Sherr et al., 2007; MacPhail et al., 2008;). Other factors may include free HCT service, linking of HCT with care, and providing high quality HCT service. Conversely, factors like inconvenient hours, location, cost (Nicole et al., 2009) and fear (UNAIDS, 2001) have negatively affected uptake of HCT services. Beyond uptake of the test, researches have shown that many of those who take up the test never return for their test results. Other studies reported that about 65% of individuals returned to learn their result after being tested (Population council, 2001; Sukari, 2008).

2.7.1 Socio-demographic factors

These factors include marital discord, gender, age, higher household wealth, living in a high cost housing area, and higher education. A team of South African researchers carried out a

study on factors associated with participation in HIV voluntary counselling and testing among TB patients in a rural South African hospital. A total of 153 consecutive adult TB patients were enrolled in the study. Demo-graphic characteristics, knowledge, attitudes and beliefs regarding HIV/AIDS were measured in order to determine possible associations with the decision to accept or reject VCT (O'Donnell et al., 2004). In the study, education was found to be the most important predictor of refusal to participate in VCT. For instance, educated TB patients accepted VCT more than the illiterate patients. The belief that VCT participation led to better health care and that participants had sufficient privacy to make their decisions about VCT were significantly associated with the acceptance of VCT. The study concluded that reaching educated TB patients in rural South Africa with VCT programmes may require different outreach strategies than less educated patients (O'Donnell et al., 2004).

Another study done to identify the factors that affect HCT utilization among the youth in Ethiopia found that being female, older youth, educational level of secondary (and higher) as well as being sexually active were factors that contributed to such individuals being more likely to test for HIV. It was suggested that these respondents might have engaged in high-risk sexual activities (compared to younger and sexually inactive youths) and this might have prompted them to wanting to know their status (Yimam, 2005). In another study, secondary and above educational status, singleness and non-polygamous union factors showed a statistically significant and positive association with HCT utilization (Wondimagegn, 2004).

Pignatelli et al. (2006) investigated the factors predicting uptake of VCT in a mother and child centre in Ouagadougou, Burkina Faso. The sample consisted of all pregnant women receiving ante-natal, group health - education at St Camilla Medical Centre, Ouagadougou. It was found that less than 20% of the sample accepted VCT. The HIV seroprevalence rate was 10.6%, while the uptake rate was independently associated with age, the number of previous pregnancies, and the number of previous miscarriages.

2.7.2 Sexual behavioural factors

Studies have shown the effect of past sexual exposure on HCT uptake. Prior sexual risk, such as inconsistent condom use, history of STIs and involvement with commercial sex is negatively related to testing, presumably due to higher perceived risk of getting HIV (Creel and Rima, 2012). A study done to address determinants of counselling and testing acceptance found that acceptance was significantly higher among persons at high risk of HIV transmission than those at low risk of transmission. Factors such as client's perception of HIV risk, acknowledgement of risk behaviour, confidentiality, presentation of the counseling and testing and its benefits are factors that are associated with high HIV testing acceptance rate (Yiman Z, 2005).

2.7.3 Stigma and discrimination factors

Negative attitudes related to stigma and discrimination has an influence on HCT uptake. This is due to the fact that attitudes are deep-rooted in the community and appears to be difficult to eliminate. Stigma and discrimination is mostly driven by social and family pressure (Khan, 2000). In many occasions, people living with the virus are labeled by their relatives or community members where they reside. Stigma is driven by cultural or religious norms and values as well as by fear of HIV and AIDS and secrecy (Khan, 2000). Studies revealed that fear of positive results and the stigma attached to HIV and AIDS are major reasons for the low uptake. Many people are prevented from negotiating safer sex, seek CT, partner disclosure or seek treatment, care and support by stigma (Yiman, 2005). A study conducted in teaching hospitals in Nigeria, found that reasons for disapproving of HCT or low uptake was related to fear of stigmatization, isolation and marriage security (Creel and Rimal, 2011).

In Namibia, in many cases people living with the virus are discriminated against once their status is known, they lose their jobs, friends, properties as well as their families. In some regions it was found that most women have the desire to test in order to protect their unborn babies, however, they regularly fear stigma and rejection in case they test positive (MoHSS, 2004).

2.7.4 Confidentiality and HCT service organisation factors

People are sometimes anxious about HIV testing because of the fear of confidentiality and feel that health workers might refuse to render them the necessary health care if their status are known. In a previous study, it was found that some health workers disclose the HIV status of their client without their consent (Lancaster & Stanhope, 2000). Furthermore, patients appeared to reject being counselled by a counselor younger than them and this increase the demand of limited available HCT services, MoHSS (2004).

Other factors such stigma, discrimination and fear of positive patients to disclose their status to health workers may equally contribute to the low and inconsistent utilization of HCT services. In addition, the quality of care offered by a health facility also has an influence on the future utilization of HCT services by that person. The mode of service delivery is a crucial determinant of acceptability, reflecting concerns about confidentiality and perhaps also a general lack of faith in local health service quality (Yimam, 2005).

CHAPTER THREE

METHODOLOGY

3.1 Study Area

The Federal Capital Territory (FCT) is located in the geographical center of Nigeria. It has a land area of 8,000 square kilometers. It is bounded to the North by Kaduna State, the West by Niger State, the East and Southeast by Nasarawa State and the Southwest by Kogi State. It falls within latitudes 7° 20' North of the Equator and longitudes 6° 45' and 7° 39'. As of the 2006 census, the FCT has a population of 778,567. The FCT's natural endowments such as, its rolling hills, isolated highlands and other endearing features make it a delight. The savannah grassland of the North and the Middle Belt, the richness of the tropical rain forests of the south and an equable climate all combined make the FCT a soil-rich agriculture haven. It is made up of both Urban and Rural settlement with different people of different tribes such as Yoruba, Hausa, Ibo, Tiv, Ibibio etc. The socio economic status of the inhabitants is mostly professionals, civil servants and traders, etc. (FCT, 2014).

The FCT Government has been making efforts to improve the quality of life among the population. There are about 203 health facilities in Abuja, and these are distributed across the 6 local government areas, i.e. Abaji (25), Abuja Municipal Area Council (AMAC) (58), Bwari (38), Gwagwala (22), Kuje (16) and Kwali (44). The facilities level ranges from the primary health care in the community to state and the federal government hospital majorly in the urban area of the state. Each of these facilities renders HCT to the population. The National HIV prevalence among women attending antenatal clinics in Nigeria in 2008 was found to be 4.6% (FMOH, 2008). According to the National HIV Integrated Biological and Behavioural Surveillance Survey (IBBSS) conducted in 2010, the FCT had a higher prevalence of 34.1% compared to other states (FMOH, 2010b). Also, the National HIV/AIDS and Reproductive Health Survey (NARHS) in 2010 reported that the Federal Capital Territory had the highest site prevalence of 22% (FMOH 2010c).

3.2 Study design

A descriptive cross-sectional study of women attending antenatal clinic in January, 2005.

3.3 Study population

- The study population was women of reproductive age, 15-49 years attending district health facilities in the FCT.

3.4 Inclusion criteria

All women within the study age limits (15-49) that consented for interview, who showed mental competence were admitted for the research.

3.5 Exclusion criteria

The exclusion criteria for the research are women who are too sick to be interviewed and did not consent to participate in the study.

3.6 Sample size determination

- The sample size formula used to calculate the sample size is given by

$$N = \frac{(z_{\alpha} + z_{\beta})^2 p(1-p)}{d^2}$$

Where

N = Minimum Sample Size of

p = Coverage of HCT in Abuja = 42.6% (FMOH, 2006)

q = (1 - P) = 57.4%

d = absolute precision = 5% (0.05)

z_{α} = standard score corresponding to 5% level of significance = 1.96

z_{β} = standard score corresponding to 90% power = 1.28

$$= \frac{(1.96 + 1.28)^2 \times 0.574 \times 0.426}{0.05^2} = 1,027$$

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$$= \frac{(1.96 + 1.28)^2 \times 0.574 \times 0.426}{0.05^2} = 1,027$$

3.7 Sample size allocation

List of all the health facilities in Abuja is shown below in appendix III. The sample sizes were allocated according to the size of the health facilities.

3.7 Sampling procedure

A two stage sampling procedure was adopted to select the respondents interviewed in this study. At the first stage, a simple random sampling technique was used to select ten out of 203 health facilities in the study area using balloting. At the second stage, a systematic sampling method was used to select 1027 respondents in each of the chosen health facilities, as shown in appendix III.

3.8 Data collection

A pretested interviewer-administered semi-structured questionnaire was used to collect data from each of the respondents. The items of the questionnaire were derived from standard questions developed and used in previous surveys (Ibrahim et al., 2013; Okitiamu et al., 2013; Deressa et al., 2014). These items includes; Respondents socio-demographic information, Knowledge and perception about HIV/AIDS and HCT services, Adoption of HCT services and Reasons for non adoption

The services of three research assistants trained on the content of the questionnaire was required to administer the questionnaire with the principal investigator. The data collection lasted for a period of 4 weeks (28 days). The questionnaire contained mostly closed ended and few open ended questions pre-coded for analysis. It was pre-tested in health facilities in Nassarawa State before been used for the study.

3.9 Data management and analysis

Questionnaires were checked on the field during data collection to detect possible interviewer errors and these were corrected immediately at the survey site. Data from the field were stored in a safe place to ensure validity and reliability of responses generated from the field.

Before data entry, the questionnaires were edited to check if all the relevant questions had been responded to. Data entry was carried out immediately after the end of the fieldwork. The data was validated and cleaned for errors before data analysis.

Data entry was done using SPSS 16 statistical software for both descriptive and inferential statistical analysis. Summary data was presented using means and standard deviations, frequencies and proportions. The association between uptake of HCT and other variables was tested using the Chi square test. Logistic regression analysis was carried out to determine the predictors of HCT uptake and level of significance set at 5%.

3.10 Ethical consideration

Ethical approval to conduct the study was obtained from ethical review committee of the University of Abuja Teaching Hospital. Written Informed consent for participation in the study was obtained from the respondents before carrying out the study. Also permission was obtained from the Chief Medical Director (CMD) of each health facility and the medical doctors on duty to enlighten them on the aim of the research and finally the participants were also educated on the need to carry out the research and that consent was obtained from each respondents before the interview. They were informed that participation is voluntary, also on their right to decline or withdraw at any time of the study. Confidentiality of the information given was also assured. The questionnaires were kept in a safe place and were only accessible to members of the research team. Participants were assured on indirect benefits as results obtained from the study would be made available to stakeholders for recommendation policies. The study did not involve any invasive procedure and thus did not present any discomfort to the study participants.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of respondents

A total of 1000 women responded to the interviewers, giving a response rate of 88.9%. The mean age was 31.8 ± 5.7 years (Table 4.1). The socio-demographic characteristics are shown in table 1. About 41.5% were aged 30-34 years followed by about a third (33.5%) aged 35 years. The proportions aged 25 to 29 years and less than 25 years were 14.8% and 10.2% respectively. The highest proportion of the women that had no formal education was 37.1% followed by tertiary (27.2%). There were more Muslims (44%) than Christians (40%) and those practicing traditional religion were 16%. Over half (57.1%) were married while 14.3% were single. About 10.3% were divorced, 16.1% widowed and 1.6% are separated or cohabiting. The commonest ethnic group was Hausa (41.1%) followed by Ibo (34.9%) and Yoruba (24%).

Table 4.1: Socio-demographic characteristics of the participants

Variable	Frequency (1000)	Percentage
Age (years)		
<25	102	10.2
25-29	148	14.8
30-34	415	41.5
35+	335	33.5
Education		
Non formal	250	37.1
Primary	163	16.3
Secondary	194	19.4
Tertiary	272	27.2
Religion		
Christianity	364	40.0
Islam	401	44.0
Traditional	146	16.0
Marital status		
Single	111	14.3
Married	444	57.1
Divorced	80	10.3
Widowed	125	16.1
Separated/cohabiting	13	1.6
Ethnicity		
Yoruba	213	24.0
Ibo	310	34.9
Hausa	365	41.1

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Ibo	310	34.9
Hausa	365	41.1

The occupational groups mainly interviewed included hawkers (23.8%), petty traders (21.6%), housewives (17.7%) and professionals (15.4%). Others include students (9.5%), civil servants (7.7%), artisans (2.2%) and the unemployed (2.1%). About a third (34.2%) had three children followed by 29.4% who had two, 21.6% with four or more and 14.9% with one child. The income distribution is shown in table 2. Similar proportions earn less than 5000 naira (24.4%), between 5000 and 14999 (26.2%), 15000 to 34999 (21.3%) and 35000 and above (28.1%). The proportion who had received antenatal care in previous pregnancies was 36.5% (Table 4.2).

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Table 4.2: Other socio-demographic characteristics

Variable	Frequency	Percentage
Occupation		
Traders(hawkers)	230	23.8
Traders	209	21.6
Housewife	171	17.7
Professional	149	15.4
Student	92	9.5
Civil servant	74	7.7
Artisan	21	2.2
Unemployed	20	2.1
Number of children		
One	126	14.9
Two	249	29.4
Three	290	34.2
Four or more	183	21.6
Household income		
Less than 5000	235	24.4
5000-14999	252	26.2
15000-34999	205	21.3
35000+	270	28.1
Previous antenatal care		
Yes	347	36.5
No	604	63.5

4.2 Respondents' knowledge of HIV

4.2.1 Respondents' knowledge about modes of transmission of HIV among those who ever heard of HIV

The proportion who had ever heard of AIDS is 80.2%. Of this number the proportions with knowledge about modes of transmission of HIV is shown in table 4.2.1 The highest proportion of respondents (88.2%) identified sex with multiple partners as a mode of transmission of HIV. Over half indicated 'sex with prostitutes' (58.5%) and having unprotected sex (57.5%). Blood transfusion was the response in 47.9%. Others included razor blade and barber's clipper (46.3%), sharp objects (36.0%), circumcision (15.5%), injections (13.2%) and homosexual contact (8.5%). None identified kissing as a mode of transmission.

Table 4.2.1: Respondents' knowledge about modes of transmission of HIV among those who ever heard of HIV

Mode of transmission	Yes	No
	N=802 (%)	N=802(%)
Sex with prostitutes	469 (58.5)	333 (41.5)
Sexual intercourse with multiple partners	707 (88.2)	95 (11.8)
Not using a condom	461 (57.5)	341 (42.5)
Homosexual contact	68 (8.5)	734 (91.5)
Blood transfusion	384 (47.9)	418 (52.1)
Injections	106 (13.2)	696 (86.8)
Kissing	0 (0.0)	802 (100.0)
Mosquito bite	26 (3.2)	776 (96.8)
Circumcision	124 (15.5)	678 (84.5)
Razor blades, barbers' clippers	371 (46.3)	431 (53.7)
Sharp objects	289 (36.0)	513 (64.0)
Sharing food with infected person	11 (1.4)	791 (98.6)
Mother to child	457 (56.9)	345 (43.1)

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	N=802 (%)	N=802(%)
Sex with prostitutes	469 (58.5)	333 (41.5)
Sexual intercourse with multiple partners	707 (88.2)	95 (11.8)
Not using a condom	461 (57.5)	341 (42.5)
Homosexual contact	68 (8.5)	734 (91.5)
Blood transfusion	384 (47.9)	418 (52.1)
Injections	106 (13.2)	696 (86.8)
Kissing	0 (0.0)	802 (100.0)
Mosquito bite	26 (3.2)	776 (96.8)
Circumcision	124 (15.5)	678 (84.5)
Razor blades, barbers' clippers	371 (46.3)	431 (53.7)
Sharp objects	289 (36.0)	513 (64.0)
Sharing food with infected person	11 (1.4)	791 (98.6)
Mother to child	457 (56.9)	345 (43.1)

4.2.2 Respondents' knowledge about modes of prevention of HIV

Concerning knowledge of modes of prevention (Table 4.2.2), about 82.7% identified abstinence, 82.0% 'limiting sex to one partner' and 69.8% indicated avoiding sex with person with many partners. Less than half (44.0%) agreed with condom use, avoiding mosquito bites (45.0%), avoiding sharing razor blades (23.1%), avoiding using sharp objects (29.7%) and avoiding sex with prostitutes (14.5%). Other modes of prevention reported included avoiding sex with injecting drug users (2.6%), avoiding kissing (1.9%), avoiding injections (1.6%), seeking help from traditional practitioners (1.2%), limiting number of sexual partners (1.4%) and avoiding blood transfusion (0.1%).

Table 4.2.2: Respondents' knowledge about modes of prevention of HIV

Mode of transmission	Yes	No
	N=802 (%)	N=802(%)
Abstain from sex	663 (82.7)	139 (17.3)
Use of condoms	352 (44.0)	450 (56.1)
Limiting sex to one partner	658 (82.0)	144 (18.0)
Limit number of sexual partners	11 (1.4)	791 (98.6)
Avoid sex with prostitutes	116 (14.5)	686 (85.5)
Avoid sex with person who has many partners	550 (68.6)	252 (31.4)
Avoid sex with persons who inject drugs intravenously	21 (2.6)	781 (97.4)
Avoid blood transfusion	1 (0.1)	801 (99.9)
Avoid injections	13 (1.6)	789 (98.4)
Avoid sharing razor blades	185 (23.1)	617 (76.9)
Avoid kissing	15 (1.9)	787 (98.1)
Avoid mosquito bites	361 (45.0)	441 (55.0)
Seek protection from traditional practitioners	10 (1.2)	792 (98.8)
Avoid using sharp objects	238 (29.7)	564 (70.3)

4.2.4 Knowledge of Mother to Child Transmission

Less than a tenth of respondents knew that HIV can be transmitted from mother to unborn child during pregnancy (8.5%) while about a quarter (25.7%) knew that the virus can be transmitted during delivery. About 54.7% knew transmission can be through breastfeeding (Figure 3). The proportion of respondents with knowledge of availability of a drug to reduce risk of mother to child transmission was 69.7% (Table 4.2.4).

Table 4.2.4: Respondents' knowledge about mother to child transmission

Variable	Yes N=802 (%)	No N=802(%)
Virus can be transmitted during pregnancy	68 (8.5)	734 (91.5)
Virus can be transmitted during delivery	206 (25.7)	596 (74.3)
Virus can be transmitted during breastfeeding	439 (54.7)	363 (45.3)
Heard of drug to reduce risk of mother to child transmission	559 (69.7)	243 (30.3)

4.3 HIV counselling and testing

4.3.1 Awareness of HIV counselling and testing among the respondents

Most (92.1%) of respondents knew a place to test for HIV. The source of information about where to test for the virus is shown in Figure 4.3.1. Radio constituted the most commonly mentioned source (19.3%) followed by television (13%), community meetings (10.8%), newspaper/magazines (9.2%) and health workers (8.2%). Others include churches (7.9%), friends/relatives (5.8%), government hospitals (4.9%), schools/teachers (4.5%), private hospital/clinic (3.7%) and pharmacy/patient medicine store (2.5%).

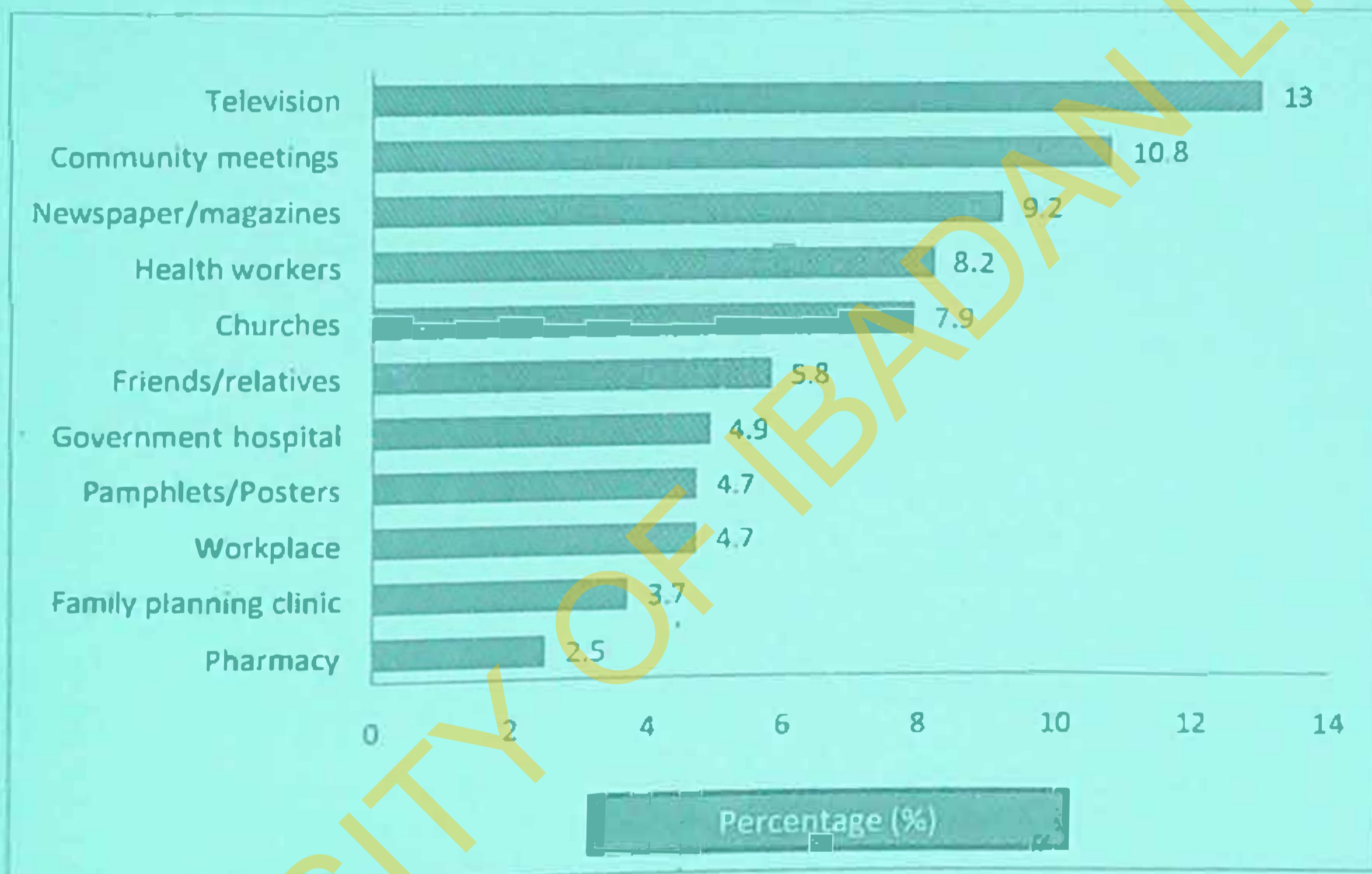


Figure 4.3.1: Percentage distribution of source of information about place to get an HIV test

4.3.2 Coverage of HIV counselling and testing and willingness to undergo the test among the respondents

Three hundred and fifteen (31.5%) of the respondents have ever undergone HIV counseling and testing. Over half of those who ever tested (57.5%) asked for the test, 26.5% was required to have the test done and 16% were offered and accepted. For respondents who had no intentions to adopt HCT, the reasons given were never asked or required (35.8%), offered but not required (2.4%), fear of discrimination (2.5%), no reagent (1.9%), long waiting times (1.8%), high costs (1.5%) and others (19.1%); about 35.0% had no particular reason (Table 4.3.2)

Table 4.3.2: HIV counseling and testing and willingness to undergo the test among the respondents

Reasons	Frequency n=1000	Percentage (%)
Ever undergone HIV counselling and testing		
Yes	315	31.5
No	685	68.5
Circumstance leading to HCT at last testing (n=315)		
Opted in voluntarily	181	57.5
Was offered and accepted	50	16.0
Was required to have it	84	26.5
Reasons for non utilization of HCT (n=685)		
Never asked or required	245	35.8
Offered but not required	14	2.4
Fear of discrimination	17	2.5
Cost is too high	10	1.5
Waiting time is too long	12	1.8
No reagent	13	1.9
No particular reason	243	35.0
Others reasons	131	19.1

4.4 Associations between ever testing for HIV and subjects' characteristics

Table 4.4.1 shows the relationship between respondents' characteristics and ever having HCT. High proportions were obtained at the extremes of ages- 81.7% for those less than 25 years and 45.3% for those 35 years and above. This was a significant result ($p < 0.001$). Also the proportions increased significantly with higher education with 9.8% for those without formal education to 81.25 for those with tertiary education ($p < 0.001$). A higher proportion of Christians (70.9%) compared to Muslims (20.9%) and those practicing traditional religion (2%) had ever had HIV test ($p < 0.001$). Single mothers (85.9%) had tested more than those currently married (45.1%) or other women who had ever married (16.9%) and this was also significant ($p < 0.001$). Similar proportions of Yorubas (50%) and Hausas compared to 10% of Ibos had tested ($p < 0.001$).

Table 4.4.1: Relationship between respondents' HCT status and participants' characteristics

Variable	Ever had HCT		Total	Chi square	P value
	Yes (%)	No (%)			
Age (years)					
<25	76(81.7)	17(18.3)	93	115.855	<0.001
25-29	13(13.3)	85(86.7)	98		
30-34	100(29.6)	238(70.4)	338		
≥35	126(45.3)	152(54.7)	278		
Education					
None	13(9.8)	120(90.2)	133	336.497	<0.001
Koranic	11(8.1)	124(91.9)	135		
Primary	10(8.6)	106(91.4)	116		
Secondary	78(45.1)	95(54.5)	173		
Tertiary	203(81.2)	47(18.8)	250		
Religion					
Christianity	246(70.9)	101(29.1)	347	244.183	<0.001
Islam	67(20.9)	253(79.1)	320		
Traditional	2(2.0)	98(98.0)	100		
Marital status					
Single	67(85.9)	11(14.1)	78	109.255	<0.001
Currently married	166(45.1)	202(54.9)	368		
Others	30(16.9)	148(83.1)	178		
Ethnicity					
Yoruba	87(50.0)	85(49.4)	172	103.155	<0.001
Ibo	21(10.0)	189(90.0)	210		
Hausa	180(50.3)	178(49.7)	358		

Table 4.4.2 shows the relationship between occupation and ever testing for HIV. The highest proportion was found for professionals (87.9%) followed by students (82.6%), civil servants (70.2%) and other professions such as artisans and unemployed (75%). Lower figures were obtained for hawkers (2.3%), traders (20.7%) and housewives (7%) ($p < 0.001$). There was also a significant relationship between number of children and ever testing with 27% of those with a child, 24.8% of those with two and 51% of those with three ever testing. No unique pattern was found for household income but testing appeared to increase with higher income and this was significant ($p < 0.001$). A higher proportion of those with previous antenatal care (72%) had ever tested compared to 15.6% of those who had never undergone ANC ($p < 0.001$).

Table 4.4.2: Relationship between HIV testing and characteristics

Characteristics	Ever had HCT		Total	Chi square	P value
	Yes (%)	No (%)			
Occupation					
Traders(hawkers)	4(2.3)	169(97.7)	132	422.541	<0.001
Traders	38(20.7)	146(79.3)	57		
Housewife	9(7.0)	120(93.0)	184		
Professional	116(87.9)	16(12.1)	173		
Student	76(82.6)	16(17.4)	92		
Civil servant	40(70.2)	17(29.8)	129		
Others	12(75.0)	4(25.0)	16		
Number of children					
One	30(27.0)	81(73.0)	111	45.777	<0.001
Two	55(24.8)	167(75.2)	222		
Three	126(51.0)	121(49.0)	247		
Four or more	35(26.3)	98(73.7)	133		
Household income (Naira)					
Less than 5000	67(37.6)	111(62.4)	178	268.612	<0.001
5000-14999	11(5.1)	205(94.9)	216		
15000-34999	42(26.6)	116(73.4)	158		
35000÷	195(77.1)	58(22.9)	253		
Previous antenatal care					
Yes	244(72.0)	95(28.0)	339	257.936	<0.001
No	71(15.6)	384(84.4)	455		

4.5 Relationship between willingness to adopt HCT and respondent's characteristics

Table 4.5.1 shows cross tabulations between desire to adopt HCT and variables. There was a significant association for all variables. Those at extremes of ages expressed willingness more than the other groups ($p < 0.001$). Willingness increased with higher educational status, with about 9.8% of those with no formal education compared to 24.4% of those with koranic, 19.8% of those with primary, 57.2% of secondary and 88% of tertiary. This was statistically significant ($p < 0.001$). A higher proportion of Christians (76.1%) compared to 38.1% of muslims and 2% for traditional religion showed desire to test ($p < 0.001$). Higher proportions of single compared to ever married women also expressed desire for HCT ($p < 0.001$). There was also significant results for ethnicity ($p < 0.001$).

Table 4.5.1: Relationship between willingness to adopt HCT and respondents' characteristics

Variable	Willing to adopt HCT		Total	Chi square	P value
	Yes (%)	No (%)			
Age (years)					
<25	86(92.5)	7(7.5)	93	132.927	<0.001
25-29	20(20.4)	78(79.6)	98		
30-34	122(36.1)	216(63.9)	338		
≥35	160(57.6)	118(42.4)	278		
Education					
None	13(9.8)	120(90.2)	133	310.871	<0.001
Koranic	33(24.4)	102(75.6)	135		
Primary	23(19.8)	93(80.2)	116		
Secondary	99(57.2)	74(42.8)	173		
Tertiary	220(88.0)	30(12.0)	250		
Religion					
Christianity	264(76.1)	83(23.9)	347	204.545	<0.001
Islam	122(38.1)	198(61.9)	320		
Traditional	2(2.0)	98(98.0)	100		
Marital status					
Single	71(91.0)	7(9.0)	78	99.414	<0.001
Currently married	208(56.5)	160(43.5)	368		
Others	46(25.8)	132(74.2)	178		
Ethnicity					
Yoruba	90(52.3)	82(47.7)	172	30.170	<0.001
Hausa	67(31.9)	143(68.1)	210		
Ibo	197(55.0)	161(45.0)	358		

There were significant associations for occupation, number of children, household income and previous antenatal care. Skilled workers appeared to be more willing compared to unskilled workers ($p < 0.001$). Also higher parity up to three had increasing figures. Higher income was earners had higher willingness ($p < 0.001$) while previous antenatal care was associate with increased willingness and this was statistically significant ($p < 0.001$) (4.5.2).

Table 4.5.2: Relationship between willingness to have HCT test and characteristics

Characteristic	Willing to adopt HCT		Total	Chi square	P value
	Yes (%)	No (%)			
Occupation					
Traders(hawkers)	24(13.9)	149(86.1)	173	366.516	<0.001
Traders	42(22.8)	142(77.2)	184		
Housewife	34(26.4)	95(73.6)	129		
Professional	117(88.6)	15(11.4)	132		
Student	86(93.5)	6(6.5)	92		
Civil servant	53(93.0)	4(7.0)	57		
Others	12(75.0)	4(25.0)	16		
Number of children					
One	32(28.8)	79(71.2)	111	50.770	<0.001
Two	82(36.9)	140(63.1)	222		
Three	151(61.1)	96(38.9)	247		
Four or more	44(33.1)	89(66.9)	133		
Household income (Naira)					
Less than 5000	88(49.4)	90(50.6)	178	277.393	<0.001
5000-14999	29(13.4)	187(86.6)	216		
15000-34999	50(31.6)	108(68.4)	158		
35000+	221(87.4)	32(12.6)	253		
Previous antenatal care					
Yes	260(76.7)	79(23.3)	339	204.285	<0.001
No	116(25.5)	339(74.5)	455		

4.6 Logistic regression of ever testing on characteristics

On a multivariate logistic analysis with ever testing for HIV as dependent variables, all variables entered remained significant. Younger women less than 30 years were about five times significantly more likely than older women (95% CI OR = 2.13 – 12.22); Higher income earners were about twice more likely than others ((95% CI OR = 1.12 – 4.05). Also those with secondary education and above were about 4 times more likely than those with lower education (95% CI OR =2.20 – 6.99). Women of other tribes were about 2.5 times more likely than Ibos (95% CI OR =1.30-4.96). Also Christians were about 9 times more likely than other religions (95% CI OR = 4.42-17.93) while those with antenatal care in previous pregnancy were about 14 times more likely than who did not (95% CI OR =5.52 – 33.29) (Table 4.6.1).

Table 4.6.1: Logistic regression of ECT on respondents' characteristics showing odds ratios and confidence intervals

Variable	Odds ratio	95% CI OR	P value
Age			
≤29 vs ≥30	5.11	2.13 – 12.22	<0.001
Income			
15000+ vs <15000	2.13	1.12 - 4.05	0.022
Education			
Higher vs primary or lower	3.92	2.20 – 6.99	<0.001
Ethnicity			
Others vs Ibo	2.54	1.30 – 4.96	0.007
Religion			
Christianity vs Others	8.90	4.42 – 17.93	<0.001
Antenatal care in previous pregnancy			
Yes vs No	13.56	5.52 – 33.29	<0.001

Findings for the logistic regression of desire to adopt HIV counselling and testing on variables are shown in table 4.6.2. Income, education, ethnicity, religion and previous antenatal care were significant. Those with monthly income of 15000 naira and above were about three times (95% CI OR =1.59 – 5.56). Those with higher education were about twice more likely than those with primary education or less ((95% CI OR =1.05 – 3.72); women of other ethnic groups about four times more likely ((95% CI OR =1.66 – 8.71) than Ibos; Christians about 2.5 times more likely than other religions (95% CI OR =1.11 – 5.38) and those who had previous antenatal care about 13 times more likely than those who did not (95% CI OR = 6.20 – 26.28). Age (p=0.082), occupation (p=0.226) and parity (p=0.383) were not significant.

Table 4.6.2: Logistic regression of willingness to adopt HCT on respondents' characteristics showing odds ratios and confidence intervals

Variable	Odds ratio	95% CI OR	P value
Age			
≤29 vs ≥30	2.02	0.92 – 4.42	0.082
Income			
≥15000 vs <15000	2.98	1.59 – 5.56	0.001
Education			
Higher vs primary or lower	1.98	1.05 – 3.72	0.034
Ethnicity			
Others vs Ibo	3.80	1.66 – 8.71	0.002
Religion			
Christianity vs Others	2.45	1.11 – 5.38	0.026
Antenatal care in previous pregnancy			
Yes vs No	12.76	6.20 – 26.28	<0.001
Occupation			
Unskilled vs skilled	1.54	0.76 – 3.12	0.226
Parity			
≥3 vs <3	1.28	0.73 – 2.23	0.383

CHAPTER FIVE

DISCUSSION

This study examined the knowledge and perceptions towards HCT and factors that may limit women from seeking the service.

5.1. Socio-demographic characteristic of study respondents

The study population involved reproductive age women attending district hospitals for different medical conditions. The predominant age group was women aged 35 years and above while those with tertiary education and that were currently married were the highest proportions for educational group and marital status respectively. The predominance of older women may be an indication that they are more likely to need care being exposed to the reproductive risk of child bearing and other morbidities for longer periods. Perhaps this explains why married women are also of higher proportion because married women are older and are exposed to childbearing. However the low proportion of women less than 25 years (10%) for this study indicates the poor clinic attendance by adolescents and other younger women who may utilize the reproductive health and other services provided by these facilities. Also education is likely to influence the patronage of hospital services generally and this could be speculated from the distribution of respondents recruited for this study.

5.2. Awareness and Knowledge of HIV among the respondents

The knowledge about modes of transmission of HIV was generally high. This is consistent with national surveys on HIV/AIDS and studies in smaller settings (FMOH 2006, Ekanem and Gbadegesin 2004). However the knowledge of transmission of the virus from mother to unborn child was low. In fact less than a tenth knew that HIV could be transmitted during pregnancy while only about a quarter knew about transmission during delivery. This is surprising particularly given that over a quarter of the women had up to tertiary education and a third had had previous antenatal care. It also contradicts the high figures of over 70% reported in national surveys (FMOH 2006). The finding has important implications for the likelihood of testing for those who intend getting pregnant. Being unaware of the risk of transmission of the virus to the unborn child they could miss the opportunity of the

prevention of mother to child transmission programme available at the facilities. The proportion who knew about transmission during breastfeeding is similar to the figure reported by Ekanem and Gbadegesin (2004) in a study of women attending antenatal clinics in Lagos. Although the latter result is higher than for the other modes of transmission from mother to unborn child, it is still low especially with the increasing number of HIV positive women who deliver and need to prevent transmission of the virus during breastfeeding.

The knowledge of a place to get an HIV test was very high. This is a good finding as those who knew a place where the test could be done would easily go to test if they consider it.

However the proportion of those who ever tested was just under a third. This is higher than the figure (17.3%) from the study by Peltzer (2004) or for women interviewed in the National HIV/AIDS and Reproductive Health Survey (10.8%). The disparity in awareness and ever testing indicates that the knowledge about how to get a test may not be the problem but behavior change is the issue. The point about behaviour change communication cannot be overemphasized as the awareness about what to do and how to get it done is not usually the problem but getting individuals to change attitudes and behaviours towards patronage of HIV and other health related services. Other reasons such as misconceptions, fear, gaps in knowledge and limited access have been reported (Iliyasu 2007) while others such as social and cultural discrimination have also been identified (Okonkwo 2006). The proportion who indicated willingness to adopt HCT among the women was 71.6%. Studies in other settings in the country also found high VCT uptake (Onah et al, 2008; Adeneye 2004).

The commonest sources of information about HCT were radio, television and through community meetings. The radio has also been reported as the commonest means of communication in larger surveys (FMOH, 2006). The radio as a veritable means of information dissemination may be due to the accessibility of majority of the population to radio and its relatively low cost. Hence more jingles, short plays and other programs on HIV counseling and testing should be encouraged. The lower proportion reported for government hospitals and other health workers are an indication that the facilities and health staff may not be doing enough to encourage women particularly in the reproductive ages to adopt voluntary counseling and testing. The information concerning HCT can be included in routine care especially when women present for services such as family planning or other

prevention of mother to child transmission programme available at the facilities. The proportion who knew about transmission during breastfeeding is similar to the figure reported by Ekanem and Gbadegesin (2004) in a study of women attending antenatal clinics in Lagos. Although the latter result is higher than for the other modes of transmission from mother to unborn child, it is still low especially with the increasing number of HIV positive women who deliver and need to prevent transmission of the virus during breastfeeding.

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non reproductive health related service. Churches, mosques and other religious bodies are important means of passing information about HIV counseling and testing.

5.3 Uptake of HCT and its barriers among the respondents

Universal access to HIV prevention, treatment, care and support is the guiding principle for HIV intervention globally as HCT is a priority intervention and a critical entry point for other interventions. One obvious advantage of knowing ones HIV status is that it allows the adoption of healthier sexual lifestyle and thus helps limit the incidence and consequently prevalence of the disease. More so, persons who are identified as having HIV would receive counseling for healthy living and access to life saving anti retroviral therapy. In this study, less than half of the respondents have ever undergone HCT, this was higher compared to previous studies in Nigeria (Amu et al., 2013; Ibrahim et al., 2013) and other parts of Africa (Bwambele et al., 2008) . However, higher prevalence of HCT uptake has been reported by previous author in South Africa (Shisana et al., 2009).

The circumstance involved in testing among those who had ever tested was mostly when they asked for the test. About more than a quarter were required to have it. Mandatory testing has been criticized and women should not be forced or coerced into having the test. High proportions of those who never tested were never asked or they never required it or they had no particular reason. A very low proportion however was offered the test. This shows that few women are ever asked about their HIV status or encouraged to test when they visit health facilities. This speculation is based on the fact these women were recruited in hospitals and one could conjecture that they are likely to visit health facilities compared to other women in the general population. The fact that many women who had never tested had no particular reason also indicates the need for information and education. Ideally women presenting at health facilities should have the opportunity to be educated about health issues particularly about HIV testing, especially those who have never been pregnant and who may never have been to health facilities and may less likely have had a test. Costs, long waiting times and fear of discrimination were reported by only a few of the respondents. This disagrees with some Nigerian studies (Adedoyin 2007). Concerning the issue of cost, many centres charge little or nothing for an HIV test but it is hoped that individuals will eventually get a free HIV test from most government health institutions.

5.3.1 Uptake of HCT and characteristics of the respondents

Young people have been shown to be at a higher risk of contracting HIV and therefore getting those to know their HIV status will assist them make informed choices about healthy lifestyle. In this study, most of the young people (<25 years) had ever had HCT compared to other age groups, therefore, the peak age of incidence of HIV are taking HCT less than others.

Education significantly influenced uptake of HCT in this study. Those respondents with tertiary education were more likely to access HCT than those with less than tertiary education. This finding is consistent with those of other authors who similarly reported that higher education levels were positively associated with HCT uptake (Masiye et al., 2009; Anu et al., 2013). People with higher educational levels are more likely to use HCT services because they may have more understanding of the benefits and are more likely to respond to health promotion messages (De Walque, 2006). This implies that strategies to encourage HCT uptake should target the less-educated, with simple, appropriate tailored messages on the benefits of HCT. Other people who were significantly more willing to adopt HCT were those with higher income, Christians and women with previous antenatal care. The association between antenatal care and adoption of HCT can be explained by the fact that those who have attended antenatal clinic sessions are likely to have been counseled about HIV testing and told about the risk of transmission to their babies. They are also likely to be more educated and this corroborates the finding that higher education increases the willingness to adopt HCT. Income is an important factor because many women are of the belief that costs may be an issue in HCT even though these services are highly subsidized. Those with higher incomes are more likely to visit HCT centres and have a test. Though religion was significant, the reason is not clear. However Christian organizations could have HCT or other HIV facilities and Christian women may be more aware of a place to get a test which may affect willingness. The attention of health staff should be directed more on those women who had no previous antenatal care or who have never visited a health facility, less educated and earning lower incomes.

5.4. Conclusions and Recommendations

5.4.1. Conclusion

The knowledge of HIV AIDS was high among respondents with high proportions reporting correct knowledge of modes of transmission and prevention of HIV. However the knowledge of modes of transmission of the virus from mother to the unborn child was poor, particularly for transmission during pregnancy and delivery. The proportion who ever tested for HIV was low though majority knew a place to get an HIV test.

The radio remains a veritable source of information concerning HIV testing. The health staff may not be doing enough in informing and encouraging women of reproductive age group to have an HIV test. More women who never had an HIV test had no particular reason or were never offered or required to have it. Women with low educational status, low income and those without previous antenatal care were less willing to adopt HCT.

5.4.2 Recommendations

The following are recommendations based on the findings

1. Based on the high knowledge about HIV but low proportion ever testing more efforts at providing interventions specifically targeted at those women who present in hospital for the first time or are less likely to visit hospitals is important
2. Increasing the number and frequency of radio jingles and other programmes encouraging people to go for HCT. However other means of communication particularly leaflets and posters should also be used particularly for those women presenting at health facilities.
3. The importance of knowing one's status should be explained to women routinely seeking reproductive health care. Particularly the risk of mother to child transmission should be emphasized.
4. Expanding access to HCT by increasing the number of sites offering the services and making testing free at all levels will increase the proportion ever testing
5. Facility based interventions should target women presenting at those institutions for the first time or without previous pregnancies; women of low education and those with low income.

6. Campaigns concerning HIV testing should target groups such as market women, artisans or other less educated and low income groups.
7. Young women particularly adolescents and the unmarried should be encouraged to visit hospitals occasionally as they could get the opportunity to have an HI V test.

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REFERENCES

- Adeneye A., Mafe M., Adeneye A., Salami K., Adewole T. 2004. Willingness to seek voluntary HIV counselling and testing (VCT) among pregnant women in Ogun state, Nigeria. Abstract presented at the XV International AIDS Conference, Bangkok, Thailand. *MedGenMed*; 6(3): MoPeE4097.
- Adeneye A., Salami K., Mafe M., Adeneye A., and Agomo P. 2004. Community perception of voluntary HIV counselling and testing (VCT) in Ijebu Communities of Ogun state, South west Nigeria. Abstract presented at the XV International AIDS Conference, Bangkok, Thailand. *MedGenMed*; 6(3): E10831.
- Afolabi M., Fatusi A., Abiola-kuteyi E., Bello I., Fakande I. 2007. HIV voluntary counselling and testing of pregnant women in Primary health care centres in Ilesa, Nigeria. *The Internet Journal of Third World Medicine* 6 (1):1
- Allen, S., Tice J., Van de perre P., Serufilira A., Hudes E., Nsengumuremyi F., Bogaerts J., Lindan C., and Hulley S. 1992. "Effect of serotesting with counselling on condom use and seroconversion among HIV discordant couples in Africa," *British Medical Journal* 304 (6842): 1605-1609.
- Amu E.O., Ijadunola K.T., Bamidele J.O., and Odu O.O. 2013. Barriers to and determinants of HIV Counselling and Testing among Adults in Ayedaade Local Government Area, Osun State, Nigeria. *Journal of Medical Science*, 13 (8): 803-808.

REFERENCES

- Adeneye A., Mafe M., Adeneye A., Salami K., Adewole T. 2004. Willingness to seek voluntary HIV counselling and testing (VCT) among pregnant women in Ogun state, Nigeria. Abstract presented at the XV International AIDS Conference, Bangkok, Thailand. *MedGenMed*; 6(3): MoPeE4097.
- Adeneye A., Salami K., Mafe M., Adeneye A., and Agomo P. 2004. Community perception of voluntary HIV counselling and testing (VCT) in Ijebu Communities of Ogun state, South west Nigeria. Abstract presented at the XV International AIDS Conference, Bangkok, Thailand. *MedGenMed*; 6(3): E10831.
- Afolabi M., Fatusi A., Abiola-kuteyi E., Bello I., Fakande I. 2007. HIV voluntary counselling and testing of pregnant women in Primary health care centres in Ilesa, Nigeria. *The Internet Journal of Third World Medicine* 6 (1):1
- Allen, S., Tice J., Van de perre P., Serufilira A., Hudes E., Nsengumuremyi F., Bogaerts J., Lindan C., and Hulley S. 1992. "Effect of serotesting with counselling on condom use and seroconversion among HIV discordant couples in Africa," *British Medical Journal* 304 (6842): 1605-1609.
- Amu E.O., Ijadunola K.T., Bamidele J.O., and Odu O.O. 2013. Barriers to and determinants of HIV Counselling and Testing among Adults in Ayedande Local Government Area, Osun State, Nigeria. *Journal of Medical Science*, 13 (8): 803-808.

Amusa B., Joel O., Anyamela C., Okoro O., Shobande J., and Pius U. 2004. Challenges of Voluntary Counselling and Testing among young people in Lagos, Nigeria. International Conference on AIDS, Abstract no TuPeD5073.

Asamoah-Odei E., Garcia J., and Boerma J. 2004. HIV prevalence and trends in sub-Saharan Africa: no decline and large subregional differences. *Lancet*; 364:35-40.

Ashford L. 2005. How HIV and AIDS affect population. Accessed from www.prb.org/Publications/Reports/2006/HowHIVandAIDSAffectPopulationsPDF108KB.aspx on October 5, 2014.

AVERT 2009. Sub-Saharan African HIV/AIDS Statistics. <http://www.avert.org/subadults.htm>.

Bajunirwe F., and Muzoora M. 2005. Barriers to the implementation of programmes for the prevention mother-to-child transmission of HIV: a cross sectional survey in rural and urban Uganda. *AIDS Res Ther.*, 2:10.

Bwambale F.M., Ssali S.N., Byaruhanga S., Kalyango J.N., and Karamagi C.A. 2008. Voluntary HIV Counselling and Testing among men in rural western Uganda: Implications for HIV prevention. *BioMedical center of Public Health*, 8 (10): 1471-2458.

Centers for Disease Control and Prevention (CDC) 1994. HIV Counselling, Testing, and Referral Standards and Guidelines. Atlanta, GA: U.S. Department of Health and Human Services.

Coates T. 1998. "Voluntary HIV counselling and testing (VCT) reduces risk behavior in developing countries: Results from the voluntary counselling and testing

study". Paper presented at the International Conference on AIDS, Geneva, Switzerland, 28 June -3 July.

Creel A., and Rimal R. 2012. Psychological and Socio - medical Aspects of AIDS/HIV. *AIDS Care*, 901-907.

Creel A. and Rimal R. 2011. Factors related to HIV- testing behavior and interest in testing in Namibia. *AIDS Care*, 901-907.

De Walque D. 2006. Who gets AIDS and how? The determinants of HIV infection and sexual behaviours in Burkina Faso, Cameroon, Ghana, Kenya and Tanzania. World Bank Policy Research Working Paper No. 3844, Development Research Group, The World Bank. Pp: 1-51.

Demographic and Health Surveys (DHS) 2001. Ministere de la sant Rwanda. Enquete demographique et de sante (EDSR-11). Rwanda, 2001, Calverton, MD: ORC Macro.

Deressa W., Seme A., Asefa A., Teshome G. and Enqusellassie F. 2014. Utilization of PMTCT services and associated factors among pregnant women attending antenatal clinics in Addis Ababa, Ethiopia. *BioMed Central Pregnancy and Childbirth*, 14 (328): 1-13.

Desgrées-Du-Lou A., Hennann B., Gérard D., Renaud B., Didier K., and Benja. 2006. Beneficial Effects of Offering Prenatal HIV Counselling and Testing on Developing a HIV Preventive Attitude among Couples in Abidjan, 2002-2005. *AIDS and Behavior*; 13, (2): 348-355.

Egieyeh S., Ekpenyong M., Oqua D., Obodozie O., Inyang U., and Ntozi J. 2000. *ECA/OAU/ADB/Secretariat* in collaboration with UNFPA. Impact of HIV/AIDS on fertility.

Ekanem E., and Gbadegesin A. 2004. Voluntary Counselling and Testing (VCT) for Human Immunodeficiency Virus: a study on acceptability by Nigerian women attending antenatal clinics. *Afr J Reprod Health*, 8(2):91-100.

Enosolease M., and Offor E. 2004. Acceptance rate of HIV Testing among women seeking induced abortion in Benin City, Nigeria. *Africa Journal of Reproductive Health*, 8(2): 86-90.

FCT 2014. The Federal Capital Territory website, www.fct.gov.ng . Accessed on October 10, 2014.

Federal Ministry of Health [Nigeria] 2008. HIV/ Syphilis Sentinel Sero-Prevalence survey in Nigeria: Technical Report: National AID/STDs control Programme, November, 2008.

Federal Ministry of Health [Nigeria] 2003. National HIV/AIDS and Reproductive Health Survey, 2003, Federal Ministry of Health Abuja, Nigeria

Federal Ministry of Health [Nigeria] 2006. National HIV/AIDS and Reproductive Health Survey, 2005, Federal Ministry of Health Abuja, Nigeria.

Federal Ministry of Health [Nigeria] 2008. National HIV and AIDS and Reproductive Health Survey, 2007, Federal Ministry of Health, Abuja, Nigeria.

Federal Ministry of Health [Nigeria] 2010. National HIV Sero-prevalence Sentinel Survey. [www.nigeria-aids.org/documents/2010_National%2520HIV%2520Sero%2520Prevalence%2520Sentinel%2520Survey.pdf&sa=U&ei=Ufo6VOIYVEYjbPJ26gYgP&ved=0CBoQFjAA&usq=AFQjCNHZvfxlh68Ex_izQ-](http://www.nigeria-aids.org/documents/2010_National%2520HIV%2520Sero%2520Prevalence%2520Sentinel%2520Survey.pdf&sa=U&ei=Ufo6VOIYVEYjbPJ26gYgP&ved=0CBoQFjAA&usq=AFQjCNHZvfxlh68Ex_izQ-aKj6or8Nq4MQ)

[aKj6or8Nq4MQ](http://www.nigeria-aids.org/documents/2010_National%2520HIV%2520Sero%2520Prevalence%2520Sentinel%2520Survey.pdf&sa=U&ei=Ufo6VOIYVEYjbPJ26gYgP&ved=0CBoQFjAA&usq=AFQjCNHZvfxlh68Ex_izQ-aKj6or8Nq4MQ). Accessed on October 12, 2014.

FMOH 2010b. HIV Integrated Biological and Behavioural Surveillance Survey

http://data.unaids.org/pub/Report/2010/nigeria_2010_country_progress_report_en.pdf. Accessed on October 12, 2014.

FMOH 2010c. Technical Report on the 2008 National HIV/Syphilis Sero-prevalence Sentinel Survey among Pregnant Women Attending Antenatal Clinics in Nigeria. Department of Public Health, National AIDS/STI Control Programme, Abuja, Nigeria.

FMOH 2005. National HIV/AIDS Reproductive Health Survey (NARHS), Abuja, Nigeria.

FMOH 2007. National HIV/AIDS Reproductive Health Survey (NARHS), Abuja, Nigeria.

Ginwalla S., Daya J., Dlovab H., and Churchyard B. 2002. Use of UNAIDS tools to evaluate HIV voluntary counselling and testing services for mineworkers in South Africa AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV 14(5):707-26.

Holmes C., Preko P., Bolds R., Baido J., and Jolly P. 2008. Acceptance of voluntary counselling, testing and treatment for HIV among pregnant women in Kumasi, Ghana. *Ghana Med. J.*, 42(1): 8-15.

Ibrahim M., Oladipupo O., Adebayo S., and Fatusi A. 2013. Socio-demographic Determinants of HIV Counselling and Testing Uptake among Young People in Nigeria. *International Journal of Prevention and Treatment*, 2(3): 23-31.

Iiyasu Z., Abuhakar I., Kahir M., and Aliyu M. 2006. Knowledge of HIV/AIDS and Attitude towards Voluntary Counseling and testing among adults. *Journal of the National Medical Association*, 98(12): 1917-1922.

Jebessa S., and Teka T. 2005. Knowledge and attitude towards mother to child transmission of HIV and its prevention among post-natal mothers in Tikur Anbessa and Zewditu Memorial Hospitals, Addis Ababa. *Ethiop J Health Dev* 2005, 19(3):211-218.

Khan M. 2000. Operational Research Project on HIV/AIDS. *Knowledgepower* [_en.pdf&sa=U&ei=m_MOVJ6_18KpygPcgYGwBQ&ved=0CB8QFJAA&usg=AFQjCNFqW3pYxP5jTVdGndRUrN8c-2C3hw](#). Accessed on October 10, 2014.

Ladner J., Leroy V., Msellati P., Nyiraziraje M., De Clercq A., Van de perre P., and Dabis F. 1996. "A cohort study of factors associated with failure to return for HIV post-test counseling in pregnant women: Kigali, Rwanda, 1992-1993." *AIDS* 10 (1): 69-75.

Lancaster M., and Stanhope 2000. *Community Health Nursing*. Lexington: Mosby.

Lawal B. 2008. HIV/AIDS awareness among secondary school teachers in Kwara, Lagos and Ogun states of Nigeria. *Eur. J. Sci. Res.*, 22(3), 399-341

MacPhail C., Pettifor A., Coates T., Rees H. 2008. "You must do the test to know your status": attitudes to HIV voluntary counseling and testing for adolescents among South African youth and parents. *Health Educ Behav*, 35(1):87-104.

Mahmoud M., Nasr A., Gasmelseed D., Abdalhafiz M., Elsheikh M., and Adam I. 2007. Knowledge and attitude toward HIV voluntary counseling and testing services among pregnant women attending an antenatal clinic in Sudan. *J Med Virol.* 79:469-473.

MoHSS 2004. *Guidelines for the Prevention of Mother-to-Child Transmission of HIV*. Windhoek: MoHSS.

Munthali A., Chimbiri A., and Zulu E. 2004. Adolescent Sexual and Reproductive Health in Malawi. A Synthesis of Research Evidence: Occasional Report No. 15, December, 2004.

National AIDS & STIs Control Program 2001. National HIV Sero-prevalence Survey, 2004. Office of AIDS Research, National Institute of Health (NIH). Women and Girls and HIV/AIDS.

National AIDS Control Organization 2004. Voluntary Counselling & Testing Operational Guidelines. Ministry of Health and Family Welfare Government of India. National HIV/AIDS strategic plan, 2010-2015.

<http://nigeria.unfpa.org/pdf/nsp.pdf&sa=U&ei=PZo6VKuyBsblO-WCgbgN&ved=0CBsQFjAB&usg=AFQjCNF3ANmA640DaDRsxt0jebwok-ZDw>. Accessed on October 12, 2014.

National Population Commission 2009. Nigeria Demographic and Health Survey 2008, ICF Macro Calverton, Maryland, USA.

Nicole A., Bula A., Gaydos E., Zeev K., Thornton R., and Yeatman S. 2009. Increasing the acceptability of HIV counselling and testing with three C's: Convenience, confidentiality and credibility: *Soc Sci Med.*, 68(12): 2263-2270.

O'Donnell M., Knight S., Campbell L., Van-Armdel P., Zeinick J., and Rand W. 2004. Factors associated with participation in HIV voluntary counselling and testing among TB patients in a rural South African hospital. A paper presented at an International Conference on AIDS, <http://gateway.nlm.nih.gov/MeetingAbstracts/ma?fa=102279809.html>.

- Okiriamu C., Onyango R., Odiwuor W., and Simatwa E. 2013. Factors Influencing Utilization of voluntary counselling and testing services among fishermen at Dunga, Usoma and Asat Beaches in Kisumu District, Kenya. *Greener Journal of Medical Sciences*, 3 (6): 190-202.
- Okonkwo K., Reich K., Alabi A., Ummeike N., and Nachman S. 2007. An evaluation of awareness, attitudes and beliefs of pregnant women towards voluntary counseling and testing for HIV AIDS Patient and Care and STDs 21(4): 252-260.
- Onah H., Ibeziako N., Nkwo P., Obi S. and Nwankwo T. 2008. Voluntary Counselling and Testing (VCT) uptake, nevirapine use and infant feeding options at the UNTH. *Journal of Obstetrics and Gynaecology* 28(3):276-279.
- Peltzer K., Mpofu E., Baguma P., and Lawal B. 2004. Attitudes towards HIV-Antibody Testing Among University Students in Four African Countries. *International Journal for the Advancement of Counselling*, 24(3):193-203.
- Perez F., Aung K., Ndoro T, Engelsmann B., and Dabis F. 2008. Participation of traditional birth attendants in prevention of mother-to-child transmission of HIV services in two rural districts of Zimbabwe: a feasibility study. *BMC Public Health*, 8:401.
- Pignatelli S., Simpore J., Pietra V., Ouodraogo G., Conombo G., and Saeri N. 2006. Factors predicting uptake of voluntary counselling and testing in a real-life setting in a mother-and-child center in Ouagadougou, Burkina Faso. *J. Trop. Med. Int. Health*, 11(3): 350-357.

Population Council 2001. "HIV voluntary counselling and testing among youth: Results from an exploratory study in Nairobi, Kenya, and Kampala and Masaka, Uganda," Horizons Final Report. Washington, DC: Population Council.

Ron I., Wenjuan W., and Oyunbileg M. 2010. Who Goes Where and Why? Examining HIV.

Sherr L., Lopman B., Kakowa M., Dube S., Chawira G., and Nyamukapa C. 2007. Voluntary counselling and testing: uptake, impact on sexual behaviour, and HIV incidence in a rural Zimbabwean cohort. *AIDS*, 21(7):851-60.

Shisana O., Rehle T., Simbayi L., Parker W., and Jooste S. 2009. South African National HIV Prevalence, Incidence, Behavioural and Communication Survey, 2008. HSRC Press, South Africa, ISBN 13 978-07969-2291-5, Pg: 120.

Skhosana H. 2004. "Women and HIV/AIDS in South Africa". Literature review commissioned by women's Net for the Genderstats Project. www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=95048&P_XSLFile=unisa/mobi3.xsl. Accessed on October 10, 2014.

Sukari O. 2008. Barriers and attitudes towards HIV Voluntary Counselling and Testing (VCT) among Secondary School Pupils of Sengerema in Mwanza; Official Publication of the Tanzania Medical Students' Association.

The AIDS Support Organization (TASO), 2001. HIV Voluntary counselling and Testing among Youths. Result from an exploratory study Nairobi, Kenya, Kampala and Masaka, Uganda.

<http://www.popcouncil.org/uploads/pdfs/horizons/vctyouthbaseline.pdf&ei=hc>

00VI2fMqrmwPEo4GICg&ved=0CA4QFjAA&usg=AFQjCNEaoB3fSp2G2

YCL4x3X0WP4dKEuDQ. Accessed on October 10, 2014.

UNAIDS/ WHO 2006. AIDS epidemic update "Voluntary Counselling and Testing."

May 2000 UNAIDS Technical update, WC 503.6. UNAIDS Best Practice Collection. Geneva: UNAIDS.

UNAIDS 2001. The impact of Voluntary Counselling and Testing: A global review of the Benefits and Challenges" UNAIDS Report. Best practice Collection, Geneva, Switzerland

UNAIDS 2002. Reference Group on Estimates, Modelling and Projections. Improved methods and assumptions for estimation of the HIV/AIDS epidemic and its impact: recommendations of the UNAIDS Reference Group on Estimates, Modelling and Projections. *AIDS*, 16:W1-W14.

UNAIDS 2010. UNAIDS Report on the global AIDS epidemic 2010. www.unaids.org/documents/20101123_GlobalReport_em.pdf. Accessed on October 12, 2014.

UNAIDS 2014. Knowledge is power Voluntary HIV Counselling and testing in Uganda. www.unaids.org/media/unaids/contentassets/dataimport/publications/irc-pub02/jc680-

UNAIDS 1998. "Force for change: World AIDS campaign with young people." 1998 World AIDS Campaign Briefing Paper. <http://www.unaids.org/unaids/events/wad/1998/force%20de.doc>. Accessed on October 10, 2014.

UNAIDS/WHO 2006. Report on global AIDS epidemic. www.data.unaids.org/pub/globalreport/2006/2006_greexecutivesummary_en.pdf. Accessed on October 10, 2014.

United Nations 2014. International Conference for Population and Development 1994.

www.un-documents.net/ac17113.htm&sa=U&ei=2EQ0VKPjBYnjavbcgOgK&ved=0CQCQFjAD&usg=AFQjCNGMfuulPsfA7kxgsDaljDzDec6fvNw

Accessed on 6 October, 2014.

USAID 2010. Technical Issue on HIV Counselling and Testing. Available from:

<http://www.usaid.gov>. [Last accessed on 2011 Oct 10].

Walker N. 2004. Estimating the global burden of HIV/AIDS: what do we really know about the HIV pandemic? *Lancet*, 363:2180-2185.

WHO 2006. Towards universal access by 2010: How WHO is working with countries to scale-up HIV prevention, treatment, care and support.

WHO 2010. PMTCT Strategic Vision 2010-2015 Preventing mother-to-child transmission of HIV to reach the UNGASS and Millennium Development Goals. Geneva Switzerland

Wondimagegn G. 2004. Factors associated with VCT utilization in Guraghe. SNNPR.

Yahaya L., Jimoh A., and Balogun O. 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.

Yimam Z. 2005. Determinant of Voluntary counselling and testing utilization among youth in Jigjig town. Master Thesis.

Yoder P., Stanley A., and Matinga P. 2004. Voluntary Counselling and Testing for HIV
in Malawi: Public Perspectives and Recent HCT Experiences. Calverton,
USA: ORC MACRO.

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APPENDIX 1

INFORMED CONSENT FORM

My name is Akinbiyi Olugbenga. I am a student of the Department of Epidemiology Medical Statistics and Environmental Health (EMSEH), College of Medicine, UCH, Ibadan. I am interviewing people in Abuja in order to find out about the barriers of HIV Counseling and Testing (HCT) among women of child bearing age in the FCT. I will need to ask you personal questions which you may find difficult to answer. Your answers will be kept completely confidential and will not be shown to other persons. The information collected from you and people like you will be used solely for to make recommendation for improvement of HCT services. Your honest answers to these questions will be greatly appreciated.

The study does not involve invasive procedure and will not pose any discomfort to you. Honest answers to questions asked would be required and this will help provide a better understanding on the barriers women of child bearing face in assessing HCT.

You have the right to decline and withdraw at any given time if you choose to. We will greatly appreciate your help in responding to the survey and taking part in the study.

Consent: Now that the study has been well explained to me and I fully understand the content of the study process. I will be willing to take part in the programme.

Signature/Thumbprint of Participant/Date

Signature of Interviewer/Date

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Signature of Interviewer/Date

DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS

FACULTY OF PUBLIC HEALTH

UNIVERSITY OF IBADAN, NIGERIA

QUESTIONNAIRE ON BARRIERS TO HIV COUNSELING AND TESTING
AMONG WOMEN OF CHILD BEARING AGE IN THE FEDERAL CAPITAL
TERRITORY, ABUJA.

IDENTIFICATION

District..... Health facility:
Name.....
Hospital Number..... SERIAL
Number.....
Respondent residential address-----

Dear Respondent,
Introduction and consent: My name is I am working with the principal investigator. We are interviewing women here in Abuja to find out about women's awareness on HIV voluntary counseling and testing services. I am going to ask you questions some of which may be very personal. Your answers are completely confidential and will not be shown to other persons. The information collected from you and people like you will be used solely for academic purpose. Your honest answers to these questions will be greatly appreciated.

SECTION A: SOCIO DEMOGRAPHIC CHARACTERISTICS

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
Q102	What is the highest level of school you attended?	1. None <input type="checkbox"/> 2. Koranic only <input type="checkbox"/> 3. Primary <input type="checkbox"/> 4. Secondary <input type="checkbox"/> 5. Tertiary <input type="checkbox"/>	
Q103	Religion	1. Christianity <input type="checkbox"/> 2. Islam <input type="checkbox"/> 3. Traditional <input type="checkbox"/> 96. others(specify) <input type="checkbox"/>	
Q104	Marital status	1. Single <input type="checkbox"/> 4. Widow <input type="checkbox"/> 2. Married <input type="checkbox"/> 5. Seperated <input type="checkbox"/> 3. Divorced <input type="checkbox"/> 6. Living together <input type="checkbox"/>	
Q105	How old were you at your last birthday? [compare with q101 if needed and correct q105] 8. Don't know <input type="checkbox"/> <input type="checkbox"/> 99. No response	
Q106	Ethnic group	1. Yoruba <input type="checkbox"/> 3. Igbo <input type="checkbox"/> 2. Hausa <input type="checkbox"/> 4. Others(specify)	
Q107	Occupation	1. Professional/Specialist <input type="checkbox"/> 2. Civil servant <input type="checkbox"/> 3. Artisan <input type="checkbox"/> 4. Trader <input type="checkbox"/> 5. Trader (Hawkers) 6. Student <input type="checkbox"/> 7. Unemployed <input type="checkbox"/> 8. Housewife <input type="checkbox"/> OTHERS(SPECIFY)----- -----	
Q108	Monthly household Income	1. <5thousand naira <input type="checkbox"/> 2. 5 - 14.99 <input type="checkbox"/> 3. 15 -34.99 <input type="checkbox"/> 4. 25-34.99 <input type="checkbox"/> 5. 35-44.99 <input type="checkbox"/> 6. 45-54.99 <input type="checkbox"/> 7. 55 and above <input type="checkbox"/>	
Q.109	How many children do you have	1. One <input type="checkbox"/> 2. Two <input type="checkbox"/> 3. Three <input type="checkbox"/> 4. Four <input type="checkbox"/> 5. Five and above <input type="checkbox"/> 6. No response <input type="checkbox"/>	
Q.110	Have you ever received Antenatal Care during your previous pregnancy	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>	

SECTION B: KNOWLEDGE AND PERCEPTION OF WOMEN ABOUT HIV/AIDS AND HCT SERVICES

Q20 1	Have you ever heard of an illness called AIDS? If no, enlighten the respondent on AIDS and transmission.	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>	If no skip to Q.302
Q20 2	How can a person get AIDS? (check all mentioned in affirmative).	1. SEX WITH PROSTITUTES <input type="checkbox"/> 2. SEXUAL INTERCOURSE WITH MULTIPLE PARTNERS <input type="checkbox"/> 3. NOT USING A CONDOM <input type="checkbox"/> 4. HOMOSEXUAL CONTACT <input type="checkbox"/> 5. BLOOD TRANSFUSION <input type="checkbox"/> 6. INJECTIONS <input type="checkbox"/> 7. KISSING <input type="checkbox"/> 8. MOSQUITOE BITE <input type="checkbox"/> 9. CIRCUMCISION <input type="checkbox"/> 10. RAZOR BLADES/BARBER/CLIPPERS <input type="checkbox"/> 11. SHARP OBJECTS <input type="checkbox"/> 12. OTHERS (SPECIFY)	
Q20 3	Is there anything a person can do to avoid getting AIDS?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>	
Q20 4	What can a person do? Check all mentioned in affirmative).	1. ABSTAIN FROM SEX <input type="checkbox"/> 2. CONDOMS <input type="checkbox"/> 3. LIMIT SEX TO ONE SEXUAL PARTNER <input type="checkbox"/> 4. LIMIT NUMBER OF SEXUAL PARTNERS <input type="checkbox"/> 5. AVOID SEX WITH PROSTITUTES <input type="checkbox"/> 6. AVOID SEX WITH PERSONS WHO HAS MANY PARTNERS <input type="checkbox"/> 7. AVOID SEX WITH HOMOSEXUALS <input type="checkbox"/> 8. AVOID SEX WITH PERSONS WHO INJECT <input type="checkbox"/> 9. DRUGS INTRAVENOUSLY <input type="checkbox"/> 10. AVOID BLOOD TRANSFUSION <input type="checkbox"/> 11. AVOID INJECTIONS <input type="checkbox"/> 12. AVOID SHARING RAZOR BLADES <input type="checkbox"/> 13. AVOID KISSING <input type="checkbox"/> 14. AVOID MOSQUITO BITES <input type="checkbox"/> 15. SEEK PROTECTION FROM TRADITIONAL PRACTITIONERS <input type="checkbox"/> 16. AVOID USING SHARP OBJECTS <input type="checkbox"/> 17. OTHER (SPECIFY)----- -----	
Q20	Can a person get the	1. YES <input type="checkbox"/>	

5	AIDS viirus by sharing food with a person who has AIDS?	2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>																					
Q20 6	Is it possible for a healthy- looking person to have the AIDS virus?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>																					
Q20 7	Do you know someone personally who has the virus that causes AIDS or someone who died of AIDS?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>																					
Q20 8	Can the virus be transmitted from a mother to a child?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>																					
Q20 9	Can the virus that causes AIDS be transmitted from a mother to a child: During pregnancy? During delivery? By breastfeeding?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%;">Yes</th> <th style="width: 10%;">no</th> <th style="width: 10%;">don't know</th> <th style="width: 10%;">no response</th> </tr> </thead> <tbody> <tr> <td>DURING PREGNANCY?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>DURING DELIVERY?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>BY BREASFEEDING?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		Yes	no	don't know	no response	DURING PREGNANCY?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DURING DELIVERY?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BY BREASFEEDING?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Yes	no	don't know	no response																			
DURING PREGNANCY?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																			
DURING DELIVERY?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																			
BY BREASFEEDING?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																			
Q21 0	Have you heard of any drug that a woman infected with the AIDS virus can take to reduce the risk of transmission to the baby during pregnancy?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>																					
Q21 1	Do you know a place where you can go to get an HIV test?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>																					
Q21 2	From which source of information did you get to know about the place to get an HIV test?	1. Radio. <input type="checkbox"/> 2. T.V. <input type="checkbox"/> 3. Newspaper/magazine. <input type="checkbox"/> 4. Pamphlets/posters. <input type="checkbox"/> 5. Health workers. <input type="checkbox"/> 6. Churches/mosques. <input type="checkbox"/> 7. Schools/teachers. <input type="checkbox"/> 8. Community meetings. <input type="checkbox"/> 9. Friends/relatives. <input type="checkbox"/> 10. Workplace. <input type="checkbox"/> 11. Government hospital. <input type="checkbox"/> 12. Family planning clinic. <input type="checkbox"/> 13. Private hospital /clinic. <input type="checkbox"/> 14. Pharmacy/patent medicine. <input type="checkbox"/>																					

		15. Store. <input type="checkbox"/> 16. Others. <input type="checkbox"/>	
213	Have you ever done HIV testing	1.yes 2.No 8. Don't know 99. No response	If No skip to
Q21 4	Would you like to have a test to find out if you had the virus that causes AIDS?	1.YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>	If No skip to Q. 216
Q21 5	What is the main reason why you will like to have a test?	1. To reduce fear and anxiety. <input type="checkbox"/> 2. Required for employment. <input type="checkbox"/> 3. For marriage purposes. <input type="checkbox"/> 4. I want to know my HIV status. <input type="checkbox"/> 5.Others specify..... 8. Don't Know <input type="checkbox"/> 99. No Response <input type="checkbox"/>	If No skip to Q. 301
Q21 6	Why would you not like to know your status	1. Do not want to know my HIV status. <input type="checkbox"/> 2. Fear and anxiety. <input type="checkbox"/> 3. I feel it is not necessary. <input type="checkbox"/> 4. I can not afford it. <input type="checkbox"/> 5. Others (specify). <input type="checkbox"/> 8. Don't Know <input type="checkbox"/> 99. No Response	

SECTION C ADOPTION OF HCT

301	Have you undergone HCT before	1. Yes 2. No	If No skip to Q. 401
Q30 2	When was the last time you were tested?	1. Within the last 6 month <input type="checkbox"/> 2. 6 months to < 12 months ago <input type="checkbox"/> 3. 12 to 23 months ago. <input type="checkbox"/> 4. 24 months or more ago. <input type="checkbox"/> 5. Don't Know <input type="checkbox"/> 99. No Response <input type="checkbox"/>	
Q30 3	The last time you did the test, did you yourself ask for the test, was it offered to you and you accepted or were you required to have the test?	1. I asked for the test. <input type="checkbox"/> 2. I was offered and accepted. <input type="checkbox"/> 3. I was required to have it. <input type="checkbox"/> 8. Don't Know <input type="checkbox"/> 99. No Response <input type="checkbox"/>	
Q30 4	How far away from your house is the centre where you obtained the HIV	1. Within the community. <input type="checkbox"/> 2. Next street. <input type="checkbox"/> 3. Few kilometers away. <input type="checkbox"/>	

	test?	4. Travelled out of town. <input type="checkbox"/> 5. Others (specify)..... 8. Don't Know <input type="checkbox"/> 99. No Response <input type="checkbox"/>	
Q30 5	How much did you spend in assessing the HIV test?	_____ Naira 8. Don't Know <input type="checkbox"/> 99. No Response <input type="checkbox"/>	
Q30 6	How long did it take you to complete the HIV test?	1. < One hour. <input type="checkbox"/> 2. 1 hour to 3 hours. <input type="checkbox"/> 3. A whole day. <input type="checkbox"/> 4. 2 days to a week. <input type="checkbox"/> 5. Others (specify). ----- ----- 8. Don't Know <input type="checkbox"/> 99. No Response	
Q30 7	If yes what was your test result	-----1 -----2 -----3	
Q30 8	What is it that you don't like about the services rendered when you did the test?	1. Lack of privacy. <input type="checkbox"/> 2. Attitude of the counselors. <input type="checkbox"/> 3. Others(specify)----- ----- 4. Others(specify)----- ----- 5. Others(specify)----- ----- 8. Don't Know <input type="checkbox"/> 99. No Response <input type="checkbox"/>	
Q30 9	What advice will you like to make in terms of improving the services?	Advice----- -----1 Advice----- -----2 Advice----- -----3 Advice----- -----4	

SECTION D REASONS FOR NON ADOPTION

Q401	Are you adopting HCT?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>	If yes skip to the end of the interview
Q402	If No, then ask for reasons for non adoption of HCT	Never asked or required <input type="checkbox"/> Offered but not required <input type="checkbox"/> Too worried or concerned or scared to be tested <input type="checkbox"/> Fear of discrimination <input type="checkbox"/> No perception of need for the test <input type="checkbox"/> High perception of risk <input type="checkbox"/> Testing is contrary to beliefs <input type="checkbox"/> Partner had tested negative <input type="checkbox"/> Do not know where the test is being offered <input type="checkbox"/> Centre where its being offered is too far <input type="checkbox"/> Cost is too high <input type="checkbox"/> Waiting time is too long <input type="checkbox"/> Poor attitude of health worker <input type="checkbox"/> Intended but had not done so <input type="checkbox"/> No reagent <input type="checkbox"/> Spouse did not consent <input type="checkbox"/> Lack of treatment /cure for the disease <input type="checkbox"/> Told is not necessary <input type="checkbox"/> Do not think about getting it done <input type="checkbox"/> No particular reason <input type="checkbox"/> Any other reason specify	
Q.403	Would you be willing to go for HCT?	1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 8. DON'T KNOW <input type="checkbox"/> 99. NO RESPONSE <input type="checkbox"/>	

Please thank respondent for taking out time to provide honest answer to your questions.

Appendix II

List of health facilities in Abuja

S/N	Abaji LGA	AMAC LGA	Bwari LGA	G/Lada LGA	Kuje LGA	Kwali LGAA
1	Abaji General Hospital	Asokoro General Hospital	Bwari General Hospital	Angwandodo PHC	Chibin Primary Health Centre	Bako Health Post
2	Abaji Town Clinic	Burum Health Post	Bwari Town Clinic	Dagiri PHC	Dafara Primary Health Centre	Dafa Health Clinic
3	Abattoir PHC	Custom Medical Centre	Byazhin Health Clinic	G/Lada Township Clinic	Gudunkarya Primary Health Centre	Ijah Sarki Health Post
4	Adgba Clinic	Dutsen Garki Health Post	Daughter of St Vincent Clinic and Maternity	Gwagwalada Specialist Hospital	Gwagwada Primary Health Centre	Kilankwa 1 Health Post
5	Agyana Health Clinic	Garki General Hospital	Our Lady of Fatima Bwari	Gwako Health Clinic	Kuchiyako Primary Health Centre	Kwaita Model Primary Health Centre
6	Ayuara PHC	Garki Village Health Post	Deidei Health Clinic	Ibwa Pada Health Clinic	Kujc General Hospital	Kwali Basic Health Clinic
7	Ebagi Health Clinic	Gidan Mangoro Health Post	Dutse Alhaji Health Centre	Kutunku 2 Primary Health Centre	Kuje Primary Health Centre	Kwali General Hospital
8	Nahareti Health Clinic	Gwagwa Health Centre	Dutsen Baupma Clinic	St Mary's Catholic Hospital	Kwaku Primary Health Centre	Piri Health Clinic
9	Nuku Primary Health Centre	Gwagwarape Primary Health Centre	Igu Health Clinic	Tungan Maje Health Clinic	Rubochi General Hospital	Rhema Foundation Hospital
10	Pandagi Comprehensive Health Centre	Gwarimpa General Hospital	Kubwa General Hospital	Yimi Health Post	Rubochi Primary Health Centre	Sheda Health Clinic
11	New Township Clinic	Idu-Karmo Health Post	Kuchibuyi Health Clinic	Zuba Health Clinic	CHC Gaube	Ubasharo PHC
12	Rimba Clinic	Jiwa Health Post	Modern Health Hospital	Old Kutunku Primary Health Centre	PHC Kabin Mangoro	Wako Health Clinic
13	Yaba CHC	Kabusa Health Post	Mpape Health Clinic	Ibwa PHC	PHC Kiyi	Yangoji Family

						Support Program me Clinic
14	Kpache Health Post	Kagjini Health Post	Shere Health Clinic	Dukpa PHC (IHVN-CIA)	PHC Kasada	Yebu Health Clinic
15	Mamagi PHC	Karshi General Hospital	Ushafa Health Clinic	Wumi PHC (IHVN-CIA)	PHC Yanga	Damakusa PHC
16	Manderegi PHC	Karshi Health Post	Kurumin Daudu PHC	Tsuani PHC (IHVN-CIA)	PHC Pegyi	Ashara PHC
17	Lowcost PHC	Karu Health Clinic	Zhigakuchi PHC	Kaida Tsoho PHC (IHVN- CIA)		Yewuti PHC
18	Nanda PHC	Kobi Health Post	Dakwa PHC	Paiko PHC (IHVN-CIA)		Bukpe PHC
19	Gurdi PHC	Lugbe Health Post	Zhiko PHC	PHC Chiumu		Kundu PHC
Total					16	
S/N	Abaji	AMAC	Bwari	G/lada	Kwali	
20	Mawogi PHC	Maitama General Hospital	Comprehensive Health Centre Dei Dei	PHC Dobi	Dapa Health Post	
21	Gigbe PHC	National Hospital (Abuja)	Kubwa Muslim Community Hospital	PHC Gurfarta	KwaitaHausaw a PHC	
22	Dogon Ruwa PHC	NIPRD Medical Clinic	Gaba Primary Health Centre	PHC Ikwa	Leda PHC	
23	Gasakpa PHC	Nyanya General Hospital	Gudupe Primary Health Centre		Yanbabu PHC	
24	Gawu PHC	Orozo Health Post	Tungan Bijimi Primary Health Centre		Kigbe Primary Health Centre	
25	St. Peters Abaji	Piwoyi Primary Health Centre	Piko Health Post		Dangara PHC	
26		Pyakasa Health Post	Panunuke Health Post		Gumbo PHC	
27		Rainbow Clinic and Maternity	Yaupe Health Post		Koroko PHC	
28		Sisters of Nativity Hospital	Lower Usman Dam PHC		Petti PHC	
29		Medical Mission of Mary Lugbe	Sumpe Health Post		ChikukuTsoho PHC	
30		Our Lady	Tokulo Primary		Kilankwa II	

						Support Programme Clinic
14	Kpache Health Post	Kagini Health Post	Shere Health Clinic	Dukpa PHC (IHVN-CIA)	PHC Kasada	Yebu Health Clinic
15	Mamagi PHC	Karshi General Hospital	Ushafa Health Clinic	Wunu PHC (IHVN-CIA)	PHC Yanga	Damakusa PHC
16	Manderegi PHC	Karshi Health Post	Kurumin Daudu PHC	Tsuani PHC (IHVN-CIA)	PHC Pegyi	Ashara PHC
17	Lowcost PHC	Karu Health Clinic	Zhigakuchi PHC	Kaida Tsoho PHC (IHVN-CIA)		Yewutu PHC
18	Nanda PHC	Kobi Health Post	Dakwa PHC	Paiko PHC (IHVN-CIA)		Bukpe PHC
19	Gurdi PHC	Lugbe Health Post	Zbiko PHC	PHC Chitimu		Kundu PHC
Total					16	
S/N	Abaji	AMAC	Bwari	G/lada	Kwali	
20	Mawogi PHC	Maitama General Hospital	Comprehensive Health Centre Dei Dei	PHC Dobi	Dapa Health Post	
21	Gigbe PHC	National Hospital (Abuja)	Kubwa Muslim Community Hospital	PHC Gurfarta	KwaitaHausawa PHC	
22	Dogon Ruwa PHC	NIPRD Medical Clinic	Gaba Primary Health Centre	PHC Ikwa	Leda PHC	
23	Gasakpa PHC	Nyanya General Hospital	Gudupe Primary Health Centre		Yanbabu PHC	
24	Gawu PHC	Orozo Health Post	Tungan Bijimi Primary Health Centre		Kigbe Primary Health Centre	
25	St. Peters Abaji	Piwoyi Primary Health Centre	Piko Health Post		Dangara PHC	
26		Pyakasa Health Post	Panunuke Health Post		Gumbo PHC	
27		Rainbow Clinic and Maternity	Yaupe Health Post		Koroko PHC	
28		Sisters of Nativity Hospital	Lower Usman Dam PHC		Petti PHC	
29		Medical Mission of Mary Lugbe	Sumpe Health Post		ChikukuTsoho PHC	
30		Our Lady	Tokulo Primary		Kilankwa II	

		Queen of Nigeria Garki	Health Centre		PHC
31		St. Cornelia Clinic Gidan Mangoro	Padan Gwari PHC		Fogbe Health Clinic
32		Shadalafiya	Galuwyi PHC		Pai PHC
33		State House Clinic	Kute PHC		Ike Health Post
34		Wuse General Hospital	Sabon Gari PHC		Tungan Sarki
35		Deidei Health Clinic	Kogo PHC		Gomani PHC
36		ECWA Medical Centre	Durumi PHC		Chida Primary Health Centre
37		Jikwoyi Medical Centre	PHC Barangoni		Mai Kwari PHC
38		Lugbe PHC	PHC Kawu		Faruku PHC
SN	AMAC		Kwali		
39	Lugbe Maternity and Hospital		Dabi Bako Primary Health Centre		
40	Mabushi Primary Health Centre		Ijah Sarki PHC (IHVN-CIA)		
41	Kurudu Primary Health Centre		Leileiyi PHC (IHVN-CIA)		
42	Gugugu Health Post		Rimba PHC (IHVN-CIA)		
43	Agnes Maternity		Choice Maternity		
44	Nakowa Maternity Mabushi		Heiti Hospital		
45	PHC Kpaduma				
46	PHC Bassa Jiwa				
47	Police Hospital Garki				
48	PHC Ikwa				
49	PHC Shercti				
50	PHC Iddo Pada				
51	PHC Igwu				
52	FSH Jabi				
53	FSH Gwarinpa				
54	Jikwoyi Primary Health Centre				
55	PHC Tungan Madaki				
56	PHC Apo				
57	PHC Ketti				
58	Bepo Clinic				

Appendix III

List of health facilities selected for the research

S/N	Health Facilities	Total attendance at the clinic in January, 2005	Calculated sample size for each center
1	Asokoro General Hospital	240	$240/2125 \times 1125 = 127$
2	Maitama General Hospital	230	$230/2125 \times 1125 = 122$
3	Wuse General Hospital	250	$250/2125 \times 1125 = 132$
4	Garki Hospital	150	$150/2125 \times 1125 = 79$
5	Kwali General Hospital	130	$130/2125 \times 1125 = 69$
6	CBN Hospital	200	$200/2125 \times 1125 = 106$
7	Kubwa General Hospital	150	$150/2125 \times 1125 = 79$
8	Nyanya General Hospital	245	$245/2125 \times 1125 = 130$
9	National Hospital Abuja	250	$250/2125 \times 1125 = 133$
10	University of Abuja Hospital	280	$280/2125 \times 1125 = 148$
Total		2125	1125