UTILIZATION OF VOLUNTARY COUNSELING AND TESTING SERVICES AMONG UNIVERSITY STUDENTS: A CASE STUDY OF NAIROBI, KENYA.

BY

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MAY, 2005

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Utilization of voluntary counseling
DECLARATION
This thesis is my original work and has not been presented for a degree or any other award in any other university.

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This thesis has been submitted for examination with our approval as university supervisors.

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DEDICATION

To all university students,

May you have the willingness to be tested and live positively with or without the HIV.
ACKNOWLEDGEMENT
I wish to express my sincere gratitude to all those who contributed to the success of this thesis.

I am indebted to my supervisors, Dr. Zipporah W. Ng’ang’a and Dr. Ephantus W. Kabiru of Kenyatta University for their invaluable time and attention to this work. They worked diligently throughout the course of the study and offered expert assistance and encouragement.

Special thanks go to all the students and counselors who participated in the study.

Finally, I wish to sincerely thank my parents Cecilia Wanjiku, Mr. and Mrs. Gitari my husband Mr. Haron Kinyua, my son Victor and the rest of my family who tirelessly supported and encouraged me to the completion of the study.

Thank you all.
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# ACRONYMS

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<th>Description</th>
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>ANOVA</td>
<td>Analysis Of Variance</td>
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<td>CDC</td>
<td>Center for Disease Control</td>
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<tr>
<td>CI</td>
<td>Confidence Interval</td>
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<tr>
<td>CUEA</td>
<td>Catholic University of Eastern Africa</td>
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<td>DCT</td>
<td>Diagnostic Counseling and Testing</td>
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<td>df</td>
<td>Degree of Freedom</td>
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<tr>
<td>FP</td>
<td>Family Planning</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>JKUAT</td>
<td>Jomo Kenyatta University of Agriculture and Technology</td>
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<tr>
<td>KU</td>
<td>Kenyatta University</td>
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<tr>
<td>MCT</td>
<td>Mandatory Counseling and Testing</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>MTCI</td>
<td>Mother to Child Infection</td>
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<tr>
<td>MTCT</td>
<td>Mother to Child Transmission</td>
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<tr>
<td>NACC</td>
<td>National AIDS Control Council</td>
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<td>NASCOP</td>
<td>National AIDS/STDS Control Programme Of Kenya</td>
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<td>PLWA</td>
<td>People Living With HIV/AIDS</td>
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<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission</td>
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<td>RCT</td>
<td>Routine Counseling and Testing</td>
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<td>ROK</td>
<td>Republic of Kenya</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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STDs  Sexually Transmitted Diseases
STI   Sexually Transmitted Infection
TB    Tuberculosis
UNAIDS United National Programme on HIV/AIDS
UNICEF United Nations Children’s Fund
USIU  United States International University
VCT   Voluntary Counseling and Testing
WHO   World Health Organization
ABSTRACT

Since HIV/AIDS was detected in 1981, it has become a pandemic that is spreading rapidly irrespective of race, country, age group and socio-economic class. Globally, more than 7000 young people including university students acquire HIV/AIDS daily. This translates to 2.6 million new infections each year among the young people of which two million cases occur in Africa. In Kenya, the devastating disease is the single most important health challenge that the country has faced in post independence. To date, there is no cure for HIV/AIDS and therefore our hope lies in preventing new infections and helping to prolong the lives of those already infected. Infected individuals will constitute a serious economic and social tragedy in the lives of surviving families, friends, employers as well as the country at large. In Kenya, studies on HIV/AIDS among the high risk groups such as commercial sex workers have been carried out. There is also paucity of research on HIV/AIDS addressing the youth out of school as well as those in secondary schools. However, little has been done to establish the rate of infection among university students as well as the rate of utilization of VCT services. This study sought to determine the utilization of VCT services among university students. A cross-sectional descriptive survey was carried out among undergraduate students from both private and public universities in Nairobi and its periphery. The universities were conveniently selected due to their location. Probability proportion-to-size sampling was used to determine the number of undergraduate students to be sampled from each university. A sample of 400 undergraduate students was randomly selected from the four universities. The data was collected by the use of self-administered structured questionnaire. Data was analyzed using the statistical package for social sciences (SPSS) software. The findings of the study indicate that the student’s knowledge of HIV/AIDS was high (93%). However the high knowledge level did not translate into high utilization of VCT. There was a significant relationship between the knowledge level of VCT and the university of study ($\chi^2 = 16.2564, \text{df}=3, p=0.001$). However the relationship between the year of study and the knowledge level was not significant ($\chi^2 = 2.3226, \text{df}=3, p=0.5080$). Despite the fact that Ninety four percent (94%) of the students were aware of vital facts concerning HIV/AIDS and VCT, only forty five percent (45%) of the students indicated that they knew their sero status. There was no significant difference between the university of study and utilization of VCT ($\chi^2 = 3.894, \text{df}=3, p=0.2731$). The main barriers hindering utilization of VCT were stigmatization (51%) and fear of positive results (37%). The study recommends that both the government and non-governmental/ civil society actors need to invest more resources in mounting consistent campaigns encouraging and motivating students to visit VCT inorder for them to know their serostatus and hence influence behaviour change. There is also need for enhanced public education through electronic and print media inorder to empower students and youth at large with important information regarding VCTs in order to increase utilization. Further, the study recommends that there is need to establish accessible and youth friendly VCT centers within various universities as an entry point to care and prevention of HIV transmission.
1.1 Background Information

Acquired immune deficiency syndrome (AIDS) has become a serious public health problem in the world and more so in sub-Saharan Africa (SSA). According to UNAIDS/WHO (2002), HIV/AIDS claimed more than 3 million lives in the year 2002 and an estimated 5 million people acquired the virus in 2002. This brings the number of people living with the virus globally to 42 million. Young people (10-24 years) account for more than 50% of all HIV infection worldwide (UNAIDS/WHO, 2000). In the year 1998, more than 8500 children and young people were infected with HIV each day-6 every minute (UNAIDS/WHO, 2000).

In Kenya more than 2.2 million people have already developed AIDS since the pandemic began (NACC, 2001). Presently, it is estimated that for every eight adults, one is infected and at least 750 people die daily from HIV/AIDS related complications (NACC, 2001). Globally, more than 7000 young people including university students acquire HIV/AIDS daily. This translates to 2.6 million new infections each year among the young people including university students of which two million of the cases occur in Africa (UNAIDS/WHO, 2000). Due to HIV/AIDS, life expectancy in Kenya has declined from 65 years to 46 years (ROK, 1999).

More over, according to ROK (2001a) more than 75% of AIDS cases occur in adults aged 20-45 years. The peak ages of infection are 25-29 for women and 30-34 years for men. A particularly affected age group is 15-24 years, with an estimated 15% prevalence rate (NASCOP, 2001). Age group (15-24) comprises young people who are at risk of
contracting HIV virus since they are sexually active and may engage themselves in casual sex.

These statistics show the devastation that HIV has caused within the past two decades. The virus wipes out families, professionals, educated and non educated people (ROK, 1999). To date there is neither cure nor vaccine for HIV/AIDS and hence with such high mortality rates due to the epidemic, there is need to promote preventive mechanisms such as VCT to curb the spread of disease.

Voluntary HIV counseling and testing (VCT) is the process by which an individual undergoes counseling thus enabling the person to make an informed choice about being tested for HIV, the virus that causes AIDS. VCT involves pre-test counseling, HIV antibody test, post-test and follow-up counseling. VCT is always voluntary and strictly confidential. The client’s dignity is carefully maintained (ROK, 2001b).

Voluntary counseling and testing (VCT) is an entry point to health care provision for HIV/AIDS and other community based health services. These services include prevention and clinical management of HIV related illnesses, TB control, psychosocial and legal support, and prevention of mother to child transmission (PMTCT). VCT is beneficial to those who test HIV positive as well as to those who test negative. For those who test HIV positive they are able to protect their partners from infection, plan for the future, seek early treatment for opportunistic infections as well as learn how to live positively with the disease. To those who test negative, VCT acts as a strong motivation which helps to reduce risky sexual behaviour, reduce stigmatization and live positively without the virus.

According to ROK (2003a), VCT services are beneficial to people who are serious about behaviour change, those planning to marry or have a new relationship, those planning to
get a baby, those who have more than one sexual partner, those with STI's as well as those interested in making informed plans for the future.

Barriers hindering utilization of VCT services among the youth include: availability and acceptability of VCT services, legal issues, costs and pressure by health staff to notify partners, concerns about confidentiality of results, inaccurate risk perception, stigmatization, perceptions of the consequences of living with HIV and inadequate responses from health care providers, including counselors to effectively meet the HIV prevention, care and support needs of the youth (ROK, 2002a).

1.2 Problem Statement and Justification

According to Panos (1999), there are more teenagers alive today than ever before. There are about 1.1 billion adolescents aged 10-19 years, 85 percent of them living in developing countries. Young people including university students aged 15-24 years account for more than 50% of all HIV infections worldwide (excluding perinatal cases). Every day, more than 7000 young people are newly infected with HIV throughout the world. This translates to 2.6 million new infections each year among the young people. In Africa alone, an estimated 1.7 million young people are infected annually (WHO/UNAIDS, 2000). According to ROK (2001a), more than 75% of AIDS cases occur in adults aged 20-45 years.

UNAIDS (2001) reports that, due to biological, cultural and economic reasons, girls in Sub-Saharan Africa (SSA) are more vulnerable to HIV infection. More so, young women aged 15-24 years are 2 to 6 times more likely to be infected than are young men of their age.
In Kenya, the knowledge on HIV/AIDS and how it is transmitted is widely known (99%). NACC (2001) reports that 99% of Kenyan adults know that HIV is transmitted through sexual intercourse but over half of single, sexually active men and 14% of women have more than one sexual partner. In addition, many of the colleges and universities today require students to have some HIV/AIDS related coursework in order to graduate (White and Ballard, 2001). However, despite the high level of awareness, HIV/AIDS continues to kill many adults in their productive age groups, resulting in significantly slower growth of the labour force among the population, which is losing well educated people as well as the under educated. This casts doubt on the quality of knowledge gained from awareness campaigns, indicating that the knowledge gained does not translate into lifestyle or relevant behavior modification. This study investigated utilization of VCT services by undergraduate university students.

1.3 Research Questions

1. What is the level of utilization of VCT services among the undergraduate university students?

2. What is the students' level of knowledge regarding VCT services?

3. Which barriers hinder utilization of VCT?
1.4 Null Hypothesis
Knowledge of VCT does not affect utilization of VCT services among university students.

1.5 Objectives of the Study

1.5.1 General Objective
To determine the knowledge, attitude and utilization of VCT services among university students.

1.5.2 Specific Objectives
1. To determine the students’ level of knowledge regarding VCT.
2. To determine the level of utilization of VCT by undergraduate university students.
3. To determine the barriers hindering utilization of VCT.

1.6 Significance of the Study
Sexual activity among the youth in Kenya is high and is associated with biological, social and economic factors such as early puberty, economic hardships, urbanization, schooling and weakening traditional structures that regulated young people’s sexual behaviour. Age group 20-45 years is the most economically productive group of the population, and hence their death results in an important economic burden as education investments have just began to pay off and most people in this age group have just began to bring up their children (NASCOP, 2001).
Due to the fact that there is no cure for HIV/AIDS hope lies on promoting preventive mechanisms to curb the spread. Hence this study aimed at determining the students’ knowledge, barriers hindering utilization and the level of utilization of VCT services. The results of this study will assist the policy makers and the relevant authorities in laying down appropriate measures to increase utilization of VCT services among the students population and hence reduce the rate of HIV infection through fostering positive behaviour change.
2.1 Theoretical Framework
The study was guided by one model and two theories namely health belief model, attribution theory and reasoned action theory to explain knowledge regarding HIV/AIDS and VCT, attitude and utilization of VCT by the undergraduate students.

2.1.1 The Health Belief Model
The model explains peoples' health behavior and compliance. It argues that there are four types of beliefs that influence the likelihood of taking action that is relevant to a given disease or a health condition. These beliefs are: perceived susceptibility to disease, perceived seriousness of the disease, perceived benefits of the preventive behaviour and the perceived barriers to the behavior.

The model therefore proposes that for a person to take preventive action against a disease, the person must first of all feel personally susceptible to the disease. Then the person must feel that the disease would have at least moderately serious consequences, for instance, if I feel susceptible to HIV/AIDS, then I should be more motivated to take action because the threat is so high. One must then feel that preventing the disease or lessening its severity (that is how effective the behaviour is in producing a health benefit) and finally he/she must feel that barriers such as discrimination, stigmatization or fear of positive results do not out weigh the perceived benefits of the proposed health action in order for the preventive health behavior to occur (Rosenstock, 1974).

It follows for example that when the benefits of being tested for HIV out weigh the perceived cost (for instance preventing transmitting the infection to the unborn baby) in the mind of the individual, then the likelihood of going for the test is increased.
Therefore, the highest likelihood of being tested for HIV occurs when the perceived threat of transmitting HIV/AIDS to the unborn is high and the perceived benefits of being tested outweigh the barriers.

2.1.2 The Theory of Attribution

It states that knowledge of historical conditions enables a person to explain why an individual perceives the present situation the way he or she does. That is, the consideration of beliefs about causes and consequences of behaviour based on past experiences. Weiner (1990) explains that people use a set of historical conditions, which he calls attribution to explain or justify their behavior. According to this theory knowledge is necessary to predict behavior, but attributions constitute explanations, excuses or rationales that people give to explain or justify their behavior. He further states that some of these causes of behavior fluctuate over time while others remain relatively constant.

Attribution theory attempts to establish knowledge obtained from various sources as a factor that influences students’ attitudes towards utilization of VCT services.

2.1.3 The Theory of Reasoned Action

It attempts to explain the suggested relationships between attitudes and human behaviour that is under voluntary control. It states that intentions are the most immediate determinants of behavior. Thus, if a person intends to perform a behavior, then it is likely that he/she will do so. If the person does not, then the behavior is unlikely to be performed. Intentions are themselves a function of privately held attitudes towards the particular behavior and socially determined subjective norms that represent a person’s
belief that others think he/she should behave in a certain way. The theory assumes that people are usually rational and they make predictable use of the information available to them.

It predicts that a person is most likely to do something when they feel good about doing it and they feel social pressure to do it. People’s attitude about other people undertaking the behavioral act may be very different from their feelings about themselves performing an act. Subjective norms on the other hand are the person’s perceptions of social influences about performing the behavior. For instance if one feel that most people engage in sex without knowing each others sero status, then, they will perceive that there is a norm that favors such an act.

Subjective norms are affected mainly by pressures from other significant people meaning that if someone feels that any of the people they are motivated to please for example sexual partners may not want them to engage in sex with other multiple partners, then the opinion of these significant others will have an impact on perceptions of social pressures to engage in sexual intercourse with multiple partners.

The model argues that attitudes are determined by the most prominent belief about what would happen as a result of what has been done. It is only the most easily remembered consequences that really affect attitudes. Therefore if a person’s first thought when he/she ‘sees’ someone engage in sex with multiple partners is, sex with many different partners makes someone a ‘conqueror’ then this is the belief that will determine their attitude about sexual abstinence. It does not matter so much that they also belief that sex with multiple partners may expose them to HIV/AIDS. This belief may not occur to their mind
so easily, and they may believe that it is ‘other people’ who will get infected if they engage in unprotected sex with multiple partners.

2.2 Modes of HIV/AIDS Transmission

Human immune deficiency virus (HIV) is the virus that causes AIDS by reducing the ability of the body to defend itself against infection (CDC, 1993). HIV can be transmitted from one person to another in three main ways namely:

Sexual transmission that occurs during unprotected sexual intercourse either through vaginal, oral or anal contact with an infected person. This is the most common mode of HIV transmission (ROK, 1999)

Contact with blood or other body fluids which occurs through transfusion of blood products from an infected person/donor and use of contaminated instruments such as needles, syringes, knives or blades (including instruments used in circumcision for both male and female, skin piercing, scarification, and other traditional practices (ROK, 2000)

From an infected mother to a child in the womb, during labour, at birth or through breastfeeding (ROK, 2000). It has been shown that traces of HIV are present in other body fluids such as tears and saliva. However the concentration of the virus in such body fluids, under normal conditions, may not cause HIV infection (Action Aid, 1999; 1998; UNICEF, 2001; Gregson et al., 2001)

2.3 Signs and Symptoms of HIV/AIDS

Acquired immune deficiency syndrome (AIDS) is a condition in which the person infected with HIV develops signs of repeated prolonged illnesses, resulting from the body’s lowered immune system. People living with HIV/AIDS (PLWHAS) have both
minor and major symptoms affecting all parts of their body. Some of these symptoms include loss of weight, swollen glands, hair loss, fever, cough, chest pain, difficulty in breathing, TB, herpes zoster, meningitis, diarrhoea, difficulty in swallowing, poor appetite, sore mouth, nausea and vomiting, headache, memory loss and confusion, convulsion and coma, boils, rashes, ulcerations, wounds and other opportunistic infections due to bacteria, fungi and viruses (WHO, 1993; ROK, 2003).

2.4 Global and Regional Impact of HIV/AIDS

It was estimated that by the end of the year 2002, 42 million people were living with HIV/AIDS and of these seventy percent (70%) were from sub-Saharan Africa (ROK, 2002b). Worldwide, by the end of the year 2001 there were 2.7 million children under the age of 15 living with HIV/AIDS, 2.4 million of whom were in sub-Sahara Africa (SSA). In 2001, there were 1400 new HIV infections daily and more than 95 % of these were from developing countries (WHO/ UNAIDS, 2002). Globally, in the year 2001 there were 2000 new infections in children under the age of 15 years everyday (WHO/UNAIDS, 2002). Due to biological, cultural and economic reasons, girls in SSA are more vulnerable to infection. Young women aged 15-24 years are 2 to 6 times more likely to be infected with HIV than young men of their age (UNAIDS, 2000; 2001). In countries where 10% of the adult population is infected with HIV, almost 80% of all deaths in adult’s aged 25-45 are associated with AIDS (UNAIDS, 2000; 2001).
2.5 HIV/AIDS in Kenya

Since 1984 some 1.5 million Kenyans have died of AIDS, a number that is estimated to rise to 2.6 million by 2005 (AIDS in Kenya, 2001). By the end of 2000 about 2 million Kenyans were HIV positive. As of June 2000, adult prevalence was 13.5% about one in every eight person with an urban prevalence of 17-18%. Life expectancy in Kenya has declined from 65 years to 46 years due to AIDS (AIDS in Kenya, 2001). 30-40% of babies born to HIV positive mothers are infected and two-thirds of them die before they are two years old (ROK, 2002a). More over, ROK (2001a) reports that more than 75% of AIDS cases occur in adults aged 20-45 years. The peak ages are 25-29 for women and 30-34 years for men. Women aged 15-24 years are more than twice as likely to be infected as are men of the same age (ROK, 1999).

The level of awareness on HIV/AIDS is quite high in Kenya (99%). However, despite the high level of awareness, the prevalence of HIV/AIDS continues to grow and it is generally agreed that the peak age of HIV infection has yet to be reached (NASCOP, 2000; NCPD, 1993; UNAIDS, 2002b; UNICEF, 2001). On the other hand, AIDS in Kenya (2001) further reports that 99% of Kenyan adults are aware that AIDS virus is transmitted through sexual intercourse, but over half of single, sexually active men and 14% of women have more than one sexual partner.

2.6 Disease Progression in HIV/AIDS

There are 3 major phases in the progression of HIV infection in humans. Each phase is divided into 2 stages:
2.6.1 Phase I of HIV Infection

During this phase the HIV is present in the body but laboratory tests cannot detect it for up to 3 months. This phase is divided into 2 stages (ROK, 2000).

2.6.1.1 Entry Stage

During this stage the virus enters the body either through sexual contact, contact with infected blood or other body fluid or from infected mother to a child in the womb, during birth and during breastfeeding. Heterosexual contact is the most common mode of HIV transmission (ROK, 2000).

2.6.1.2 Window Period

During this stage the HIV is multiplying in the body but cannot be detected by laboratory tests. Antibodies against the HIV/AIDS virus take from 1-3 months to develop after the initial infection (ROK, 2002a).

2.6.2 Phase II of HIV Infection

During this phase the HIV in the blood can be detected by laboratory tests (ELISA test). It is the HIV positive stage. Laboratory diagnosis of HIV infection can be divided into four major categories namely antibody detection, Antigen detection, testing for viral nucleic acid (RNA or PRO DNA) and culturing for the virus (ROK, 2002a).

2.6.2.1 The Sero-Conversion Stage

The sero-conversion stage means that the virus is present in large enough quantities to produce an immune response that laboratory tests can detect in blood. It involves
progressive destruction of the CD4 lymphocytes and the rate of CD4 T-cell decline determines the rate of immunodeficiency and subsequent development of HIV related opportunistic infections (ROK, 2002b).

2.6.2.2 The Asymptomatic Seropositive Stage

The viral load in the blood is high but the person infected shows no signs or is not aware of the infection unless tested. This stage may last from two months to several years before one develop the signs and symptoms of AIDS. The duration varies from one person to another. The person looks healthy (Aggleton et al., 1999).

2.6.3 Phase III of HIV Infection

During this phase the virus is in the blood, laboratory tests can detect the antibodies against the virus, and the person shows signs and symptoms of AIDS. There is now evidence that even during this phase, administering antiretroviral therapy can reduce the viral load plasma level to undetectable levels. HIV related symptoms may disappear, the incidence of opportunistic infection is reduced and the quality of life improved (ROK, 2002b). It includes the following stages :-

2.6.3.1 AIDS-Related Illness Stage

During this stage the infected person shows signs and symptoms such as diarrhoea, weight loss, weakness and fatigue, loss of appetite, fever and night sweats but the person is still capable of taking care of himself. The person falls sick frequently but with early
treatment of opportunistic infections one can be able to carry on with their normal duties (ROK, 2002b).

2.6.3.2 The Full Blown AIDS Stage

The person shows more pronounced and more frequent signs/symptoms of AIDS and often becomes too weak to take care of themselves. During this stage one suffers more severe and chronic illnesses like diarrhoea, prolonged fever (intermittent or constant for more than one month) and loss of more than 10% body weight in less than a month. It is the advanced stage of AIDS (ROK, 2003).

2.7 The Role of VCT

Voluntary Counseling and Testing (VCT) is not only an effective prevention mechanism of HIV but also an entry point to care and support. This is because people who are worried about their HIV status and are negative can take steps to remain negative. Those who have their positive status confirmed can take steps to live positively and prolong their productive lives (Fig I).
Fig. 2.1: Conceptual Model Showing VCT as an Entry Point for HIV/AIDS Prevention and Care

Adapted from (ROK, 2002b)
2.8 Components of VCT

Voluntary Counseling and Testing (VCT) means that the person being tested gives informed consent and has voluntarily and freely agreed to be tested. Confidentiality of the result is always maintained and anonymous services are provided (ROK, 2001b).

Voluntary Counseling and Testing also involves professional counseling. This is the confidential dialogue between a client and a care-provider aimed at enabling the client to cope and to take personal decisions related to HIV and AIDS. VCT helps clients decide if they are really ready to take the test and receive results. It helps them understand the results and develop a plan to reduce future risk of infection (ROK, 2003a).

Voluntary Counseling and Testing also includes HIV testing. Simple and rapid tests for same day or same hour results are recommended. Parallel testing with two different types of rapid tests are used to confirm the results (ROK, 2001b).

Currently there are five terms used to describe HIV testing. They include:-

VCT - Voluntary counseling and testing which are done outside the hospital settings (stand-alone VCT centers).

DCT - Diagnostic counseling and testing which is done to client or patients with conditions which the doctor suspects could be HIV related.

RCT - Routine counseling and testing for all people with certain conditions such as STIs, TB, and pregnancy.

MCT - Mandatory counseling and testing is required during blood donation or during medical examinations for employment, insurance, international travel and scholarships award.
Surveillance Testing- It is done where scientists test blood samples that have been drawn for other purposes to get an idea of how many people in a community might be infected. This method is totally anonymous (ROK, 2003a).

2.9 Importance of VCT

According to UNAIDS (2000) over 2.2 million Kenyans are already living with HIV. Many people who are infected with the virus still look healthy and are not aware that they may be spreading. Voluntary Counseling and Testing can help prevent the spread of HIV through reduction of risky behaviour in that testing negative creates a powerful motivation to reduce risky behavior and remain uninfected. Testing positive and getting professional counseling can help clients and patients to avoid passing the virus to anyone else, including loved ones and children. For those who are already married, testing together and the counseling process can increase trust and strengthen the relationship, no matter what the results may be. VCT can also help clients including university students to make informed decisions about marriage, pregnancy and sexual relationships (ROK, 2003a).

2.9.1 Benefits of VCT for Those Who Test Negative

According to ROK (2003) HIV negative result mean that antibodies to HIV were not detected and hence the person is not infected. CDC (1987) reported that seeking VCT services and finding out that one is not infected acts as a strong motivation to reducing risky sexual behaviour. This includes abstinence, condom use and being faithful to one partner. VCT helps in reducing fear, anxiety and hopelessness about past risky behaviour.
The person can be able to plan for the future without much worry concerning their HIV status. For those clients who have symptoms associated with AIDS and yet they test negative they can be able to seek other medical tests inorder to diagnose their illness without fear of HIV infection (ROK, 2003).

2.9.2 Benefits of VCT for Those Who Test Positive

A HIV positive result means that antibodies to HIV can be detected in the blood or body fluids. By learning that one is HIV positive, the person can prevent passing the virus to other people including protecting their loved ones (Higgins et al., 1991). They can also be able to make informed decisions about marriage, pregnancy and sexual relations (NCPD, 1998). VCT is an entry point to care for other services like detection and treatment of TB, prevention and treatment of opportunistic infections, prevention of mother to child infection (MTCI) and family planning (FP) services (Fig.1). Clients can also seek spiritual care early if they so desire. People who are positive can learn about positive living with HIV and AIDS. This involves good nutrition; follow-up medical care, physical exercises, social support and maintaining a sense of optimism. The VCT counselors can help clients to cope with psychological issues related to HIV such as stigma, revealing their HIV status to loved ones, referral for legal assistance and to support groups within the community (ROK, 2002a).
CHAPTER THREE: MATERIALS AND METHODS

3.1 Study Area

The study was conducted in four universities within Nairobi Province and its periphery (Appendix II). Catholic University of East Africa (CUEA) is situated in Karen area within Kibera Division 13 Kilometers South of Nairobi City Center. Catholic University of Eastern Africa was started in September, 1984 as a Catholic Higher institute for Eastern Africa offering postgraduate degree in Theology. Degree programs offered in the University included Bachelor of Education, Bachelor of Arts, Bachelor of Science and Bachelor of Commerce. In the year (1992) the Catholic Higher Institute for Eastern Africa was transformed into a faculty of Theology with the right to award canonical degrees in Theology. This Faculty offers Bachelors degree, postgraduate diplomas, masters and doctorate degrees.

United States International University (USIU) is an international university with four campuses worldwide. Among them are San Diego Campus in southern California in USA that is the headquarters and Nairobi Campus. USIU Nairobi Campus was started in 1970. USIU is located eleven kilometers North of Nairobi City Centre off Thika-Nairobi Highway next to Safari Park Hotel in Kasarani Division. Medical services are offered on campus in the dispensary with students being covered by a health insurance. The university also offers VCT services through an independent organization.

Kenyatta University (KU) is situated in Kasarani Division, Kahawa Location along Thika-Nairobi Highway twenty kilometers north of Nairobi City Centre. The university has three schools offering different courses under different departments. Medical services
are offered on campus in the Health Units which has an out patients wing as well as a sick bay. It also offers VCT services where HIV counseling and testing are done.

Jomo Kenyatta University of Agriculture and Technology (JKUAT) is situated in Thika District Juja Division, 46 Kms to the North-East of Nairobi. It was founded in 1981. The university has three main Faculties namely Faculty of Science, Faculty of Engineering and Faculty of Agriculture. It offers both undergraduate and postgraduate degrees in these three faculties. JKUAT has a well-equipped university hospital, which offers medical services to the students and members of staff. It also offers VCT services at no cost to the entire university as well as to the outsiders.

3.2 Study Population

The study population comprised undergraduate students from the four universities. The number of undergraduate students from each university was as shown in Table 3. I

<table>
<thead>
<tr>
<th>Name of University</th>
<th>No. of undergraduate students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyatta university</td>
<td>6,200</td>
</tr>
<tr>
<td>JKTUAT</td>
<td>4,800</td>
</tr>
<tr>
<td>USIU</td>
<td>1,800</td>
</tr>
<tr>
<td>Catholic university</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Total Number of students</strong></td>
<td><strong>14,800</strong></td>
</tr>
</tbody>
</table>
3.2.1 Inclusion Criteria

Undergraduate students in the named universities who gave informed consent were included in the study.

3.2.2 Exclusion Criteria

Undergraduate students who did not give informed consent to the study.

3.2.3 Ethical Considerations

Permission to carry out the research was sought from the Ethical committee at the Ministry of Education Science and Technology. In each university, further permission was sought from the office of the Vice-Chancellor. Participation in the study was voluntary and willing participants were required to give informed consent. However, participants enrolled in the study were free to withdraw at any time. To ensure anonymity and secure privacy of the participants, the researcher did not require registration numbers or names of the participants. Further safeguards included passwords to control access to data in the computer. The researcher kept all information obtained in strict confidence and only for the purpose of the study.

3.3 Study Design

A cross-sectional survey was carried out using questionnaires which were filled at some point in time and only a representative sample of university students was used. The study also involved focus group discussions with the students.
3.4 Sampling Procedure

The study was carried out in four universities namely Kenyatta, JKUAT, USIU and Catholic University. The researcher employed three sampling techniques namely convenience sampling, probability proportion to size sampling and simple random sampling.

Universities around Nairobi were conveniently selected due to their location. Probability proportion to size sampling was used to determine the number of students to be considered from each university. Simple random sampling was used to select students to participate in the research from each university.

3.5 Sample Size Determination

The sample size was determined using the standard formula as used by Fisher et al., (1998) as shown below

\[ N = \frac{Z^2 pqD}{d^2} \]

\[ Z = \text{Standard normal deviate 1.96 which correspond to 95\% CI} \]

\[ P = \text{proportion of the target population estimated to have desired characteristics} \]

\[ q = 1 - p \]

\[ d = \text{degree of freedom} = \alpha - 0.05 \]

\[ D = \text{design effect (1)} \]

Thus,

\[ N = \frac{1.96^2 \times 0.5 \times 0.5 \times 1}{0.05^2} = 384 \]
However, to cater for attrition a total of 400 respondents were sampled. Probability proportion to sample size as shown below was used to determine the number of students to be considered from each university.

Therefore the sample size from each university were:-

Kenyatta university \[ \left( \frac{6200}{14800} \right) \times 400 = 167 \]

JKUAT \[ \left( \frac{4800}{14800} \right) \times 400 = 130 \]

USIU \[ \left( \frac{1800}{14800} \right) \times 400 = 49 \]

Catholic university \[ \left( \frac{2000}{14800} \right) \times 400 = 54 \]

In all the four universities studied, the study population consisted of first, second, third and forth year students from randomly selected departments.

3.6 Data Collection Methods and Research Tools

3.6.1 Tools

The data was collected using self-administered structured questionnaires and focus group discussions.

3.6.1.1 Self-Administered Questionnaires

Self-administered questionnaires were used to collect data from the study population. A total of 400 questionnaires were administered and analyzed. Use of questionnaires ensured confidentiality which was paramount in this study since sensitive questions about sexuality were being asked (appendix 1).
3.6.1.2 Focus Group Discussions

The main purpose of the focus group discussion was to enhance the quality of the data generated using the questionnaires.

Volunteers for the focus group were randomly selected and recruited after handing over the completed questionnaires. Each focus group consisted of ten participants. A total of eleven focus group discussions were held. Four sessions were held at KU, three sessions at JKUAT, two sessions at USIU and two sessions at CUEA. The principal investigator facilitated the discussion whereby each participant was free to contribute. One of the research assistants took down the notes while the other was an observer. The principal researcher conducted the discussion as per the attached discussion guide (Appendix III).

3.7 Data Analysis

Data was entered, stored and retrieved using the Statistical Package of Social Science (SPSS) software. Chi-square test was used to test for relationships between independent and dependant variables, which included age, year of study, knowledge, practice and attitude. Chi-square test is a strong measure of associations as it compares only two variables.
CHAPTER FOUR: RESULTS

4.1 Social Demographic Profile of the Undergraduate Students

4.1.1 Distribution of Respondents Recruited From Various Universities

The study was carried out in four universities, both private and public within Nairobi Province and its periphery. A total of four hundred students were recruited to fill in the self-administered questionnaires. This consisted of 41.75% from KU, 32.5% from JKUAT, 12.25% from USIU and 13.5% from Catholic university (Table 4.1).

Table 4.1: Number of students recruited from various universities

<table>
<thead>
<tr>
<th>Name of university</th>
<th>No. of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyatta</td>
<td>167</td>
<td>41.75</td>
</tr>
<tr>
<td>JKUAT</td>
<td>130</td>
<td>32.5</td>
</tr>
<tr>
<td>CUEA</td>
<td>49</td>
<td>12.25</td>
</tr>
<tr>
<td>USIU</td>
<td>54</td>
<td>13.5</td>
</tr>
</tbody>
</table>
4.1.2 Distribution of Respondents According to their Age

Seventy four percent (74%) of the students were in the age group 20-23 years with the youngest respondent being 18 years at USIU and Catholic University while the oldest respondent was 42 years from Catholic University. The modal age of respondents from all the universities was 21 years.

4.1.3 Distribution of Respondents According to Their Gender and Marital Status

There were more female respondents (52%) as compared to males (48%). Ninety three percent (93%) of the students were single while five percent (5%) were married and only (2%) were divorced.

4.1.4 Respondents’ Year of Study

Thirty one percent (31%) of the students were in third year of study while (28%) were in second year, (22%) were in first year, while (19%) were in fourth year (figure 4.1).
HIV/AIDS, ninety five percent (95%) of the students stated that it was an incurable disease while five percent (5%) of the students did not respond to the question.

4.3 Respondents’ Knowledge on the Methods of HIV/AIDS Transmission

All the respondents stated that HIV/AIDS could be transmitted through sexual intercourse with an infected person (Fig 4.2). They also identified other methods through which HIV could be transmitted. These methods included blood transfusion (95%), unsterilized needles and other sharp objects (90%) as well as from infected pregnant mother to an unborn child (85%). Only seventy percent (70%) of the students identified breast feeding as a method through which HIV could be transmitted.
4.2 Respondents' knowledge about people living with HIV/AIDS (PLWAS)

Sixty two percent (62%) of the students acknowledged that they knew someone living with AIDS. Eighty eight percent (88%) of the students stated that they knew someone who had died of HIV/AIDS.

According to the findings ninety nine percent (99%) of the respondents had heard of HIV/AIDS. When the respondents were asked to state whether there was cure for
* Multiple responses were allowed

**Fig 4.2: Respondents' knowledge of methods of HIV/AIDS transmission**
4.4 Source of education and information material on VCT

According to the findings, ninety five percent (95%) of the respondents indicated that they had heard of VCT. Eighty six percent (86%) of the students learnt of VCT through the media (print or electronic media). Forty seven percent (47%) of the students also indicated that their main source of information on VCT was from the billboards on the road side while (72%) of the respondents indicated that they learnt of VCT from their friends (Table 4.2).

Table 4.2: Respondents’ Sources of Information on VCT

<table>
<thead>
<tr>
<th>Source</th>
<th>No. of responses</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media (print or electronic media)</td>
<td>345</td>
<td>86</td>
</tr>
<tr>
<td>Friends</td>
<td>289</td>
<td>72</td>
</tr>
<tr>
<td>Billboards</td>
<td>188</td>
<td>47</td>
</tr>
<tr>
<td>Health care workers</td>
<td>56</td>
<td>14</td>
</tr>
</tbody>
</table>

*Multiple responses were allowed
4.5 Services Offered at VCT Centers

When the respondents were asked to identify the services offered at VCT centers, ninety one percent (91%) of the students identified counselling and testing services. Seventy eight percent (78%) of the respondents indicated that counseling was the only service offered at the VCT centre (Table 4.3).

Table 4.3: Services offered at VCT centre

<table>
<thead>
<tr>
<th>Services offered</th>
<th>No. of responses</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counseling</td>
<td>311</td>
<td>78</td>
</tr>
<tr>
<td>Medical and nursing care</td>
<td>33</td>
<td>8</td>
</tr>
<tr>
<td>Referral to specialized health professions</td>
<td>60</td>
<td>15</td>
</tr>
<tr>
<td>Financial support for people with HIV</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Counseling and testing</td>
<td>362</td>
<td>91</td>
</tr>
</tbody>
</table>

*Multiple responses were allowed*
4.6 Respondents Knowledge of Their HIV Status and University of Study

Four percent (4%) of the students from USIU, 6% from KU, 2% from CUEA and 12% from JKUAT indicated that they knew their HIV status while the rest 96% from USIU, 94% from KU, 98% from CUEA and 88% from JKUAT indicated that they did not know their status (Table 4.4). The respondents who acknowledged that they did not know their HIV status were further asked to state whether they would like to know their HIV status. Sixty three percent (63%) did not respond to the question and only (37%) said they would like to know their HIV status.

<table>
<thead>
<tr>
<th>University</th>
<th>Students tested (%)</th>
<th>Students not tested (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USIU</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>KU</td>
<td>6</td>
<td>94</td>
</tr>
<tr>
<td>CUEA</td>
<td>2</td>
<td>98</td>
</tr>
<tr>
<td>JKUAT</td>
<td>12</td>
<td>88</td>
</tr>
</tbody>
</table>

Table 4.4: Relationship between Respondents knowledge of their HIV status and University of study
Eighty nine percent (89%) of the respondents indicated that they knew several VCT centers. Ten percent (10%) of the students indicated that they did not know any VCT center while one percent (1%) of the respondents did not respond. The students were requested to indicate whether they had visited a VCT center. Seventy three percent (73%) of the students admitted that they had not visited a VCT center while the rest (27%) had visited a VCT center. Eight percent (8%) of the students indicated that they had gone for counseling, (18%) for counseling and testing, while (67%) did not respond to the question (Table 4.5).

Table 4.5: Respondents' reasons for visiting VCT center

<table>
<thead>
<tr>
<th>Reason</th>
<th>No. of responses</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counseling</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>Treatment</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Counseling &amp; Testing</td>
<td>70</td>
<td>18</td>
</tr>
<tr>
<td>Requirement for job or sponsorship</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Non responses</td>
<td>269</td>
<td>67</td>
</tr>
</tbody>
</table>
4.8 Perceived Benefits of knowing one’s HIV status

Ninety percent (90%) of the students stated that there were several benefits in knowing one’s HIV status. Nineteen percent (19%) of the students pointed out that by visiting the VCT center, one could be able to know their HIV status and hence adopt positive behaviour change. Eighteen percent (18%) of the students stated that they were able to protect themselves from being infected if negative while those positive could be able to protect themselves from re-infection. Fifteen percent (15%) of the students pointed out that knowing one’s status could help to protect their sexual partners while (16%) pointed out that it could help one to plan for the future (Fig.4.3).
Know ones HIV status
Protect themselves from infection
Plan for future
Avoid MTCT
Influence others to be tested
Protect their partners
Be able to seek for treatment

Perceived benefits of HIV testing

Fig 4.3: Perceived Benefits of HIV testing by respondents
4.9 Barriers Hindering Utilization of VCT by Respondents

This study further sought to establish the barriers hindering utilization of VCT centers by the students. Fifty one percent (51%) of the students indicated that stigmatization was the main barrier hindering utilization of VCT centers. On the other hand, (37%) stated that fear of positive results was the main barrier hindering utilization of VCT services. Five percent (5%) of the students indicated that lack of confidence on the VCT providers. However, three percent (3%) of the students indicated accessibility to VCT centers and the cost of testing (4%) as barriers (Table 4.6).

<table>
<thead>
<tr>
<th>Reason</th>
<th>No. of responses</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigmatization</td>
<td>204</td>
<td>51</td>
</tr>
<tr>
<td>Cost of the test</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Fear of positive result</td>
<td>150</td>
<td>37</td>
</tr>
<tr>
<td>Lack of VCT center</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Lack of confidence on providers</td>
<td>20</td>
<td>5</td>
</tr>
</tbody>
</table>
4.10 Respondents’ Number of Sexual Partners

Fifty three percent (53%) of the students had sexual partners while forty seven percent had no sexual partners. Sixty three percent (63%) of the students did not know the HIV status of their sexual partners. When asked if they intended to visit a VCT center, fifty five percent (55%) of the students said they had intended to visit while forty five percent had no intention to visit a VCT center. Seventy five percent (75%) of the students further stated that they had had other previous sexual partners (Table 4.7).

Table 4.7: Respondents’ number of previous sexual partners

<table>
<thead>
<tr>
<th>No. of sexual partners</th>
<th>No. of responses</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>98</td>
<td>25</td>
</tr>
<tr>
<td>1</td>
<td>140</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>112</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Above 5</td>
<td>18</td>
<td>4</td>
</tr>
</tbody>
</table>
4.11 People with Whom the Respondent Shared HIV/AIDS Results

The study further sought to find out whether those who knew their HIV status shared their results with others. From the findings, sixty five percent (65%) of the students stated that they shared their results while thirty five percent (35%) did not share test results.

Thirty five percent (35%) of the students shared their results with friends, (21%) with sexual partners, (14%) with parents (12%) with brothers/sisters, (10%) with counselors while (8%) did not share their results with anybody (Fig 4.4).
4.12 Reasons for not Sharing HIV Test Results

Fifty percent of the students stated that stigmatization was the main reason they feared sharing their results, while (28%) identified fear of positive results as the main barrier hindering sharing HIV test results (Table 4.8).

Table 4.8: Reasons for not sharing HIV Test results

<table>
<thead>
<tr>
<th>Reason for not sharing</th>
<th>No. of responses</th>
<th>Proportions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigmatization</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>Fear of positive result</td>
<td>44</td>
<td>28</td>
</tr>
<tr>
<td>Lack of confidentiality</td>
<td>35</td>
<td>22</td>
</tr>
</tbody>
</table>

4.13 Respondents Perception of Risk of HIV/AIDS

The study sought to find out the students' perception of the risk of infection with HIV/AIDS. Sixty five percent of the students felt that they were at risk of being infected with HIV/AIDS. They were further requested to give reasons as to why they felt at risk. Fifty two percent of the students felt that they could contract AIDS because they were
sexually active, (18%) were at risk of contracting the disease due to the university environment they lived in while (26%) stated peer influence (Fig 4.5).

Fig. 4.5 Risk perception of contracting HIV/AIDS

4.14 Respondents Attitude towards Educating Students on Importance of Utilizing VCT Services

Ninety four percent (94%) of the students stated that there was need to educate university students on the benefits of utilizing VCT services. Ninety two percent (92%) of the
students expressed the need to establish VCT centers within the universities while the rest (8%) felt that there was no need.

4.15 Measures to Be Taken Inorder to Increase Utilization of VCT by the Students

Forty four percent (44%) of the students felt that there was need to incorporate VCT services in social places like the gym inorder to increase uptake. Twenty nine percent (29%) of the students also felt that there was need for proper training of the service providers (Table 4.9).

Table 4.9: Measures to be taken inorder to increase utilization of VCT by the students.

<table>
<thead>
<tr>
<th>What to be done</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce cost of testing</td>
<td>82</td>
<td>16</td>
</tr>
<tr>
<td>Incorporate VCT in social places</td>
<td>225</td>
<td>44</td>
</tr>
<tr>
<td>Proper training of the counselor</td>
<td>148</td>
<td>29</td>
</tr>
<tr>
<td>Reduce pretest counseling</td>
<td>62</td>
<td>11</td>
</tr>
</tbody>
</table>
4.16 Relationship between Knowledge of VCT and University

Chi-square test indicated that there was significant difference between knowledge of VCT and the institution of study. From the results, students at KU (76%), USIU (70%) and JKUAT (62%) were more knowledgeable about VCT as compared to CUEA (43%) ($\chi^2 = 16.2564$, df=3, $p=0.001$) (Table 4.10).

Table 4.10: Relationship between Knowledge level of VCT and University

<table>
<thead>
<tr>
<th>Name of University</th>
<th>Poor Knowledge level of VCT (%)</th>
<th>Good Knowledge level of VCT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USIU</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>KU</td>
<td>24</td>
<td>76</td>
</tr>
<tr>
<td>CUEA</td>
<td>57</td>
<td>43</td>
</tr>
<tr>
<td>JKUAT</td>
<td>38</td>
<td>62</td>
</tr>
</tbody>
</table>

($\chi^2 = 16.2564$, df=3, $p=0.001$)
4.17 Relationship between Utilization of VCT and University

From the results, 24% of the respondents from USIU, KU 16%, JKUAT 16% and 11% from CUAE utilized VCT services (Table 4.11). However, from the chi-square results there was no significant relationship between utilization of VCT services and the university of study ($\chi^2 = 3.894, df=3, p=0.2731$).

Table 4.11: Relationship between Utilization of VCT and University

<table>
<thead>
<tr>
<th>Name of University</th>
<th>Percentage Students not utilizing VCT Services</th>
<th>Percentage Students utilizing VCT Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>USIU</td>
<td>84</td>
<td>16</td>
</tr>
<tr>
<td>KU</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>CUEA</td>
<td>89</td>
<td>11</td>
</tr>
<tr>
<td>JKUAT</td>
<td>84</td>
<td>16</td>
</tr>
</tbody>
</table>

($\chi^2 = 3.894, df=3, p=0.2731$)
4.18 Relationship Between Knowledge of VCT and The Year of Study

Knowledge level of VCT scored (66%) among the first year students, (68%) among the second year, (61%) among the third year and (72%) among fourth years. However the relationship between the year of study and the knowledge level was not significant ($\chi^2 = 2.3226, df=3, p=0.5080$) (Table 4.12).

Table 4.12: Relationship between Knowledge of VCT and the year of study

<table>
<thead>
<tr>
<th>Year of study</th>
<th>Poor Knowledge of VCT (%)</th>
<th>Good Knowledge of VCT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>34</td>
<td>66</td>
</tr>
<tr>
<td>Second</td>
<td>32</td>
<td>68</td>
</tr>
<tr>
<td>Third</td>
<td>39</td>
<td>61</td>
</tr>
<tr>
<td>Fourth</td>
<td>28</td>
<td>72</td>
</tr>
</tbody>
</table>

($\chi^2 = 2.3226, df=3, p=0.5080$)
4.19 Relationship between Utilization of VCT and Year of Study

From the results, there was a significant relationship between utilization of VCT and the year of study \( (\chi^2 = 9.1426, \text{df}=3, p=0.0274) \). The fourth years were utilizing VCT services more (30%) as compared to first (14%), second year (17%) and third year students (11%) (Table 4.13).

Table 4.13: Utilization of VCT and the year of study

<table>
<thead>
<tr>
<th>Year of study</th>
<th>Percentage Students not utilizing VCT Services</th>
<th>Percentage Students utilizing VCT Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>86</td>
<td>14</td>
</tr>
<tr>
<td>Second</td>
<td>83</td>
<td>17</td>
</tr>
<tr>
<td>Third</td>
<td>89</td>
<td>11</td>
</tr>
<tr>
<td>Fourth</td>
<td>70</td>
<td>30</td>
</tr>
</tbody>
</table>
4.20 Relationship between Knowledge of VCT and Marital Status

There was no significant statistical association between the knowledge of VCT and respondents’ marital status ($\chi^2 = 3.7717, df=2, p=0.1517$) (Table 4.14).

Table 4.14: Knowledge of VCT and marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Poor Knowledge of VCT (%)</th>
<th>Good Knowledge of VCT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>33</td>
<td>67</td>
</tr>
<tr>
<td>Married</td>
<td>57</td>
<td>43</td>
</tr>
<tr>
<td>Divorced</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

($\chi^2 = 3.7717, df=2, p=0.1517$)

4.21 Relationship between Utilization of VCT and Marital Status

There was no significant relationship between utilization of VCT and marital status ($\chi^2 = 1.8257, df=2, p=0.4013$) (Table 4.15).
<table>
<thead>
<tr>
<th>Marital status</th>
<th>Percentage Students not utilizing VCT Services</th>
<th>Percentage Students utilizing VCT Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>84</td>
<td>16</td>
</tr>
<tr>
<td>Married</td>
<td>71</td>
<td>29</td>
</tr>
<tr>
<td>Divorced</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

\( (\chi^2 = 1.8257, df=2, p=0.4013) \)
4.22.1 Focus Group Discussions

All the discussants identified heterosexual contact as the most common method through which HIV/AIDS was transmitted. However, only a few of the discussants identified breastfeeding, kissing and homosexual contact as methods through which HIV could be transmitted.

Media, billboards and friends were the main sources of information on HIV/AIDS and VCT. Most of the discussants felt that they could not share their HIV test results with their parents.

Concerning the services offered at the VCT centres, the discussants identified HIV testing as the main service offered. However, most of the discussants admitted that they had not gone for HIV test due to fear of being stigmatized as well as the fear of test results. Those who had gone for HIV testing stated that they had not gone with their sexual partners. When the discussants were asked whether there was need for one to be tested they differed in their views with some feeling that the test could not give the correct results due to the window period. Others felt that since most of the people could not afford to buy antiretroviral drugs, going for the test was meaningless, while others felt that since there is no cure for the disease, knowing their status could only increase their anxiety and fear of death.

4.22.2 Suggestions to Increase the Uptake of VCT

The discussants identified various measures to be taken inorder to increase the uptake of VCT by the students. The students pointed out that there was need to promote youth friendly VCT centers. For instance, they felt that there was need to incorporate VCT
centre in other social places like gym in order to eliminate the stigma associated with VCT.

They also pointed out the need to intensify campaigns on the need to know ones HIV status. Sex education needs to be given stage wise to the adolescents depending on their information requirements based on their age. Since parents shy away to discuss sexuality issues with their children there is need to equip teachers with proper training on reproductive health so that they may authoritatively and accurately guide the youth right from puberty. Though media plays an important role in disseminating information, it also offers misleading information by promoting sexual immorality through its programme and hence there was need to allow only the relevant productive material to reach the students. There was also need to encourage the students to postpone their sexual activity through abstinence in order to protect them from being infected. On the other hand, there was need to promote condom use for those who cannot abstain.
CHAPTER FIVE: DISCUSSION

5.1 The Students Knowledge level on HIV/AIDS and VCT

HIV/AIDS is an incurable disease and hence it is the single most important health challenge that our country has faced during its post independence period. This study found out that all the students knew the fact that HIV/AIDS was an incurable disease. These findings were consistent with those of Onyango and Moloo (1991) whose study reported high level of awareness on HIV/AIDS in Kenya (83%) of respondents as well as reports from NASCOP (2000); NCPD (1993); UNAIDS (2002b); UNICEF (2001) which reported the high level of AIDS awareness (99%) in Kenya. The high level of awareness on HIV/AIDS can be attributed to the fact that many of the colleges and universities today require students to have some HIV/AIDS related coursework in order to graduate (White and Ballard, 2001). It can also be due to the fact that most of the universities have currently started to offer VCT services in their health facilities.

There was no data to show the prevalence of HIV/AIDS among university students in Kenya. However, the students stated that they knew someone in the society who had either died of HIV/AIDS or someone living with HIV/AIDS. ROK (2001a) reports that over 75% of AIDS cases occur in the age group 20-45 years. In a study at the University of Nairobi to determine the HIV/AIDS prevalence rate, it was estimated that on average, about 8-12 deaths were reported among the university community members every month. Whereas the cause of these deaths had not been confirmed, most were suspected to be AIDS related. Compared to previous years, these deaths were on the increase. For example, in 1991, the number of deaths in the university would average between 0 - 3 a month, but these rose to an average of between 4 to 6 deaths a month among both
students and staff in the year 1999 (Bollag, 2000). This was an indication that HIV/AIDS was on the increase even in the institutes of higher learning and hence there is need to promote preventive mechanisms to curb the spread.

The students pointed out that their main source of education and information regarding VCT was the media (both electronic and print media) and friends. These results suggest that the media played a vital role in disseminating information especially among the youth. The fact that the methods proved to be the leading source of information on VCT suggests that they needed to be strengthened in order to increase utilization of VCT by the students and the youth at large. The fact that 72% of the students learnt of VCT from their friends suggests that the students feel free to discuss sexuality issues among themselves. These further suggest that there is need to equip students with quality information regarding HIV/AIDS and VCT for them to be able to make informed decisions. ROK (1999) reported that information, education and communication (IEC) were the most powerful weapons against HIV/AIDS.

All the students pointed out that HIV/AIDS was sexually transmitted. This was consistent with AIDS in Kenya (2001), which stated that heterosexual contact was the most common mode of HIV transmission. However, only 70% of the students reported breast-feeding as a method through which HIV/AIDS could be transmitted. These results suggest that some students were not aware of breastfeeding as a method through which HIV/AIDS could be transmitted. There is therefore need to intensify information and education regarding how HIV could be spread through breastfeeding. This was crucial because the undergraduate students are in the childbearing age (15-50 years) and hence
they need to be aware of how they can avoid mother-to-child transmission through avoiding breastfeeding for HIV positive mothers.

There was a significant difference in the knowledge level on HIV/AIDS issues across the four universities. The knowledge level on HIV/AIDS issues and VCT was widespread among the students at KU (76%), JKUAT (62%) and USIU (70%) compared to the knowledge level among students in CUEA (43%) ($\chi^2=16.2564$, df=3, p=0.001). The high knowledge level in the three universities (KU, JKUAT and USIU) could be attributed to the fact that they had started HIV-related study which were compulsory among all the students and were offering VCT services within the universities as compared to CUEA where there were no such courses or services.

These results suggest that there is need to intensify education regarding HIV/AIDS and VCT. More so, there is need to start compulsory courses on HIV/AIDS and VCT in all the universities.

5.2 Level of Utilization of VCT by Undergraduate Students.

Despite the high level of awareness on the basic issues concerning HIV/AIDS and VCT (99%), the level of utilization of VCT was low among the students USIU (4%), KU (6%), CUEA (2%), JKUAT (12%). There was a significant relationship between utilization of VCT and the year of study ($\chi^2=9.1426$, df=3, p=0.0274). More fourth year students (30%) were utilizing VCT services as compared to the other students. This could be due to the fact that the fourth year students were more mature and were more likely to engage in serious relationships as compared to the other students. The students felt that in order to increase utilization of the VCT services there was need to start VCT centers in all the
universities. They further pointed out that these VCT centers should be youth friendly and should be linked with other support groups in order to provide support for those who test HIV positive as well as help to reduce stigma associated with being HIV positive.

The students felt that there were several benefits gained through knowing their HIV status. NASCOP (2001a) reported that when one gets to know their HIV status early, they can be able to control the viral load through avoiding re-infection as well as early therapy with ARVS. For those who test negative they can be able to foster positive behavior change to avoid infection. Despite the fact that the students were aware of the benefits of being tested, only a few had taken a HIV test. For those who had taken the test, they had done so without informing their sexual partners. In a similar study to determine the utilization level of VCT in Ghana, Gostin (1990) found out that despite the fact that most people were able to point out the benefits of being tested, very few people had take the HIV test.

Counseling and testing were the major services offered at VCT centers as pointed out by the students. These results suggest that the students were aware of the services offered at VCT centres. In a similar study to determine the factors influencing utilization of VCT among the youth, eighty seven percent (87%) of the respondents were able to identify the services offered at VCT (Oyore, 2003).

From the findings of this study, the students shared their HIV test results with their friends and rarely with their parents. This suggests that students shy away from discussing issues regarding their sexuality with their parents due to cultural beliefs or taboos. The students were hence left to learn these issues from the media, friends or teachers.
5.3 Barriers Hindering Utilization of VCT

There were several barriers that reduced the uptake of VCT services as pointed out by the students. Since there is still no cure for HIV/AIDS, most students felt that being HIV positive means death. For instance, in a qualitative evaluation of VCT among young people in Rwanda, some participants referred to HIV positive status as a “red card that was designated with a hoe and pick axe” and they believed that death was near (Allen et al., 1992). These sentiments illustrate the negative impact of tactics rather than the necessary message of hope.

The students also pointed out the fear of being stigmatized as one of the drawbacks hindering utilization of VCT as well as hindering sharing of the test results. Allen et al., (1992) reported that most people feared sharing their results due to fear of being stigmatized, abandoned or abused once friends and family members learnt that they were HIV positive. Gostin (1990) stated that discrimination deters people from being tested for HIV/AIDS. This discrimination could be in form of denial for insurance, employment or scholarships. This was further supported at the discussion groups when the students felt that they could only go for VCT if it was a requirement for employment or scholarship. Others felt that they had better lose these chances other that being tested. This suggests that most people do not take up the HIV test due to fear of stigmatization and hence risk transmitting the virus to others. For those who go for the test and are confirmed positive, they may spread the virus knowingly inorder to gain company and avoid being stigmatized alone.

Fifty two percent (52%) of the students felt that they were at risk of contracting HIV/AIDS because they were sexually active. Weistein (1994) reported that lack of
Perception of risk and the illusion of vulnerability can be a significant obstacle to change especially where critical health issues are concerned. The illusion of vulnerability prevents people from making realistic estimates of personal risk that in turn acts against the adoption of preventive behaviour. This was illustrated in a study of Oxford university undergraduate students by (Doll and Kennedy, (1994)). They found out that the students estimated their own personal risk of HIV/AIDS infection to be less than others of their age and sex. This was also true for individuals who were engaging in activities associated with greater risk for HIV/AIDS, such as unprotected intercourse with bisexual partners and prostitutes. From this study, 96% of the students stated that they did not know neither knew their HIV status nor the status of their sexual partner. However most of the students had multiple sexual partners. This suggests that the students were sexually active and were at a greater risk of contracting HIV/AIDS. From the discussion groups, this fact was further strengthened when the discussants pointed out that despite the fact that they were sexually active, they were poor users of contraceptive measures like condoms to protect them from being infected with HIV/AIDS and hence this results in the high rate of infection, pregnancies and abortions among the university students. In a study to determine knowledge, attitude and practice on contraceptives among undergraduate students in Nairobi University, the mean age at first sexual intercourse was 14.2 years for males and 18.2 years for females. Most male students start their sexual activity earlier than female students and remain more sexually active (Wanga, 2001).
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

- The knowledge level of HIV/AIDS and VCT among university undergraduate students was 99% and 95% respectively.

- Despite the high level of awareness regarding the services offered at VCT centers (91%), the utilization level of VCT services among the undergraduate students was low (USIU (4%), KU (6%), CUEA (2%), JKUAT (12%)).

- Fear of HIV test results (37%), stigmatization and fear of being discriminated against (51%) were the main barriers hindering utilization of VCT centers.
6.2 RECOMMENDATIONS

- Both the government and non-governmental actors should consult and fully involve the students/youth at large in policy formulation and designing of HIV/AIDS interventions.

- Youth-friendly VCT centers should be established in all the universities and should be linked to support services and support groups following testing. These support groups should be youth friendly and should also involve religious groups, which advocate for a holistic approach to AIDS prevention and care.

- Both the government and non-governmental/civil society actors need to invest more resources in enhancing public education through electronic and print media inorder to empower students and the youth at large with important information regarding VCT inorder to increase the uptake.
REFERENCES


**National AIDS/STDS Control Programme of Kenya** (2000). AIDS case reporting system and sentinel surveillance system, Nairobi, NASCOP.


I am Mary Njoki Wachira a student at Kenyatta University pursuing a masters’ course in Public Health and Epidemiology. The purpose of this study is to determine Knowledge, Attitude and Practice associated with the use of VCT services among University students. This can be attained if you are honest with the information you give which will be confidential and used for the purpose of this study only.

**DEMOGRAPHIC DATA.**

(Tick appropriately)

1. **Sex**
   - 1. Female [ ]
   - 2. male [ ]

2. **Age in years**

3. **Marital status**
   - 1. Single [ ]
   - 2. Married [ ]
   - 3. Divorced [ ]
   - 4. others (specify)

4. **Year of study**
   - 1. First [ ]
   - 2. Second [ ]
   - 3. Third [ ]
   - 4. Fourth [ ]

**KNOWLEDGE ASSESSMENT (TICK APPROPRIATELY)**

5. Have you ever heard of HIV/AIDS
   - 1. Yes[ ]
   - 2. No [ ]

6. In your view, how is HIV/AIDS transmitted (tick appropriately)

   - Sexual intercourse [ ]
   - Blood transfusion [ ]
   - Contaminated needles picks and other sharp objects[ ]
   - Mother to child during birth [ ]
   - Breast feeding [ ]
   - During delivery[ ]
   - Others (specify)
7. In your own view is there cure for HIV/AIDS? 1. Yes ( ) 2. No ( )

8. Do you know anyone 'Living with HIV virus' 1. Yes ( ) 2. No ( )

9. Do you know anyone who has died of HIV/AIDS? 1. Yes ( ) 2. No ( )

10. Have you ever heard of VCT? 1. Yes ( ) 2. No ( )

11. If Yes, how did you come to hear of it?

   From media (specify)

   Friends ( )

   Billboards ( )

   Health care workers

   Others (specify)

12. Which services are offered at VCT?

   Counseling ( )

   Medical and nursing care ( )

   Referral to specialized health professionals ( )

   Financial support ( )

   testing ( )

   Others

13. Do you know your HIV status? 1. Yes ( ) 2. No ( )

14. If No would you like to know your status? 1. Yes ( ) 2. No ( )

15. Do you know of any VCT Centre(s)? 1. Yes ( ) 2. No ( )
PRACTICE (TICK APPROPRIATELY)

16. Have you ever visited VCT Centre Yes ( ) No ( )

17. If Yes why had you gone there

  For counseling ( )
  To be treated ( )
  As a referral ( )
  For counseling and testing ( )
  As a requirement for sponsorship/scholarship ( )
  Others (specify)

18. Is there any benefits that one gain from knowing his/her HIV status? 1. Yes ( ) 2. No ( )

19. If Yes, which benefits?

  Know your status ( )
  Protect yourself from being infected ( )
  Be able to plan for future ( )
  Avoid mother to child infection ( )
  Be able to influence others positively ( )
  Seek treatment ( )
  Protect your partner ( )
  others ( )

20. Which barriers prevent you from visiting a VCT?

  Stigmatization ( )
  Cost of the test ( )
  Fear of positive result ( )
21. Do you have a current girlfriend(s) / boyfriend(s)?
   1. Yes ( ) 2. No ( )

22. If yes, do you know each other's status? Yes ( ) No ( )

23. If No, do you intend to visit VCT centre? Yes ( ) No ( )

24. How many previous girlfriend(s) / boyfriend(s)? ( )

25. Do you share your HIV status results with anyone? Yes ( ) No ( )

26. If Yes who do you share with?
   - Friend( )
   - Parent( )
   - Girlfriend/boyfriend( )
   - Counselor( )
   - Brother( )
   - Sister( )
   - Others (specify) ( )

27. If No why?
   - Stigmatization ( )
   - Fear of positive result ( )
   - Lack of confidentiality of service provider ( )
   - Others (specify)
ATTITUDE (TICK APPROPRIATELY)

28. In your own view as a student do you feel at risk of being infected with HIV?
1. Yes ( ) 2. No ( )

29. If yes why
- Sexually active ( )
- Lack of money ( )
- Peer influence ( )
- Interaction freedom ( )
- Others (specify) O

30. Do you think there is any need to educate University students on the importance of visiting VCT centres?
1. Yes ( ) 2. No ( )

31. What do you think need to be done in order to increase the number of students visiting VCT centres?
- Reduce cost of testing ( )
- Incorporate VCT centers in social places ( )
- Proper training of the councilors ( )
- Reduce pre test counseling ( )
- Others (specify)

32. Do you think there is need to establish VCT centres within the Universities?
1. yes ( ) 2. no ( )
My name is Mary Njoki and my colleagues are Nancy and Jane. Please feel free to participate in this discussion. All the information will be treated with confidence and only used for the purpose of this study.

Then the researcher facilitated the discussion as per the guidelines below.

1. Have you ever been to a VCT center?
2. Which barriers hinder you from going to a VCT center for testing?
3. Do you know any VCT center?
4. Do you think there is any need to be tested? If so which are the benefits?
5. Do you discuss the issue of HIV/AIDS with your sexual partner?
6. Would you go for HIV testing alone or with your partner?
7. Where do you get information regarding HIV/AIDS and VCT?
8. How is HIV/AIDS transmitted?
9. What do you think need to be done to increase the uptake of VCT?
10. As a student do you feel at risk of being infected with HIV/AIDS and why?