KNOWLEDGE AND UTILIZATION OF VOLUNTARY COUNSELING AND TESTING SERVICES ON PREVENTION OF HIV/AIDS AMONG STUDENTS OF TERTIARY INSTITUTIONS IN BAUCHI STATE, NIGERIA

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BY

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DEPARTMENT OF PHYSICAL AND HEALTH EDUCATION, FACULTY OF EDUCATION, AHMADU BELLO UNIVERSITY, ZARIA, KADUNA STATE

AUGUST, 2014

DECLARATION

I declare that the work in the thesis entitled **"knowledge and utilization of voluntary counseling and testing services on prevention of HIV/AIDS among students of tertiary institutions in Bauchi state, Nigeria"** has been carried out by me in the department of physical and health education under the supervision of Professor (Mrs.) M.A. Suleiman and Professor J. A. Gwani. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this thesis was previously presented for another degree or diploma at this or any other university.

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Name of Student	Signature	Date

CERTIFICATION

This thesis entitle "KNOWLEDGE AND UTILIZATION OF VOLUNTARY COUNSELING AND TESTING SERVICES ON PREVENTION OF HIV/AIDS AMONG STUDENTS OF TERTIARY INSTITUTIONS IN BAUCHI STATE, NIGERIA" by Umar Danasabe, HARUNA, meets the regulation governing the award of the master's of education degree of the Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

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Professor A.A. Joshua Date
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DEDICATION

The research work is dedicated to my children Ahmed, Aisha, Fatima, Sani, Yusuf and Khadija Umar.

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ABSTRACT

This study aims at investigating knowledge and utilization of Voluntary Counseling Testing (VCT) services on the prevention of HIV/AIDS among Students of Tertiary Institutions of Bauchi State. However, to achieve the aim seven objectives and research questions each were postulated to guide the study and seven hypotheses were formulated and tested. The study adopted an ex-post facto design using a multistage sampling method, stratified sampling technique was used to divide the Tertiary Institution into four strata and one school from each stratum was drawn using random sampling, proportional and cluster sampling were deployed in meeting the 381 respondents using modified self-developed questionnaire which contain three sections. Descriptive statistic of mean, standard deviation were used to analyze the items in the various section of the questionnaire while t-test, ANOVA and Pearson product moment correlation coefficients were used to test the hypothesis at 0.05 level of significance. The data collected was analyzed using statistical package of social sciences (SPSS). The result revealed that majority of students in Tertiary Institutions of Bauchi State have knowledge on VCT services and are utilizing VCT services; there are no significant difference between male and female in their knowledge of VCT services among respondents; the result indicated no significant difference between male and female in their utilization of VCT services among respondents; significant difference existed on knowledge and utilization among students of different tertiary institution; and knowledge of VCT services influences the utilization of VCT services among respondents. Based on these findings it was recommended that VCT centres should be cited in educational institutions for proximity to the people. Both sexes should have to be encouraged to accept VCT for HIV through peer initiated VCT services at all levels of care including in universities; to intensify health education to convince the remaining minority who are still skeptical or ignorant of the benefits of VCT. Since knowledge of VCT influenced the utilization of VCT services among the respondents. Health personnel should intensify enlighten campaigns on the benefits of VCT utilization.

TABLE OF CONTENTS

Title Page..... **Error! Bookmark not defined.**
Declaration ii
Certification..... iii
Dedication iv
Acknowledgements..... v
Abstract vi
Abbreviations..... ix
List of Tables..... x
Operational Definition of Terms xi

CHAPTER ONE 1
INTRODUCTION: 1
1.1 Background to the Study 1
1.2 Statement of the Problem..... 4
1.3 Research Questions 5
1.4 Purpose of the Study 6
1.5 Basic Assumptions..... 6
1.6 Hypotheses 7
1.6.1 Major Hypothesis 7
1.6.2 Sub-Hypotheses..... 7
1.7 Significance of the Study..... 8
1.8 Delimitation of the Study..... 8
1.9 Limitation of the Study..... 8

CHAPTER TWO 10
REVIEW OF RELATED LITERATURE 10
2.1 Introduction 10
2.2 Concept of Human Immunodeficiency Virus/Acquire Immune Deficiency Syndrome (HIV/AIDS)..... 10
2.2.1 Epidemiology of HIV/AIDS 10
2.2.2 Signs and Symptoms of HIV/AIDS 15
2.2.3 Transmission of HIV/AIDS 16
2.2.4 Response to HIV/AIDS 18
2.2.5 HIV/AIDS and Education:..... 22
2.2.6 Prevention of HIV/AIDS 24
2.3 The Concept of Voluntary Counseling Testing (VCT) 24
2.3.1 Benefits of HIV Counseling and Testing 29
2.3.2 The Process of Counseling and Testing 29
2.3. Voluntary Counseling and Testing In Nigeria 30
2.4 Knowledge of Students on VCT Services 32
2.5 Utilization of Voluntary Counseling and Testing (VCT) Services 37
2.6 Relationship between Knowledge and Utilization of VCT Services 43
2.7 Empirical Studies on Knowledge and Utilization Of VCT 45
2.8 Summary..... 61

CHAPTER THREE 62
METHODOLOGY 62
3.1 Introduction 62
3.2 Research Design 62
3.3 Population of the Study 63
3.4 Sample and Sampling Procedure 63
3.5 Data Collection Instrument 65
3.6 Validation of the Instrument 65
3.7 Data Collection Procedure 66
3.8 Data Analysis 66

CHAPTER FOUR 67
RESULTS AND DISCUSSION 67
4.1 Introduction 67
4.2 Results 67
4.4 Discussion 76

CHAPTER FIVE 82
SUMMARY, CONCLUSION AND RECOMMENDATIONS 82
5.1 Summary 82
5.2 Summary of Major Findings 82
5.2 Conclusion 83
5.3 Recommendations 84
5.4 Recommendations for Further Research 84

REFERENCES 85

APPENDIX A 97
RESEARCH QUESTIONNAIRE 97
APPENDIXB 101
Introductory Letter 101
APPENDIXC 102
Request to Vet a Questionnaire 102

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti Retrovirus Therapy
ATBU	Abubakar Tafawa Balewa University
BSS	Behavioral Survey Surveillance
CDC	Centre for Disease Control
CHTN	College of Health Technology Ningi
COEA	College of Education Azare
FHI	Family Health International
FMH	Federal Ministry of Health
FPTB	Federal Polytechnic Bauchi
HCT	HIV Counseling and Testing
HEAP	HIV/AIDS Emergency Action Plan
HIV	Human Immunodeficiency Virus
IBBSS	Integrated Biological Behavioural Surveillance Survey
IDU	Intravenous Drug Users
MARPS	Most at Risk Persons
MDG	Millennium Development Goals
MSM	Men having Sex with Men
NACA	National Action Committee on AIDS
NARHS	National HIV/AIDS and Reproductive Health Survey
PCA	Presidential Council on AIDS
PEPFAR	US president's Emergency plan for AIDS Relief
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother-To-Child Transmission
SPSS	Statistical Package of Social Sciences
STI	Sexually Transmitted Infections
UNAIDS	United Nations programme on HIV/AIDS
UNGASS	United Nation General Assembly Special Session
VCT	Voluntary Counseling and Testing
W HO	World Health Organization

LIST OF TABLES **Page**

Table 2.1 -Main Symptom of acute HIV-1 infection ……..16
Table 3.1 -Population of Tertiary Institution in Bauchi State …….....65
Table 3.2 -Respondents based on School Population using Percentage …….67
Table 4.2.1 -Demographic characteristics of the respondents ……...69
Table 4.2.2 -Descriptive statistical table for knowledge of VCT services among the respondents ……...71
Table 4.2.3 -Descriptive statistical table for utilization of VCT services among the respondents ……73
Table4.2.6 -Summary of t-test on difference between Male and Female Student in their knowledge of VCT services ……...74
Table4.2.7 -Summary of t-test on difference between Male and Female Student in their Utilization of VCT services ……75
Table4.2.8A -Summary of ANOVA on difference in knowledge of VCT services among the different tertiary institution of Bauchi state ……75
Table 4.2.8B -Summary of scheffes' analysis on mean different of school (I-J) on knowledge of VCT services among students of different tertiary institution in Bauchi State…….....76
Table 4.2.9A -Summary of ANOVA on difference in utilization of VCT services among the different tertiary institution of Bauchi state …… ……...77
Table 4.2.9B -Summary of scheffes' analysis on mean different of school (I-J) on utilization of VCT services among students of different tertiary institution in Bauchi State…….…….....77
Table 4.2.10 -Summary of correlation analysis on relationship between knowledge and utilization of VCT services among respondents……..78

OPERATIONAL DEFINATION OF TERMS

Knowledge -Information that one has about Voluntary, Counseling and Testing

Utilization -Making use of Voluntary, Counseling and Testing.

Voluntary -To accept Voluntary, Counseling and testing willingly

Counseling -Confidential dialogue between a client and a care provider

Testing -Scientific process of investigating blood specimen for HIV

Tertiary Institution -School where education is given after secondary education own by government

Student -Learner in the Tertiary Institutions

CHAPTER ONE

INTRODUCTION:

1.1 Background to the Study

The human immunodeficiency virus (HIV) was unknown until the early 1980s, but since that time it has infected millions of persons in a worldwide pandemic (Edward, 2006). The result of HIV infection is relentless destruction of the immune system leading to onset of the acquired immunodeficiency syndrome (AIDS). The AIDS epidemic has already resulted in the deaths of over half of its victims. All HIV-infected persons are at risk of illness and death from opportunistic infections and neoplastic complications as a consequence of the inevitable manifestations of AIDS (Moss, & Bacchetti, 1989).

HIV/AIDS is a global crises, a challenge to human life and dignity with ability to erode social and economic development. It has great influence on stability, life expectancy and economic development. It is a major public health problem with sub-Sahara Africa severely affected by the epidemic (Lancet, 2002).

World Health Organizations (WHO) interventions for prevention focused on key areas such as counseling and testing as the entry point to treatment, prevention and comprehensive programs to prevent HIV/AIDS infection among infants, women and young people. Only 5 percent of people with HIV/AIDS are estimated to be aware of their status worldwide (WHO, 2004). The scope of the AIDS pandemic has already led to serious consequences, not only for health care systems of countries that are unable to cope with many AIDS victims, but also for the national economies of those countries because of the loss of young to middle aged who are economically most productive. At the beginning of the 21st century, 95 percent of new HIV infections and deaths occurred in developing nations, and two-third of persons living with HIV infection reside in Sub-

Sahara Africa. The age groups most affected are young persons from 15 to 24years of age, accounted for 40 percent of new HIV infection (Merson, 2006). Worldwide, over half the victims of AIDS are women and the consequence of this is perinatal infection resulting in a significant number of children born with HIV infection (Lancet, 1996).

Nigeria recorded the first case of AIDS in 1986 (FMH, 2005). Heterosexual intercourse remains the primary mode of transmission for HIV and accounts for 80-95 percent of HIV infection in Nigeria (Adeyi & Kanki, 2006). Nigeria has the second highest number of people living with HIV in the World after South Africa with estimated number of 33.4 million of people living with HIV in 2008 (UNAIDS, 2009).

With an estimated 3.5 million people living with HIV/AIDS, Nigeria remains a home to 1 of every 11 of the 40 million people living with HIV/AIDS worldwide (UNAIDS, 2002). The HIV prevalence among adults in Nigeria has increased from 1.8% in 1991 to an estimated 5.8% in 2001 (UNAIDS 2002). Prevalence ranges from 2 percent to 14.9 percent in the country's 36 states and Federal Capital Territory (FMH, 2001). According to official estimates, Nigeria faces 200,000 new infections and approximately 170,000 AIDS death in 2003 alone, (UNAIDS, 2002) and these numbers are projected to increase each year. There are geographic differences in prevalence of HIV/AIDS (UN system in Nigeria, 2001) which ranges from 2 percent to 14.9 percent in the country's 36 states and Federal Capital Territory (FMH, 2001). Young people – 15-24 year olds – account for nearly half of all new HIV infections worldwide. They are the largest youth generation in history and need a protective environment – regular schooling, access to health and support services – If they are to play their vital part in combating the epidemic (UNAIDS, 2004). Adolescents and young adults in their 20's are mostly affected with HIV/AIDS and have little access to reproductive health services and information.

Prevalence for girls and young women aged 15-24 is higher than for males in that age group (UN System in Nigeria, 2001).

The number of sites providing VCT has been on the increase. As at December 2008, there were 908 functional VCT sites across the country (Nigeria) providing counseling and testing services compared with 864 at the end of 2007. Closely linked to this is an increase in expressed desire to get an HIV test; 72 percent of respondents in the 2007 National HIV/AIDS and Reproductive Health Survey (NARHS) expressed a desire to get tested. The total number of people who were counseled, tested and received their test results also rose from 2,350,000 in December 2007 to 3,371,220 at the ends of 2008 (NACA, 2009). In Bauchi state, 61,851individuals received HIV counselling and Testing (HCT) of which1233 tested positive (Liman, 2011).

HIV counseling and testing (HCT) has been identified as a critical intervention tool in HIV prevention and care strategies. Voluntary Counseling and Testing (VCT) provides an opportunity for one to know his/her HIV status after receiving enough information to make the decision. A study (Allen, Serufilira, Bogaerts, Van de Perre, Nsengumuremyi, Lindan, et al. 1992) had shown that VCT has been useful in facilitating and sustaining behavior change. However, it has been observed that utilization of VCT services in conventional health care setting has been limited. This is especially the case for hard to reach targets such as young people (especially out- of- school youth), migrant fisher men and farmers, nomadic, long distant truck drivers, and street based commercial sex workers.

HIV counseling and testing is crucial in controlling HIV transmission in those who tested negative and in those who tested positive by promoting the appropriate contraceptive and the practice of safer sex, early management of opportunistic infections

and sexually transmitting infection (STI), referral services to support groups and acceptance of status (FHI, 2007).

In Nigeria there is a distinct lack of HIV testing programmes. In 2010 there was only 1.4 HIV testing and counseling facilities for approximately every 100,000 Nigerian adults and only 11.7 percent of women and men aged 15-49 had received an HIV test and found out the results (FMH 2012, WHO/UNAIDS/UNICEF, 2011). This shows how desperately the government needs to scale up HIV testing services. Whilst an estimated 2.2 million people aged 15 years and above received HIV testing and counseling in 2010, this amounts to only around 31 people per 100,000 of the total adult population (WHO/UNAIDS/UNICEF, 2011). This research therefore, aimed at assessing knowledge and utilization of VCT services on the prevention of HIV/AIDS among students of tertiary institution in Bauchi state.

1.2 Statement of the Problem

Voluntary counseling and testing is an effective and pivotal strategy for both HIV/AIDS prevention and care, and is also a principal entry point to care and support for people living with HIV/AIDS (PLWHA). VCT help HIV negative people make informed choices when engaging in sexual intercourse, such as having single partner or using a condom. There is strong evidence that voluntary HIV counseling and testing can affect sexual behaviors and a multi-country trial suggested that VCT is cost- effective and efficacious in promoting behavior change, particularly in high HIV prevalence setting and VCT can even lower HIV incidence rates (Allen, Serufilira, Bogaerts, Van de Perre, Nsengumuremyi, Lindan, et al., 1992).

However, relatively few studies have focused on client's experience of VCT, particularly among tertiary institution students, young people between the ages of 15-35years, the majority of who are currently in schools, colleges and Universities, have

been identified as vulnerable to HIV infections (UNAIDS/WHO 2005; Horizons Project, 2001). According to the World Bank (2001), University students in Africa are at high risk of contracting HIV AIDS because of high-risk activities such as "sugar daddy practices" and unprotected casual sex with multiple partners. The use of VCT services by young people has also been limited, primarily due to the issues such as lack of confidentiality, cost of services and unfriendly attitudes of clinical staff (UNFPA, 2004).

It is against this background that the researcher intends to conduct a study on knowledge and utilization of VCT services on the prevention of HIV/AIDS among students of tertiary institutions of Bauchi State.

1.3 Research Questions

Based on this, and the fact that there is paucity of literature on this topic in the area of study, the researcher formulated the following questions to guide this study.

1. What is the level of knowledge of VCT services among Students of tertiary institutions in Bauchi state?
2. What is the level of utilization of VCT services among Students of tertiary institutions in Bauchi state?
3. Are there differences between male and female students of Bauchi State tertiary institutions in their knowledge of VCT service?
4. Are there differences between male and female students of Bauchi State tertiary institutions in their utilization of VCT services?
5. Are there differences among the students of different tertiary institutions of Bauchi State in their knowledge of VCT services?
6. Are there differences among the students of different tertiary institutions of Bauchi State in their utilization of VCT services?

7. Is there any relationship between knowledge and utilization of VCT services on the prevention of HIV/AIDS among students of Bauchi State tertiary institution?

1.4 Purpose of the Study

The purpose of this study is to assess knowledge and utilization of voluntary counseling and testing services in the prevention of HIV/AIDS among student of Bauchi State tertiary institutions. Specifically, the study sought to:

1. Find out the level of knowledge of VCT services on the prevention of HIV/AIDS among students of tertiary institution of Bauchi State.
2. Find out the level of utilization of VCT services on the prevention of HIV/AIDS among students of tertiary institution of Bauchi State.
3. Examine the difference between male and female in their level of Knowledge of VCT services on the prevention of HIV/AIDS among students of tertiary institution of Bauchi State.
4. Determine the difference between male and female in their level of Utilization of VCT services on the prevention of HIV/AIDS among students of tertiary institution of Bauchi State
5. Find out differences in knowledge of VCT services on the prevention of HIV/AIDS among students of different tertiary institutions in Bauchi State.
6. Find out the differences in utilization of VCT services on the prevention of HIV/AIDS among students of different tertiary institutions in Bauchi State.
7. Find out the relationship between knowledge and Utilization of VCT services among student of tertiary institution of Bauchi State

1.5 Basic Assumptions

The following assumptions were made for the study.

1. Level of knowledge of VCT services among Student of tertiary institution help on the prevention of HIV/AIDS in Bauchi state.
2. Level of utilization of VCT services among Student of tertiary institution help on the prevention of HIV/AIDS in Bauchi state.
3. Male and female students of tertiary Institution have the same level of knowledge of VCT services in Bauchi state.
4. Male and female students of tertiary Institution have the same level VCT services utilization in Bauchi state.
5. More Students from health Institutions are aware of VCT services then student of other tertiary Institution on the prevention of HIV/AIDS.
6. More Students from health Institutions are utilizing VCT services then student of other tertiary Institution on the prevention of HIV/AIDS.
7. Knowledge of VCT services helps in the utilization of VCT among students of tertiary institutions on the prevention of HIV/AIDS.

1.6 Hypotheses

1.6.1 Major Hypothesis

The students' demographic variables do not significantly differ in their knowledge and utilization of VCT services for the prevention of HIV/AIDS in Bauchi State.

1.6.2 Sub-Hypotheses

In this study the following sub-hypotheses were formulated:

1. There is no significant difference between male and female students of tertiary institution in their knowledge of VCT services for the prevention of HIV/AIDS in Bauchi State.

2. There is no significant difference between male and female students of tertiary institution in their utilization of VCT services for the prevention of HIV/AIDS in Bauchi State.
3. There is no significant difference in the knowledge of VCT services among Students of different tertiary institutions in Bauchi state.
4. There is no significant difference in the utilization of VCT services among Students of different tertiary institutions in Bauchi state.
5. There is no significant relationship between knowledge and utilization of VCT services in the prevention of HIV/AIDs among student of tertiary institution in Bauchi State.

1.7 Significance of the Study

The outcome of the study would be of great importance to the tertiary institution of the study area, Bauchi State government, particularly, Ministry of Higher education and Ministry of Health for the creation of more VCT site in the schools.

Non-governmental organization would also find this study useful in designing health education campaign on the benefits of VCT services utilization to individuals at risk particularly, students of school/colleges.

1.8 Delimitation of the Study

This study would be delimited to knowledge of HIV/AID VCT and utilization of VCT services among student of tertiary institutions age 15-49 years in Bauchi State.

1.9 Limitation of the Study

This study has the following limitations, which were considered while interpreting the results.

1. Some of the respondents refused to respond appropriately to the questions asked as such the trained research assistant explain and solicit for the true from the respondent.
2. After retrieving the questionnaire, it was found that some of the questionnaires were returned not completely answer; as such it was not included in the analysis.
3. There was delayed in the return of the questionnaire by the respondents, as such one week was added to retrieve the questionnaires.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The focus of this study is to ascertain the knowledge and utilization of HIV voluntary counseling and testing services for the prevention of HIV/AIDS among students of tertiary institutions in Bauchi State. An attempt was made in this chapter to review literature that are relate to knowledge and practices (utilization) of VCT as published in other studies and some literatures are also discussed.

For the purpose of this study the related literature were reviewed under the following subheading:

1. Concept of Human Immunodeficiency Virus/Acquire Immune Deficiency Syndrome
2. Concept of Voluntary, Counseling and Testing (VCT)
3. Knowledge of Students on VCT services
4. Utilization of VCT services among Students
5. Relationship between knowledge and utilization of VCT services
6. Empirical studies on knowledge and utilization of VCT services
7. Summary

2.2 Concept of Human Immunodeficiency Virus/Acquire Immune Deficiency Syndrome (HIV/AIDS)

2.2.1 Epidemiology of HIV/AIDS

HIV is a virus that is transmitted from person to person through the exchange of body fluids such as blood, semen, breast milk and vaginal secretions. Sexual contact is

the most common way to spread HIV AIDS, but it can also be transmitted by sharing needles when injecting drugs, or during childbirth and breastfeeding. As HIV/AIDS reproduces, it damages the body's immune system and the body becomes susceptible to illness and infection. There is no known cure for HIV infection (Mark, 2010). Furthermore, Mark, (2010) stresses that, Acquired immune deficiency syndrome (AIDS), is a condition that describes an advanced state of HIV infection. With AIDS, the virus has progressed, causing significant loss of white blood cells (CD4 cells) or any of the cancers or infections that result from immune system damage. Those illnesses and infections are said to be "AIDS-defining" because they mark the onset of AIDS. Like HIV, there is no known cure for AIDS.

HIV/AIDS is a global crises, a challenge to human life and dignity with ability to erode social and economic development. It has great influence on stability, life expectancy and economic development. It is a major public health problem with sub-Saharan Africa severely affected by the epidemic (Lancet, 2002).

No other disease has captured people's attention in recent times as much as HIV. In 1987, the World Health Organization (WHO) first recognized the seriousness of the emerging AIDS epidemic (Hubley, 1995) and since then HIV has become a global problem. In 2003 an estimated 5 million people acquired the human immunodeficiency virus (HIV) bringing to 40 million the number of people living with the virus around the world and of these 40 million, 26.6million people are in Sub-Saharan Africa (MOHSS, 2004).

The AIDS pandemic has evolved over time, with four main phases of evolution. In the initial phase, HIV emerged from endemic rural areas to spread among urban populations at an accelerating rate. In the second phase dissemination occurred and involved definable risk groups. Behaviors in these risk groups, including sexual

promiscuity and injection drug use, led to the third phase of escalation which occurred through the 1980's. A fourth phase of stabilization has occurred in some regions such as Western Europe, North America, and Australia, where control measures appear to be having a positive effect. However, some regions such as central Africa and Asia continued to experience escalation of the pandemic through the 1990's (Quinn, 1996; & CDC, 2001).

Although the HIV infection rate in the United States increased rapidly in the 1980's, peaked in the early 1990's, and has declined since, the reservoir of HIV-infected persons developing AIDS and requiring therapy continued to increase through the 1990's and into the 21st century (Fauci, 1999; & CDC, 2000). At the end of the 20th century, over 21 million persons worldwide had died from AIDS, over 34 million were living with HIV infection, and over 95% of HIV infected persons resides in developing nations (Sepkowits, 2001; & Gayle, & Hill, 2001)

Nigeria has the second highest number of people living with HIV in the world after South Africa. UNAIDS (2009) estimated 33.4million people living with HIV in 2008 in the world. Nigeria, with about 2.98million people living with HIV, makes about 9% of the global HIV burden. However, there is gender inequality in the distribution with males accounting for 1.23million and female accounting for 1.72million in the HIV estimates and projections for 2008. Women are more affected in the defining feature of the epidemic with policy implications for prevention of mother to child transmissions (Simon, 2006; Quinn, & Overbaugh, 2005). Hence, addressing gender inequality is crucial in the control of the epidemic (Shisana, Davids, 2004; Ezumah, 2003). Nigeria recorded the first case of acquired immunodeficiency syndrome (AIDS) in 1986 (FMH, 2005). Heterosexual intercourse remains the primary mode of transmission for HIV and accounts for 80-95% of HIV infections in Nigeria (Adeyi, et al, 2006). Tracking the

course of HIV epidemic in Nigeria requires good reporting and surveillance systems. Thus, Nigeria through the Federal Ministry of Health instituted regular surveillance system using clinic-based and population-based surveys to monitor the epidemic. This is needed to obtain reliable information about HIV prevalence and behaviors associated with HIV transmission or acquisition. These surveys have shown the dynamic nature of HIV epidemic in relation to temporal changes, geographic distribution, magnitude, and modes of transmission. Furthermore, this surveillance system provides opportunities to monitor trend in prevalence, create awareness about early response, inform priority setting for new interventions and measure the effectiveness of public health interventions in the control of the epidemic (Ainsworth, & Teokul., 2000; Jha, , et al., 2001).

The national HIV prevalence rate had steadily increased from 1.8% in 1991 to 5.8% in 2001 with a decline to 5.0% in 2003 and 4.4% in 2005 (Sentinel Survey, 2005). However, there is wide variation in the prevalence rate across age groups, geographic locations and occupations. 15 states have HIV prevalence rates above the national average of 4.4% with Benue State having the highest prevalence rate of 10%, while Jigawa, Ekiti and Oyo have the least prevalence rates of less than 2.1% (UNAIDS Country Report; 2007). Furthermore, a prevalence rate of 5.2% was reported for the age group 15-24 years, with adolescent girls being three times more vulnerable than boys. Although the national average for HIV prevalence rate is 4.4%, Nigeria ranks third globally in terms of actual number of people living with HIV/AIDS, currently estimated at 3.86 million adults (UNGASS, 2007). The 2007 Integrated Biological Behavioural Surveillance Survey (IBBSS) provides a deeper insight into the behaviours driving the HIV/AIDS epidemic in the general population. These include risky sexual behaviour (56.13% of women and men aged 15-49 years reporting having multiple sexual partners), high rate of unsafe sex practices and low condom utilization (35%). The percentage of

Most at Risk Persons (MARPs) who are living with the virus is currently estimated at 32.69% for sex workers, 13.46% for Men having Sex with Men (MSM) and 5.62% for Intravenous Drug Users (IDUs). Similarly, the incidence of sexually transmitted infections (STIs) is high, with 60% of all new annual STI infections occurring among young people. This is largely due to high sexual networking and unsafe sex practices.

HIV has the potential of hindering the realization of the Millennium Development Goals (MDG) and its spread promotes poverty, and has unleashed immense suffering on different countries and communities worldwide (UNGASS, 2001).

HIV epidemic rose from 1.8% in 1991 and placed at 5.8% in 2001. It is currently at 4.6% in 2008 antenatal survey. Subsequently, the trend reversed and took a down ward turn from 5.8% in 2001 to 5% in 2003 and then to 4.4% in 2005 (FMH, 2001; FMH, 2004).

In addition, the National HIV prevalence was 3.6% from the National HIV/AIDS and Reproductive Health Survey (NARHS, 2007; FMH, 2005). NARHS has the advantage of being a population based survey. NARHS (2007) report shows 78.6% of males and 78.5% of females accepted to be tested among the survey participants. Likewise, among the male participants, HIV testing coverage was higher in the rural areas (81%) than the urban area (75%). While among the female participants, HIV testing coverage in the rural areas was (75%) compared to the urban areas (78%). Similarly, North East zone had the highest testing coverage (85%) and age group 15-24yrs (80%). At the same time, the report shows that more females (4.0%) were infected than males (3.2%). Prevalence was slightly higher in urban areas (3.8%) compared to rural areas (3.5%). North Central Nigeria has the highest prevalence of 5.7% with South East having the least 2.6%. Youth (ages 15-24yrs) had a prevalence of 2.4% which was about 67% of

the national HIV prevalence of 3.6% in the survey which buttresses the fact that youths are important risk group in HIV epidemic (AIDS, 2005).

In both low and high prevalence setting, HIV and AIDS affects key macro-sectors of the economy, such as education, agriculture and industry and in the process; places obstacles on human development. In fact, it has the potential to destroy gains made in education by government in terms of access (Veronica, 2007).

2.2.2 Signs and Symptoms of HIV/AIDS

Marcus and Bruce (2003) stated that, after an incubation period of few days to a few weeks, most cases present with an acute flu-like illness. The most common symptoms (Table 1 below) are fever, maculopapular rash, oral ulcers, lymphadenopathy, arthralgia, pharyngitis, malaise, weight loss, aseptic meningitis and myalgia. In a recently published study by Hecht, et al. (2002), fever (80 %) and malaise (68 %) had the highest sensitivity for clinical diagnosis of acute HIV-1 infection, whereas loss of weight (86 %) and oral ulcers (85 %) had the highest specificity. In this study, the symptoms of fever and rash (especially in combination), followed by oral ulcers and pharyngitis had the highest positive predictive value for diagnosis of acute HIV infection. In another study by Daar, et al. (2001), fever, rash, myalgia, arthralgia and night sweats were the best predictors for acute HIV infection

Table 2.1: Main symptoms of acute HIV infection

Symptom	Frequency	Odds ratio (95% CI)
Fever	80%	5.2 (2.3-11.7)
Rash	51%	4.8 (2.4-9.8)
Oral ulcers	37%	3.1 (1.5-6.6)
Arthralgia	54%	2.6 (1.3-5.1)
Pharyngitis	44%	2.6 (1.3-5.1)
Loss of appetite	54%	2.5 (1.2-4.8)
Weight loss > 2.5 kg	32%	2.8 (1.3-6.0)
Malaise	68%	2.2 (1.1-4.5)
Myalgia	49%	2.1 (1.1-4.2)
Fever and rash	46%	8.3 (3.6-19.3)

Source: Hecht FM et al. Use of laboratory tests and clinical symptoms for Identification of primary HIV infection *AIDS* (2002)

Furthermore, stressed that the symptomatic phase of acute HIV-1 infection lasts between 7 – 10 days, and rarely longer than 14 days. The severity and duration of symptoms has prognostic implications, as severe and prolonged symptoms are associated with more rapid disease progression. The nonspecific nature of the symptoms poses a great challenge to the clinician and underlines the importance of a detailed history of exposure.

2.2.3 Transmission of HIV/AIDS

Transmission of HIV can occur from male to male, male to female, and female to male. Female to female transmission remains extremely rare, though women with same-sex contact are also often bisexual and have additional risk factors for HIV infection (Rich, et al., 1993, Bevier, et al., 1995). Even a partial modification of sexual behavior practices may help retard the rate and extent of HIV transmission. Amongst males having sex with males in the U.S. in the 1990's, the prevalence of HIV infection remained high at 7.2%, and the prevalence of unprotected anal intercourse over a prior 6 month period was 41% (Valleroy, et al., 2000).

The transmission of HIV in definable risk groups allows for control measures to be taken to prevent the spread of AIDS. Since HIV is primarily spread as a sexually transmissible disease, then educational efforts must be aimed at sexually active persons and must be explicit regarding the behaviors that lead to the spread of HIV. A significant number of both boys and girls become sexually active as teenagers and must be included in prevention strategies. Given that the level of promiscuity will often be difficult to modify within a population, then educational campaigns are best focused upon the use of barrier precautions, particularly condom use. Sexual activity does not appear to increase with condom use (Guttmacher, et al., 1997). All sexually active persons with more than one sexual partner, or whose partner is a member of a risk group for AIDS, should use condoms. Persons who know that they are infected with HIV should inform their sexual partners (Hobfoll, et al., 1993; Kaplan, & Shayne, 1993; Seidman, & Rieder, 1994).

The spread of HIV by injection drug use creates a major reservoir for HIV infection that can then be transmitted to other segments of the population, particularly heterosexual adults, including the sexual partners of injection drug users. Drug users must be educated about the risks of needle sharing. They can be provided with clean needles to prevent the spread of HIV, and can be advised to use condoms (Monterroso, et al., 2000). Congenital AIDS can be prevented by efforts to educate women of childbearing age about the hazards to the fetus if they are HIV-infected. Potential mothers can be provided with means of contraception. Antiretroviral therapy for mothers can reduce perinatal HIV transmission. Confidential HIV testing should be made available along with counseling services to persons in all risk groups to encourage voluntary testing and prevent unknowing transmission of HIV (Monterroso, Hamburger, Vlahov, et al., 1993).

Equally, Thore and Katrin, (2006) said that, there is a risk of HIV transmission if an HIV-negative person comes into contact with the blood, semen or vaginal fluids of an

HIV-positive person. Furthermore, they stated that exposure of intact skin to HIV-contaminated body fluids (e.g. blood) is not sufficient to transfer the virus. Transmission is possible if HIV-containing material enters the body by: accidental needle stick injury or incision by surgical instruments exposure of damaged skin or mucosal membranes unprotected sexual intercourse with an HIV-infected person. IDU sharing needle or equipment transfusion of HIV-contaminated blood or blood products

2.2.4 Response to HIV/AIDS

Many programs have been put into action in response to the threats caused by HIV/AIDS. Many countries have taken urgent steps in fighting this epidemic.) Nigeria has a host of development partners who have funded programs or activities in the areas of institutional strengthening, capacity building, prevention, treatment, case and support. It has been estimated that the Nigerian government contributes about 5% to the funding of ART program, while majority of the funding comes from development partners. The US president's Emergency plan for AIDS Relief (PEPFAR), The Global fund to fight AIDS, tuberculosis and malaria, and the World Bank, In 2002, the World Bank loaned US $90.3 million to Nigeria to support the five year HIV/AIDS program Development project. In May, 2007, World Bank further allocated US $50 million loan for the program (UNGASS, 2010).

Similarly, in 2008 PEPFAR provided approximately US $448 million to Nigeria for HIV/AIDS prevention, treatment care and support. This was the third highest amount out of PEPFAR's 15 focus countries. By the end of 2008, the Global fund had disbursed US $95 million in funds to expand treatment, prevention and prevention of mother-to-child transmission programs in Nigeria (AIDS, 2006).

The current HIV prevalence rate in Bauchi State stands at 2.0%. This has placed Bauchi state as having the least prevalence rate in the North East sub-region and 33rd in the

burden of HIV among the 36 states and FCT. Indeed Bauchi state has witnessed a drastic decline in the prevalence of HIV especially looking at where we were at the peak of the epidemic when the prevalence rate has hit an unacceptable level of 6.8%. To further boost the HIV/AIDS response in the, the Bauchi State Government has entered into partnership with the World Bank to implement the HIV/AIDS program Development Project II. This is bringing additional funding and technical support to the line ministries and civil society organization for effective HIV/AIDS control.

The HIV/AIDS control program coordinates the broad spectrum multi sectoral response in collaboration with line ministries, Office of the First Lady, donor agencies, Network of People Living with HIV/AIDS (NEPWHAN) and the civil society organizations. The State AIDS and Sexually Transmitted Infections (STI) unit is responsible for the HIV/AIDS health sector response providing the following services: HIV Counseling and testing (HCT), Anti Retroviral Therapy services (ART) and Management of opportunistic infections. Others are prevention of mother to Child Transmission (PMTCT) and Home Based Care and Referrals.

The Bauchi State Government in collaboration with various development partners and NGOs such as Family health International (FHI) and Institute of Human Virology Nigeria (IHVN) have made substantial progress in the response to HIV/AIDS epidemic in the State. Resources have been mobilized from all partners to upgrade health facilities, train health personnel, and provide equipment, essentials drugs, reagents and other supplies to combat HIV/AIDS.

The Bauchi State Agency for the Control of HIV/AIDS, Tuberculosis/Leprosy and Malaria (BACATMA) has made the following progress in HIV/AIDS control in 2011:

- 11 comprehensive Anti Retroviral Therapy (ART) centres providing treatment to eligible HIV positive individuals

- 23 new HIV Counselling and Testing (HCT) centres established in 2011 in collaboration with Planned Parenthood Federation of Nigeria (PPFN) with support from Global Fund round 9 totalling to 51 HCT centres
- 6 new Prevention of Mother to Child Transmission (PMTCT) centres established totalling to 24 centres so far.
- Received and distributed 28,610 different HIV rapid test kits to various health facilities in the state including private health facilities.
- Trained 1000 healthcare workers on Injection Safety in collaboration with AIDS Star one and the state Ministry of health
- Trained 15 health workers as Master trainers on the management of opportunistic infections (OIs)
- Trained 20 laboratory Scientist/Technicians on diagnosis of opportunistic infections for 2 days (OIs)
- Trained 28 health workers on Prevention of Mother to Child Transmission (PMTCT) services from 20 health facilities across the state.
- Carried out monthly mobile HIV Counselling and Testing (HCT) in five junction towns in the state (Mararraba ,Jama'are, Bulkachuwa,, Nasaru and Tudun Dan'iya), ATB University and Federal Polytechnic, Bauchi
- 61,851individuals received HIV counselling and Testing (HCT) of which1233 tested positive
- 2108 HIV positive individuals were screened for TB
- 28,610 pregnant women were HIV counselled, tested and received result

- 325 HIV exposed children received Early Infant Diagnosis (EID) services under PMTCT program in the state
- 196 exposed infants received ARV prophylaxis
- 468 HIV positive mothers received infant feeding counselling
- **11,232** HIV positive individuals are currently receiving Anti Retroviral Therapy (ART)
- There is reduction in stigma among general population to a point where marriages among persons living with HIV/AIDS were publicly conducted with support from BACATMA with the purpose of restoring hope and love and giving them meaningful life. So far, 160 HIV/AIDS positive couples went into marriage and these marriages have resulted in the birth of 79 babies, all HIV negative

Veronica (2007) in her study reported that, In South Africa, the government has launched programs designed to prevent the spread of HIV/AIDS that covers all aspects of the media, including radio, television and print media. Programs and advertisements on radio promotes abstinence and condoms use, and educates people on their right to say "no" and to demand safer sex (Veronica, 2007).

Again, in Nigeria the adoption of a national multi-sectoral response led to the creation of the Presidential Council on AIDS (PCA) and the National Action Committee on AIDS (NACA) in 2001 to coordinate the activities at the federal level. At the State and local government levels, the coordination was done by the State Action Committee on AIDS (SACA) and Local Government Action Committee on AIDS (LACA) respectively. Therefore, NACA with the collaboration of the relevant stakeholders developed the HIV/AIDS Emergency Action Plan (HEAP) in 2001. This served as an

interim action plan and it focused on three major areas: Creation of an enabling environment through the removal of socio-cultural, informational and systematic barriers to community based responses; Prevention; care and support. Similarly, NACA developed National HIV/AIDS policy to create the enabling policy environment to drive the response against HIV/AIDS and developed guidelines for ART, PMTCT and HCT (UNGASS, 2010).

The regional HIV strategy adopted in 1996 during the forty-sixth session of the WHO Regional Committee for Africa reaffirmed the major role of the health sector in national response to the HIV/AIDS epidemic with a clear prevention component (WHO, 1996). In spite of the resources and efforts invested, the epidemic has continued unabated, with high morbidity and mortality, undermining health gains and the improvement of health status in the Region.

The epidemic has had a definite impact on economic, educational health care and social aspects of the country, in addition to death and suffering on an individual and community level. Every year more and more money is pumped into fighting HIV/AIDS with less noticeable success (Veronica, 2007)

2.2.5 HIV/AIDS and Education:

Veronica, (2007) stresses that, the key to HIV prevention is education. This entails teaching people about HIV; what it is, what it does, and how people can protect themselves. Over half of the world's population is now under 25 years old (UNAIDS/WHO, 2004). This age group is more threatened by AIDS than any other; equally, it is the group that has more power to fight the epidemic than any other (UNAIDS/WHO, 2004) Education can help to fight HIV, and it must focus on young people because of their vulnerability to HIV/AIDS infections.

In both low and high prevalence setting, HIV and AIDS affects key macro-sectors of the economy, such as education, agriculture and industry and in the process; places obstacles on human development. In fact, it has the potential to destroy gains made in education by government in terms of access quality and achievement and in the supply and quality of teachers of education are often seriously threatened by HIV and AIDS epidemic. The impact of the epidemic on education is severe as it affects demand, supply quality, content, process, organization, fund available, potential clientele, as well as planning and management of the education system. (National Education Sector HIV/AIDS Strategic Plan, 2006) furthermore, one of the most visible impacts of HIV/AID epidemic is the growth in the number of orphans and other vulnerable children. Many of these orphans have dropped out of school because they cannot afford to pay school fees. Many of them have to work to take care of themselves and support their younger ones; many of such children become child-headed families.

In many parts of the World, young people are particularly at risk for HIV infection from unprotected sex between men and from drugs use because of the very high prevalence rates often found amongst people who engage in these behaviours. Young people are also often especially vulnerable to exploitation that may increase their susceptibility to infection (UNAIDS/WHO, 2004). Even if they are not currently engage in risky behaviours, as they become older, young people are increasingly exposed to situations that put them at risk. For example, globally, most young people become sexually active in their teens; sexual initiation usually takes place before people enter University (tertiary institution); ranging between 15 and 17 years (Uys, 2006).

In addition to learner and students being affected, teachers are also at risk, since most teachers also fall into the high risk age group of 15-49 years. Currently, an

estimated 10,000 educators are in need of antisectorial therapy (Rehce, Shisana, Glenaross & Colving, 2005).

2.2.6 Prevention of HIV/AIDS

To beat the disease, an intervention from three levels is needed, namely, prevention intervention, care and support intervention, and voluntary counseling and testing intervention (HSRC, 2002). The prevention intervention concerns strategies to prevent people from contracting HIV, such as encouraging people to wear condoms to abstain and to remain with one sexual partner (Veronica, 2007)

The cure of AIDS is still to be discovered. As such, the focus has been placed on prevention and treatment program as solutions to controlling the disease. Antiretroviral treatments are now available to those in need. Trail for the HIV vaccine are being carried out around the globe to prevent future infections. There seems to be more hope placed on the vaccine for controlling the disease than on the cure. A solution to controlling HIV should be appropriate or affordable for the poor; and reliance on the development of a vaccine may not be the answer (Veronica, 2007).

HIV prevention efforts have been outpaced by the HIV/AIDS epidemic, with a rising trend of HIV incidence in most countries. Should the current trends continue, most countries in the African Region are unlikely to achieve Millennium Development Goal No 6 (MDG, 2005).It is therefore imperative to reshape strategies of prevention, identify measures to quickly scale up successful interventions and highlight what should be done differently.

2.3 The Concept of Voluntary Counseling Testing (VCT)

Publicly funded HIV antibody counseling and testing service were initiated in USA in March 1985 to provide an alternative to the donation of blood as a means for

high-risk persons to determine their HIV status. At that time, little was known about the prevalence and natural history of HIV infection. Counseling was considered as an essential adjunct to HIV testing. The counseling addressed the accuracy and consequence of test and was designed to help persons interpret the meaning of positive and negative results. HIV counseling was based on the recognition that learning HIV status may be difficult for certain clients (U.S. Department of Health & Human Service, 1994)

In 1987, with increased understanding about the scope and severity of the HIV epidemic and the predictive value of positive test, HIV counseling and testing were expanded. Persons seeking care for sexually transmitted infections, family planning, childbirth, or substance abuse were counseled and tested in an attempt to reduce their risk for HIV transmission. "The primary public health purposes of counseling and testing are to help uninfected individuals initiate and sustain behavioral changes that reduce their risk of becoming infected and to assist infected individuals in avoiding infecting others" (U.S. Department of Health & Human Service, 1994)

According to Maria, (2006) the growing awareness of HIV infection and AIDS and the recent availability of antiretroviral therapy (ART), the scope of and reasons for Voluntary Counseling and HIV Testing have broadened. Furthermore, Maria, (2006) defined VCT as the process by which an individual undergoes counseling to enable her/him to make an informed decision about being tested for HIV, assess their personal risk for HIV and develop a risk reduction strategy. Similarly, Family Health International, (2002) stated that, Voluntary counseling and testing (VCT) for HIV is an essential link between HIV prevention and HIV care and support. VCT promotes and sustains behavior change, and links with interventions to prevent mother-to-child transmission (PMTCT), prevent sexually transmitted infections (STIs), and prevent as well as treat tuberculosis (TB) and other opportunistic infections (OIs). VCT also facilitates early referral to

comprehensive clinical and community-based prevention, care and support services, including access to antiretroviral therapy (ART). VCT improves quality of life and may play a pivotal role in reducing stigma.

HIV voluntary Counseling and testing (VCT) have been shown to have a role in both HIV prevention and, for people with HIV infection, as an entry point for care. VCT provides people with an opportunity to learn and accept their HIV status in a confidential environment with counseling and referral for ongoing emotional support and medical care. People who have been tested seropositive can benefit from earlier appropriate medical care and interventions to treat and /or prevent HIV-associated illnesses. Pregnant women who are aware of their seropositive status can prevent transmission to their infants. Knowledge of HIV aerostats can also help people to make decisions to protect themselves and their sexual partners from infection. A recent study has indicated that VCT may be a relatively cost effective intervention for the prevention of HIV transmission (UNAIDS, 2000).

VCT is an effective secondary prevention tool for people living with HIV/AIDS (Solomon, et al., 2000). These researchers also found it more effective in the prevention of HIV/AIDS amongst HIV-positive people than HIV-negative individuals, especially when it targets both partners. Therefore, VCT services are essential components of HIV prevention and care programs. However, initially, many people were reluctant to be tested if care and treatment were not offered (Stringer, et al., 2003).

The social conceptualization and representation of HIV and HIV testing also have influence on HIV test uptake rates. For example, the association of HIV with immediate death and discrimination, belief that a person is outside the category of risk, lack of awareness or knowledge about rates in one's community, fear of being labeled and stigmatized by the significant others, perception of the consequences of living with HIV,

user friendliness of testing sites, symptom driven health seeking , lack of knowledge about available treatment are some factors that have been alleged to deter people from HIV testing (MOHSS,2004).

Voluntary counseling and testing (VCT) was introduced in the early 1990s in most countries as strategies to curb the spread of HIV/AIDS. VCT aims to provide care, support and treatment to people already hiring with HIV (UNAIDS/WHO; 2001; UNAIDS/WHO, 2004). It allows people to learn their HIV status and be counseled about its implications (UNAIDS/WHO 2001). VCT also represents a mechanism for referral into cure, treatment and support (Van Dyk, 2005).

HIV voluntary counseling and testing (VCT) 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, VCT 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 VCT from other HIV testing services.

VCT has become a widely advocated HIV/AIDS prevention strategy among adults. Most clients of VCT services are in their mid- to late twenties (Coates et al. 1998; Ladner, et al., 1996; Allen, et al., 1992). Sixty percent of all new HIV infections in sub-Saharan Africa, however, occur among young people between the ages of 10 to 24 (UNAIDS 1998)

In general VCT can be considered as an entry point to prevention and care, Medical care, for prevention of mother to child transmission of HIV infection (PMCTC), for ongoing emotional and spiritual care and social support (UNAIDS, 2000). Hence, the need for expanding VCT service and stimulating its utilization is outlined as a priority

intervention area and as an entry point for HIV prevention, through creating more personal awareness, and care (NAC, 2001).

However, Counseling services have been slow to gain acceptance in many countries, especially where HIV is highly stigmatized and access to services and support for HIV infected individuals is limited. Indeed, HIV testing has often been used as a diagnostic tool to confirm symptomatic AIDS. But a number of studies attest to the value of counseling and voluntary HIV testing in largely healthy populations. These services have been shown to contribute to an increase in safe behaviour at the individual level, and are likely also to reduce the ignorance, fear and stigma associated with HIV infection in the population at large (UNAIDS, 1999)

Survey results show that youth have a strong interest in knowing about their HIV status. More than 75 percent of untested youth in Kenya and about 90 percent in Uganda indicates that they would like to be tested in the future. Furthermore, of those youth who have already had an HIV test, a similarly large majority (74 percent in Kenya, 84 percent in Uganda) indicates that they intend to repeat the test (Veronica, 2007).

VCT gives access to the prevention, treatment and management of HIV related illnesses, and can also lead to changes in behavior (Bagga, 2001). These include treatment of opportunistic infection; prevention of mother to child transmission (PMTCT), post exposure prophylaxis (PEP), access to antiretroviral treatment (ARV), as well as long term counseling and support for positive living (UNAIDS/WHO, 2001).

Counseling is also appreciated by youth, according to a Horizons study of youth and VCT carried out by the University of Nairobi in Kenya and Makerere University in Uganda (2004). One-half of the tested youth in Nairobi, Kenya, and two-thirds of the tested youth in Kampala, Uganda, who spoke with a service provider say that they most appreciate the counseling and advice they received from the service. Yet one in four

tested youth in Nairobi did not talk with a service provider before the HIV test and the same proportion received no post-test counseling but rather got the test result either in writing or from a third person such as a parent.

2.3.1 Benefits of HIV Counseling and Testing

Some of the key benefits of knowing one's status include

- Aware of the key benefits of knowing one's status include:
- Individual or couple-based HIV prevention counseling to identify and reduce risky behaviors
- Education on HIV prevention strategies
- Access to and education on correctly and consistently using condoms
- Linkages to HIV care and treatment
- Linkages to other relevant services, such as sexually transmitted infection treatment, family planning, and prevention of mother-to-child transmission programs
- Planning for the future *(UNAIDS and WHO, 2006).*

2.3.2 The Process of Counseling and Testing

Counseling; HIV counseling has been defined as a confidential dialogue between a client and a care provider aimed at enabling the client to cope with stress and to take personal decisions related to HIV/AIDS (WHO/GPA, 1994)

- If testing is appropriate, your counselor or doctor should:
- Describe the test and how it is done
- Explain AIDS and the ways HIV infection is spread
- Discuss ways to prevent the spread of HIV
- Explain the confidentiality of the test results

- Discuss the meaning of possible test results
- Ask what impact you think the test result will have on you
- Address the question of whom you might tell about your result
- Discuss the importance of telling your sex and/or drug-using partner(s) if the result indicates HIV infection

2.3.3 Voluntary Counseling and Testing In Nigeria

The first HIV/AIDS hotline began on the fourteenth of February, 2000 with a private line managed by youth empowerment foundation, based on the best practices documented from this service, NACA and Celtel (formally V-mobile) expanded the services to a toll free HIV/AIDS and SRH hotline in 2005. Four toll free lines were provided by the telecommunication company to serve each region in the country. Youth empowerment foundation (Lagos); Education as a vaccine against AIDS in Nigeria (Kano) and ASCOPANY (Cross River) were selected to manage the hotlines. (www.evanigeria.Org)

The goal of the hotline service is to increase access to accurate and reliable HIV/AIDS and SRH information counseling for the general public. The lines and equipments were installed and full operation of the service began in June, 2005 (NACA, 2005).

HIV counseling and testing (HCT) has been identified as a critical intervention tool in HIV prevention and care strategies. HCT provides an opportunity for one to know his/her status after receiving enough information to make the decision. A number of studies (Allen, Serufilira, Bogaerts, Van de Perre, Nsengumuremyi, Lindan, et al., 1992) have shown that HCT has been useful in facilitating and sustaining behavior change. However, it has been observed that HCT has been observed that the utilization of HCT services in conventional health care setting has been limited. This is especially the case

for hard to reach targets such as young people (especially out- of -school youth), migrant fishermen and farmers, nomadic, long distant truck drivers, and street based commercial sex workers. The use of HCT services by young people has also been limited, primarily due to the issues around lack of confidentially, cost of services and unfriendly attitudes of clinical staff (UNFPA, 2004)

HIV counseling and testing is crucial in reducing HIV transmission in those who test negative and in those who test positive by promoting the appropriate contraception and the practice of safer sex, early management of opportunistic infections and STI, referral to support groups and acceptance of status (FHI, 2007).

VCT is a gateway to prevention and care (WHO/UNAIDS 2004), and is a critical first step in identifying people who are HIV positive, so as to provide them with HIV treatment, care and support services (Van Dyk, 2001). However, the national survey by the HSRC (2002) reported a low uptake of VCT, with only one in five people in South Africa who know VCT having been tested for HIV (Department of Health, 2004).

Veronica (2007) asserted that, in subscribing to the principal that knowing one's HIV/AIDS status is the first step towards combating the pandemic, Iyobeke (2007) took an HIV/AIDS test at the AIDS consultancy centre at the Pretoria campus as part of the centre's know your status campaign that ran from 31st July to 4th August, 2006. He encouraged all University staff and students to follow his example. According to Iyobeka, 2007 "HIV testing has role in both HIV prevention and, for those infected, in ensuring an early start to obtaining care and support and managing the virus" (www.tut.ac.2a).

2.4 Knowledge of Students on VCT Services

Twenty-five years into the HIV epidemic, more than 80 percent of people living with HIV in low- and middle-income countries do not know they are HIV positive. (UNAIDS and WHO, 2006)

VCT has encouraged some people to change their lifestyle and has increased their knowledge about the risk and the consequences of their choices. There was a decrease in the rates of unprotected sex among men and women who participated in VCT in Kenya, Tanzania and Trinidad (UNAIDS/WHO 2002; Voluntary HIV 1 counseling and testing Efficacy study Group, 2000). This study examined a random sample of 3120 individuals and 586 couples. The study reported a decrease in unprotected sexual behavior with both steady and casual partners following a VCT intervention programme.

A study conducted in Zambia in 1995 - 1996 found that only 7% of the people surveyed, mainly living in urban areas, reported that they had previously undergone HIV testing (Fylkesnes, et al., 1999). A more recent study estimated that less than 1% of the sexually active urban population in Africa had been tested (Kumarnayake &Watts, 1995). This proportion was even lower in rural populations. Furthermore, this study estimated that only 0.5% of pregnant women attending urban health facilities had been counseled, tested and had received their test results, and that this proportion was even lower in rural health facilities.

A study in Nigeria found that the use of VCT services by young people led to an increase in the use of condoms and a decrease in the prevalence of sexually transmitted infections (Boswe & Baggaley, 2002). Knowing one's HIV status also provides essential information that will enable both HIV positive and HIV negative persons to plan for their future and that of their family. VCT can help to connect clients to services such as hospice care, legal services and support for orphans and vulnerable children, as well as

antiretroviral treatment (WHO/UNAIDS 2003). VCT also help HIV negative people make informed choices when engaging in sexual intercourse, such as having a single partner or using a condom.

A national survey by the Reproductive Health Research Unit (2003) in partnership with love life reported that youth people have knowledge about HIV/AIDS and ways to avoid being infected. More than two thirds of the youth in South Africa were reported to have changed their sexual behavior because of awareness of HIV/AIDS, and increased condom usage (Reproductive Health Research Unit, 2003). However, there was a concern that the majority of young people, including those infected with HIV, under estimate their risk for contracting the disease.

Among Nigerian youth, studies point to the fact that awareness of HIV/AIDS has not translated to behavioural change. For example, Adedimeji (2003) observes a 100 percent HIV/AIDS awareness rate among undergraduates in a Nigerian University, yet only five percent of his respondents reported using condoms during casual sexual intercourse with persons they were meeting for the first time. This observation becomes more worrisome when situated within the social practice of possession of multiple sexual partners among the youth in the universities. In one of the states in which our study took place, an earlier study reported that 77 percent of the study sample had initiated sex, and among them 27 percent had multiple sexual partners (Omoregie, 2003). Anugwom (no date) has similarly noted, with disappointment, that as much as 40 percent of his respondents who were also undergraduates did not care to protect themselves against being infected with HIV virus during sexual encounters. Indeed, Anugwom observes condoms were used more for the purpose of avoiding pregnancies, and sexually transmitted infections (other than HIV) than for the purposes of avoiding HIV infection.

However, detailed explorations of why awareness has not matched behavioral change remains to be conducted. Why do educated youth who are supposed to know and to champion the course of HIV/AIDS education and enlightenment turn out to ignore the message? Could this attitude be related to their self-perception of risk of getting infected with the disease, since they already are aware that the disease exists? (Adedimeji, 2003; Anugwom, 2007). How do they perceive their susceptibility to being infected with the virus? What are the contextual social and economic factors that shape their adoption of behavioural change vis-à-vis their self-perception of exposure to the infection? How do they perceive and practice HIV testing (voluntary counseling and testing) in view of their self-perception of risk of infection? What contextual factors are important in mediating their attitude and practice of care seeking for HIV testing against the backdrop of their self-perception of risk of infection?

In terms of HIV counseling, which is an important aspect of VCT, (Nkosi, 2003) reports that adult black women living with HIV/AIDS perceive HIV/AIDS counseling to the beneficial? It provides a safe space in which people can receive emotional support and share their fears and concerns. HIV/AIDS counseling also gives people knowledge about HIV/AIDS and educates them on a healthy lifestyle (NKOSI, 2003).

According to Cornelissen, (2005) the umbrella organization for tertiary education in South Africa, Higher Education South Africa, reported that students have knowledge about the cause and modes of transmission of HIV/AIDS, and further pointed to an abundance of international research on HIV/AIDS at higher educations on knowledge, attitudes and practice (KAP) amongst students. Additional studies were undertaken by researches across institutions to determine the KAP of students regarding, HIV/AIDS, However, Cornelissen, (2005) cited a paucity of research on testing the perceptions of different role players in HIV, and particularly the youth. Uys, (2006) highlights the act of

research on the perceptions, attitudes and awareness of undergraduate students at tertiary institutions. This is a cause for concern, as fresh from high school and away from the care and support of parents; these young people have a need for independence and are venturing into the unknown work seeking experience, yet are often without the wisdom to make wise lifestyle decisions.

Ibe, (2002) also examined the knowledge, attitude and prevention practices of 285 first year students of Port Harcourt in Nigeria. He administered structured questionnaires with the assistance of two trained interviewers. The findings indicate partial knowledge of the definitions of HIV/AIDS, modes of transmission, prevention and cure. Furthermore, Ibe, (2002) observed that there is strong need of HIV/AIDS prevention at tertiary level through education, counseling and testing, also recommends that HIV testing with pre and post counseling be subsidized or made free for youths.

In addition to the above findings, the following points, highlighted by Uys, (2006) also supported the choice of young people, and particularly students, as the focus of this study.

- Students are generally knowledgeable about HIV/AIDS and know how to protect themselves.
- Although students know that the use of condoms could protect them from contracting HIV/AIDS sexually active students tend to have a negative attitude towards them.
- Students experience peer pressure to engage in sexual activities
- Students tend to engage in casual sex especially when under the influence of alcohol.
- Students tend to believe that they are not vulnerable of contracting HIV/AIDS.

According to Uys, (2006) there is abundance of knowledge among students at tertiary institutions about HIV/AIDS and how it is transmitted. Although students know how to protect themselves against HIV/AIDS, they still put themselves at risk because they experience pressure from their peers to use alcohol and to engage in sexual activities. Despite these dilemmas, some students accept responsibility for their lives and for protecting themselves against HIV/AIDS by finding out their HIV status, aim of this study was to access these students and specifically those who have gone for voluntary counseling and testing, to describe and understand their experiences.

In similar study on perception of High school students towards voluntary HIV counseling and testing, using Health Belief model in Butajira, (Abebe & Mitikie, 2009), reported that the majority of students have heard about VCT and revealed willingness to undergo VCT. Willingness for VCT was affected by age, education and previous sexual experience. High perceived susceptibility and high perceived barrier were associated with low willingness to undergo VCT. On the other hand, students with high perceived benefits revealed better willingness to undergo VCT.

Njagi and Macharaj, (2006) conducted a study on perceptions of VCT among students at tertiary institution in Kwazuhi Nata. A survey questionnaire with open and closed ended questions was used to gather information. The findings indicate a high knowledge of VCT services among students, with peers serving as the main source of information. Other students reported hearing about VCT in the media. Those students who use VCT perceived it as helpful because they were treated with respect and had enough time to ask questions. Students were satisfied with the way the counselors answered their questions. The students who were not satisfied with VCT were more concerned about a lack of confidentiality, especially when they made appointments, and were concerned about lack of privacy in the waiting room. Students also feared being

recognized by other students, which may result in them being discriminated against and stigmatized. It is a concern that only 14% of the sample of 200 students had undergone VCT, which supports other researchers' concerns that VCT is underutilized.

2.5 Utilization of Voluntary Counseling and Testing (VCT) Services

Studies in both developed and developing countries have found that VCT for HIV/AIDS can be an effective intervention in the fight against the disease. When treatment is available, VCT can serve as an important entry point into the medical system, directing individuals to the appropriate resources for management of HIV/AIDS and its opportunistic infections (UNAIDS, 2001). Even in the absence of treatment options, VCT can provide an opportunity for learning one's sero-status in order to plan for the future or to give peace of mind (Sweat, et al., 2000; Van de Perre, 2000). Voluntary counseling and testing interactions can also serve as important conduits of health information and promotion, encouraging changes in risky behaviors for those not infected and modifications in behavior for discordant couples and those already infected (Allen, et al., 1992; Beardsall, 1994; De Zoysa, et al., 1995; Higgins, et al., 1991; Voluntary HIV-1 Counseling and Testing Efficacy Study Group, 2000; Weinhardt, et al., 1999; Wolitski, et al., 1997).

However, have also shown that substantial barriers exist which inhibit the uptake of VCT. For many people, the motivation to use VCT is low because, correctly or incorrectly, they do not view themselves as being at risk for HIV/AIDS, even in high-prevalence areas or subsequent to high-risk behavior (Killewo, et al., 1998; Simpson et al., 1998; Stein & Nyamathi, 2000). Importantly, the perceived benefits of VCT may also be low when treatment is not readily available or is unaffordable, as has been the case in much of the afflicted areas of Africa (Baggaley, et al., 1996; Voluntary HIV-1 Counseling and Testing Efficacy Study Group, 2000)

Stigma surrounding HIV/AIDS and people living with HIV/AIDS serves as an additional barrier, affecting the acceptability of testing (Kipp, et al., 2002) and the extent of social support (Stein, & Nyamathi, 2000). Many people fear the psychosocial consequences of testing positive for HIV/AIDS, particularly when it may lead to loss of social status, to discrimination (Brown, et al., 2003; Buwalda, et al., 1994; Parker & Aggleton, 2003; UNAIDS, 2003), to domestic violence or even to abandonment (Maman et al., 2001; Rothenberg & Paskey, 1995).

Many studies have examined even lamented the lack of access and poor quality of VCT services in developing countries, noting that testing has often been done primarily through antenatal services rather than general health services (UNAIDS, 2001). Studies in India (Abraham, et al., 1998), South Africa (Viljoen, et al., 1998) and the Democratic Republic of Congo (Denolf, et al., 2000) have documented the shortcomings of available VCT services and the likely effects on uptake of VCT services. Often the quality of interactions between clients and counselors particularly inappropriate confidentiality safeguards has limited the acceptability of VCT and reduced the likelihood that People will return for results (Coovadia, 2000). Few of the available studies, however, have sought to quantify these effects on rates of utilization of VCT services.

Other studies have highlighted lack of access to testing services with trained counselors and to treatment for HIV-infected persons. One study noted inhibiting factors such as shortages of counselors, long lines, lack of privacy and lack of follow-up support following diagnosis (van Dyk & van Dyk, 2003). Other researchers have highlighted the level of training and availability of counselors (Coovadia, 2000).

The availability of testing and counseling services is very uneven, and only a small proportion of people living in developing countries know their serostatus. In most resource-constrained settings with high HIV prevalence, investment in testing and

counseling services is inadequate, medical and laboratory infrastructures remain insufficient, and trained staffs are scarce. Furthermore, in areas where testing and counseling services are available, the uptake of these services has remained low, because of widespread denial, stigma and discrimination. Until recently, many people believed there were few benefits to knowing their serostatus. This is now changing, due to improved access to antiretroviral drugs for treatment and for use in preventing mother-to-child transmission of HIV. Demand for HIV testing and counseling services is now increasing in many places. The provision of these services will need to be scaled up dramatically in the future in order to reach the goals for prevention and care that have been set at the 2001 United Nations General Assembly Special Session on HIV/AIDS.

The number of sites providing HIV counseling and testing (HCT) has been on the increase. As at December 2008, there were 908 functional HCT sites across the country (Nigeria) providing counseling and testing services compared with 864 at the end of 2007 (NACA, 2009). In Bauchi State alone there are about 37 HCT functional sites across the state (Directorate of available HIV/AIDS & Related services in Bauchi State – Draft; 2010). Closely linked to this is an increased expressed desire to get an HIV testing; 72% of respondents in the 2007 National HIV/AIDS and Reproductive Health Survey (NARHS) expressed a desire to get tested. This is much high than 43% reported in the 2005 NARHS survey. The total number of people who were counseled, tested and received their results also rose from 2,350,000 in December, 2007 to 3,371,220 at the end of 2008 (NACA, 2009).

Although the number of functional sites providing HCT has increased remarkably over the years, it is still grossly inadequate to meet the needs of the Nigerian populace. Most services are still facility based and mostly located at the tertiary and secondary facility levels; there is poor access to services especially at the community and hard to

reach areas and insufficient targeting of HCT to most-at-risk peoples (MARPs), it is also important to note that many Nigerians are unaware of where they can access HCT services. The result of NARHS shows that there had been very little change in the proportion of Nigerians who knew where HCT can be obtained: from 54.2% for men and 43.2% for women in 2003 to 55.7% for men and 48.9% for women in 2007 (NRR full version, 2004)

The uptake of HIV VCT is still low among the Nigerian population. Although the proportion of people who had tested had doubled between 2003 and 2007, as reported by NARHS, the overall figure is still very low. The proportion of people tested increased from 6.6% to 14.4% for females, and from 7.7% to 14.7% for males. The very low figure in terms of the proportions of Nigerians who had ever tested for HIV contrasts sharply with the spirit of the policy where a target of ensuring that "By 2010, at least 50% of Nigerians have ready access to quality voluntary confidential counseling and testing services". The achievement also falls far below the universal access target of reaching at least 80% of sexually active adults with HCT services (NACA, 2009).

Concerning factors that influence VCT uptake, we see that with age, the students were more likely to have gone for VCT. This may be due to the fact that as age increases, the students become more mature and are able to better assimilate HIV information. Students from lay private schools were more likely to have used VCT services than their peers from other schools. In mission schools talking about sex is taboo since premarital sex is forbidden by Christianity, so we would expect a very low rate of VCT utilization among the students because any one going for VCT is considered sexually active (Haddison, et al., 2012).

In related studies, several studies have shown that young people are generally not motivated to attend VCT services and that there is a range of barriers ranging from

availability of services, worries about confidentiality in accurate risk perceptions, fear of being stigmatized and perceptions of the consequences of living with HIV (East African Journal of public health VO.5 No.2 2008), and Students from lay private schools were more likely to have used VCT services than their peers from other schools. In mission schools talking about sex is taboo since premarital sex is forbidden by Christianity, so we would expect a very low rate of VCT utilization among the students because anyone going for VCT is considered sexually active (Haddison, 2011).

Sarah, et al. (2007) revealed that respondents who had one or to sexual partners had low self-perception of risk of getting infected with HIV virus, despite the fact that they might later change the partners. This low self-perception of risk is also associated with the tendency to ignore safer sex (condom use) as a risk-reduction measure, and with the tendency not to seek VCT services. Respondents who had multiple sexual partners (more than two) had high self-perception of risk of HIV infection. But this neither led them to adopt risk-reduction measures against HIV infection nor increase their tendency to seek VCT services. Therefore, self-perception as a single factor is not enough to utilize VCT services. Economic and financial constraints, gender issues, fear of stigmatization and discrimination are also important factors and may actually attenuate any effects of self-perception on seeking VCT services.

Nkhochi, (2005) explored the experience of prisoners in Atteridgeville of HIV/AIDS pre-and post-test counseling. The finding of the study are that undergoing on HIV/AIDS test without pre-and post-test counseling leaves clients feeling psychologically distressed. The study recommends therefore that pre-and post-test counseling be administered to every individual reporting for an HIV test.

Diedericks, (2003) explored and described the perceptions of voluntary counseling and testing among first year students at the University of Post Elizabeth. The findings

reveal that students would use VCT for testing, HIV information, counseling, education and skills to protect themselves and others. Further, many students would use VCT services on campus for convenience and because it is free, although others indicated that they would not use campus-based VCT services because they perceive confidentially, professionalism, hygiene and trustworthiness to be compromised in a campus setting. Generally, the students perceived VCT to be an important prevention strategy and confirmed VCT that could cause students to change their risky sexual behavior.

Van Dyk and Van Dyk, (2003) found that 33% of their participants (40% black and 19% white) preferred going to an unknown clinic for VCT because they did not trust health workers to be discreet, because of confidentiality reasons, and for fear of prejudice and rejection. A disturbing finding was that 79% of previously tested subjects did not receive any form of counseling. Counseling was generally experienced as positive and clients expected counselors to be empathetic, discreet, non-judgmental, supportive and directive (Van Dyk & Van Dyk, 2003).

The study on South African mine workers by Gnwala, et al (2002) found that two out of ten clients interviewed by community volunteers were not satisfied with the counseling service they received, complaining that they did not receive sufficient information on HIV and AIDS. As a result, they did not consider testing again in future. The remaining client, including those interviewed by the nurse counselors, were satisfied with the service.

Studies conducted in African countries have shown that awareness campaigns increased the VCT utilization. A study conducted in Kenya revealed that VCT uptake increased from an average of 56 per month in the 8 months prior to the awareness campaign to 165 per month in the 3 months after the initiation of the awareness campaign (Masiv, & Ali, 2004). Similarly, in another study conducted in Zambia the awareness of

the confidential, free VCT services being offered at the health centre increased significantly among all community respondents, from 45% of all respondents at baseline to 79% at the end of the study (http://www.popcouncil.org./pdfs/horizons/mdolantn1.pdf). As the main finding of the study was low utilization of VCT, due to lack of awareness among high risk group.

A Nigerian study showed that most respondents were aware of VCT through health workers, mass media and friends. Our study participants acquired awareness about HIV/AIDS through mass media, friends and health care providers. This source can thus be used for both community and high risk groups (Iliyasu, Kabir, et al., 2005).

2.6 Relationship between Knowledge and Utilization of VCT Services

It is known that among the general population, adolescents and youth are most vulnerable because it is within this age group that high-risk behaviours are initiated (Banerjea & Baer, 2006). In Nigeria, the undergraduate period is a time when such high-risk behaviours are escalated, given that most of the undergraduates are within the youth age group or slightly older who are sexually more active than the general population (Anugwom, 2007) . According to the Federal Ministry of Health (2001b), young people (to which most undergraduates belong) have the highest rate of HIV infection (8.1 percent in 1999). However, the prevalence rate of HIV infection specifically among undergraduates in Nigeria remains unknown. The paucity of studies (data) on this is also evident in the case of perceptions of this group of people to own susceptibility to the risk of HIV infection in relation to their sexual practices (sexual risk behaviour) and in relation to seeking and utilization of voluntary counseling and testing services. Volitional sexual behaviour is of paramount importance in the transmission of HIV virus. Therefore, how a person views own vulnerability to getting infected with the virus is crucial in adopting sexual behaviour that will minimize the vulnerability (Ward, et al., 1989;

Cochran and Peplau, 1989; cited in Anugwom, no date). It may also affect his seeking to know his HIV status through HIV testing. Knowledge of whether or not one is infected may in turn help to strengthen risk averse or risk-reduction behaviour. Indeed, it has been argued that this becomes more meaningful and more effective when people know their HIV status. Following this, voluntary counseling and testing has been defined as the 'process by which an individual undergoes confidential counseling to make informed choice about knowing his or her HIV status and to take appropriate action' (IPPF/UNFPA, 2004:1). In developed countries like Britain, such services have begun to attract utilization by target groups (McGarrigle, Mercer, Fenton, Copas, Evens & Johnson, 2005). Among Nigerian youth, studies point to the fact that awareness of HIV/AIDS has not translated to behavioural change. For example, Adedimeji, (2003) observes a 100 percent HIV/AIDS awareness rate among undergraduates in a Nigerian University, yet only five percent of his respondents reported using condoms during casual sexual intercourse with persons they were meeting for the first time. This observation becomes more worrisome when situated within the social practice of possession of multiple sexual partners among the youth in the universities.

Sarah, et el. (2007) conducted a study to investigates the perceptions of Nigerian undergraduates of own exposure to infection with HIV virus on the basis of their sexual behaviour; the relationship between their self-perception of exposure to HIV infection and behavioural risk-reduction on the one hand; and the relationship between self-perception of exposure to HIV infection and seeking voluntary counseling and testing (VCT) services. In one of the states in which the study took place, an earlier study reported that 77 percent of the study sample had initiated sex, and among them 27 percent had multiple sexual partners (Omoregie, 2003). Anugwom (no date) has similarly noted, with disappointment, that as much as 40 percent of his respondents who were also

undergraduates did not care to protect themselves against being infected with HIV virus during sexual encounters. Indeed, Anugwom (no date) observes condoms were used more for the purpose of avoiding pregnancies, and sexually transmitted infections (other than HIV) than for the purposes of avoiding HIV infection. However, detailed explorations of why awareness has not matched behavioural change remains to be conducted. Why do educated youth who are supposed to know and to champion the course of HIV/AIDS education and enlightenment turn out to ignore the message? Could this attitude be related to their self-perception of risk of getting infected with the disease, since they already are aware that the disease exists? (Adedimeji, 2003; Anugwom, no date) How do they perceive their susceptibility to being infected with the virus? What are the contextual social and economic factors that shape their adoption of behavioural change vis-à-vis their self perception of exposure to the infection? How do they perceive and practice HIV testing (voluntary counseling and testing) in view of their self perception of risk of infection? What contextual factors are important in mediating their attitude and practice of care seeking for HIV testing against the backdrop of their self-perception of risk of infection? These questions were explored through qualitative methodological approach so as to provide an understanding of the lapses in the translation of awareness into positive behavioural change, which is important for the success of any interventions, approaches, policies and programmes geared towards HIV/AIDS prevention and control in Nigeria and other developing countries.

2.7 Empirical Studies On Knowledge And Utilization Of VCT

Alemayehu, (2008) conducted a study on "Knowledge, Attitude, and Practice of Voluntary Counseling and Testing for HIV among University Students, Tigray, Northern Ethiopia." The aim of this study was to assess the knowledge, attitude, and practice of voluntary counseling and testing (VCT) for HIV in Mekelle, Tigray, Ethiopia with a view

of suggesting measures for increased up takes in University students. Institution based cross-sectional study design was used. Respondents were selected by simple random sampling method. A total of 425 students were included. The data was collected from April 1-10, 2008 by trained health workers using a self-administered structured questionnaire which was adopted from Behavioral survey surveillance (BSS). A total of 413 students participated (with the response rate of 97%). In which 145 (35.1%) accounted for females. Their age ranged from 18-30, with the median age of 20. Majority 145(35.1%) of the respondents preferred the VCT service to be given in youth clubs followed by Government Institutions 105(25.4%).The female respondents were found to have a significant association to accept VCT for HIV with the OR=1.95(1.27,2.99). In this study females were more knowledgeable and willing to VCT for HIV than that of the males. Still cost of VCT matters, in which the respondents prefer to be tested at youth clubs and Government hospitals. Therefore, both sexes should have to be empowered to accept VCT for HIV through peer initiated VCT services at all levels of care including in Universities.

Iliyasu, Abubakar, Kabir, and Aliyu, (2006) conducted a research on Knowledge of HIV/AIDS and attitude towards voluntary counseling and testing among adults' This study assessed knowledge of HIV/AIDS and attitude towards VCT among adults in a rural community in Northern Nigeria. A pretested questionnaire was administered on a cross-section of 210 adults in Danbare village, Northern Nigeria. Information about knowledge of HIV/AIDS and attitudes toward VCT was elicited among respondents. The majority of respondents (59%) did not know the causative agent of AIDS; however, knowledge of route of disease transmission was high, with 71% and 64% of study participants mentioning sexual activity and unscreened blood transfusion, respectively, as possible transmission routes. Respondents listed avoidance of premarital sex, outlawing

prostitution, condom use and screening of blood before transfusion as protective measures. Overall, 58 (27.6%), 80 (38.1%) and 72 (34.3%) of the respondents had good, fair and poor knowledge of HIV/AIDS, respectively. After adjusting for confounders, female gender and formal education remained significant predictors of HIV/AIDS knowledge. Reasons for rejection of VCT included fear of stigma, marital disharmony, and incurable nature of the disease and cost of treatment. Formal education, female gender and HIV knowledge significantly predicted positive attitude toward VCT for HIV/AIDS among the study population. More than half of the respondents had adequate knowledge of HIV/AIDS, and the majority were willing to have VCT. However, misconceptions, fear, gaps in knowledge and limited access to VCT remain prevalent. Our findings suggest the need to provide health education and scale up VCT services in northern Nigeria by targeting the efforts of international and local development partners to underserved rural areas.

Ikechebelu, Udigwe, Ikechebelu, & Imoh, (2006) carried out a study on knowledge, attitude and practice of voluntary counseling and testing (VCT) for HIV/AIDS among undergraduates in a polytechnic in southeast, Nigeria' The objective of this study is to determine the level of knowledge, attitude and practice of Voluntary Counseling and Testing (VCT) for HIV/AIDS among undergraduates in a Nigerian tertiary institution. This is a cross sectional study using a multistage sampling method to enroll students from different levels of the national diploma programme into the study. A structured questionnaire was administered to the 260 students with response rate of 70%. Only 115 (63.2%) of the students were aware of VCT with 68 (59.1%) having heard of it at least one year prior to the study. Mass media and Churches were the highest sources of information on VCT Most of the students did not know where VCT services could be obtained and knowledge of what VCT entails was also low. However, 127 (69.8%)

students approved the necessity of counseling prior to testing and 117 (64.3%) were ready to take a positive result in good fate. At least one out of every four students (54 of 182) had been sexually active within three months preceding the study only 48 (26.4%) students had taken an HIV test at one time or the other before the study. Majority (62.5%) of those who had been tested went for the screening just to know their HIV status. Premarital testing (18.8%) was the second commonest reason for taken an HIV test. Majority of the respondents (74.2%) were willing to go for VCT. Among those who were not willing to go for VCT the commonest reason given was that they were certain they were not infected. This study highlights the need to step up efforts to increase the students' awareness of VCT, deepen their knowledge and create the right attitude towards VCT through the mass media and religious bodies. Teaching on HIV/AIDS and VCT should also be incorporated into the school curriculum. A shift from the present clinic based approach to a more routine and widespread public health model will increase access to VCT Stand alone. VCT centres should therefore be cited in educational institutions, community centres, market places, youth friendly centres etc. for proximity to the people.

Naseem, Shahid, and Shireen, (2008) conducted a study on Factors affecting accessibility and acceptability of Voluntary Counseling and Testing among High Risk Group (HRG) for Human Immunodeficiency Virus (HIV) in NWFP Pakistan**;.** To identify the factors that affects the accessibility and acceptability of Voluntary Counseling and Testing (VCT) services among High Risk Groups for HIV in NWFP. A cross sectional study was conducted in two districts of N.W.F.P. namely Peshawar and Abbotabad from August 2007 up till January 2008. A total of 153 participants were interviewed from high risk group by convenient sampling. The high risk group included commercial sex workers and injection drug users. Information was also gathered from in-

charges of VCT centers. The data were collected in two phases, in the first phase data were collected in Peshawar while in the second phase data were collected in Abbotabad. Out of 153 respondents 102 (67%) were interviewed in Peshawar while 51 (33%) respondents were interviewed in Abbotabad. A total of 153 respondents were interviewed, that included commercial sex workers (123) and injection drug users (30). Mostly the participants were young with a mean age of 24 ± 8.8 years. As far as transmission of HIV was concerned 57% reported that HIV was transmitted through sexual contact, 09% said it was transmitted by contaminated instruments and syringes and around 11% reported its transmission by eating with persons having HIV/AIDS while 04% said it was transmitted by hugging/kissing. The level of knowledge about VCT was very low and about 27% of the participants had heard about VCT center. Only a small number i.e.16 out of 153 participants visited VCT centers. The study concluded that there is lack of awareness among high risk group regarding VCT and those who have heard about VCT (27%) only a few had visited the VCT center. The awareness campaign about VCT should target communities in general and high risk group in particular (JPMA 60:265; 2010).

Iliyasu, et al., (2005) carried out a research on Awareness and attitude of antenatal clients towards HIV voluntary coun and testing in Aminu Kano Teaching Hospital, Kano, Nigeria This study assessed pregnant women's knowledge of HIV/AIDS, awareness and attitudes towards Voluntary Counseling and Testing (VCT) in a teaching hospital in northern Nigeria. A pre-tested structured interview questionnaire was administered on a cross-section of 210 antenatal clients in Aminu Kano Teaching Hospital, Nigeria. All respondents were aware of HIV/AIDS. Fifty seven percent had good knowledge, 32% had fair knowledge and the remaining 11% had poor knowledge of the infection. Most respondents were aware of VCT through health workers, mass media and friends.

Similarly, most respondents (81.0%) approved of VCT, 13.0% disapproved of it and the remaining (6%) was undecided. The main reasons for disapproval were; fear of stigmatization, isolation and effect on marriage security. Those that had tertiary level of education were three times more likely to accept VCT compared to those with lower levels of education (O.R=3.2, 95% confidence interval =1.3-8.0). Although the awareness of VCT for HIV was quite high with most antenatal clients harboring positive attitudes towards it, there is a need to intensify health education to convince the remaining minority who are still skeptical or ignorant of the benefits of VCT.

Bwambale, et al., (2008) worked on 'Voluntary HIV counseling and testing among men in rural western Uganda implications for HIV prevention' Voluntary HIV counseling and testing (VCT) is one of the key strategies in the prevention and control of HIV/AIDS in Uganda. However, the utilization of VCT services particularly among men is low in Kasese district. We therefore conducted a study to determine the prevalence and factors associated with VCT use among men in Bukonzo West health sub-district, Kasese district. A population-based cross-sectional study employing both quantitative and qualitative techniques of data collection was conducted between January and April 2005. Using cluster sampling, 780 men aged 18 years and above, residing in Bukonzo West health sub-district, were sampled from 38 randomly selected clusters. Data was collected on VCT use and independent variables. Focus group discussions (4) and key informant interviews (10) were also conducted. Binary logistic regression was performed to determine the predictors of VCT use among men. Overall VCT use among men was 23.3% (95% CI 17.2-29.4). Forty six percent (95% CI 40.8-51.2) had pre-test counseling and 25.9% (95%CI 19.9-31.9) had HIV testing. Of those who tested, 96% returned for post-test counseling and received HIV results. VCT use was higher among men aged 35 years and below (OR = 2.69, 95%CI 1.77-4.07), the non-subsistence farmers (OR = 2.37,

95%CI 2.37), the couple testing (OR = 2.37, 95%CI 1.02-8.83) and men with intention to disclose HIV test results to sexual partners (OR = 1.64, 95%CI 1.04-2.60). The major barriers to VCT use among men were poor utilization of VCT services due to poor access, stigma and confidentiality of services. VCT use among men in Bukonzo West, Kasese district was low. In order to increase VCT use among men, the VCT programme needs to address HIV stigma and improve access and confidentiality of VCT services. Among the more promising interventions are the use of routine counseling and testing for HIV of patients seeking health care in health units, home based VCT programmes, and mainstreaming of HIV counseling and testing services in community development programmes.

Ekanem and Gbadegesin, (2004) carried out a study on Voluntary counseling and testing (VCT) for Human Immunodeficiency Virus: a study on acceptability by Nigerian women attending antenatal clinics. This study was carried out among 345 pregnant women attending antenatal clinics at two health facilities in Lagos, Nigeria. It was undertaken to determine their knowledge and acceptability of HIV voluntary counseling and testing in pregnancy as a strategy for the prevention of mother-to-child transmission (PMTCT) of HIV. Data were collected on issues relating to mother-to-child transmission of HIV, willingness to go for voluntary counseling and testing, actions to be taken if a pregnant woman was found to be HIV positive including infant feeding options. Majority of the women (89.9%) had good knowledge of the modes of HIV transmission; however, knowledge of specific aspects of PMTCT was poor. Close to half of the women (41.7%) were not aware of the association between breast milk and HIV transmission. Almost all the women (96.1%) were willing to undergo HIV testing in pregnancy particularly if it would assist preventing transmission of HIV to their babies; but only few would undergo the test if the result would be shared with relatives. Many of the women would still prefer

breastfeeding even if they were found to be HIV positive. Awareness of anti-retroviral drugs among the study group was very poor. As the country is about to embark on its PMTTCT programme, there is need to increase the level of knowledge, acceptability and adoption of VCT and other PMTCT strategies among potential beneficiaries. Innovative information and education techniques need to be developed to provide HIV positive mothers with knowledge and skills that can enable them to make informed choices about infant feeding options and other forms of care.

Sarah, et al., (2007) conducted a research "Does Self-Perception of Risk of HIV Infection Make the Youth to Reduce Risky Behaviour and Seek Voluntary Counselling and Testing Services? A Case Study of Nigerian Youth" The objective is to investigate whether self-perception of risk of HIV infection causes Nigerian youth to reduce risky sexual behavior and to seek HIV testing. In this population-based qualitative study, in-depth interviews were conducted among 90 undergraduates in three Nigerian universities. In each university, three focus group discussions were facilitated for males only, females only, and for both males and females (mixed). Results show that students with low self-perception of HIV infection felt they did not have a need for behavioral change or to do HIV testing. Those with high self-perception were not inclined to reduce risky behavior or to seek voluntary counseling and testing. The conclusion is that self-perception of risk as a single factor is not enough to seek HIV testing.

Alex, Muganzi, Muganga, Bahemuka, Ariono, Denis & Buwembo, (2002) conducted a study on Knowledge and acceptability of HIV voluntary counseling and testing (VCT) among Ugandan urban youth. HIV rates among youth continue to rise. Many don't know they carry HIV; leading to further spread.VCT is effective in slowing HIV spread. VCT knowledge and acceptability among youth is still low. Objectives: -1) Assess knowledge of urban youth about VCT.2) Assess factors influencing decision of

urban youth to do an HIV test. From Oct-Dec 2001,100 randomly selected urban youth around Kampala aged 16-28 years were interviewed. Informed consent was sought.92% were university students. They were given a questionnaire on knowledge and acceptability of VCT. Results:81% had ever heard about VCT, with health talks as main source of data(51%).Only 28% had ever taken the HIV test; of whom 9(68%) felt pre test counseling had been adequate. Only 13(46%) said confidentiality was very good.53% said they would take an HIV test if well counseled, of whom 46(87%) said they would wish to get the results there and then. Only 9% said youth are involved much in VCT activities.30% gave 4 right routes of HIV spread.10%gave one wrong mode of HIV spread. Only 20%gave 4 right modes of prevention.77% said they would carry out an HIV test to know their status. Other responses were:-To boost self confidence, start treatment, avoid further infection, plan for the future, positive living, and marriage, influence others, help researchers. Asked why they would not wish to carry out the HIV test, 59% said they were scared of the results. Other responses were - fear of psychological effects and stigma, worry about confidentiality and loss of hope. Problems of VCT identified were:-Lack of confidentiality and publicity about VCT, poor counseling skills, difficult VCT terms, lack of financial support, Few VCT canters. Conclusions: HIV test uptake is still low among youth.2) Health talks are the main source of information on VCT. 3) Involvement of youth in VCT activities is still low. 4) This study highlights an urgent need for emphasizing a strategy for greater involvement of youth in VCT programs.

Reilley, et a. (2004) carried out a research on Acceptability and utilization of services for voluntary counseling [corrected] and testing and sexually transmitted infections in Kahsey Abera Hospital, Humera, Tigray, Ethiopia. A study was conducted to assess the acceptability and utilization of voluntary counseling and testing (VCT) and

sexually transmitted infection (STI) services in Kahsey Abera Hospital, Humera. Retrospective data was taken from hospital consultation logbooks from January 2002 to February 2003, and focus group discussions were conducted in March 2003 in the community. Finding reveals that, the services were known and utilization is increasing, important misconceptions about the medical services, disease transmission, and STI treatment persist. Although hospital care was generally considered of high quality, persons often go to pharmacies to self-treat for STIs due to concerns about confidentiality, and the stigma of HIV deters many from wanting to know their serostatus. Conclusions: Additional education is needed on HIV/AIDS, STIs, and the medical services provided. Education may make use of community health workers or outreach workers in a small group where participants can feel comfortable to ask sensitive questions. HIV/AIDS treatment is planned for the near future and may be significant in reducing HIV/AIDS stigma.

Mugisha, et al., (2011) conducted a study on Strategic framework for increasing accessibility and utilization of voluntary counseling and testing services in Uganda. Despite the usefulness of VCT service as an entry point to prevention for the HIV-uninfected people and care, treatment and support for those who test HIV positive, VCT service remains poorly utilized among the fishing communities. The aim of the study was to identify factors influencing VCT service delivery and utilization among fishing communities in Uganda and consequently, formulated a strategic framework for improving VCT service delivery and utilization in the fishing communities. The study followed a 3-phased approach, collecting and analyzing quantitative data from Kasenyi fishing community under phase I, collecting and analyzing qualitative data from hospital managers and VCT counselors in phases II and III, respectively. Results indicate that VCT services delivery and utilization is affected by factors at government (macro) level,

the institution (meso) level, and at the individual (micro) level. Based on this, a strategic framework was designed, expected to increase VCT service availability, accessibility, and acceptability if applied. The researcher recommends the use of this useful tool in the design of VCT programs.

Jinling, Jinjian, Xiuhong, Genming, Qingwu and Roger, (2009) studied on knowledge, attitudes and practices (KAP) of voluntary HIV counseling and testing (VCT) among rural migrants was conducted in Shanghai, China. An anonymous questionnaire was administered face-to-face. Among 2,690 participants, 78% reported having had lifetime sexual intercourse with 41.3% of singles reporting sexual intercourse, 9.2% having had multiple sex partners in the past year, only 19% of the participants always using condoms whereas 61.6% did not use in their sexual acts in the past month, 80% knew HIV infection was diagnosed through a blood test, 46.5% had heard of VCT ever before, but only 3.5% felt that they were likely to be HIV-infected now or in the future and only 62 (2.3%) had ever had HIV testing with 19 of them getting tested at a VCT site. Gender, working venue, multiple sex partnerships and knowledge of VCT were independently correlated with having had HIV testing. This study suggests that a much greater effort is needed to promote safer sex and to improve VCT knowledge and services among rural migrants particularly those who are engaging in risky behaviors.

Comfort, Daniyam, Patricia & Emmanuel, (2010) conducted a research on ' Acceptability of voluntary counseling and testing among medical students in Jos, Nigeria'; Various preventive strategies have been employed to curb the spread of HIV infection as there is presently no cure. Abstinence, avoidance of multiple sexual partners, condom use, voluntary counseling and testing (VCT) and treatment of HIV-infected individuals form the cornerstone of HIV prevention. This study assessed the acceptability

of VCT among medical students in a single institution in Nigeria. Self-administered questionnaires were distributed to clinical medical students of the University of Jos in a cross-sectional study. Out of a total of 368 students surveyed, 178 (50.7%) have had VCT. There was no significant difference between the proportion of males and females who had had VCT previously (48.9% of males and 56.3% of females; $\chi 2 = 1.65$, OR = 0.76 95% CI: 0.46-1.20; $p = 0.19$). The majority of the respondents (83.1%) would want to have VCT. Fear of a positive test result was the main reason given by those who would be unwilling to be tested. Gender had no effect on the willingness of the subjects to have VCT as 81.8% of males and 87.1% of females were predisposed to it ($\chi 2 = 1.95$; OR = 0.63, 95% CI: 0.31-1.26). VCT acceptability was similar among sexually active and inactive respondents (80.2% and 80.2% respectively; $\chi 2 = 0.018$, $p = 0.99$). Awareness of VCT services and acceptability of VCT among medical students is high. These students can be role models for the optimization of VCT services.

Mengesha & Yohannis, (2006) carried out a study on Factors affecting acceptance of VCT among different professional and community groups in North and South Gondar Administrative zones, north west Ethiopia Voluntary counseling and testing (VCT) for HIV allows individuals to determine their HIV status and serve as a gateway for both HIV prevention and early access to treatment, care and support. Identifying factors associated with VCT acceptance among different professional and community groups is essential in promoting the service. The aim of this study is to assess factors that affect VCT acceptance among different professional and community groups in the north and south Gondar administrative zones of northwest Ethiopia. A cross-sectional descriptive study was undertaken among different professional and community groups in north and south Gondar administrative zones using a pre-tested structured questionnaire on a total of 460 respondents from October - December 2004. Four hundred forty people granted

interviews from a total of 460 proposed study participants with a response rate of 96%. The mean age of the respondents was 27.79 years. Sixty five percent of the respondents were males and the rest were females. Eighty two percent of the respondents were willing to accept VCT services. The age range from 15-19 years was found to be positively associated with VCT acceptance ($p<0.01$). Results of the behavioural variables showed the effect of others (friends families, religious leaders, and couples) who were found to have statistically very significant effect towards VCT acceptance ($p<0.001$). T he absence of community support was found to be negatively associated with VCT acceptance ($p<0.01$). The availability of ART was found to have positive association with acceptance of VCT ($p<0.001$). Involving closely related people is instrumental in enhancing the social acceptance of voluntary counseling and testing and providing sustainable and reliable VCT services. Increasing access to ART services would also help in further expanding VCT services

Sukari, (2007) studied on 'Barriers and attitudes towards HIV Voluntary Counseling and Testing (VCT) among Secondary School Pupils of Sengerema in Mwanza'. To determine barriers and attitudes towards voluntary counseling and HIV-testing among secondary school students in Sengerema district; A cross-sectional study was done in Sengerema district, Mwanza August 2006. A total of 400 secondary school students from the two schools Sengerema district, Mwanza from August to September 2006 were included in the study. By using simple random sampling technique, two secondary schools (Sima and Tuitange) were selected and enrolled in the study. After a verbal consent from each interviewee as well as observing confidentiality to the information data was collected using a pre tested Swahili questionnaire. Data analysis was done using EPI INFO 2002. A total of 400 students from the two secondary schools were interviewed. Out of the 400 students 54% were females. The majority (95.8%) of

these students knew that VCT is necessary and a large number (33.8%) of them gave a reason to get HIV education as a reason for HIV services. Only a small number (4.2%) of the students thought that VCT is not necessary with (47.8%) said it to be against the religious teachings; A large proportion (65.8%) of the students knew VCT sites in Sengerema district but only a few (24.3%) of them ever used available VCT services. Of those who ever used VCT services 32.7% were just interested in knowing their HIV status and to get HIV education and only a small number (6.2%) of students used VCT services because they were pressurized by their spouses. For those who never used VCT services (41.8%) said they feared being labeled as HIV positive and 34.9% said these services were not meant for students. It was also observed in this study that VCT services were more accepted among female students than male students. From the findings it is concluded that a large number of students knew that VCT use is necessary and the acceptance of VCT among the students is influenced by age where younger students were more willing to use VCT services than older students. The use of VCT services is positively correlated with the level of education and that though a large number of students knew that VCT services are necessary only a small number of students use VCT services. It is recommended that much more effort should be emphasized on encouraging young people to use VCT services.

Abebe and Mitikie, (2009) conducted a research on 'Perception of High School Students towards Voluntary HIV Counseling and Testing, using Health Belief Model in Butajira', Voluntary counseling and testing (VCT) for HIV is one of the strategies for HIV/AIDS prevention, and yet, there is very little information on what influences the services in Ethiopia. To assess the perception and attitude of students towards VCT services using the Health Belief Model: A cross sectional descriptive study was conducted in January 2006, among Butajira senior secondary school students where a

multi stage sampling method was used. About ninety seven percent of the students had heard about VCT services but less than one fifth of them had undergone VCT. Eighty two percent of the students were willing to undergo VCT. It was shown that willingness to VCT was significantly associated with perceived susceptibility [AOR=0.37(0.28, 0.89)], perceived barrier [AOR= 0.45 (0.23, 0.89)] and perceived benefit [AOR=1.79 (1.44, 2.49)]. The majority of students had heard about VCT and revealed willingness to undergo VCT. High perceived susceptibility and barriers were associated with low willingness to undergo VCT. On the other hand, students with high perceived benefits showed better willingness to undergo VCT. It is recommended that messages on VCT give emphasis on personal susceptibility to HIV/AIDS and benefits of VCT.

Onipede, (2009) carried out a study on 'Change in Sexual Behaviour among Undergraduates in Lagos Metropolis, Nigeria: The Role of Voluntary Counseling and Testing' This study examines the likelihood of VCT reducing risky sexual behaviour among undergraduates in Lagos Metropolis. A total of 625 undergraduates in the metropolis were interviewed in 2008. A multistage sampling technique was adopted. Data analysis indicates that 26.1% of males and 28.9% of females ever visited a VCT centre. About 5.3% of male respondents and 5.2% of females reported positive HIV status. The average number of heterosexual partners before visit to VCT centre among the respondents was 3.17 and declined to 2.27 (males) and 2.36 and declined to 1.63 (females) after visit to VCT centres among females. T-test analysis shows that the differences are statistically significant (p=0.000). The proportion of male respondents who engaged in frequent sex also declined from 35.8% to 24.1% (males) and from 25% to 24.7% among females, after visiting VCT centres. Thus VCT is capable of reducing risky sexual behaviour among young people.

Vuyelwa, et al., (2012) studied on 'Perceptions towards HIV and AIDS, Condom Use and Voluntary Counseling and Testing (VCT) amongst Students at a Previously Disadvantaged South African Tertiary Institution'. The study focuses on risk behaviour, stigmatization, social perceptions, voluntary counseling and HIV testing (VCT) amongst a sample of four hundred students at a rural tertiary institution in South Africa. Statistic was used to calculate descriptive statistics from the quantitative data and Thematic Content Analysis was used to analyze qualitative data. The mean age of students is 22.85 years and the Standard Deviation (SD) = 2.08. Overall the findings indicate that students have knowledge about condom use, risky sexual behaviours and VCT but this does not always translate into positive sexual behaviours. For instance, thirty -seven percent (37%) of the sample had little or no intention of using a condom. The results point towards the spread of the pandemic as a noteworthy percentage of participants indulge in high risk sexual behaviours and display negative attitudes towards Voluntary Counseling and Testing (VCT), condom use and people living with HIV and AIDS.

Tenibiaje, (2011) conducted a study on 'Voluntary Counseling and Testing As a Panacea to HIV/AIDS Epidemic in Nigeria'. There has been series of reports on panacea to HIV/AIDS epidemic in Africa and Nigeria in particular but no solution to HIV/ AIDS. The acquisition of knowledge and accessibility to information is essentially relevant to Voluntary Counseling and Testing in any developing country. Voluntary Counseling and Testing is increasingly important in global response to HIV/AIDS. The study focused on Nigeria youths on knowledge and information on HIV Voluntary Counseling and Testing is seen as a panacea to the spread of HIV. The research, adopted a descriptive survey method and the instrument for the collection of data was a 19-item questionnaire. The sample comprised 357 youths that correctly filled and returned the questionnaire. Two research questions were raised and two research hypotheses were formulated and tested.

Data collected were subjected to t-test statistical analysis. All the hypotheses were tested at 0.05 level of significance. The finding showed that there was a significant difference in the knowledge of HIV voluntary counseling and testing of HIV/AIDS by gender, age and religion. It was concluded that information and counseling will increase knowledge of Voluntary Counseling and Testing (VCT) in youths. Recommendation were made that counselors should organize group counseling sessions and workshops on how to make youths to be aware of the importance of voluntary counseling and testing.

2.8 Summary

HIV/AIDS is a global crises, a challenge to human life and dignity with ability to erode social and economic development. It has great influence on stability, life expectancy and economic development. It is a major public health problem with sub-Saharan Africa severely affected by the epidemic. HIV has the potential of hindering the realization of the millennium Development Goals and its spread promote poverty, and have unleashed immense suffering on different countries and communities worldwide. The focus has been placed on prevention and treatment program as solutions to controlling the disease. VCT aims to provide care, support and treatment to people already hiring with HIV. It allows people to learn their HIV status and be counseled about its implications. VCT also represents a mechanism for referral into cure, treatment and support.

This study is unique from those reviewed in terms of the scope (area cover), the instrument used, method and sample used, population and method used in analyzing and presentation of the data.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This study assessed Knowledge and Utilization of Voluntary counseling and testing services for the Prevention of HIV/AIDs among Students of Tertiary Institution in Bauchi state. This chapter discussed the methods used in collecting the data under the following sub-headings:

3.1 Research Design,

3.2 Population of the Study,

3.3 Sample and Sampling Procedure,

3.4 Data Collection Instrument,

3.5 Validation of the Instrument,

3.6 Data Collection Procedure

3.7 Data Analysis.

3.2 Research Design

An Ex-post facto research design was adopted for this study to assess knowledge and utilization of VCT services on the prevention of HIV/AIDS among students of tertiary institution in Bauchi state. Ogbalu (1997) expressed that ex-post facto design is study in which the investigation of independent variable is done retrospectively; that is after they have occurred in natural cause of event, and the research is designed to examine the relationship or association between the dependent and the independent variables. Therefore, ex-post facto research design was found suitable for this study because it is not possible for the researcher to directly manipulate the independent variables; as well the

study examined the relationship between Knowledge and Utilization of VCT services for prevention of HIV/AIDS among students of tertiary institutions in Bauchi state.

3.3 Population of the Study

The population of this study was made up of 53,416 students of tertiary institutions in Bauchi State. According to National Policy of Education (2004), tertiary education is the education given after secondary education in Universities, polytechnics, College of Education and monotechnics. Therefore, based on the above category the populations of the study were categorically shown as table 3.1 below:

Table 3.1 Population of students of tertiary institution in Bauchi State

S/N	Category	Tertiary Institutions in Bauchi State	Students Enrolment
1	University	Abubakar Tafawa Balewa University Bauchi (ATBU).	7,982
2	Polytechnic	Federal Polytechnic Bauchi (FPTB)	11,750
3	Polytechnic	Abubakar Tatari Ali Polytechnic Bauchi (ATAP)	15,256
8	Polytechnic	College of Legal and Islamic Studies (CLIS) Misau	5,000
4	College of Education	College of Education Azare (COE)	8,000
5	Monotechnic	School of Nursing Bauchi (SON)	273
6	Monotechnic	School of Midwifery Bauchi (SOM)	250
7	Monotechnic	Adult and non-formal Education Kangere (ANFE)	1,865
9	Monotechnic	College of Health Technology Ningi (CHT)	1,457
10	Monotechnic	Social Development Institute (SDI) Ningi	1,233
11	Monotechnic	College of Administration and Business Studies (CABS) Azare	350
	TOTAL		**53,416**

Source: Registrar's office student's enrollment, (2010/2011)

3.4 Sample and Sampling Procedure

The sample for the study was drawn from the population of the study using multistage sampling procedure. The population of the study was made up of 53,416 students. According to Krejcie and Morgan, (1970) if the population is 50,000, then, the

required sample size is 381 at 5% margin of error and 95% confidence interval. Therefore the sample size for the study comprised of 381 students.

Stratified sampling was used to divide the tertiary institutions in Bauchi state in to four strata namely; University, Polytechnic, College of Education and Monotechnic.

Simple random sampling technique was used to draw one school from each stratum. The groups of the schools were assigned numbers and writes on pieces of paper which was folded and thoroughly mixed in a small container. A trained research assistant picked one piece of paper; the number was checked against the name of the school and recorded as a sample. These processes were applied to all the schools belonging to each stratum except University and College of Education where only one school belongs to each stratum, therefore, they were used. The sample schools are Abubakar Tafawa Balewa University Bauchi (ATBU) with population of 7,982; Federal Polytechnic Bauchi (FPTB) with populations of 11,750; College of Health Technology Ningi (CHTN) with populations of 1,453; and College of Education Azare (COEA) with populations of 8,000. Therefore, the populations of the sample school are 29,189.

Proportional sampling technique was used to draw the 381 respondents where each of the school population was divided by total of the sampled school and multified by the sample size. The sample to each school are Abubakar Tafawa Balewa University Bauchi (ATBU) with 104 samples; Federal Polytechnic Bauchi (FPTB) with 153 samples; College of Health Technology Ningi (CHTN) with 19 samples; and College of Education Azare (COEA) with 105 samples as it shown in table 3.2 below.

A cluster sampling technique was employed to select the respondents across the four selected institutions. Each institution was divided in to faculty or school, then two faculties or schools were selected at random from each selected institution.

Systemic sampling technique was used to select the respondents according to seating arrangement at their respective general study classes.

Table 3.2 Respondents based on school population using percentage

S/N	Category	Institutions	Population	Sample	Percentage
1	University	Abubakar Tafawa Balewa University Bauchi	7,982	104	27.35%
	Polytechnic	Federal Polytechnic Bauchi	11,750	153	40.25%
	College of Education	College of Education Azare	8,000	105	27.41%
	Monotechnic	College of Health Tech. Ningi	1,457	19	4.99%
	Total		**29,189**	**381**	**100%**

3.5 Instrumentation

To achieve the purpose of this study, a self-developed validated questionnaire was used to find out the knowledge and utilization of VCT for prevention of HIV/AIDs among students of tertiary institutions in Bauchi State. A Four point modified Likert scale was used to collect data for the study. The four point Likert scale is score as follow: Strongly Agree, 4 points; Agree, 3 points; Disagree, 2 points and Strongly Disagree, 1 point.

The questionnaire consisted of three sections: A – C. Section A contained items 1-5 information on demographic data of the respondents; Section B contained items 6-17 collects data on the knowledge of students about VCT services while section C contained items 18-29 sought data about the utilization of VCT services by students.

3.6 Validation of the Instrument

Content and face validity of the research instrument was done by five (5) Professionals from the Department of physical and Health Education, Ahmadu Bello

University Zaria. Their corrections were incorporated in the final draft of the questionnaire.

3.7 Procedure for Data Collection

Introductory letters was collected from the Head of Department, Physical and Health Education, Ahmadu Bello University, Zaria and submitted to the schools in the study area. The researcher personally administered the questionnaire with four trained research assistants who assisted in obtaining data for the study, that is, one research assistant from each study institution. One week was initially given for the respondents to fill the questionnaire, on retrieving the questionnaire after one week still some of the respondents were unable to fill the questionnaire as such, one week was added. These processes were carried out during General Study weekly lecture hours across the four tertiary institutions. Thus, a total of three hundred and seventy three (373) copies of questionnaire were duly completed and returned, out of three hundred and eighty one (381) copies administered at the four tertiary institutions of Bauchi State.

3.8 Data Analysis

To achieve the purpose of this study, Information collected from the respondents through the use of the questionnaire was analyzed statistically.

Descriptive statistics of simple percentages and frequency counts were used to compute the demographic information of the respondents. Descriptive statistics of mean and standard deviation were used to analyze the items in the various sections of the questionnaire, while t-test, ANOVA and Pearson Product Moment Correlation Coefficient (r) were used to test the hypotheses of the study at 0.05 level of significance. Data were analyzed using Statistical Package of the Social Sciences (SPSS) version 17

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The study aimed at investigating knowledge and utilization of VCT services among students of tertiary institutions in Bauchi state. Descriptive statistics was used to analyze each of the items of questionnaire and mean score of 2.5 was considered as a baseline for making decision. The null-hypotheses were tested using t-test and Pearson product moment correlation coefficient, all the hypotheses were tested at 0.05 alpha level of significance. In this chapter, the results of the analysis of data and discussion are presented.

4.2 Results

The results of the study are presented in tables as indicated below:

Table 4.2.1 Information on Demographic Characteristics of the Respondents

Variable	Characteristic	Respondent	Percentage
School	(a) Abubakar Tafawa Balewa University	102	27.4%
	(b) College of Education	102	27.4%
	(c) College of Health Technology	19	5.0%
	(d) Federal Polytechnic	150	40.2%
Total		**373**	**100%**
Sex	(a) Male	228	60.9%
	(b)Female	145	39.1%
Total		**373**	**100%**

Table 4.2.1, showed that a total of 373 respondents were used for this study, the distribution by School indicated that 102(27.4%), 102(27.4%), 19 (5%), and 150(40.2%), of the respondents were in ATBU, COE, CHTN, and FPTB respectively. The distribution by Sex shows 228(60.9%) were Male while 145 (39.1%) were Female. This implied that a large number of the respondents were male while female were the least.

4.2.1 Major Hypothesis

The students' demographic variables do not significantly differ in their knowledge and utilization of VCT services for the prevention of HIV/AIDS in Bauchi State.

Table 4.2.2 Descriptive statistical table for Knowledge of VCT services among students of tertiary institutions in Bauchi State.

s/n	Questions	Mean	SD
1	Voluntary counseling and testing is the process by which an individual undergoes counseling to enable her/him to make an informed decision about being tested for HIV.	3.42	0.764
2	Voluntary counseling and testing services make one to know his/her HIV status.	3.45	0.668
3	Voluntary counseling and testing services are a gate way to HIV treatment and care.	3.12	0.823
4	Voluntary counseling and testing helps to prevents HIV transmission.	3.17	0.779
5	Voluntary counseling and testing services help to eliminate stigma to those who tested positive.	2.84	0.952
6	Voluntary counseling and testing services are easily accessible in our school.	2.69	0.938
7	Voluntary counseling and testing services procedure does not transmits HIV/AIDS.	3.05	0.910
8	Voluntary counseling and testing services in Health institution are free.	3.02	0.883
9	Voluntary counseling and testing services prevent spread HIV/AIDS to others in the school.	3.10	0.780
10	Voluntary counseling and testing services is an advantage to those who tested positive or negative	3.09	0.858
11	Voluntary counseling and testing services modified people habit towards sexual behavior.	2.87	0.932
12	Voluntary counseling and testing services served as a base-line for HIV/AIDS diagnosis and prevention.	3.03	0.868
	Aggregate	**3.07**	**10.155**

Table 4.2.2: shows that the pattern of responses relates that the respondents have knowledge on VCT services on the prevention of HIV/AIDS. The result shows all of the mean score are above 2.5.

The average mean (3.07) therefore, suggest that students of Bauchi state tertiary institutions have knowledge on VCT services.

Table 4.2.3 Descriptive statistical table for Utilization of VCT services among students of tertiary institutions in Bauchi State

s/n	Questions	Mean	SD
1	I have taken an HIV test at one time or the other.	2.84	0.967
2	Confidentiality are respected during and after the test	3.16	0.745
3	I voluntarily accept to do HIV test after I have received counseling.	3.13	0.797
4	I appreciate the voluntary counseling and testing services because are free	3.20	0.816
5	I use to go for HIV test whenever I exposed myself to people I don't know.	2.71	0.977
6	I have peace of mind because I was tested.	3.25	0.912
7	My school's hospital/clinic has facilities for Voluntary counseling and testing services.	2.71	0.996
8	I find it convenient to use voluntary counseling and testing services because it is voluntary.	3.03	0.796
9	I got tested when I donated blood to my relation.	2.79	0.990
10	I am satisfied with the facilities and manner of personnel conducting the counseling and testing services.	3.11	0.818
11	I am satisfied with the awareness campaign on voluntary counseling and testing services through mass media.	3.09	0.844
12	The site providing the voluntary counseling and testing services is close to my school.	2.76	0.973
	Aggregate	**2.98**	**10.631**

Table 4.2.3: shows that the pattern of responses relates to the utilization of VCT services on the prevention of HIV/AIDS by the respondents. The result shows that all of the mean score are above 2.5.

The average mean (2.98) therefore, suggest that students of Bauchi state tertiary institutions are utilizing VCT services.

4.2.2 Sub-hypothesis One

There is no significant difference between male and female students of tertiary institution in their knowledge of VCT services for the prevention of HIV/AIDS in Bauchi state. The result that verifies this hypothesis is contained in table 4.2.4

Table 4.2.4 A summary of two sample t-test on differences between Male and Female students in their knowledge of VCT services

Sex	N	Mean	SD	df	t- value
Male	228	3.0607	0.42683	371	*0.664
Female	145	3.0902	0.40712		

t(373)= 1.960, P < 0.05

Table 4.2.4; is a summary of two sample t-test on differences between male and female students in their knowledge of VCT services. The results shows that the calculated t-value (0.664, df = 371, P < 0.05) is statistically lower than the t-critical value of 1.960. Therefore, the null hypothesis which states no significant difference exists between male and female students in their knowledge of VCT services is hereby accepted.

4.2.3 Sub-hypothesis Two

There is no significant difference between male and female students of tertiary institution in their utilization of VCT services for the prevention of HIV/AIDS in Bauchi state. The results that verify this hypothesis is contained in table 4.2.5.

Table 4.2.5 A summary of two sample t-test on difference between male and female students of tertiary institution in Bauchi state in their utilization of VCT services

Sex	N	Mean	SD	df	t- value
Male	228	2.9677	0.44739	371	*1.352
Female	145	2.9034	0.44668		

t(373)= 1.960, P < 0.05

Table 4.2.5; is a summary of two sample t-test on differences between male and female students in their utilization of VCT services. The result shows that the calculated t-value (1.352, df = 371, P < 0.05) is statistically lower than the t-critical value of 1.960. The outcome of the study shows that no significant difference exists between male and female students in their utilization of VCT services. This means that the null hypothesis which states no significant difference exists between male and female student in their utilization is hereby accepted.

4.2.4 Sub-hypothesis three

There is no significant difference in the knowledge of VCT services among Students of different tertiary institutions in Bauchi State. The result that verifies this hypothesis is contained in table 4.2.6A.

Table 4.2.6A: A summary of ANOVA on significant difference in the knowledge of VCT services among students of different tertiary institution in Bauchi State.

Source of Variance	SS	df	MS	F- value
Between Groups	166.337	3	55.446	*350.692
Within Groups	58.340	369	.158	
Total	224.677	372		

F(373)= 2.62, P < 0.05

Table 4.2.6A is a summary of ANOVA, indicating a significant difference in knowledge on VCT services among students of different tertiary institutions in Bauchi state. The

result shows that the calculated F-value (350.692, df=3, P<0.05) is statistically higher than F-critical value of 2.62. This means that the null hypothesis which states no significant difference in the knowledge of VCT services among students of different tertiary institutions in Bauchi state is hereby rejected.

Table 4.2.6B: A summary of scheffes' analysis on mean difference of school (I-J) indicating significant difference in the knowledge of VCT services among students of different tertiary institution in Bauchi State.

Sch(I) And Sch(J)	Mean Different(I-J)	Mean Different
ATBU And COEA	3.9869 – 3.3979	.58905*
ATBU And CHTN	3.9869 – 3.0500	.93693*
ATBU And FPTB	3.9869 – 2.3792	1.60773*
COEA And CHTN	3.3979 – 3.0500	.34788*
COEA And FPTB	3.3979 – 2.3792	1.01868*
CHTN And FPTB	3.0500 – 2. 3792	.67081*

Table 4.2.6B is a summary of post hoc analysis using scheffẽ post hoc test indicating difference in mean score among different tertiary institutions (school) ATBU and COEA (.58905), ATBU and CHTN (.93693), ATBU and FPTB (1.60773), COEA and CHTN (.34788), COEA and Fed. Poly (1.01868) and CHTN and Fed Poly (.67081). Mean significantly differed among the school, more difference lies between COEA and Fed Poly (1.01868) while COEA and CHTN (.34788) were the least.

4.2.5 Sub-hypothesis four

There is no significant difference in the utilization of VCT services among Students of different tertiary institutions in Bauchi State. The result that verifies this hypothesis is contained in table 4.2.7A

Table 4.2.7A: A summary of ANOVA on significant difference in the utilization of VCT services among students of different tertiary institution in Bauchi State.

Source of Variance	SS	df	MS	F- value
Between Groups	161.694	3	53.898	*188.619
Within Groups	105.442	369	.286	
Total	267.136	372		

F (373) = 2.62, P < 0.05

Table 4.2.7A is a summary of ANOVA, indicating a significant difference in the utilization of VCT services among students of different tertiary institutions in Bauchi state. The result shows that the calculated F-value (188.619, df=3, P<0.05) is statistically higher than F-critical value of 2.62. This means that the null hypothesis which states no significant difference in the knowledge of VCT services among students of different tertiary institutions in Bauchi state is hereby rejected.

Table 4.2.7B: A summary of scheffes' analysis on mean difference school (I-J) indicating significant difference in the utilization of VCT services among students of different tertiary institution in Bauchi State

Sch(I) And Sch(J)	Mean Different (I-J)	Mean Different
ATBU And COEA	6. 8243 – 5.9093	.91503*
ATBU And CHTN	6. 8243 – 6. 1292	.69518*
ATBU And FPTB	6. 8243 – 5. 1974	1.62692*
COEA And CHTN	5. 9093 – 6. 1292	− .21985
COEA And FPTB	5. 9093 – 5. 1974	.71189*
CHTN And FPTB	6. 1292 – 5. 1974	.93174*

Table 4.2.7B is a summary of post hoc analysis using scheffẽ post hoc test indicating difference in mean score among different tertiary institutions (school) ATBU and COEA (.91503), ATBU and CHTN (.69518), ATBU and FPTB (1.62692), COEA and CHTN (−.21985), COEA and Fed. Poly (.71189) and CHTN and Fed Poly (.93174), Mean significantly differed among the schools with more difference lies between ATBU and Fed. Poly while COEA and CHTN not significantly differed.

4.2.6 Sub-hypothesis Five

There is no significant relationship between knowledge and utilization of VCT services among students of tertiary institution in Bauchi state. The result that verifies this hypothesis is contained in table 4.2.8.

Table 4.2.8 A summary of correlation analysis on relationship between knowledge and utilization of VCT services among students of tertiary institutions in Bauchi State

Variable	N	Mean	SD	SE	df	r- value
Knowledge	373	2.072	0.419	0.022	371	*0.575
Utilization	373	2.943	0.448	0.023		

r (373) = 0.098, P < 0.05

Table 4.2.8 shows results of correlation analysis which indicates that the calculated r-value of 0.575 was greater than the critical r-value of 0.098 at significance level of 0.05, df. 371(0.575 > 0.098, P 0.05, df 371). The outcome of this study indicates a statistically significant relationship between knowledge and utilization of VCT services among the respondents. This means that the null hypothesis which states no significant relationship exists between knowledge and utilization of VCT services among students of tertiary institution in Bauchi State is hereby rejected.

4.3 Discussion

The study was aimed at finding out the knowledge and utilization of VCT services across the student' s gender, differences among the schools as well as the relationship between the knowledge and utilization of VCT services on prevention of HIV/AIDS among student of tertiary institutions in Bauchi state.

The findings of this study revealed that students of tertiary institutions in Bauchi state showed good knowledge of VCT services. This finding is in agreement with the study of Vuyelwa, et al., (2012) on Perceptions towards HIV and AIDS, Condom Use and Voluntary Counseling and Testing (VCT) amongst Students at a Previously

Disadvantaged South African Tertiary Institution, indicated that students have knowledge about VCT. It is consistent with a national survey by the reproductive health research unit (2003) in partnership with love life which reported that youth have knowledge about HIV/AIDS. Similarly, the findings tallied with the work of Iliyasu, et al., (2005) on Awareness and attitude of antenatal clients towards HIV voluntary counseling and testing in Aminu Kano Teaching Hospital, Kano, Nigeria, that most respondents were aware of VCT services through health worker, mass media and friends. Again Ikechebelu, et al., (2006) on Knowledge, Attitude and Practice of Voluntary Counseling and Testing for HIV/AIDS among undergraduate in a polytechnic in southeast, Nigeria, which reported that 63.2% of the students were aware of VCT with 59.1% having heard of it at least one year prior to the study, they claimed that the mass media and churches were the highest sources of information on VCT. It is also in line with work of Cornelissen, (2005) on 'HIV/AIDS Knowledge, awareness and perception of Undergraduate students at the University of Stellenbosch' which revealed that students have knowledge about the causes and mode of transmission of HIV/AIDS. Moreover, the finding was supported by Uys, (2006), which reported that there is abundance of knowledge among student at tertiary institution about HIV/AIDS and how it is transmitted. In similar study on perception of high school student toward Voluntary HIV Counseling and Testing, using health belief model in Bitajira, Abebe, and Mitikie, (2009) reported that majority of students have heard about Voluntary Counseling and Testing and revealed willingness to undergo VCT. Njagi, and Machary, (2006) conducted a study on perception of Voluntary Counseling and Testing among students at tertiary institution in Kwazali Nata, the findings indicates similarity that the research findings showed a high knowledge of Voluntary Counseling and Testing services among students, with peers serving as the main source of information.

Finding of this study showed that students of tertiary institutions in Bauchi state are utilizing of Voluntary Counseling and Testing services. The finding is closely linked to the report by National HIV/AIDS and Reproductive Health Survey (NARHS 2007) shows that 72% of respondents expressed a desire to get tested. This is much high than 43% reported in the 2005 NARHS survey. The total number of people who were counseled, tested and received their results also rose from 2,350,000 in December, 2007 to 3,371,220 at the end of 2008 (NACA, 2009). The finding is not in line with the report issued by UNFPA (2004) which stated that the use of HCT services by young people has also been limited; which is also not similar with that of NACA (2009) which reports that the uptake of HIV/VCT is still low among the Nigerian Population. Similarly, a report from department of health, (2004) indicates low uptake of Voluntary Counseling and Testing services, with only one in five people in S. Africa who know VCT having been tested for HIV (HRSC, 2002).

Findings of the study revealed that no significant difference exists between male and female students in their knowledge of VCT services. The finding of this study is in line with the findings of Dele (2011) works on Voluntary Counseling and Testing As a panacea to HIV/AIDS Epidemic in Nigeria, which indicated that there is no significant difference in the acquisition of knowledge on transmission and prevention of HIV among male and female students. The mean value of 6.71 (Male) and 6.81 (female) respectively are so close hence, the result was not significant. The finding of this study does not corroborate the findings of Hubley, (1992), Gardon and Klondo, (1993), Onuorah and Ezey, (2005). Their studies revealed that gender has a strong influence on Tertiary Institution student's knowledge on the mode of transmission and prevention of HIV/AIDS. The findings is also not in line with Berer and Sumanda, (1993) which affirmed that male and female students have acquired skills to prevent HIV/AIDS

transmission to a great extent, but relationship between gender of Tertiary Institution students on the skills acquired to prevent HIV/AIDS transmission is not statistically significant.

The finding of this study showed that no significant difference exists between male and female student in their utilization of VCT service this is in line with the study conducted on acceptability of VCT among medical student in Jos, Nigeria by Daniyam, Agaba & Agaba, (2010). The study reported that there is no significant different between the proportion of male and female who have had VCT (48.9% males & 56.3% of females; χ^2 =1.65 or = 0.76 or 95% CI: 046 – 1.20; p=0.19). The finding of this study is contrary to the study done in south Africa show that the practice and acceptability of VCT among women attending antenatal clinic is high (Abdoolkarim, et al., 1998; Abdullahi, et al., 2001; Urban, et al., 2004) and was also reported by Iliyasu, et al., (2006) as they noted that female gender significantly predicted positive attitude toward VCT for HIV/AIDS among their population. Similarly, Sukari, (2007) finding on barrier and attitude toward HIV/VCT among Secondary schools Pupil's of Sengerema in Mwanza, contradicted the research finding as VCT services were more accepted among female students than male students.

The finding of the study on difference in knowledge of VCT services among students of different tertiary institution in Bauchi state, revealed that significant different existed among the four studied tertiary institutions, this is probably due to misconception on subject matter that is HIV/AIDS and VCT that knowing something related HIV/AIDS and VCT is associated with those who are involve in sexual abuse and drugs addict, and in some school the topic of such are addressed in either the core or elective courses.

The finding of the study on difference in the utilization of VCT services among students at different tertiary institution in Bauchi state revealed that significant different

existed among the four studied tertiary institutions. The finding is in line with Haddison, (2011) on voluntary counseling and testing for HIV among high school students in the Tiko health district, Cameroon. Students from lay private schools were more likely to have used VCT services than their peers from other schools. In mission schools talking about sex is taboo since premarital sex is forbidden by Christianity, so we would expect a very low rate of VCT utilization among the students because anyone going for VCT is considered sexually active. This is due to lack of sufficient functional VCT centre at schools and location of some schools especially those outside the state headquarter where the concentration of the campaign are less, also lack of HIV/AIDS policy in some school where issues related to right of PLWHA on education, stigma and discrimination are addresses can make the difference. The result is not surprise as in some school the issues of HIV/AIDS and VCT are captured in their school curriculum.

The results of this study revealed that significant relationship exist between knowledge and utilization of VCT among students. Therefore, knowledge of VCT services influence the utilization of VCT services. The finding of this study was not unexpected, because, (Abebe & mitikie, 2009) reported that the majority of students have heard about VCT and reveals willingness to undergone VCT. Willingness was affected by education, age and sexual experience. Similarly, another study conducted by Masiv, (2004) on studies conducted in African countries has shown that awareness campaigns increased the VCT utilization. Furthermore, A study conducted in Kenya revealed that VCT uptake increased from an average of 56/month in the 8 month prior to the awareness campaigns to 165 /month in the 3 months after the initiation of the awareness campaigns. So also Veronica, (2007) conducted a survey research on youths, results show that youth have a strong interest in knowing about their (HIV) status "more than 75% of untested youth in Kenya and about 90% in Uganda indicate they would like to be tasted in

the future; similarly, 74% Kenya, 84% in Uganda indicate they intend to repeat the test. On the other hand, the finding of this research was not similar with the results of Adadimeji, (2003) on study conducted on 'Perception of HIV/AIDS infection and condom use among undergraduates in a Nigerian University" show among Nigerian youth; studies point to the fact that awareness of HIV/AIDS has not translated to behaviour change (testing for HIV/AIDS inclusive). Similarly, in related study by Njagi and Macharaj, (2006) study on 'Access to Voluntary Counseling and Testing services: Perspectives of young people, South Africa' reported a high knowledge of VCT services among students but 14% of the sample of 200 students had undergone VCT, which supports other researchers concerns that VCT is underutilized Uys, (2006).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The purpose of this study was to find out the knowledge and utilization of VCT services for prevention of HIV/AIDs among students of tertiary institution in Bauchi state. To achieve the purpose of this study, eight research questions were formulated and one major hypothesis and eight sub-hypotheses were postulated in null hypothesis form. An ex-post facto design was adapted for this study. Population of the study was made up of 56,418 students while the sample of the study was made up of 381students in the study area, Cluster sampling procedure was employed to select the 381 students, selection of sample also cut across the male and female students.

Data was collected quantitatively using a self-developed validated questionnaire shown in Appendix A. For the purpose of the analysis, only data from 373 respondents who duly completed and returned the questionnaire were analyzed. Frequency counts and percentage were used to describe the demographic characteristics of the respondents while t-test, ANOVA and Pearson product moment correlation co-efficient (r) were used to verify the hypotheses at 0.05 level of significance from this, the following major findings were drawn:

5.2 Summary of Major Findings

1. Students of tertiary institution in Bauchi state has significant knowledge of VCT services;
2. students of tertiary institution in Bauchi state are significantly utilizing VCT services;
3. Significant difference did not exist between male and female students in their knowledge of VCT services;

4. Significant difference did not exist between male and female students in their utilization of VCT services;
5. Significant difference existed on knowledge of VCT services among student of different tertiary institution in Bauchi state;
6. Significant difference existed on utilization of VCT services among student of different tertiary institution in Bauchi state
7. Significant relationship existed between knowledge and utilization of VCT services among students.

5.2 Conclusion

Based on the findings of this study, the following conclusions were drawn:

1. Students of tertiary institution in Bauchi state have knowledge on VCT services;
2. Students of tertiary institution in Bauchi state are utilizing VCT services;
3. There was no difference between male and female students in their knowledge of VCT services;
4. There was no difference between male and female students in their utilization of VCT services;
5. There are difference in awareness of VCT services among Students of different tertiary institution in Bauchi State;
6. There are difference in utilization of VCT services among Students of different tertiary institution in Bauchi State;
7. Knowledge of VCT services influenced the utilization of VCT services among the respondents.

5.3 Recommendations

Based on the findings of the study, the following recommendations were made;

1. VCT centres should be cited in educational institutions,
2. To intensify health education to further improves knowledge and utilization of VCT among the students of tertiary institutions in Bauchi state.
3. Since there are difference among students of different schools there is need to intensify campaigns on HIV/AIDS and VCT to cover those tertiary institutions lagging behind in order to bridge the gap.
4. Since knowledge of VCT influenced the utilization of VCT among the respondents. Health personnel should intensify enlighten campaigns on the benefits of VCT utilization.

5.4 Recommendations for further research

Similar study across the nation should be conducted to ascertain the extent of knowledge and utilization of VCT services among students of tertiary institutions in Nigeria.

As this study limited to only student of tertiary institutions, however, that further researches should be carried out on knowledge and utilization of VCT services among students of secondary schools in Bauchi state.

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APPENDIX A

RESEARCH QUESTIONNAIRE

Dear Respondent,

I am a master's student in Physical and Health Education Department of Ahmadu Bello University, Zaria, carrying out a research on **"Knowledge and Utilization of Voluntary Counseling and Testing (VCT) Services on Prevention of HIV/AIDS among Students of Tertiary Institutions of Bauchi State"**. All information given will be completely used for academic purpose and remained highly confidential.

Instructions: Please tick [√] the option that mostly represent your opinion.

SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree.

SECTION A: Demographic Information about the Respondents

1. Sex Male ☐ Female ☐
2. School/College: …….
3. Facualty: ……...
4. Department: …….
5. Type of programme:
   - (a) Postgraduate ☐
   - (b) Undergraduate ☐
   - (c) Diploma/NCE/ ☐
   - (d) Certificate ☐
   - (e) Others ☐

SECTION B: Knowledge of Voluntary Counseling and Testing (VCT) Services among Students of Tertiary Institution of Bauchi State.

S/N	Statement	SA	A	D	SD
6	Voluntary counseling and testing is the process by which an individual undergoes counseling to enable her/him to make an informed decision about being tested for HIV.				
7	Voluntary counseling and testing services make one to know his/her HIV status.				
8	Voluntary counseling and testing services are a gate way to HIV treatment and care.				
9	Voluntary counseling and testing helps to prevents HIV transmission.				
10	Voluntary counseling and testing services help to eliminate stigma to those who tested positive.				
11	Voluntary counseling and testing services are easily accessible in our school.				
12	Voluntary counseling and testing services procedure does not transmits HIV/AIDS.				
13	Voluntary counseling and testing services in Health institution are free.				
14	Voluntary counseling and testing services prevent spread HIV/AIDS to others in the school.				
15	Voluntary counseling and testing services is an advantage to those who tested positive or negative				
16	Voluntary counseling and testing services modified people habit towards sexual behavior.				
17	Voluntary counseling and testing services served as a base-line for HIV/AIDS diagnosis and prevention.				

SECTION C: Utilization of Voluntary Counseling and Testing (VCT) Services by Students of Tertiary Institution of Bauchi State.

S/N	Statement	SA	A	D	SD
18	I have taken an HIV test at one time or the other.				
19	Confidentiality are respected during and after the test				
20	I voluntarily accept to do HIV test after I have received counseling.				
21	I appreciate the voluntary counseling and testing services because are free				
22	I use to go for HIV test whenever I exposed myself to people I don't know.				
23	I have peace of mind because I was tested.				
24	My school's hospital/clinic has facilities for Voluntary counseling and testing services.				
25	I find it convenient to use voluntary counseling and testing services because it is voluntary.				
26	I got tested when I donated blood to my relation.				
27	I am satisfied with the facilities and manner of personnel conducting the counseling and testing services.				
28	I am satisfied with the awareness campaign on voluntary counseling and testing services through mass media.				
29	The site providing the voluntary counseling and testing services is close to my school.				

APPENDIX B

APPENDIX C

APPENDIX D