

**PSYCHOSOCIAL AND DEMOGRAPHIC FACTORS AFFECTING UTILIZATION OF
VOLUNTARY COUNSELING AND TESTING SERVICES AMONG SECONDARY
SCHOOL TEACHERS IN NYANDO DISTRICT, KENYA**

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

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To my dear parents Mr. Joseph Pius Owiti and Mrs. Dina Auma Owiti.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS-Acquired Immune-Deficiency Syndrome

AMREF-African Medical and Research Foundation

ART-Anti-Retroviral Therapy

CBO-Community Based Organization

CHW-Community Health worker

EFA-Education For All

FBO-Faith Based Organization

FGD-Focus Group Discussion

FHI -Family Health International

GDS-German Development Service

GNAT-Ghana National Association of Teachers

GOK-Government of Kenya

HIV-Human Immunodeficiency Virus

ILO-International Labor Organization

IPAR-Institute of Policy Analysis and Research

KACE-Kenya Advanced Certificate of Education

KAP-Knowledge, Attitude and Practice

KCSE-Kenya Certificate of Secondary Education

KDHS-Kenya Demographic and Health Survey

KEMRI-Kenya Medical Research Institute

MDG-Millennium Development Goals

MOH-Ministry of Health

NACC-National Aids Control Council

NASCOP-National AIDS and STD Control Program

PEPFAR- (US) President's Emergency Plan For AIDS Relief

PLWHA-People Living With HIV/AIDS

PMTCT-Prevention of Mother to Child Transmission

PSI-Population Services International

ROK-Republic of Kenya

SPSS-Statistical Package for Social Scientists

TB-Tuberculosis

TEWU-Teachers and Educational Workers Union

TSC-Teachers Service Commission

UN-United Nations

UNAIDS-Joint United Nations Program on HIV/AIDS

UNDP-United Nation Development Program

URTI-Urinary Tract Infection

USAID-United States Agency for International Development

VCT-Voluntary Counseling and Testing

WHO-World Health Organization

ABSTRACT

HIV/AIDS continues to be a source of concern worldwide and more so in the sub-Saharan Africa region. Kenya is one of the countries with a high rate of HIV/AIDS prevalence estimated at 5.1%. About one million people in Kenya are estimated to live with HIV/AIDS but few know their status hence spreading further HIV. While most sectors of the society have been affected, one sector that has not received adequate focus and attention is education. The high mortality, morbidity and absenteeism of Kenya's teachers arising from HIV/AIDS are a combination of factors that has caused havoc in the Kenya's education sector and resulted in a decline in the quality of education. It is estimated that death rates among teachers in Kenya could be as high as six per day largely attributed to HIV/AIDS. While VCT has been suggested as a plausible commitment towards HIV/AIDS prevention, only 20% of teachers in Kenya have gone for VCT. This descriptive cross-sectional study therefore aimed at investigating the psychosocial and demographic factors affecting the utilization of VCT services among secondary school teachers in Nyando District, Kenya. The findings of this study would be important in guiding policy related to scaling up and promotion of VCT services among the teachers. Nyando District had 73 secondary schools with 753 teachers; 473 males and 280 females. Stratified sampling was used to determine the number of schools per administrative division to be included in the study. Simple random sampling was then used to select schools in each division. All consenting teachers in the 26 selected schools were eligible to participate in the study. A total of 255 secondary school teachers took part in the study. The methods of data collection used were administration of questionnaires and focus group discussions (FGDs). Cross tabulation was used to show relationships between the independent and dependent variables, and chi-square was used to test for existence of relationships between the variables, $p < 0.05$ was considered statistically significant. Information from in-depth discussions was analyzed manually using qualitative methods. The data was presented descriptively and through the use of frequency tables and bar graphs. The study found significant relationships between utilization of VCT services and gender ($p=0.003$) and age ($p=0.004$), but not level of education, marital status, religious affiliation or area of residence. The study also found a positive association between utilization of VCT services, and perception of the importance of VCT as an HIV/AIDS control strategy ($p=0.039$). Majority (77%) of the respondents expressed willingness to utilize VCT services in the near future indicating a positive attitude towards future utilization of VCT services. Spousal approval of VCT utilization emerged as the most significant social factor affecting utilization of VCT services ($p=0.019$). The study among other recommendations, recommended that MOH and other VCT service providers immediately step up VCT promotion programs that will mainly focus on male and older members of the study population. They should also initiate promotion of couple HIV counseling and testing among them.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter covers the background to the study, statement of the problem, objectives of the study, research questions, justification of the study, the null hypothesis, significance of the study, limitations of the study, assumptions of the study, theoretical framework, conceptual framework, and operational definition of terms.

1.1 Background to the study

1.1.1 The HIV/AIDS pandemic

HIV/AIDS cases were first brought to notice in the USA in 1981 and in Uganda in 1982 (Willis, 2005). Over the last two decades, HIV/AIDS has become the world's most devastating epidemic particularly in developing countries. As at the end of the year 2007 more than 25 million people worldwide had died as a result of AIDS-related illnesses and about 33 million people were infected with HIV (UNAIDS/WHO, 2008). Most new infections occurred among sexually active adults in the 15-49 years age group. Sub-Saharan Africa was the region with the biggest burden, constituting of 70% of PLWHA worldwide (UNAIDS/WHO, 2005). The region had an adult (15-49 years) prevalence of 5% resulting in about 1.9 million new infections and 1.5 million deaths annually (UNAIDS/WHO, 2008). Kenya was one of the countries in the region most affected by the HIV/AIDS scourge, with an estimated prevalence among adults (15-49 years) of 5.1% leading to approximately 55,000 new AIDS cases and at least 85,000 deaths annually (NACC, 2007). About one million Kenyans were living with HIV/AIDS, but few knew their HIV status, hence spreading further HIV.

While most sectors of the society have been affected by HIV/AIDS, one sector that had not received adequate focus and attention is education. Education sectors in several countries in the world especially in the sub-Saharan Africa region, have witnessed severe loss of teachers to HIV/AIDS. Zambia, Central African Republic, Botswana and South Africa are some of the countries which had been most affected (Kpevai, 2004). In Zambia for instance, teacher mortality was 70% higher than in the general population, largely attributed to HIV/AIDS (Grassly et al., 2003). In South Africa, about 12% of teachers were living with HIV/AIDS (PSI, 2008). In Kenya, it was estimated that death rates among teachers could be as high as six per day with HIV/AIDS thought to be the major contributor to teacher mortality (Barimbui and Miller, 2008).

1.1.2 Voluntary Counseling and Testing (VCT)

VCT is a process by which an individual undergoes counseling to enable him/her to make informed decision about being tested for HIV, assess his/her personal risk for HIV and develop a risk reduction strategy (Stringer et al., 2003). VCT is acknowledged in the international arena as an efficacious and pivotal strategy for both HIV/AIDS prevention and care. It is also an important point of entry for care and support for PLWHA. The rationale for VCT can be summarized by the following four points: Firstly, VCT is more than just drawing blood and offering a few counseling sessions. It is a vital point of entry into other HIV/AIDS services including PMTCT, prevention and clinical management of HIV-related illnesses, TB control, and psychosocial and legal support. Secondly, there is demand for VCT (that is, people want to know their HIV sero-status) or demand can be created when comprehensive services are made available. Thirdly, VCT provides benefits for those who test negative as well as those who test

positive. VCT alleviates anxiety, increases clients' perception to their vulnerability to HIV, promotes behavioral change, facilitates early referral for care and support including access to ART and assists in reduction of stigma in the community. Lastly, VCT offers a holistic approach that addresses HIV/AIDS in the broader context of peoples' lives including the context of poverty and its relationship to risk practice (FHI, 2002; Mariano, 2005).

VCT was adopted as a priority by the Kenya parliament for implementation in 1997. The National Guideline for VCT document was published in 2001 to ensure standardized, good quality services in all the sites, along the following lines (UNAIDS, 2002a): Making good quality VCT available and accessible; ensuring informed consent and confidentiality in clinical case research, the donation of blood, blood products or organs and other situations where an individual's identity will be linked to his/her HIV test results; strengthening quality assurance and safeguards on potential abuse before licensing commercial HIV home collection and home self-tests; encouraging community involvement in sentinel surveillance and epidemiological surveys; and discouraging mandatory testing.

The psychosocial conceptualization and representation of HIV and HIV testing have had an influence on VCT uptake rates (Stringer et al., 2003). The association of HIV with immediate death and discrimination, belief that a person is outside the category of risk and lack of awareness or knowledge about HIV rates in ones' community are some of the factors that have been alleged to deter people from testing for HIV. Other factors include 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 and lack of knowledge about available treatment.

1.2 Statement of the problem

The high rates of mortality, morbidity, and absenteeism of teachers as a result of HIV/AIDS are a combination of factors that have caused havoc within Kenya's education sector and resulted in a decline in the quality of education. The Kenya's teaching profession consisting of an estimated 240,000 teachers included about 10,000 teachers who were HIV positive (Barimbui and Miller, 2008). It was estimated that death rates among the teachers could be as high as six per day largely attributed to HIV/AIDS. In addition, the Kenyan government had been losing about 260 million Kenya shillings annually due to salaries paid but days lost to HIV/AIDS-related sick leaves taken by secondary school teachers (ROK and NACC, 2006). During such sick leaves, students lost learning time, classes doubled up to be covered by one teacher and the quality of teaching and learning was compromised. The situation was worsened by the increase in enrolment associated with the subsidized secondary school education started by the government at the beginning of 2008. Indeed, the situation demanded an appropriate intervention measure that would reverse the trend.

VCT is a key strategy in the prevention and control of HIV/AIDS. However, the utilization of VCT was still low among teachers in Kenya. A study done by Kiragu et al. (2006) in selected districts (Thika, Kwale, Kiambu and Kilifi) in Kenya found that only 20% of the teachers had gone for VCT. The specific problem for this study therefore was the low utilization of VCT services by Kenya's teachers which led to high HIV/AIDS-related mortality and morbidity rates

among them. This study focused on finding out the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers in Nyando District, Kenya.

1.3 Objectives of the study

1.3.1 General objective

The general objective of the study was to investigate the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers in Nyando District, Kenya.

1.3.2 Specific objectives

The specific objectives of the study were:

1. To establish the demographic factors affecting utilization of VCT services among secondary school teachers in Nyando District.
2. To establish the psychological factors affecting utilization of VCT services among secondary school teachers in Nyando District.
3. To establish the social factors affecting utilization of VCT services among secondary school teachers in Nyando District.
4. To identify the methods of VCT service delivery secondary school teachers in Nyando District would prefer to be incorporated in the provision of VCT services.

1.4 Research questions

The research questions of the study were:

1. What demographic factors affect utilization of VCT services among secondary school teachers in Nyando District?
2. What psychological factors affect utilization of VCT services among secondary school teachers in Nyando District?
3. What social factors affect utilization of VCT services among secondary school teachers in Nyando District?
4. Which methods of VCT service delivery would secondary school teachers in Nyando District prefer to be incorporated in the provision of VCT services?

1.5 Justification of the study

The need for urgent measures to address the high morbidity and mortality rates among teachers in Kenya arising from HIV/AIDS could not be overemphasized. According to Barimbui and Miller (2008), out of the 240,000 teachers in Kenya, 10,000 were estimated to be HIV positive. In addition, death rates among the Kenyan teachers could be as high as six per day largely attributed to HIV/AIDS. One suggested intervention to prevent the spread of the disease was VCT. VCT benefits those who test HIV negative as well as those who test positive; individuals who test HIV negative are motivated to guard their sero-status, while those who test positive are counseled on how to protect their sexual partners from infection and can be referred for ART where appropriate. Stepping up utilization of VCT services among teachers in Kenya was therefore crucial in mitigating the effects of HIV/AIDS among them. The outcome of this study would be important in guiding policy related to scaling up and promotion of VCT services among secondary school teachers in Kenya. In addition, the findings of the study would guide VCT counselors in putting in place mechanisms of addressing possible psychosocial and

demographic barriers to utilization of VCT services among teachers. The study would also reveal the methods of VCT service delivery preferred by the secondary school teachers. It was envisaged that implementation of the recommendations of the study would lead to increased VCT uptake rates among not only secondary school teachers but also other vulnerable groups.

1.6 Null hypothesis

The null hypothesis of the study was:

There is no relationship between psychosocial and demographic factors, and utilization of VCT services among secondary school teachers in Nyando District, Kenya.

1.7 Significance of the study

The findings of this study would be important in the following ways:

- Guiding policy makers at the Ministries of Health and Education in formulation of policies related to provision of VCT services to secondary school teachers;
- Identifying the psychosocial and demographic factors that are important in the process of scaling up and promoting VCT services among secondary school teachers. This information would be important to VCT service providers;
- Providing information to VCT counselors on the psychosocial and demographic factors that are important in VCT service delivery among secondary school teachers;
- Identifying to VCT service providers methods of VCT service delivery preferred by secondary school teachers and,
- Adding theoretical knowledge, for future researchers on the role of psychosocial and demographic factors in the utilization of VCT services.

1.8 Limitations of the study

The study was limited to finding out the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers teaching in Nyando District, Kenya. The findings of this study therefore would neither be generalized to teachers in other levels of education like early childhood, primary schools and tertiary institutions, nor secondary school teachers who were teaching outside Nyando District at the time of the study. In addition, the study relied solely on self-reporting. Due to the stigma associated with HIV/AIDS there was a likelihood of respondents to give socially desirable responses that might not have reflected their true feelings or experiences. Data inaccuracy that could result from this was minimized by encouraging the respondents to be as honest as possible and assuring them of maximum confidentiality with all the information they would give in the questionnaire and during focus group discussions.

1.9 Assumptions of the study

The study assumed that the information given by the respondents during the study were their true feelings, perceptions and experiences. The study also assumed that utilization of VCT services was mainly dependent on demographic, psychological and social factors.

1.10 Theoretical framework

The theoretical framework was based on the social cognitive theory credited to Bandura (2001). The theory posits that cognitive and environmental factors interact to determine behavior. Cognitive or psychological factors have to do with a person's state of the mind or way of

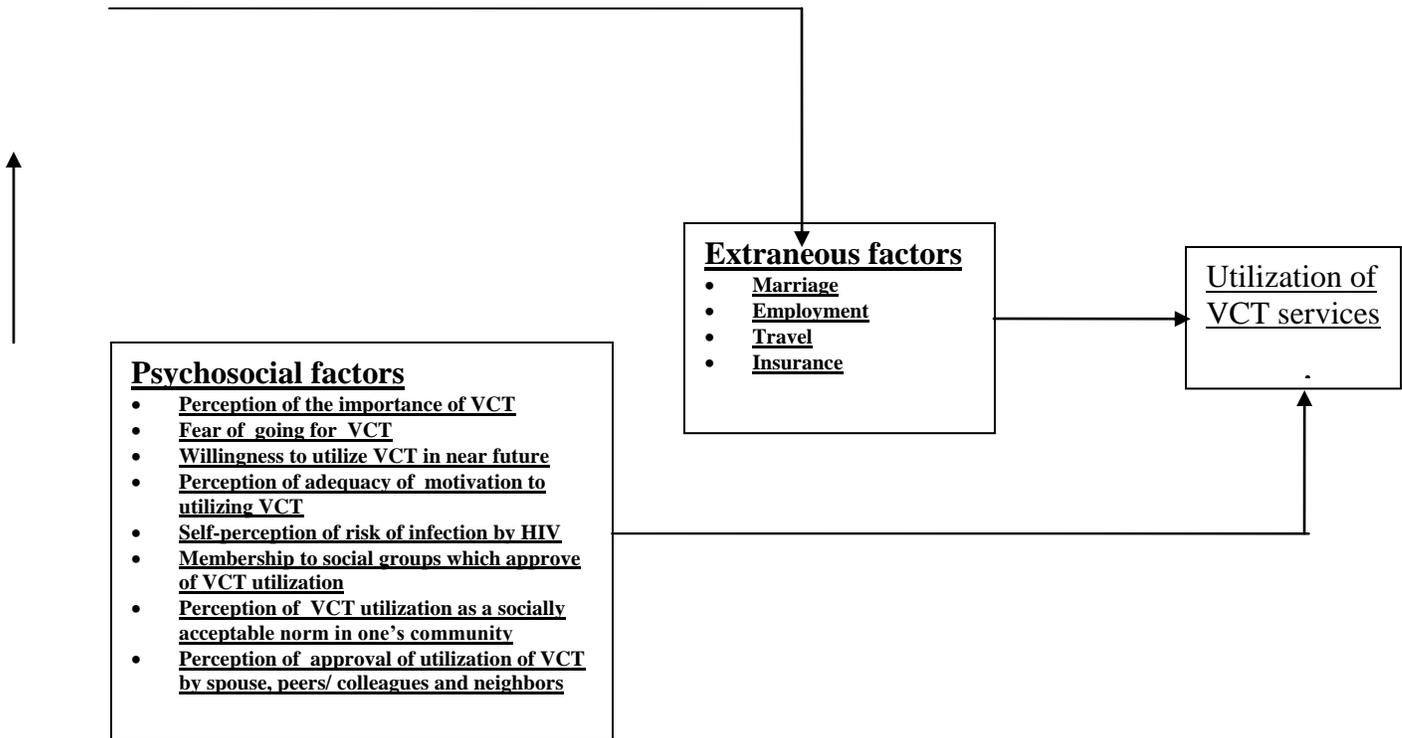
thinking and include such concepts as attitude, motivation and self-perception of risk. Environmental factors include both the physical and social factors affecting a person's behavior. The physical environment refers to the physical surrounding of an individual such as the area of residence. The social environment includes family members, friends and colleagues. Observational learning occurs when a person watches the actions of the people around him/her and the reinforcements they receive. This may eventually make them adopt certain behavior patterns. Applied to this study, the social cognitive theory indicates that the behavior of secondary school teachers with regard to utilization of VCT services depended partly on cognitive or psychological factors like attitude, motivation and self-perception of risk, and partly on social factors like the social norms and interactions. People who had positive attitude towards VCT, were highly motivated to utilize the services, and had high self-perception of risk were more likely to have utilized VCT services. People who belonged to communities where VCT was perceived as a socially acceptable norm and interacted with people who approved VCT were more likely to have utilized VCT services. The study also investigated the relationship between demographic factors like age, gender, level of education, religious affiliation and area of residence, and utilization of VCT services.

1.11 Conceptual framework

Figure 1.1: A hypothetical model on psychosocial and demographic factors affecting utilization of VCT services

Demographic factors

- Gender
- Level of education
- Age
- Marital status
- Religious affiliation
- Area of residence



Although utilization of VCT services (dependent variable) is mainly affected by psychosocial and demographic factors (independent variables) as shown in figure 1.1, the literature review and the study findings revealed other (extraneous) factors affecting VCT services utilization as mandatory HIV testing before marriage and employment, and when applying for visa (travel) and insurance services.

1.12 Operational definition of terms

AIDS; Acquired Immune Deficiency Syndrome -This is a cluster of medical conditions often referred to as opportunistic infections resulting from infection by the HIV virus and the weakening of the body's immune system.

Counseling -This is a confidential process in which a professionally qualified person called a counselor helps a client to assess his/her personal risk for HIV, develop a risk reduction strategy and arrive at an informed decision about being tested for HIV.

Demographic factors -These refer to selected population characteristics such as gender, level of education, age, marital status, religious affiliation and area of residence.

HIV; Human Immunodeficiency Virus -This is a virus that weakens the body's immune system, ultimately causing AIDS.

HIV Testing -This is the act of obtaining a bodily sample for the specific purpose of performing a medical test or a number of tests to determine the HIV status of a person.

Moonlight VCT- This refers to VCT services offered in the evening or early hours of the night usually up to 10 p.m.

Psychosocial factors -These are factors related to an individual's state of mind (psychological factors) and the social environment (social factors), and include concepts such as attitude, motivation, self-perception of risk and social norms and interactions.

Utilization of VCT services -Going to VCT centers or other places where VCT services are offered for the specific purpose of getting HIV counseling and/or testing services.

VCT; Voluntary Counseling and Testing -This is a process in which an individual undergoes counseling to enable him/her make an informed decision about being tested for HIV.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter deals with reviewed literature on HIV/AIDS situation and utilization of VCT services globally, in sub-Saharan Africa and in Kenya. The chapter also captures teachers' vulnerability to HIV/AIDS infection and their utilization of VCT services, previous research findings on psychosocial and demographic factors affecting utilization of VCT services among

teachers and other populations, and teachers' preferred methods of VCT service delivery. Lastly, the chapter covers the literature review summary.

2.1 Global picture of HIV/AIDS and VCT service utilization

Over the last two decades HIV/AIDS has become the world's most devastating epidemic particularly in developing countries. As at the end of the year 2007 more than 25 million people worldwide had died as a result of AIDS-related illnesses and about 33 million people were infected with HIV (UNAIDS/WHO, 2008). Most new infections occur among sexually active adults in the 15-49 years age group (Pathfinder, 2002; KEMRI, 2001). UNAIDS/WHO (2008) estimates that around 11% of HIV infections globally are due to mother-to-child transmission; 10% result from injecting drug use; 5-10% occur among homosexuals; and 5-10% occur in healthcare settings. Heterosexual relations account for the remaining proportion which is around two-thirds of new infections. An overwhelming majority of people with HIV, some 95% of the global total, live in low and middle income countries (World Bank, 2005). The proportion is set to grow even further as infection rates continue to rise in countries where poverty, poor health care systems and limited resources for prevention and care fuel the spread of the virus. The total number of PLWHA continues to rise even in high-income countries (United States of America, United Kingdom, Australia, Canada and Western Europe) largely due to availability of ART, which prolongs the lives of HIV positive people (UNAIDS/WHO, 2008). This increases the pool of HIV-infected people who are able to transmit the virus onwards. In North America, about 1.2 million people are living with HIV, while in Western and Central Europe the number of PLWHA is estimated at 730,000 (UNAIDS/WHO, 2008). In these regions, HIV is most prevalent among marginalized groups of the population, such as drug users, immigrants and refugees. In Eastern

Europe and Central Asia, the AIDS epidemic is rapidly expanding with 1.5 million people estimated to be living with the virus. Worst affected countries in these regions include the Russian Federation, Ukraine, and the Baltic States (Estonia, Latvia, and Lithuania). An estimated five million PLWHA are found in Asia (UNAIDS/WHO, 2008). Countries with the largest number of PLWHA in the Asian continent include China (700,000), Thailand (610,000) and Vietnam (290, 000). In North Africa and the Middle East, about 380,000 are estimated to have HIV/AIDS. In Latin America and the Caribbean an estimated 1.7 million people live with the virus.

UNAIDS (2002b) estimates that 90% of infected people in the world do not know that they are HIV positive, that is, they have not gone for VCT. In absolute terms, this means that over 27 million people in the world are not aware of their HIV infection and many may still be spreading the virus. According to UNAIDS/WHO (2002) many people discover their HIV status only when they are diagnosed with AIDS, and even a larger number of PLWHA are never diagnosed. According to Thornton (2005), coverage of VCT is extremely poor in countries with the highest HIV/AIDS burden and only about 5% of people have been tested worldwide. The low uptake of VCT, which is an effective HIV prevention strategy, has hindered global attempts to prevent new HIV infections, as well as limiting the scale-up of HIV care and treatment for the estimated 33 million infected persons worldwide (USAID, 2003; Batenganya et al., 2007).

2.2 Sub-Saharan Africa picture of HIV/AIDS and VCT service utilization

With 10% of the world's population, sub-Saharan Africa is the region with the biggest HIV/AIDS burden constituting of about 70% of PLWHA worldwide (GDS, 2001; WHO, 2004).

The region has an adult (15-49 years) prevalence of 5% resulting in about 1.9 million new infections and 1.5 million deaths annually (UNAIDS/WHO, 2008). More than 22 million people are living with HIV/AIDS in the region. HIV/AIDS prevalence varies considerably across the region ranging from less than 1% in Madagascar to over 25% in Swaziland. Southern Africa remains the worst affected sub-region with 35% of new infections and 38% of AIDS deaths (World Bank, 2009). According to UNAIDS/WHO (2008) South Africa has the highest number of PLWHA in the world. While, the HIV/AIDS prevalence in the region appears to have fallen slightly over recent years because the number of new infections is exceeded by the number of deaths each year, the number of PLWHA is still rising because of the overall population growth (Avert, 2008).

Only about 10% of PLWHA in sub-Saharan Africa know their HIV status (UNAIDS/WHO, 2002). Psychosocial and physical barriers, such as access to testing and stigma surrounding HIV testing remain and prevent rapid VCT scale-up in the region (PSI, 2008). One study estimated that less than 1% of the sexually active urban population in Africa had gone for VCT (Kumarnayake and Watts, 2001). A study done by Charles et al. (2009) on evaluation of uptake and attitude to VCT among health care professional students in Kilimanjaro region of Tanzania revealed that 35% of the respondents had gone for VCT. Besides, according to the National household survey on family planning services in Kenya, Tanzania and Zimbabwe, 60% of adults want to know their HIV status while only 15% or less have accessed VCT services (Kipitu, 2005). One way to encourage VCT uptake among the general population is to provide VCT services or referrals through workplace HIV programs. However, two large and influential groups of workers-health providers and teachers-are often overlooked by workplace programs

(Khan and Wess, 2006). One reason is that HIV program planners wrongly assume that these groups are knowledgeable about HIV-related issues and that they do not need targeted interventions to address HIV in their personal and professional lives.

2.3 Kenya's HIV/AIDS situation and VCT service utilization

Kenya is one of the countries in the region most affected by HIV/AIDS, with an estimated prevalence among adults (15-49 years) of 5.1% leading to approximately 55,000 new AIDS cases and at least 85,000 deaths annually (NACC, 2007). Eight percent (8%) of men and 14% of women in Kenya carry HIV/AIDS. On average about 233 people are dying daily due to HIV/AIDS and out of every eight adults in rural Kenya, one is infected (Kenya Space, 2008). In urban areas, nearly one out of every five adults is infected. It is estimated that there are 800 new infections every day in Kenya. Besides, more than 50% of hospital beds in the country are occupied by people suffering from AIDS-related complications, causing an immense strain on the limited medical facilities (NACC, 2007). While the rate of new infections has decreased, the relatively recent advent of treatment has not yet significantly affected mortality rates (PEPFAR, 2006). The Kenyan epidemic varies significantly from region to region, with Nyanza Province affected by prevalence rates approximating those in some southern Africa nations (Barimbui and Miller, 2008). The vast majority of HIV transmissions in Kenya occur through heterosexual contact but certain populations require special prevention interventions (PEPFAR, 2006). These include intravenous drug users, uniformed personnel, HIV-infected partners among discordant couples, men who have sex with men, long-distance transport workers, and commercial sex workers.

Only a few of the one million Kenyans living with HIV infection know that they are infected or show outward symptoms of the disease. According to the KDHS (2003), only 13% of women and 14% of men in Kenya had gone for HIV testing, although approximately two-thirds of respondents were willing to learn their status (NASCO & MOH, 2005). This means that most Kenyans do not know their own HIV status or that of their spouse or sexual partner, and many may therefore be unknowingly exposed to HIV. A study by Oyore (2003) on factors influencing utilization of VCT services among the youth in the Nairobi Province found that only 38% of the youth had accessed VCT services, and that more females (51%) than males (49%) had gone for VCT.

2.4 Teachers' vulnerability to HIV/AIDS and their utilization of VCT services

As part of the Millennium Development Goals (MDG), the UN seeks to achieve "Education for All" (EFA) by 2015 (UNDP, 2008). This may not be possible unless the international education community recognizes the HIV/AIDS epidemic as a global emergency and react accordingly (Boler, 2003). Educational systems particularly in sub-Saharan Africa have experienced severe loss of teaching personnel to HIV/AIDS. In Zambia for instance, teacher mortality is 70% higher than in the general population, largely attributed to HIV/AIDS (Grassly et al., 2003). In Central African Republic, 2000 schools have closed due to AIDS-related deaths of teachers. In Botswana, one study projects that by the year 2010, the country will be losing nearly 8% of secondary school teachers annually as a result of HIV/AIDS (Kpevai, 2004). To replace teachers lost to HIV/AIDS, one province in South Africa will need to train 60,000 new teachers by 2010.

The cost of replacing all teachers lost to HIV/AIDS will far exceed the South African Ministry of Education's annual budget for the province. A study done by PSI (2008) on the impact of HIV/AIDS on the education sector and on South African teachers revealed that HIV/AIDS prevalence among educators was 12%. The study further showed that VCT was still not popular among workers in the education sector. Only 9% of all respondents said they had ever gone for VCT, and whereas the majority of the respondents thought it was important for everyone to know their HIV status, only 27% reported that they were aware of their own.

A study done by 'Education International' on teacher supply, recruitment and retention in six sub-Saharan African Anglophone countries (Gambia, Kenya, Lesotho, Tanzania, Uganda and Zambia), revealed that the average teacher attrition in the countries was 4% attributed to death (mainly resulting from HIV/AIDS), retirement and brain-drain (Sinyolo, 2008). According to the Ministry of Higher Education and Tertiary Education's Policy on HIV and AIDS for Teachers' Colleges (Zimbabwe), Zimbabwe's teachers face a substantial risk of HIV infection, and around one third of the teachers are likely to be infected. A study done by 'Save the Children' (2008) in Malawi on successes and lessons learned on teacher peer counseling on HIV/AIDS found that many teachers found VCT inaccessible due to long distances and requested that testing be done by the peer counselors themselves. A study done by the GNAT and TEWU (2007) on assessment of the awareness of HIV/AIDS in the education sector and the needs of teachers and education workers living with HIV/AIDS in Ghana found that although a majority (85%) of the respondents believed that it was useful for everybody to know their status, only 20% of them had actually gone for VCT. Many of the HIV positive people interviewed discovered their status for the first time when their spouse or child fell ill. Another study done by Kakoko (2006) on VCT

uptake involving 918 primary school teachers in Mwanza, Tanzania found that only 20% of the teachers had gone for VCT.

In Kenya, it is estimated that the number of teacher deaths between 1995 and 1999 tripled with HIV/AIDS thought to be the highest contributor to teacher mortality (Kelly, 2000). A recent analysis by the International Labor Organization (ILO) on the impact of HIV/AIDS on human capital suggests that Kenya will be second only to South Africa in the sheer number of teachers dying from HIV infection by 2010, well ahead of Nigeria, Zimbabwe and Uganda (Cohen, 2002). According to Kenya's TSC (2004), HIV/AIDS represents the greatest challenge to service provision in the commission and has put immense pressure in the workplace. It has led to loss of skilled and experienced manpower due to death, loss of man-hours due to prolonged illness, absenteeism, reduced performance, increased stress, stigma, discrimination and loss of institutional memories among others. Consequently, there is a decrease in productivity and an increase in health care costs for both the employer and the employees.

The Kenya's teaching profession which has remained 240,000-strong for the last five years includes an estimated 10,000 teachers who are HIV positive; 3,000 of these had gone public about their status and participate in the support group 'Teachers with AIDS' (Barimbui and Miller, 2008). Despite the openness on the part of some teachers, many are still uncomfortable about benefiting from VCT. Barimbui and Miller (2008) estimate that death rates among the Kenyan teachers could be as high as six per day largely attributed to HIV/AIDS. Yet, most school-based HIV interventions in Kenya rely on teachers as behavior-formation and behavior-change agents to deliver prevention messages to children. Few target teachers as direct

beneficiaries even though teachers themselves are at risk of HIV infection. In a study of primary school teachers in Rachuonyo District in Nyanza Province, Kenya, Mumah (2003) found that 36% of married respondents had sex with more than one partner in the year preceding the survey. This clearly shows that Kenya's teachers could be at risk of HIV infection and urgent teacher-targeted interventions need to be put in place to control the spread of the virus among them.

A study done by Kiragu et al. (2006) in selected districts (Thika, Kwale, Kiambu and Kilifi) in Kenya found that, although nearly all (90%) the teachers sampled knew where to get tested for HIV, only 20% of them had gone for VCT. Of those who had not gone, only a third (34%) desired to go for the services, the remainder did not wish to go for VCT or had not made up their minds. The teachers' responses suggested that some could be more responsive to VCT if their fears were addressed and questions answered. This informed the decision to investigate the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers in this study.

2.5 Demographic factors affecting utilization of VCT services

A study done by Sherr et al. (2007) on VCT uptake and its impact on sexual behavior and HIV incidence in a rural Zimbabwe cohort found that psychosocial and demographic factors were the main determinants of VCT uptake. In a study by Hutchinson and Mahlalela (2006) on utilization of VCT among the general population in the Eastern Cape, South Africa, utilization of VCT services was positively associated with age, education, socio-economic status, proximity to clinics, availability of rapid testing and outreach services, and levels of HIV stigma. The effect of stigma appeared to be stronger for females, while men were more heavily influenced by the

characteristics of the VCT services themselves. According to a study done by Tefera (2006) on determinants of youth VCT acceptance in Addis Ababa, Ethiopia, higher proportions of females (60%) and youths in the age category of 20-24 years (58%) had accessed VCT services compared to males and youths in older age groups.

The study by Kakoko (2006) on VCT service uptake among primary school teachers in Mwanza, Tanzania found that teachers who were aged between 21 and 30 years were more likely to have gone for VCT while those aged between 51 and 60 years were least likely to have gone for the services. The same study found that teachers in urban areas and had at least a diploma level of education were more likely to have accessed VCT services. Another study by Charles et al. (2009) on evaluation of uptake and attitude to VCT among 309 health care professional students in Kilimanjaro region of Tanzania found no significant relationship between VCT uptake and gender, age group, religion, and cadre of students. A study done by Mugisha and Eugene (2010) on factors influencing utilization of voluntary counseling and testing services in Kisenyi fishing community in Uganda found that married people were less likely to have gone for VCT than unmarried people.

A study by Odhiambo et al. (2004) on Knowledge, Attitude and Practice (KAP) regarding HIV/AIDS and VCT center operations in Western Kenya found that VCT attendance was influenced by literacy level, but not gender. A study by Kimani et al. (2007) on progress of VCT programs in Kenya involving 1024 community members, 269 health care service providers and 54 opinion leaders found that more males than females had utilized VCT services. The same

study found that VCT service utilization remained poor in rural areas although community members reported a preference for mobile VCT services.

2.6 Psychosocial factors affecting utilization of VCT services

2.6.1 Motivation

Yoder et al. (2004) lists VCT utilization motivating factors as: feeling sick, experiencing family events like marriage or new partner, fear of having been exposed to HIV by actions of one's spouse or partner and job circumstances such as scholarships. A study done by Thornton (2005) on the impact of incentives on learning HIV status found that randomly assigned monetary rewards had large and significant effects on returning for HIV test results and increased overall VCT attendance by over 100%. A study done by Annemarie et al. (2008) on the association between fear of AIDS-related stigma and willingness to go for VCT among 72 students of University of Limpopo in South Africa found the main motivator for going for VCT as 'to know my status'. Other reasons included marriage, a new relationship, having had unsafe sex, having a friend with HIV and job circumstances.

A study by Kiranga (2004) on perceptions and attitudes to VCT among women in Nairobi, Kenya found that the major motivator to seeking VCT was poor state of health. The study by Oyore (2003) on factors influencing utilization of VCT services among the youth in Nairobi Province, Kenya found that respondents who had gone for VCT gave reasons for doing so as: blood donation (40%), looking for a job (17%), undergoing treatment (10%), and to know their status (33%). Besides, about 86% of clients who filled the Kenya National VCT Data Form gave

at least one of the social reasons (such as planning for the future or premarital planning) for coming for VCT with 'planning for the future' the most commonly given (MOH & NASCOP, 2005).

2.6.2 Attitude

A study on attitudes and perceptions of university students on VCT in the University of Ghana revealed that a large number of students would only go for VCT under some mandatory conditions like marriage, employment, travel (visa) and insurance (Mawusi and Inusah, 2003). However, qualitative studies on public interest towards VCT in Malawi and Uganda reported that the community members valued VCT; counselors gave them enough time to ask questions and others said counselors were competent and confidential (Kipitu, 2005). In Tanzania, surveys have shown that 75% of respondents would like to have taken an HIV test; however, fear of positive results was a great deterrent (Kisesa et al., 2000). Another study done in Tanzania showed that 54% of study participants who did not return for their HIV test results cited fear as the biggest factor (Mugusi et al., 2002; UNAIDS, 2002). In the study by Charles et al. (2009) on evaluation of uptake and attitude to VCT among 309 health care professional students in Kilimanjaro region of Tanzania, 64% of the respondents had positive attitude towards attending VCT, 19% had negative attitude and 17% were undecided. Among those who had not gone for VCT, 53% said that they didn't see the need of going for the services, 35% mentioned fear as the obstacle, 10% said that they trusted themselves and 3% had other reasons. Majority of the respondents were willing to attend VCT in the future.

According to the study by Oyore (2003), those who had not attended VCT gave the reasons of not doing so as: fear of discrimination (26%), fear of stigmatization (19%), no need since there is

no cure (24%), expensive (19%), and lack of confidentiality (17%). Another study on exploration of perceptions and attitudes to VCT among women in Nairobi, Kenya revealed that participants viewed VCT as playing a significant role both in prevention and care in HIV/AIDS (Kiranga, 2004). However, a study by the Institute of Public Policy and Research, IPAR (2004) revealed that 90% of household heads in Nyanza Province, Kenya, still feared going for VCT. Some of the reasons cited were: fear of finding out a positive status; fear of stigma, discrimination and isolation by friends and relatives; high risk of contracting the virus during testing; lack of confidentiality about the results; and lack of faith in the results due to perceived ineffective equipment. Besides, a study by Kargbou (2004) on factors influencing utilization of VCT services among fisher men and women in Kisumu District, Kenya showed that there was positive attitude towards VCT with 84% respondents indicating future utilization of VCT services.

2.6.3 Self-perception of risk

A study by Habte et al. (2003) in Addis Ababa, Ethiopia on determinants of utilization of pre-marital HIV testing, revealed that out of the 640 individuals (320 males and 320 females) who underwent civil marriage, 55% reported having had pre-marital HIV testing, the remaining had not tested. The main reason given for not having gone for testing was that the interviewees did not perceive themselves as being at risk of acquiring HIV/AIDS. However, a study done by Jereni and Muula (2008) in Malawi among VCT center clients indicated that majority of clients were motivated by perception of risk of HIV infection to seek VCT services. Another study by Kakoko (2006) on VCT service uptake among primary school teachers in Tanzania found a direct positive correlation of VCT service utilization and perception of risk. However, a study by Oshi et al. (2007) on whether self-perception of risk of HIV infection causes Nigerian youth to

seek HIV testing, indicated that those with high self-perception of risk did not see the need of seeking HIV testing. A study by Charles et al. (2009) on evaluation of uptake and attitude to VCT among health care professional students in Kilimanjaro region of Tanzania showed that majority of the respondents (63%) considered themselves to be at low risk of contracting HIV and the rest (37%) considered themselves to be at high risk. This was thought to have contributed to their low levels (35%) of utilization of VCT services.

2.6.4 Social norms and interactions

A study done by Smith (2005) on motivation and barriers to VCT utilization among high risk populations in Vietnam revealed that social norms were the most significant barriers impeding greater acceptance and utilization of VCT services. Fear of being branded HIV positive and shunned by loved ones, neighbors and the community caused many high-risk people to avoid learning their HIV status. A study by Thornton (2005) on the impact of incentives on learning HIV status in Malawi revealed that VCT utilization by friends, neighbor, or spouse might impact positively on the decision to go for VCT. Another study by Kamanga (2006) on the role of post-test clubs in increased uptake of HIV counseling and testing in Malawi revealed that membership to HIV post-test clubs had positive association with utilization of VCT services. The club members support each other in positive living and psychosocial issues, for instance by supporting those who were sick materially as well as helping with household chores. People who had not yet tested for HIV saw the love and care existing in the post-test clubs and got motivated to seek VCT services. A study by Kingsley et al. (2007) on attitudes and beliefs of pregnant Nigerian women towards VCT found that 89% of the respondents were willing to go for VCT if they were accompanied by their spouses. In the same study, 69% of respondents who were not

willing to go for VCT attributed their refusal to the social and cultural stigmatization associated with HIV/AIDS.

2.6.5 Preferred methods of VCT service delivery

In the study by Kipitu (2005) majority of the respondents would have preferred that VCT counselors be both males and females. A study done by Spielberg et al. (2003) among 240 HIV positive patients in a clinic in Seattle (USA) found that majority (61%) of the respondents would prefer to be tested at home if they were not aware of their HIV status. The same study found that a higher proportion (95%) of the respondents had less difficulty performing oral fluid tests (95% concordance with staff performance) compared to finger-stick tests (89%). Another study done by the John Hopkins University among 444 patients in the university hospital found that majority (91%) of the respondents preferred self-testing for HIV (Keller, 2009). In addition, most (91%) respondents preferred the oral fluid (OraQuick test) to the Uni-Gold test which uses blood obtained from the finger. A study done by Mutale et al. (2010) on acceptability of home-based voluntary HIV counseling among urban and rural populations of Zambia found that there was an overall increase in the proportion of the population who went for VCT, from 18% before the provision of home-based VCT to 38% after. In the study done by Kimani et al. (2007) on VCT progress among selected Kenyan communities, majority of the respondents were found to prefer mobile VCT. A study done by Odeny (2010) on how moonlight VCT helps curb HIV/AIDS infection in South Nyanza, Kenya found that many people preferred accessing VCT centers in the evenings or early nights. The respondents argued that during the day they were busy and could not find time to go for the services. Many respondents also felt this would help them evade stigmatization. The study by Thornton (2005) on the impact of incentives on learning HIV status

found that randomly assigned monetary rewards increased overall VCT attendance by over 100%.

2.7 Literature review summary

The literature reviews indicate that utilization of VCT services among secondary school teachers is an area which has largely been ignored by most researchers particularly with regard to the psychosocial and demographic factors affecting their utilization of VCT services, and their preferred methods of VCT service delivery. None of the above studies dealt specifically with secondary school teachers. In addition, none of the studies was done in Nyando District, Kenya. This study therefore strived to bridge these gaps by investigating the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers in Nyando District. In addition, the study sought to investigate whether the findings on the effects of psychosocial and demographic factors on utilization of VCT services found in the above studies also applied to the secondary school teachers in Nyando District. Moreover the study sought to establish the methods of VCT service delivery preferred by the secondary school teachers and which they would wish to be incorporated in the provision of VCT services.

CHAPTER THREE: MATERIALS AND METHODS

3.0 Introduction

This chapter covers the research design, the study variables, the study area, the target population, the study population, sampling size determination and sampling techniques, construction of

research instruments, pilot study, data collection techniques, data analysis, and logical and ethical considerations.

3.1 Research design

This was a descriptive cross-sectional study. This research design is appropriate in describing the relationship between the study variables among a given study population at a specific time (Kate, 2006). The design was therefore chosen so as to get relevant information from the study participants within the shortest time possible and to arrive at valid conclusions regarding the relationships between the study variables.

3.2 The study variables

3.2.1 Independent variables

The independent variables of this study were derived from demographic characteristics and psychosocial concepts such as motivation, attitude, self-perception of risk, and social norms and interactions. The specific independent variables were: gender, level of education, age, marital status, religious affiliation, area of residence, perception of adequacy of motivation to utilize VCT, perception of the importance of VCT as an HIV/AIDS control strategy, willingness to go for VCT in the near future, fear of going for VCT, self-perception of risk of infection by HIV, membership to social groups that approve of VCT utilization, perception of VCT as a socially acceptable norm in one's community, and perception of VCT utilization approval by spouse, peers/colleagues and neighbors. Responses were compared to respondents' utilization of VCT services.

3.2.2 Dependent variable

The dependent variable for the study was the utilization of VCT services.

3.3 The study area

The study was done in Nyando District, Kenya. Nyando District was one of the 12 districts in Nyanza Province. The district bordered Kisumu District to the west, Nandi District to the north, Kericho District to the east and Rachuonyo District to the south (Appendix 3). The district had 6 Divisions, namely: Upper Nyakach, Lower Nyakach, West Nyakach, Nyando, Miwani and Muhoroni. It had a total land area of 1168.4 km² and a population of 332,137; 162,381 males and 169,756 females (ROK, 2002). The most prevalent diseases in the district were malaria, URTI, diarrhea, skin diseases and worms. There were 35 health facilities in the district which consisted of 1 GOK hospital, 2 sub-district hospitals, 2 private hospitals, 9 health centers, 16 dispensaries, and 5 Nursing/maternity homes. The average distance to the nearest health facility was 5 kilometers with a doctor/patient ratio of 1: 50,000. The district had 12 VCT sites. The district was purposely chosen for this study due to its relatively high levels of HIV/AIDS prevalence which stood at 7.5% (NACC, 2007). This was way above the national average which was 5.1%. The area was also chosen because of its accessibility and familiarity to the researcher.

3.4 The target population

The target population of the study was all secondary school teachers in Kenya.

3.5 The study population

The study population was all secondary school teachers teaching in Nyando District at the time of the study. This gave a population of 753 teachers; 473 males and 280 females.

3.5.1 Inclusion criteria

The study included all secondary school teachers teaching in Nyando District at the time of the study.

3.5.2 Exclusion criteria

The study excluded teachers teaching in other levels of education like early childhood, primary schools, and tertiary institutions in Nyando District, and all other teachers who were not teaching in Nyando District at the time of the study.

3.6 Sample size determination and sampling techniques

3.6.1 Sample size determination

The minimum sample size of respondents was obtained using a formula as used by Fisher et al. (1998) shown below:

$$N = \frac{z^2 pq}{d^2}$$

Where; N= the desired sample size, z = normal deviate which corresponds to 95% confidence interval, p =0.2 (20%); the proportion of the study population estimated to have utilized VCT services (Kiragu et al., 2006), q =1-p, d =degrees of freedom = 0.05.

Thus, $N = \frac{1.96^2 \times 0.2 \times 0.8}{(0.05)^2}$, this was approximately =246.

3.6.2 Sampling techniques

Nyando District had six divisions with 73 secondary schools and 753 teachers. This gave an average of about 10 teachers per school. With a minimum sample size of 246, at least 25

secondary schools were needed to obtain a representative sample of the study population. The number was however increased to 26 to cater for attrition and respondents who would be unwilling to participate in the study. Stratified sampling was used to determine the number of schools per division which were to be included in the study. Simple random sampling was then used to select schools from each division. All consenting teachers in the selected schools were eligible to participate in the study.

3.7 Construction of research instruments

A self-constructed and personally administered questionnaire was the major tool for data collection in the study. Closed and open-ended questions were used in the questionnaire. Personally administered questionnaire was suitable for this study because it would enable the researcher to clarify questions and encourage the respondents to answer all the questions.

The researcher held FGDs with respondents divided in groups of 8-10. All consenting respondents in the sampled schools were eligible to participate in the FGDs. The FGDs were important in getting the respondents' views and opinions on the psychosocial and demographic factors that affected their utilization of VCT services. The FGD guide had open-ended questions that allowed respondents to express themselves fully.

3.8 Pilot study

A pilot study was conducted in two randomly selected schools in the neighboring Kisumu District, which had similar characteristics as the study area. The main purpose was to ensure the

validity and reliability of the data collection instruments and their suitability to the study. After piloting, the data collection instruments were adjusted accordingly.

3.8.1 Validity

The validity of the research instruments was ensured by availing them to university supervisors who appraised their suitability in obtaining information consistent with the research objectives. The instruments were also pre-tested during the pilot study to ensure that they elicited the kind of responses required by the researcher.

3.8.2 Reliability

Reliability of the instruments of the study was enhanced through repeated field tests during the pilot study whereby the questionnaire and FGD guide items were evaluated in terms of their ability to give consistent results with repeated trials.

3.9 Data collection techniques

The questionnaires were personally administered to the respondents by the researcher. This was to avoid the possibility of the respondents discussing the responses, or people not included in the sample answering the questions. Focus group discussions (FGDs) were also held with all consenting respondents divided in groups of 8-10.

3.10 Data analysis

Data from the filled questionnaires was coded and entered into the computer using SPSS version 11.5. Cross tabulation was done to establish the relationships between the independent and the

dependent variables. Analysis was done using the chi-square test and $p < 0.05$ was considered statistically significant. Information obtained from in-depth discussions was analyzed manually using qualitative methods.

3.11 Logistical and ethical considerations

Permission for carrying out the study was sought from the Graduate School of Kenyatta University and the Ministry of Higher Education, Science and Technology. The researcher sought informed consent from the respondents by adequately explaining to them the objectives of the study. The respondents were also assured of maximum confidentiality with all the information they would give during the study. Respondents then signed consent forms availed to them by the researcher.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.0 Introduction

This chapter deals with the interpretations and explanations of the study findings with regard to the stated hypotheses and research questions.

4.1 Socio-demographic characteristics of the study population

Table 4.1: Socio-demographic characteristics of the study population

| Socio-demographic characteristic | | Number | Percentage (%) |
|----------------------------------|----------------------|--------|----------------|
| Gender | Females | 91 | 36 |
| | Males | 161 | 64 |
| Level of education | KCSE | 12 | 5 |
| | KACE/Diploma | 36 | 14 |
| | Degree | 186 | 74 |
| | Post-graduate degree | 17 | 7 |
| Age | 15-24 years | 27 | 11 |
| | 25-34 years | 95 | 38 |
| | 35-44 years | 110 | 43 |
| | 45 years and above | 20 | 8 |
| Marital status | Single | 47 | 19 |
| | Married/cohabiting | 187 | 75 |
| | Divorced/separated | 3 | 2 |
| | Widowed | 12 | 4 |
| Religious affiliation | Protestants | 156 | 63 |
| | Catholics | 85 | 34 |
| | Muslims and others | 6 | 3 |
| Area of residence | Urban | 74 | 29 |
| | Rural | 176 | 71 |

The results in table 4.1 indicate that majority (64%) of the respondents were males, and majority (74%) had degree level of education. The largest proportion of respondents (43%) were aged 35-44 years while only 8% were aged above 45 years. In addition, majority (75%) of the respondents were married or cohabiting, while about 4% were widowed. The results further show that majority (63%) of the respondents were Protestants, and majority (71 %) lived in rural areas.

4.2 The level of utilization of VCT services among the study population

Results in figure 4.1 show that less than half (48%) of the respondents had utilized VCT services at least once. The level of utilization of VCT services among the study population was higher than that found in the general population. A study done by Kimani et al. (2007) among 1042

randomly selected community members in the general population found that only 38% reported ever going for VCT. The relatively high proportion of utilization of VCT services was attributed to the fact that the study population consisted of individuals who were relatively more enlightened with comparatively higher standards of living compared to the general population. However, the fact that majority of the respondents had not utilized VCT services implies that there was still need to step up promotion of VCT services among them.

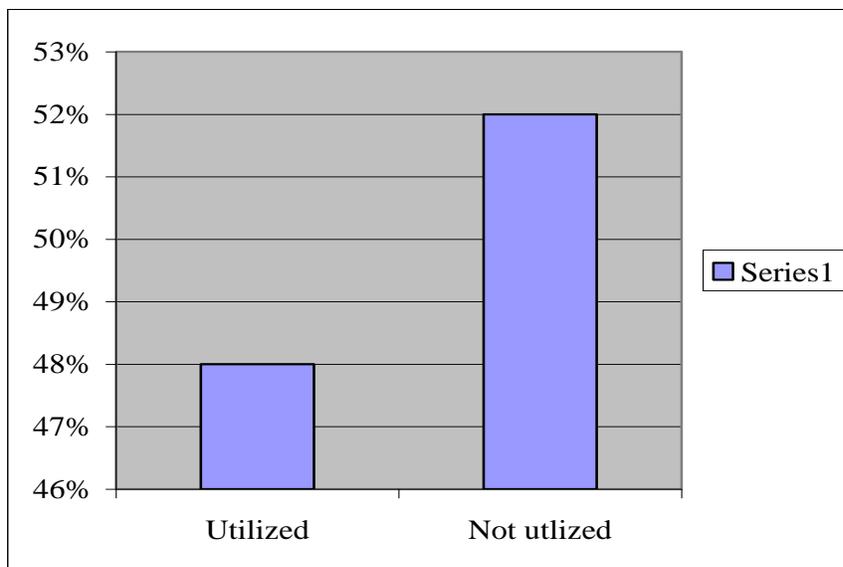


Figure 4.1: The level of utilization of VCT services

Results in figure 4.2 show that, majority (53%) of those who had utilized VCT services had gone for the services only once. This implies that the members of the study population needed to be sensitized on the importance of consistent use of VCT services.

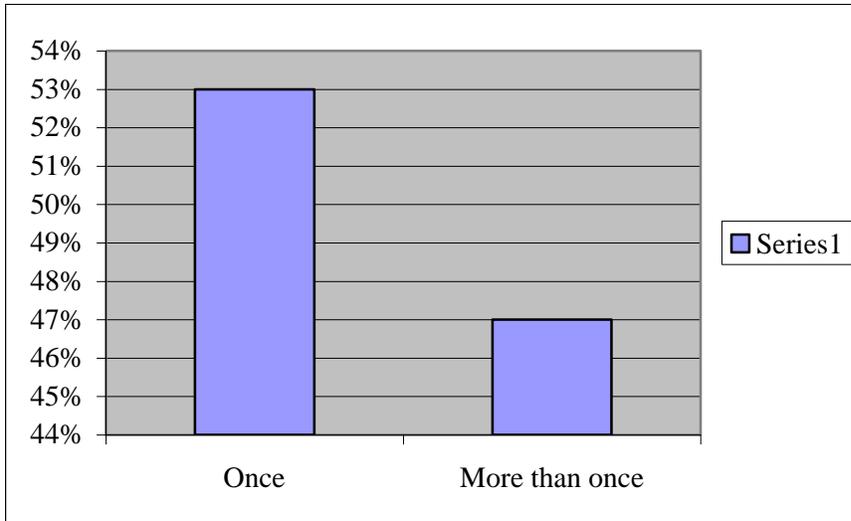


Figure 4.2: Frequency of utilization of VCT services

4.3 Demographic factors affecting utilization of VCT services

Table 4.2: Demographic factors and utilization of VCT services

| Demographic factors | Utilized VCT | Never utilized VCT | Chi-square statistic |
|---------------------|--------------|--------------------|----------------------|
| Gender | | | $\chi^2=8.808$ |
| Females | 55(60%) | 36(40%) | |

| | | | |
|--------------------------------|----------|----------|----------------|
| Males | 66(41%) | 95(59%) | df=1 |
| Total | 121(48%) | 131(52%) | p=0.003 |
| Level of Education | | | $\chi^2=3.344$ |
| KCSE | 7(58%) | 5(42%) | df=3 |
| KACE/Diploma | 13(36%) | 23(64%) | p=0.342 |
| Degree | 94(51%) | 92(49%) | |
| Post-graduate degree | 7(41%) | 10(59%) | |
| Total | 121(48%) | 130(52%) | |
| Age | | | $\chi^2=13.36$ |
| 15-24 years | 17(63%) | 10(37%) | df=3 |
| 25-34 years | 54(57%) | 41(43%) | p=0.004 |
| 35-44 years | 46(42%) | 64(58%) | |
| 45 years and above | 4(20%) | 16(80%) | |
| Total | 121(48%) | 131(52%) | |
| Marital status | | | $\chi^2=3.205$ |
| Single(never married) | 28(60%) | 19(40%) | df=2 |
| Married/cohabiting | 86(46%) | 101(54%) | p=0.201 |
| Widowed/divorced/ separated | 6(40%) | 9(60%) | |
| Total | 120(48%) | 129(52%) | |
| Religious affiliation | | | $\chi^2=0.626$ |
| Protestants | 78(50%) | 78(50%) | df=2 |
| Catholics | 38(45%) | 47(55%) | p=0.731 |
| Muslims/others | 3(50%) | 3(50%) | |
| Total | 119(48%) | 128(52%) | |
| Area of residence | | | $\chi^2=3.229$ |
| Urban | 42(57%) | 32(43%) | df=1 |
| Rural | 78(44%) | 98(56%) | p=0.072 |
| Total | 120(48%) | 130(52%) | |

4.3.1 Gender

The results in table 4.2 indicate that a larger proportion (60%) of females had utilized VCT services compared to the males (41%). The results ($\chi^2=8.808$; $df=1$; $p=0.003$) indicated that a significantly larger proportion of female respondents had utilized VCT services compared to their male counterparts. The null hypothesis was therefore rejected at 0.05 significance level, that there is no significant relationship between gender and utilization of VCT services. The difference in utilization of VCT services between males and females was attributed to the fact

that more female respondents felt vulnerable to HIV infection compared to males and therefore saw the need to go for VCT. According to NASCOP & MOH (2005) greater vulnerability of women to HIV infection has been attributed to biological, socio-cultural and economic factors. Most female respondents had also gone for VCT during pregnancy as part of the pre-natal care (Tapparo, 2006). VCT utilization could be stepped up among the study population if VCT promotion programs increasingly focused on male members of the study population.

4.3.2 Level of education

The results in table 4.2 indicate that the largest proportion (58%) of respondents who had utilized VCT services were KCSE holders. Fifty one percent (51%) of degree holders, 41% of post-graduate degree holders and 36% of KACE/Diploma holders had also utilized the services. The results ($\chi^2=3.344$; $df=3$; $p=0.342$) indicated that there was no significant relationship between the level of education and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between the level of education and utilization of VCT services. The higher proportion of KCSE holders who had accessed VCT compared to the other categories was attributed to the fact that this level of education consisted of comparatively younger individuals who were mostly targeted by most VCT promotion programs. However, the absence of significant difference in utilization of VCT services between respondents with different educational backgrounds implies that VCT utilization is not necessarily predominant among the most educated segments of the population as would have been expected, and that VCT promotion programs needed to target people of diverse educational backgrounds including the most educated.

4.3.3 Age

The results in table 4.2 indicate that the largest proportion (63%) of the respondents in the age category of 15-24 years had utilized VCT services. Forty two (42%) of respondents in the age category of 35-44 years had also utilized VCT services. In addition, only about 20% of respondents aged over 45 years had utilized VCT services. The results ($\chi^2=13.363$; $df=3$; $p=0.004$) indicated that a significantly larger proportion of younger respondents (15-24 years) had utilized VCT services compared to those in the older age categories. The null hypothesis was therefore rejected at 0.05 level of significance, that there is no significant relationship between age and utilization of VCT services. This finding was attributed to the fact that most VCT promotion programs had targeted the youth at the expense of older members of the population. This implies that utilization of VCT services could be stepped up if VCT promotion programs target not only the youth but also older age groups of the population.

4.3.4 Marital status

The results in table 4.2 indicate that the largest proportion (60%) of the respondents who had utilized VCT services were single (never married). Forty six percent (46%) of the respondents who were married or were cohabiting and 40% of those who were widowed, divorced or separated had also utilized the services. The results ($\chi^2=3.205$; $df=2$; $p=0.201$) however indicated that there was no significant relationship between marital status and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between marital status and utilization of VCT services. The higher proportion of single respondents who had utilized VCT services compared to married respondents was attributed to the fact that most single respondents were in younger age

categories which were mostly targeted by most VCT promotion programs. Single respondents also felt more vulnerable to HIV infection compared to their married counterparts. In addition, limited or no discussion about VCT utilization among most married couples was a hindrance to their utilization of the services. “VCT utilization has never been an issue in our family and I don’t remember ever discussing it with my husband”, said a 35 year-old married female respondent. VCT service utilization among the study population could be stepped up if VCT promotion programs not only target single but also married members of the population. Promotion of open discussions about VCT utilization among married couples could also lead to higher uptake rates of the services among the study population.

4.3.5 Religious affiliation

The results in table 4.2 indicate that the proportions of the respondents who had gone for VCT according to their religious affiliations were as follows: Protestants (50%), Catholics (45%), Muslims and others (50%). The area was however predominantly Christian, with very few Muslims or members of other religious faiths. The results indicated that there was no significant relationship between religious affiliation and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between religious affiliation and utilization of VCT services. Most respondents said that their religious groupings hardly had any policy on utilization of VCT services. “Throughout the time I have been a member of my church, I don’t remember any time any member or religious leader has publicly talked to us about utilization of VCT services and I doubt if the church has any policy regarding the same”, said a 43 year-old respondent.

4.3.6 Area of residence

The results in table 4.2 indicate that a larger proportion (57%) of respondents living in urban areas had utilized VCT services compared to their rural counterparts (44%). However, the results ($\chi^2=3.229$; $df=1$; $p=0.072$) indicated that there was no significant relationship between area of residence and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between area of residence and utilization of VCT services. The higher proportion of utilization of VCT services among urban dwellers compared to their rural counterparts was attributed to inadequate access to VCT services in most rural areas (Kimani et al., 2007). VCT utilization would likely be stepped up in rural areas if more VCT centers were put up in the areas to reduce long distances covered in accessing the VCT centers.

4.4 Psychosocial factors affecting utilization of VCT services

4.4.1 Motivation

Respondents who had gone for VCT were asked what motivated them to seek the services. The question was a multiple response type, meaning that a respondent could give more than one response from a given set of alternatives. The results in table 4.3 indicate that the largest proportion (38%) of the respondents gave the reason for going for VCT as “To know my status/plan my future”. Other major reasons cited were influence by the mass media (7%), influence by friends/colleagues (6%) and blood donation (6%). Many respondents also mentioned mandatory HIV testing during pregnancy and before marriage. Many female respondents said that they had gone for VCT as part of their prenatal care. “I have gone for VCT

twice, and in each case I was expectant and was required to undergo an HIV test as part of the prenatal care”, said a 30 year-old respondent. A 26 year-old male respondent who had recently married said, “In our church, it is a requirement that a couple has to undergo an HIV test before exchanging marriage vows”. Since the highest proportion of respondents indicated that knowledge of their HIV status and planning for the future was the major motivator to utilization of VCT services, VCT utilization among the study population could be stepped up if the members were increasingly sensitized on the importance of knowing one’s HIV status especially in planning one’s future like when entering a new relationship.

Table 4.3: Motivating factors to utilization of VCT services

| | Responses | Number of responses | Percentage (%) |
|-----|---|---------------------|----------------|
| 1. | To know my status/plan my future | 46 | 38 |
| 2. | Influenced by the mass media campaign | 9 | 7 |
| 3. | Influenced by friends/colleagues | 7 | 6 |
| 4. | Blood donation | 7 | 6 |
| 5. | Influenced by spouse/relative | 5 | 4 |
| 6. | After sex with a partner who is not trusted | 5 | 4 |
| 7. | Poor health of spouse/sexual partner/child | 4 | 3 |
| 8. | Undergoing treatment | 4 | 3 |
| 9. | Poor health of self | 2 | 2 |
| 10. | After a risky sexual behavior | 1 | 1 |

Respondents who had not gone for VCT were asked why they had not sought the services. The question was a multiple response type, meaning that a respondent could give more than one response from a given set of alternatives. Results in table 4.4 indicate that fear of a positive result

was chosen by the largest proportion (22%) of respondents as being a deterrent to utilization of VCT services. Other major reasons cited were; long distances to the nearest VCT centers (4%) and fear of stigma (4%). The finding on fear of positive results as a major obstacle to utilization of VCT services implies that VCT service utilization could be stepped up if MOH and other VCT service providers addressed potential VCT clients' fear of positive results, for instance by making comprehensive care services more readily available for those who test HIV positive. A deliberate attempt aimed at addressing fear of stigma at the community level would also likely to lead to increased VCT uptake rates. This could be done through provision of health education about HIV/AIDS, and the importance of avoiding stigmatizing people infected and affected by HIV/AIDS.

Table 4.4: Barriers to utilization of VCT services

| | Responses | Number of responses | Percentage (%) |
|----|--|---------------------|----------------|
| 1. | Fear of a positive result | 29 | 22 |
| 2. | Long distance to the nearest VCT | 5 | 4 |
| 3. | Fear of stigma | 5 | 4 |
| 4. | No need since there is no cure for HIV/AIDS | 3 | 2 |
| 5. | Fear of family break-up in case of a positive result | 1 | 1 |
| 6. | Fear of contracting HIV during testing | 1 | 1 |
| 7. | Inadequate testing equipment | 1 | 1 |

The respondents were asked whether they thought that motivation to utilize VCT services was adequate. Results in table 4.5 indicate that majority (58%) of the respondents agreed, 27% disagreed, and 14% did not know. The results ($\chi^2=2.894$; $df=2$; $p=0.235$) indicated that there was no significant relationship between perception of adequacy of motivation to utilize VCT services and the actual utilization of the services. The null hypothesis was therefore not rejected at 0.05

level of significance, that there is no significant relationship between perception of adequacy of motivation to utilize VCT and the actual utilization of the services. This finding suggests that VCT utilization could be stepped up if methods of motivating people to utilize VCT services were evaluated and reviewed. The fact that higher perception of adequacy of motivation to utilize VCT services did not translate to increased utilization of the services implies that the approaches used in motivating people to utilize the services could not have been yielding positive results or could have been inappropriate. Formulation of new methods of motivating people to utilize VCT services would therefore likely lead to increased VCT uptake rates.

4.4.2 Attitude

Respondents were asked whether they thought that VCT was an important HIV/AIDS control strategy. The results in table 4.5 indicate that majority (60%) of the respondents agreed, 27% disagreed and 13% did not know. The results ($\chi^2=6.509$; $df=2$; $p=0.035$) indicated that a significantly larger proportion of respondents who perceived VCT as an important HIV/AIDS control strategy had utilized the services. The null hypothesis was therefore rejected at 0.05 level of significance, that there is no significant relationship between perception of the importance of VCT as an important HIV/AIDS control strategy, and utilization of VCT services. This finding suggests that there was widespread awareness about the importance of VCT as an HIV/AIDS control strategy among the study population and this was an important factor in their utilization of the services. The finding implies that there was a positive attitude towards utilization of VCT services among majority of the members of the study population. It also suggests that stepping up provision of health education on the importance of VCT as an HIV/AIDS control strategy

among members of the population would likely lead to increased VCT service uptake rates among them.

4.4.3 Self-perception of risk

Respondents were asked whether they thought that they were at risk of HIV infection. Results in table 4.5 indicate that majority (60%) of them felt they were at risk of HIV infection. Only 28% of the members of the study population who felt at risk of infection by HIV had utilized VCT services. A higher proportion (32%) of the respondents felt at risk of infection but still did not wish to know their HIV status implying that they could be in self-denial in that despite feeling at risk of HIV infection they still did not find it necessary to know their HIV status. The results ($\chi^2=0.022$; $df=1$; $p=0.883$) indicated that there was no significant relationship between self-perception of risk and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between self-perception of risk and utilization of VCT services. VCT service uptake rates could be stepped up among members of the study population if VCT service providers addressed self-denial at individual level, for instance by availing to them information on prevalence of HIV/AIDS in their communities and their vulnerability to HIV infection.

Table 4.5: Psychological factors affecting utilization of VCT services

| Psychological factor | Response | Utilized VCT | Not utilized VCT | Chi-square statistic |
|--|-------------|--------------|------------------|---------------------------------------|
| Perception of adequacy of present motivation to utilize VCT services | Yes | 72(29%) | 72(29%) | $\chi^2=2.894$ $df=2$ $p=0.235$ |
| | No | 33(13%) | 34(14%) | |
| | Do not know | 12(6%) | 23(9%) | |
| | Total | 117(48%) | 129(52%) | |
| Perception of VCT | Yes | 68(28%) | 79(32%) | $\chi^2=6.509$ |

| | | | | |
|---|-------------|----------|----------|-----------------------------------|
| as an important HIV/AIDS control strategy | No | 39(16%) | 27(11%) | df=2 p=0.039 |
| | Do not know | 10(4%) | 21(9%) | |
| | Total | 117(48%) | 127(52%) | |
| Self-perception of risk | Yes | 68(28%) | 77(32%) | $\chi^2=0.022$ df=1 p=0.883 |
| | No | 45(19%) | 52(21%) | |
| | Total | 113(47%) | 129(53%) | |

The respondents were also asked whether they were willing to go for VCT in the near future. The results in figure 4.3 show that a larger proportion (77%) of the respondents were willing to go for VCT services in the near future. This finding suggests that majority of the respondents had a positive attitude towards VCT service utilization with regard to future utilization of VCT services. Many respondents said that they had not sought VCT services because of procrastination. “Every time I want to go for VCT, something comes up and I postpone it. I keep on postponing it until I have lost count of the number of times I have done so”, said a 24 year-old female respondent. VCT service uptake among the members of the study population could be stepped up if VCT promotion programs emphasized both the need and the urgency of seeking the services.

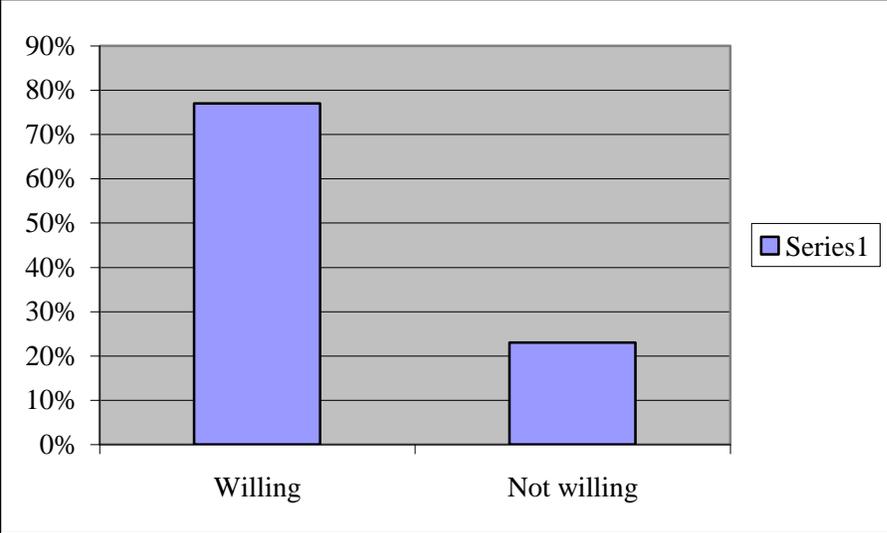


Figure 4.3: Willingness to utilize VCT services in the near future

4.4.4 Social norms and interactions

Respondents were asked whether VCT was a socially acceptable norm in their communities. Results in table 4.6 indicate that a larger proportion (73%) of the respondents agreed. However, the results ($\chi^2=0.019$; $df=1$; $p=0.890$) indicated that there was no significant relationship between social norms and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between social norms and utilization of VCT services. According to a 39 year-old male respondent, “due to the stigma associated with HIV/AIDS, most members of our community rarely discuss issues related to HIV/AIDS openly hence limiting the possibility of VCT becoming a socially acceptable norm in our community. In fact, most of our people believe that promotion of VCT services is the responsibility of government agencies, NGOs and health personnel”. Limited discussion about VCT utilization among members of the local communities in the study area could have limited the possibility of VCT utilization becoming a socially acceptable norm among members of the study population. VCT service utilization could be stepped up among members of the study population if community members were sensitized on the importance of open discussions about HIV/AIDS and VCT utilization.

Respondents were asked whether they belonged to any social group(s) which approved of VCT utilization. Results in table 4.6 indicate that less than half (44%) of the respondents belonged to such social groups. Among those who belonged to the groups, only 35% had gone for VCT. The results ($\chi^2=1.396$; $df=1$; $p=0.237$) indicated that there was no significant relationship between

membership to social group(s) which approved VCT utilization, and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between membership to social groups which approve of VCT utilization and the actual utilization of the services. This finding was attributed to the fact that most respondents rarely discussed VCT in their social groups. “Most of the time our discussions center on politics, economic empowerment and spiritual nourishment for some of us who are saved. Rarely do we discuss utilization of VCT services in our social groups”, said a 38 year-old male respondent. This implies that utilization of VCT services among members of such social groups could be stepped up if they were sensitized on the importance of including discussions about VCT utilization among the issues they hold dear. In addition, VCT promotion programs could use such social groups to propagate information about the importance of going for VCT.

The respondents were asked whether their peers/colleagues/neighbors approved VCT utilization. Results in table 4.6 indicate that majority (77%) of the respondents agreed that their peers/colleagues/neighbors approved of VCT utilization. However, only 46% of respondents whose peers/colleagues/neighbors approved VCT utilization had gone for the services. The results ($\chi^2=0.596$; $df=1$; $p=0.440$) indicated that there was no significant relationship between VCT approval by peers/colleagues/neighbors and utilization of VCT services. The null hypothesis was therefore not rejected at 0.05 level of significance, that there is no significant relationship between perception of VCT approval by peer/colleagues/neighbors and utilization of the services. This finding implies that higher VCT uptake rates could be stepped up if VCT promotion programs focused mainly on individuals rather than communities.

Respondents who were married were asked whether their spouses approved of VCT utilization. Responses were compared to whether or not the respondents had utilized VCT services. Results in table 4.6 indicate that majority (83%) of the respondents had spouses who approved VCT service utilization. Respondents who were married and their spouses approved VCT service utilization accounted for 40% of those who had utilized the services. The results ($\chi^2=5.507$; $df=1$, $p=0.019$) indicated that a significantly larger proportion of respondents whose spouses approved VCT service utilization had utilized the services. The null hypothesis was therefore rejected at 0.05 level of significance, that there is no significant relationship between VCT utilization approval by spouse and utilization of the services. Many respondents said that they had utilized VCT services after encouragement by their spouses. A 29 year-old married female respondent who had gone for VCT said, “I went for VCT after encouragement by my husband. Had he not encouraged me I doubt if I could have gone for it”. The finding implies that VCT utilization among married couples could be stepped up if VCT promotion programs emphasized the need for couple VCT. In addition, encouraging married couples to hold candid discussions on the need to go for VCT services would be critical in ensuring higher VCT uptake rates.

Table 4.6: Social factors affecting utilization of VCT services

| Social factor | Response | Utilized VCT | Not utilized VCT | Chi-square statistic |
|--|----------|--------------|------------------|---------------------------------------|
| Perception of VCT as a socially acceptable norm | Yes | 85(35%) | 94(38%) | $\chi^2=0.019$ $df=1$ $p=0.890$ |
| | No | 32(13%) | 34(14%) | |
| | Total | 117(48%) | 128(52%) | |
| Membership to social group(s) which approve of VCT utilization | Yes | 43(18%) | 39(16%) | $\chi^2=1.396$ $df=1$ $p=0.237$ |
| | No | 72(30%) | 90(36%) | |
| | Total | 115(48%) | 129(52%) | |
| Perception of VCT utilization by peers/colleagues/ | Yes | 84(35%) | 99(42%) | $\chi^2=0.596$ $df=1$ $p=0.440$ |
| | No | 29(12%) | 27(11%) | |
| | Total | 113(47%) | 126(53%) | |

| | | | | |
|-------------------------------------|-------|---------|----------|-----------------------------------|
| neighbors | | | | |
| Spousal approval of VCT utilization | Yes | 79(40%) | 84(43%) | $\chi^2=5.507$ df=1 p=0.019 |
| | No | 9(5%) | 25(12%) | |
| | Total | 88(45%) | 109(55%) | |

4.5 Preferred methods of VCT service delivery

Table 4.7: Preferred methods of VCT service delivery

| | Responses | Number of Responses | Percentage (%) |
|----|--|---------------------|----------------|
| 1. | Self-testing with results known to myself | 159 | 62 |
| 2. | Testing saliva or mouth swab instead of blood | 49 | 19 |
| 3. | Counselors should male only | 6 | 2 |
| 4. | Counselors should be females only | 3 | 1 |
| 5. | Counselors should be both males and females | 193 | 76 |
| 6. | VCT services should be mobile provided at home and at places of work | 152 | 60 |
| 7. | There should be monetary incentives for people to go for VCT | 43 | 19 |
| 8. | VCT services be offered on a 24-hour basis | 89 | 35 |

Respondents were asked the methods of VCT service delivery that were not widely used, but which they would prefer to be incorporated in the provision of VCT services. The question was a multiple response type, meaning that a respondent could give more than one response from a given set of alternatives. The results in table 4.7 indicate that majority (76%) of the respondents preferred that counselors at all VCT centers be both males and females. This was to cater for the needs of clients from both sexes (males and females). Sixty two percent (62%) of respondents preferred an option of self-testing where the test results remained known to the client only. This was to cater for the needs of respondents who wished that their test results remain known to themselves only.

Sixty percent (60%) of the respondents preferred that VCT services be made mobile provided at home and work places. Most respondents believed this would help them save time and money

that could otherwise be used in accessing VCT centers. Thirty five percent (35%) of the respondents preferred that VCT services be offered on a 24-hour basis. Due to the stigmatized nature of HIV/AIDS, most people seen going for VCT were thought to be HIV positive. “The last time I went for VCT some people who saw me started spreading rumors among my friends, relatives and neighbors that I was HIV positive and this has discouraged me a lot from ever going for the services again”, said a 28-year old male respondent. Many people therefore preferred accessing the VCT centers at odd hours-nights or early mornings-to avoid being seen when going for the services. Nineteen percent (19%) of respondents preferred that saliva or mouth swab be used during HIV testing instead of blood. The reasons given were the pain felt when blood was being drawn for the purpose of testing, and fear of the possibility of contracting the HIV virus during such testing process. Some respondents (19%) also felt that monetary incentives should be used to encourage people to go for VCT.

Integration of these preferred methods of VCT service delivery into the provision of VCT services would likely lead to increased VCT updates.

4.6 Discussion of the findings of the study

4.6.1 The level of utilization of VCT services among the study population

Less than half (48%) of the respondents had gone for VCT at least once. This proportion was higher than those found by Oyore (2003) and Charles et al. (2009) which were 38% and 35% respectively. Among the respondents who had gone for VCT in this study, majority (57%) had gone for the services only once, while 43% had utilized the services more than once, and a higher proportion (60%) of females had accessed VCT compared to males (41%). In addition,

majority (77%) of the respondents were willing to go for VCT in the near future. This finding concurs with those of studies by Kargbou (2004) and Charles et al. (2009) which both found that majority (84% and 85% respectively) of respondents were willing to go for VCT in the near future. A larger proportion (48%) of respondents in this study had accessed VCT services compared to that found in the study done by Kiragu et al. (2006), where only 20% of respondents had accessed VCT while about 34% desired to be tested for HIV in the near future. In addition, the proportions of those who indicated past and future utilization of VCT in this study were higher than those found by the KDHS (2003) where only 13% of women and 14% of men in Kenya said they had been tested for HIV, and approximately two-thirds of respondents were willing to go for VCT in the near future (NASCOP & MOH, 2005). These variations were attributed to increased awareness of the importance of going for VCT and increased access to ART (Fitaw, 2006).

4.6.2 Demographic factors affecting utilization of VCT services

A significantly larger proportion (60%) of females had utilized VCT services compared to males (41%) ($p=0.003$). This concurs with the finding of the study by Oyore (2003) which found that a larger proportion of females (51%) than males (49%) had accessed VCT services. The finding is however inconsistent with that of Kimani et al. (2007) which found that more males than females had utilized VCT services. The finding also disagrees with those of studies by Odhiambo et al. (2004) and Charles et al. (2009) which found no significant relationship between utilization of VCT services and gender.

A significantly larger proportion (63%) of younger respondents aged 15-24 years had accessed VCT compared to those in older age brackets ($p=0.004$). These findings concur with those of the studies done by NASCOP & MOH (2005), Hutchinson and Mahlalela (2006) and Tefera (2006), which all found that higher proportions of younger respondents had accessed VCT services, compared to those in older age brackets. However the finding differed with that of Charles et al. (2009) which found no significant difference in VCT attendance with regard to age.

The largest proportion (58%) of respondents who had gone for VCT were KCSE holders. Fifty one percent (51%) of degree holders and 36% of KACE/Diploma holders had also utilized the services. However, only 5% of the respondents were KCSE holders, and majority (74%) were degree holders. In absolute terms therefore, more degree holders (186) had utilized VCT services compared to the KCSE holders (12). There was no significant relationship between utilization of VCT services and the level of education. This finding concurs with the finding of the study by Charles et al. (2009) which found no significant relationship between utilization of VCT services and level of education. It however disagrees with the findings of studies by Hutchinson and Mahlalela (2006) and Odhiambo et al. (2004) which both found a positive association between utilization VCT services and literacy level.

The study found no significant relationship between utilization of VCT services and marital status, religious affiliation and area of residence. The finding of no significant relationship between VCT service utilization and religious affiliation concur with that of the study by Charles et al. (2009) which found no significant association between VCT uptake and religious affiliation. The finding of no significant relationship between VCT service utilization and area of

residence is inconsistent with that of the study by Kimani et al. (2007) which found that access to VCT was poorer in rural areas compared to urban areas. In addition, the finding of no relationship between marital status and VCT utilization disagrees with that of the study by Mugisha and Eugene (2010) that found that married people were less likely to have gone for VCT than unmarried people.

4.6.3 Psychosocial factors affecting utilization of VCT services

The largest proportion (38%) of the respondents gave the reason for going for VCT as “To know my status or to plan my future”. This finding concurs (albeit with lower proportions) with the findings of studies by Yoder et al. (2004), Oyore (2003) and Annemarie et al. (2008) that all found that the greatest motivator to utilization of VCT services was the desire to know one’s status and to plan the future. Other reasons cited were mandatory HIV testing during pregnancy and before marriage. However, some reasons cited in previous studies such as travel (visa) and employment were never mentioned in this study. The findings of this study concur with the assertion by Gunja (2007) that interest in VCT is often “social” with clients showing interest in knowing their sero-status when they want to get married or go into new relationships, and when they want to plan their future. Majority (58%) of the respondents indicated that the motivation to utilize VCT was adequate, although this perception had no significant effect on their utilization of VCT services.

The main barriers to utilization of VCT were found to be fear of a positive result (22%), fear of stigma (4%) and long distances to the nearest VCT centers (4%). The finding on fear of a positive result as the major deterrent to utilization of VCT services concurs with those of studies

done by IPAR (2004), Kisesa et al. (2000), Mugusi et al. (2002), Charles et al. (2009), and Oyore (2003). However, the proportion of respondents who cited fear as the main barrier to utilization of VCT services in this study (22%) was lower than those found by IPAR (90%), Kisesa et al. (75%), Mugusi et al. (54%), Charles et al. (35%) and Oyore (26%). Other respondents cited procrastination as a reason for not going for VCT, while some said they did not have any specific reason for their failure to go for VCT. However these reasons were never cited by any of the previous studies.

A significantly larger proportion of those who perceived VCT as an important HIV/AIDS control strategy had utilized the services compared to those who did not have such perception ($p=0.039$). In addition, majority (77%) of the respondents indicated future utilization of VCT. This concurs with findings of studies by Kargbou (2004) and Charles et al. (2009) which both found that majority (84% and 85% respectively) of respondents were willing to go for VCT in the near future.

Majority (61%) of the respondents felt they were at risk of HIV infection. However, the study found no significant relationship between self-perception of risk and utilization of VCT services. This finding concurs with that of the study by Oshi et al. (2007) which found that respondents with higher self-perception of risk did not necessarily see the need of seeking VCT services. The study finding however disagreed with those of Habte et al. (2003), Kakoko (2006) and, Jereni and Muula (2008) which all found a direct positive relationship between VCT service utilization and self-perception of risk.

Spousal approval of VCT utilization emerged as the most significant social factor affecting utilization of VCT services ($p=0.019$). The finding concurs with that of the study by Thornton (2005) which found that VCT approval by a spouse impacted positively on the decision of an individual to go for VCT. It also concurs with the finding of the study by Kingsley et al. (2007) which found that a majority (89%) of pregnant women in Nigeria were willing to go for VCT if they were accompanied by their spouses. However, unlike Thornton (2005) and Smith (2005), the study found no significant relationship between utilization of VCT services and social norms, VCT approval by peers/colleagues/neighbors, and membership to social groups which approve utilization of VCT services. The finding also disagreed with that of the study by Kamanga (2006) which found a positive association between membership to clubs which approve of VCT utilization, and utilization of the services ($p=0.01$).

4.6.4 Preferred methods of VCT service delivery

A large proportion (76%) of the respondents preferred that counselors at the VCT centers be both males and females. This concurs with the finding of the study by Kipitu (2005) that found that majority of VCT clients would have preferred that VCT counselors be both males and females. A large proportion (62%) of respondents preferred an option of self-testing where the test results remained known to the client only. This finding is consistent with that of the study by Spielberg et al. (2003) which found that a larger proportion (61%) of respondents preferred self home-based HIV testing. In addition, the study finding concurs with that of the study by Keller (2009) that found that majority (91%) of respondents found self-testing preferable. Sixty percent (60%) of the respondents preferred that VCT services be made mobile provided at home and work places. This concurs with the finding of the study by Mutale et al. (2010) that found that there

was an overall increase in the proportion of the population who went for VCT with provision of home-based VCT services. It is also consistent with the finding of the study by Kimani et al. (2007) which found that majority of respondents preferred mobile VCT.

Thirty five percent (35%) of the respondents preferred that VCT services be offered on a 24-hour basis. The finding is consistent with that of the study by Odeny (2010) that found that many people preferred accessing VCT centers in the evenings or early nights. The respondents said that during the day they were busy and could not find time to go for the services. According to Kina and Nyyneque (2007), the stigmatized nature of HIV/AIDS has brought about a situation whereby anybody seen going to a VCT center was thought to be HIV positive. Many people therefore preferred accessing the VCT centers at odd hours-evenings or early hours of the night to avoid stigmatization. Nineteen percent (19%) of the respondents preferred that saliva or mouth swab be used during HIV testing instead of blood. This concurs with the finding of the study by Keller (2010) which found that majority of the respondents preferred the OraQuick test which involves the use of oral fluids, to the Uni-Gold test which involves the use of blood. Nineteen percent (19%) of the respondents preferred monetary incentives for VCT clients. This is consistent with the finding of the study by Thornton (2005) which found that randomly assigned monetary rewards increased overall VCT attendance by over 100%.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter covers the summary of the study findings, implications of the findings, conclusions and recommendations. In addition, the chapter captures suggested areas for further research.

5.1 Summary of the findings of the study

Demographic factors affecting utilization of VCT services were gender and age; a significantly larger proportion of females had utilized VCT services compared to males ($p=0.003$). In addition, a significantly larger proportion of younger respondents had utilized VCT services compared to their older counterparts ($p=0.004$).

Psychological factors affecting utilization of VCT services were perception of the importance of VCT as an important HIV control strategy and willingness to utilize VCT services in the near future. A significantly larger proportion of respondents who perceived VCT as an important HIV/AIDS control strategy had utilized the services compared to those who did not have such perception ($p=0.039$). In addition, majority (77%) of the respondents were willing to utilize VCT services in the near future.

Spousal approval of VCT utilization emerged as the most significant social factor affecting utilization of VCT services. A significantly larger proportion of respondents whose spouses approved VCT utilization had utilized the services compared to those whose spouses did not approve the services ($p=0.019$).

Preferred methods of VCT service delivery were: deployment of both male and female counselors at all VCT centers (76%), self-testing with the results known to the client only (62%), mobile VCT services provided at home and at places of work (60%), provision of VCT services on a 24-hour basis (35%), use of saliva or mouth swab in HIV-testing instead of blood (19%), and use of monetary incentives to encourage people to go for VCT (19%).

5.2 Implications of the study findings

The findings of this study have the following implications:

- VCT promotion programs need to put more focus on male and older segments of the population.
- VCT promotion programs need to put up more VCT centers especially in rural areas to reduce the long distances covered in accessing VCT centers.
- VCT promotion programs need to focus on alleviating perceived psychosocial barriers related to utilization of VCT services.
- VCT promotion programs need to scale up provision of health education on the importance of VCT as an HIV/AIDS control strategy.
- VCT promotion programs need to come up with new methods of motivating people to utilize VCT services.
- VCT promotion programs need to focus on promotion of couple VCT especially among married couples.
- VCT promotion programs need to target individuals rather than communities.
- VCT programs need to integrate the preferred methods of VCT service delivery revealed by the study. These include deployment of both male and female counselors at all VCT centers, provision of equipment for self-testing with the results known to the client only, providing VCT services on a 24-hour basis, provision of mobile VCT services at home and at places of work, use of saliva or mouth swab for HIV testing instead of blood.

5.3 Conclusions

Gender and age emerged as the most significant demographic factors affecting utilization of VCT services. A significantly larger proportion of females than males had utilized VCT services ($p=0.003$). In addition, a significantly larger proportion of younger respondents had utilized VCT services compared to their older counterparts ($p=0.004$). Perception of the importance of VCT as an important HIV control strategy and willingness to utilize VCT services in the near future were the most significant psychological factors affecting utilization of VCT services. A significantly larger proportion of respondents who perceived VCT as an important HIV/AIDS control strategy had utilized the services compared to those who did not have such perception ($p=0.039$). In addition, majority (77%) of the respondents were willing to utilize VCT services in the near future. Socially, spousal approval of VCT services emerged as the most significant factor affecting utilization of VCT services. Individuals whose spouses approved VCT utilization were more likely to have utilized VCT services ($p=0.019$). Lastly, majority of the respondents preferred that the following approaches to VCT service delivery be integrated in the provision of VCT services: deployment of both male and female counselors at all VCT centers, self-testing with the results known to the client only, providing VCT services on a 24-hour basis, mobile VCT services provided at home and at places of work, and use of saliva or mouth swab for testing instead of blood. The findings suggest that VCT service uptake rates could be stepped up if interventions were put in place to address the psychosocial and demographic barriers to utilization of VCT services. In addition, integration of the preferred methods of VCT service delivery in the provision of VCT services would likely lead to increased VCT service utilization among members of the study population.

5.4 Recommendations

The study recommends that the Government of Kenya through the MOH, and other VCT service providers such as NGOs, CBOs and FBOs should immediately do the following:

- Initiate VCT promotion programs that will mainly focus on male and older segments of the population.
- Step up health education on the importance of VCT as an HIV/AIDS control strategy.
- Promote couple HIV counseling and testing.
- Integrate the following preferred methods of VCT service delivery in the provision of VCT services:
 - i) Deployment of both male and female counselors at all VCT centers in Kenya.
 - ii) Introduction of an option of self-testing with the results known to the clients only,
 - iii) Provision of VCT services on a 24-hour basis,
 - iv) Provision of mobile VCT services at homes and work places,
 - v) Provision of equipment in all VCT centers which can be used in testing saliva or mouth swab instead of blood.

5.5 Further research areas

Further research should be carried out in the following areas:

- Psychosocial and demographic factors affecting utilization of VCT services among teachers in all other districts in Kenya
- Socio-economic and cultural factors affecting utilization of VCT services among teachers in Kenya
- Psychosocial and demographic factors affecting utilization of VCT services among teachers in pre-primary, primary and tertiary institutions in Kenya

- Knowledge, Attitude and Practice (KAP) in relation to utilization of VCT services among teachers in Kenya
- The extent to which mandatory HIV testing before marriage, employment, travel, and when seeking insurance services contribute to utilization of VCT services.

REFERENCES

- Annemarie, E. M., Arjan, E. R., Hans, E. O., Herman, P. S. (2008). "Fear of Stigmatization as a barrier to Voluntary HIV Counseling and testing in South Africa". *East African Journal of Public Health Association* Vol.5, Num.2, 2008, pp.49-54.
- Avert (2008). HIV and AIDS Statistics Commentary. AVERT.org
- Bandura A. (2001). Social Cognitive theory; An agentive perspective. *Annual review of psychology*, 52, 1-26. University of Twente.
- Barimbui, L., Miller, P. (2008). The Impact of HIV/AIDS on Education and the Teaching Profession. A paper presented at The Third Commonwealth Teachers' Research Symposium held at Pestana Rovuma Hotel, Maputo, Mozambique (19th-21st Feb, 2008).
- Batenganya M., Abdulwadud O. A., Kiene S. M. (2007). Home-based Voluntary Counseling and Testing (VCT) in developing countries. *CochraneDatabase of Systematic Reviews*. 2007 Issue 4. John Wiley

and Sons Ltd.

- Bowler T. (2003). Approaches to examining the impact of HIV/AIDS on Teachers; Policy and Research: Series 1. UK Working Group on Education and HIV/AIDS.
- Charles, M., Kweka, E., Mahande, A. (2009). Evaluation of uptake and attitude to VCT among health care professional students in Kilimanjaro region of Tanzania. *BMC Public Health*. 2009; 9:128.
- Cohen, D. (2002). "Human Capital and the HIV Epidemic in Sub-Saharan Africa", Working Paper.
- Family Health International (FHI) (2002). Evaluating HIV Counseling and testing in Evaluating Programs for HIV/AIDS Prevention and Care in Developing Countries. A Hand Book for Program Managers and Decision Makers.
- Fisher, A. A., Laing, J. E., Stoeckel, J. E. and Townsend, J. W. (1998). Handbook For Family Planning Operations Research Designs (2nd ed). National Population Council. Nairobi.
- Fitaw Y. (2006). "Factors affecting acceptance of VCT among different professional And community groups in North and South Gondar administrative zones, North-west Ethiopia". *Ethiopia.J.Health Dev.*2006;20(1):24-31.
- German Development Service (GDS). (2001). The HIV/AIDS Global Epidemic.
- GNAT and TEWU. (2007). An Assessment of the Awareness of HIV/AIDS in the Education Sector and the Needs of Teachers and Education Workers living with HIV/AIDS in Ghana.
- Grassly, N. C., Desai, K., Pegurri, E., Sikazwe, A., Malambo, I., Siamatowe, C. and Bundy, D. (2003). "The Economic Impact of HIV/AIDS on the Education Sector in Zambia". *AIDS*; 17, 1039- 1044.
- Gunja B.G.C. (2007). Socio-Economic Characteristics affecting People's Knowledge and Utilization of HIV/AIDS Counseling-Testing Service in Kathmandu District, Nepal.
- Habte, D., Deyessa, N. and Davey, G. (2003). "Assessment of the Utilization of Pre-marital HIV Testing Services and Determinants of VCT in Addis Ababa, Ethiopia". *Ethiopia. J. Health Dev.* 2006; 20(1): 18-23.
- Hutchinson, P. L. and Mahlalela, X. (2006). "Utilization of VCT in the Eastern Cape, South Africa". *AIDS Care*, 2006 Jul; 18(5): 446-455.

- International Labor Organization (ILO). (2004). HIV/AIDS, Work and Development in the United Republic of Tanzania. Country Profile produced within the ILO- GTZ Partnership. Geneva.
- Institute of Policy Analysis and Research, IPAR. (2004). HIV/AIDS scourge in Nyanza Province; Poverty, culture and behavior change. IPAR Policy brief. Volume 10, Issue 11, 2004.
- Jereni, B. and Muula, A. (2008). “Availability of Supplies and Motivations for Assessing Voluntary Counseling and Testing Services in Blantyre, Malawi”. BMC Health Serv Res. 2008; 8: 17.
- Kakoko, D. C. V. (2006). Voluntary HIV Counseling and Testing Service Uptake among Primary School Teachers in Mwanza, Tanzania: Assessment of Socio-Demographic, Psychosocial and Socio-Cognitive Aspects. PHD Thesis. University of Bergen. Norway.
- Kamanga, G. (2006). The Role of Post-test Clubs in Increased Uptake of HIV Counseling and Testing in Malawi: AIDS 2006 XVI Intern AIDS Conference: Abstract No. WEPEO533.
- Kargbou, A. Y. (2004). Factors Influencing Utilization of Voluntary Counseling and Testing Services among Fisher Folks in Kisumu. Diploma in Community Health Dissertation. AMREF. Nairobi.
- Kate A. L. (2006). “Study design III: Cross-sectional studies”. Evidence-based Dentistry (2006) 7, 24-25.
- Keller, D.M., (2009). Rapid self-test for HIV feasible, accurate, and reliable. Infectious Diseases Society of America (IDSA) 4th Annual Meeting. Abstract no. 180. Medscape Medical News.
- Kelly, M. (2000). “Planning for Education in the Context of HIV/AIDS. IIEP Fundamentals of Educational Planning”, No. 66. UNESCO. Paris.
- KEMRI. (2001). AIDS Update. October-December Vol.4. No. 004.
- Kenya Space. (2008). HIV in Kenya. kenyaspace.com.
- Khan, H., Wess, E. (2006). Promoting VCT at the workplace. Horizons Report, 2006. Dec; [4] p.
- Kimani, J., Wachihi C., Muthama E., Gakii G., Ngare, C., Cherutich, P., Margaret, G., Bwayo, J., Kariri, A., Jaoko W. (2007). VCT program in Kenya; Are

we making progress?. IAS Abstract.

- Kina B. and Nyyneque R. O. (2007). Reaching, caring, serving all. Launch of Moonlight VCT.
- Kingsley C.O., Kimberly R., Adewale I.A., Nwalfe U. (2007). AIDS Patient Care and STDs. An Evaluation of Awareness and Beliefs of Pregnant Nigerian Women towards VCT. April 2007, 21(4): 252-260.
- Kipitu, U. (2005). Quality of Care of Voluntary Counseling and Testing; Clients' Experiences, Expectations and Satisfaction in Mbeya Tanzania. Mbeya District Council. Tanzania.
- Kiragu, K., Kimani, M., Manathoko, C. and Mackenzie, C. (2006). Teachers Matter: Baseline Findings on the HIV-related needs of Kenyan Teachers. Horizon Research Update. Population Council. Washington DC.
- Kiranga, J. W. (2004). An exploration of Perceptions and Attitudes to VCT among Women in Nairobi. Int Conf AIDS. 2004 Jul 11-16; 15; Abstract no.D10693, University of Nairobi, Kenya.
- Kisesa A. M., Nkungu D., Dulle T. (2000). Danale Creation for VCT Services by Social Marketing-Angaza Experience. Tanzania, 788 (2000).
- Kpevai, D. V. (2004). HIV/AIDS and the Public Sector Workforce: An Action Guide to Managers. Family Health International and Futures Group. Arlington. USA.
- Kumarnayake, L. and Watts, C. (2001). "Resource Allocation and Priority Setting of HIV/AIDS Interventions: Addressing the Generalized Epidemic in Sub-Saharan Africa". Journal of International Development. 2001. 13:451-466.
- Mariano, C. (2005). Clients' Perception of HIV/AIDS Voluntary Counseling and Testing (VCT) in Mozambique. Mozambique.
- Mawusi, G., and Inusah, F. (2003). Attitude and perception on Voluntary HIV testing: A case of Ghana University. University of Ghana. Ghana.
- Ministry of Higher Education and Tertiary Education (Zimbabwe). Policy on HIV and AIDS for Teachers' Colleges.
- Mugisha, E., and Eugene, P. (2010). "Factors influencing utilization of voluntary counseling and testing services in Kisenya Fishing community in Uganda". Journal of the Association of Nurses in AIDS care.

- Mugusi, F., Josiah, R., Moshi, A., Chale, S., Bakari, M., Aris, E., Magao, P., Pallangyo, N., Sandrom, E., Biberfeld, G., Mhalu, F., and Pallangyo, K. (2002). "Drop-Outs in a Long-Term Follow-Up Study Involving Voluntary Counseling and HIV Testing: Experience From a Cohort of Police Officers in Dar-es-Salaam, Tanzania". *Journal of Acquired Immune Deficiency Syndromes* 30(1):119-23.
- Mumah S. C. (2003). *Religiosity and sexual behavior in the era of HIV/AIDS: An Empirical Study of Primary School Teachers in Kenya*", A Paper Presented at Hawaii International Conference on Social Sciences, June 12-15.
- Mutale, W., Michelo, C., Jurgensen, M., and Fylkesnes, K. (2010). Home-based Voluntary HIV counseling and testing found highly acceptable and to reduce inequalities. *BM. Public Health* 2010, 10: 347 doi: 10.1186/1471-2458-10-347.
- NACC. (2007). *National HIV Prevalence- as released in June 2007*. NACC and NASCOP. Nairobi.
- NASCOP & MOH. (2005). *AIDS in Kenya; Trends, Interventions and Impact* (7th Ed.). NASCOP. Nairobi.
- Odeny, M. (2010). *How moonlight VCT helps to curb HIV/AIDS infection in South Nyanza, Kenya*. Kenya News Agency. Nairobi.
- Odhiambo A. F., Genga I. O., Aloo J. A., Kumon K., Oishi I., Vulule J., Okello D., Ogolla F., Muniu E. M. (2004). *Knowledge, Attitude and Practices (KAP) regarding HIV/AIDS and Voluntary Counseling and Testing (VCT) center operations: Western Kenya experience*. International Conference on AIDS (15th) (2004).
- Office of the President. (2005). *Kenya National HIV/AIDS Strategic Plan 2005/6-2009/10; A Call to Action*. NACC. Nairobi.
- Oshi, S. N., Ezugwu, F. O., Oshi, D. C., Dimkpa, U., Kori, F. C. and Okperi B. O. (2007). *Does Self-Perception of Risk of HIV Infection make the Youth to Reduce Risky Sexual Behavior and Seek VCT Services ? A Case Study Of Nigerian Youth*. Center for Development and Reproductive Health. Anchara. Nigeria.
- Oyore, J. P. (2003). *Factors influencing utilization of Voluntary Counseling and Testing Services for HIV/AIDS among the Youth in Nairobi Province, Kenya*. A Masters Thesis of Kenyatta University, Nairobi.
- Pathfinder. (2002). *In Focus: Young People and STD/HIV/AIDS*. Focus on Young

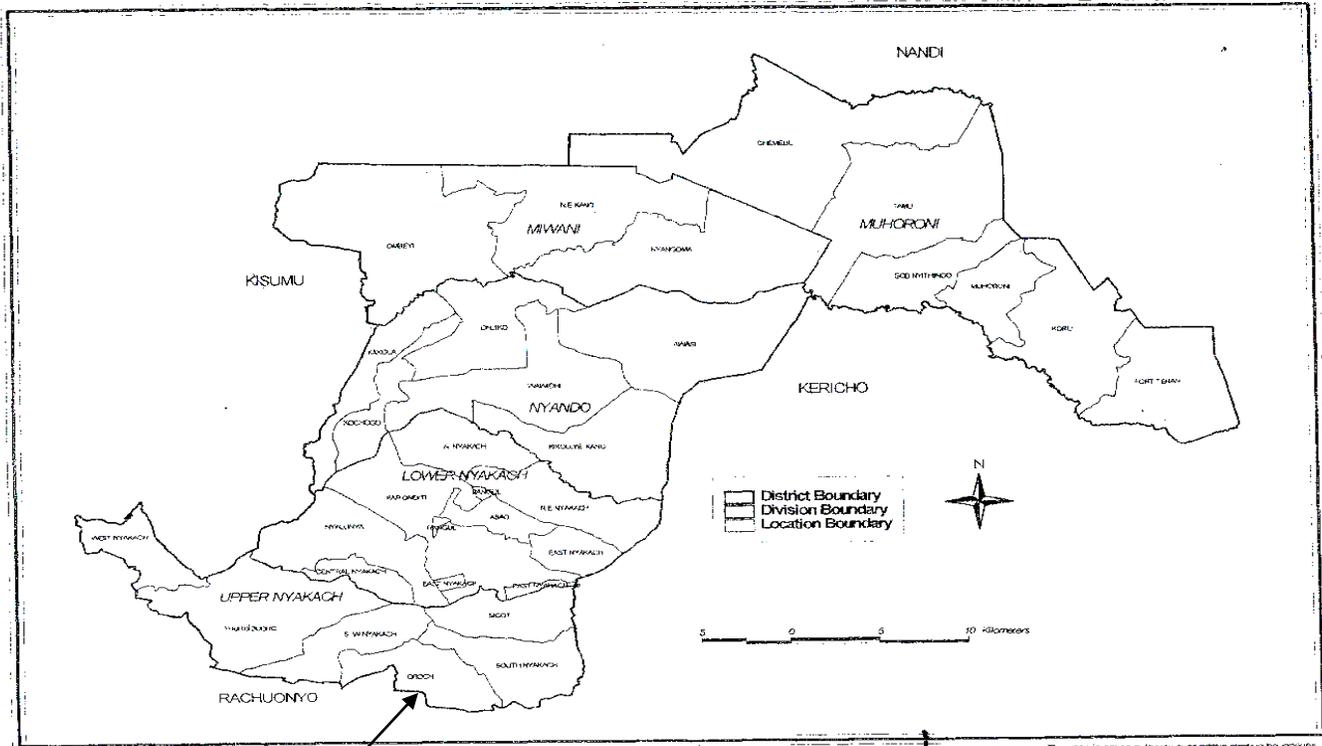
Adults.1201 Connecticut Avenue. NW Suite 5001.Washington D. C.

- Population Services International (PSI). (2008). HIV Voluntary Counseling and Testing; International HIV Counseling and Testing Workshop Jan 21-24, Lusaka, Zambia.
- Republic of Kenya (ROK) (Ministry of Planning and National Development). (2002). Nyando District Development Plan 2002-2008. Government of Kenya. Nairobi.
- Republic of Kenya (ROK), NACC. (2006). Final Report on the Assessment of the Socio-economic Impact of HIV and AIDS on Key Sectors in Kenya. NACC. Nairobi.
- Save the Children. (2008). Teacher Peer Counseling on HIV/AIDS. Successes and Lessons learned from Mangochi District, Malawi.
- Sherr, L., Lopman, B., Kakowa, M., Dube, S., Chawira, G., Nyamukapa, C., Oberzaucher, N., Cremin, I., and Gregson, S. (2007). "Voluntary Counseling and Testing: Uptake, Impact on Sexual behavior, and HIV Incidence in a Rural Zimbabwe Cohort". *AIDS* 2007 Apr 23; 21(7): 851-860.
- Sinyolo, D. (2008). Teacher Supply, Recruitment and Retention in six sub-Saharan Africa Anglophone Countries; Report of a study conducted by Education International in Gambia, Kenya, Lesotho, Tanzania, Uganda and Zambia.
- Smith, R. (2005). "Fear, shame and peace of mind: Motivation and Barriers to VCT Utilization among Most at Risk populations in Vietnam". Population Services International (PSI). May 37p. (First Report). Hanoi. Vietnam.
- Spielberg, F., Camps, S., Ramachandra, E. (2003). HIV Home Self-testing: Can it work? National HIV Prevention Conference. Abstract no. M1-AO1O1.
- Stringer, J. (2003). "Nevirapine to Prevent Mother-to-Child Transmission of HIV-1 among Women of Unknown Sero Status". *African Medical Journal* May 13;1850- 1853.
- Tapparo J. (2006). National Incidence Surveillance using BED capture. Immunoassay among Pregnant Woman and Female Sex Workers, Thailand.
- Tefera, Z.D. (2006). Determinants of Youth Voluntary HIV Counselling and Testing acceptance in 4 Youth Centers of the Family Guidance Association of Ethiopia. Unpublished Masters Thesis. Swiss Tropical Institution.

- Thornton, R. (2005). The impact of Incentives on learning HIV Status: Evidence from a Field Experience.
- TSC. (2004). Sub-Sector Work Place Policy on HIV and AIDS.
- UNAIDS. (2002a). HIV Voluntary Counseling and Testing: A Gateway to Prevention and Care. UNAIDS Best Practice Collection (June).
- UNAIDS. (2002b). United States Population Census Bureau: Impact of VCT- A Global Review of Benefits and Challenges.
- UNAIDS/WHO. (2002). AIDS Epidemic Update, December 2002.
- UNAIDS/WHO. (2005). AIDS Epidemic Update, December, 2005.
- UNAIDS/WHO. (2008). Report on the Global AIDS Epidemic, end of 2007.
- UNDP (2008). Monitor, Track, Learn and Support; Tracking the Millennium Development Goals. UNDP.
- PEPFAR. (2006). Kenya FY 2006 Country Operational Plan (COP).
- USAID. (2003). HIV/AIDS. USAID.
- WHO. (2004). Investing in a Comprehensive Health Sector Response to HIV/AIDS Scaling Up Treatment and Accelerating Prevention. WHO. Geneva.
- Willis, R. (2005). The AIDS Pandemic. Stranborough Press Ltd. England.
- World Bank. (2005). HIV/AIDS and the World Bank.
- World Bank. (2009). Regional HIV/AIDS Update.
- Yorder, P., Matinga, S. and Matinga, P. (2004). VCT for Malawi: Public Perspective and Recent VCT Experience. Calverton. Maryland, USA: ORC Marco.

APPENDIX 1

NYANDO DISTRICT (Administrative Boundaries)



Prepared by Central Bureau of Statistics

This map is not an authority over administrative boundaries

Map of Kenya



APPENDIX 2

SECONDARY SCHOOL TEACHERS' QUESTIONNAIRE ON PSYCHOSOCIAL AND DEMOGRAPHIC FACTORS AFFECTING UTILIZATION OF VCT SERVICES

I. INTRODUCTION

Thank you very much for accepting to answer these questions. This questionnaire is purely a research tool meant for academic purposes. All the information got will be handled with strict confidentiality and without any victimization whatsoever. The main objective of the study is to find out the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers in Nyando District, Kenya. Please answer all the questions sincerely.

Please do not write your name anywhere on this paper.

II. DEMOGRAPHIC INFORMATION

Q1. Sex of the respondent

- (1) Female []
- (2) Male []

Q2. Highest level of education of the respondent

- (1) KCSE []
- (2) KACE/ Diploma []
- (3) Degree []
- (4) Post-graduate degree []

Q3. Age of the respondent

- (1) 15-24 yrs []
- (2) 25-34 yrs []
- (3) 35-44 yrs []
- (4) 45 yrs and over []

Q4. Marital status of the respondent

- (1) Single []
- (2) Married/Cohabiting []
- (3) Divorced/Separated []
- (4) Widowed []

Q5. Respondent's religion

- (1) Catholic []
- (2) Protestants []
- (3) Muslim/ Other []

Q6. Respondent's area of residence

- (1) Urban []
- (2) Rural []

Q7. Have you ever gone for Voluntary Counseling and/or Testing (VCT)?

- (1) Yes []

(2) No []

III. PSYCHOSOCIAL INFORMATION

If your answer to Q7 above is Yes, answer Q8 and Q9 and then Q11 onwards in this section. If your answer to Q7 is No, answer question Q10 onwards.

Q8. How many times have you gone for voluntary counseling and/ or testing? (For those who have gone for VCT)

- (1) Once []
- (2) More than once []

Q9. What motivated you to go for voluntary counseling and/or testing? (For those who have gone for VCT) [You can tick more than one response/box below]

- (1) To know my status/plan my future []
- (2) Blood donation []
- (3) Poor health of self []
- (4) Poor health of spouse/ sexual partner and/ or child []
- (5) Undergoing treatment []
- (6) After having sex with a partner I did not trust []
- (7) Sexual partner's risky sexual behavior []
- (8) Influenced by spouse/ relative []
- (9) Influenced by a colleague/ friend []
- (10) Influenced by the mass media campaign []
- (11) Other (specify)_____

Q10. Why haven't you gone for voluntary counseling and/or testing?

- (1) Long distance between where I stay and the nearest VCT []
- (2) Fear of a positive result []
- (3) Fear of stigmatization by family, relatives and friends/ other people knowing my HIV status []
- (4) Fear of family break-up in case of being HIV positive []
- (5) Fear of loosing my standing/respect in the society []
- (6) Fear of contracting HIV during testing []
- (7) There is no need because HIV/AIDS has no cure []
- (8) Inadequate equipment used for testing []
- (9) Other (please specify)_____

Q11. Will you go for VCT in the near future?

- (1) Yes []
- (2) No []

Q12. Do you fear being tested for HIV?

- (1) Yes []
- (2) No []

Q13. Please put a tick [✓] in the box which best describes your perception of the following aspects of VCT services?

(a) VCT is an important HIV/AIDS control strategy?

- (1) I agree []
- (2) I don't agree []
- (3) I don't know []

(b) The current motivation to attend VCT is adequate

- (1) I agree []
- (2) I don't agree []
- (3) I don't know []

Q14. Do you think you are at risk of infection by HIV? (1) Yes [] (2) No []

Q15. Do you belong to any social group (e.g. club etc) which approve of voluntary counseling and/or testing? (1) Yes [] (2) No []

Q16. Is VCT a socially acceptable norm in your community?(1) Yes [] (2) No []

Q17. Do your peers/colleagues/neighbors approve of voluntary counseling and/or testing for HIV? (1) Yes [] (2) No []

Q18. If married, does your spouse approve of voluntary counseling/testing? (1) Yes [] (2) No []

Q19. Among the following suggested approaches to VCT service delivery presently not being used widely, which ones would you wish to be incorporated in the provision of VCT services (you can tick more than one alternative):

- (1) Self-testing with results known to yourself only []
- (2) Testing saliva or mouth swab instead of blood []
- (3) Counselors at VCT centers should be: (1) Males only []
(2) Females only []
(3) Both males and females []
(Please tick one here)
- (4) VCT services should be made mobile, provided at home and places of work []
- (5) There should be monetary incentives for people to go for VCT []
- (6) VCT services should be offered on a 24-hour basis []
- (7) Other (Please specify)_____

Q20. Briefly give your suggestions on aspects of VCT you would like to be done away with_____

Q21. Are you willing to participate in a Focus Group Discussion to be held later related to the issues contained in this questionnaire? (1) Yes [] (2) No [].

THANKS FOR YOUR COOPERATION

APPENDIX 3

SECONDARY SCHOOL TEACHERS' FOCUS GROUP DISCUSSION (FGD) GUIDE

The discussion will elicit the views of the secondary school teachers on the factors which affect their utilization of VCT services. The following questions will guide the FGDs:

1. What are the motivators for utilization of VCT services among secondary school teachers?
2. What is the attitude of secondary school teachers to VCT and its utilization?
3. What is the secondary school teachers' perception of risk of infection by HIV and how does this affect their utilization of VCT services?
4. To what extent is utilization of VCT considered a socially accepted norm among secondary school teachers?
5. How do spouses, peers, colleagues and neighbors influence a secondary school teacher's decision to go for VCT?
6. What methods of VCT service delivery would secondary school teachers prefer to be incorporated in the provision of VCT services?

APPENDIX 4

SECONDARY SCHOOL TEACHERS' CONSENT FORM

Purpose of study: I invite you to participate in this study which aims at finding out the psychosocial and demographic factors affecting utilization of voluntary counseling and testing services among secondary school teachers in Nyando District, Kenya.

Procedure: You will be required to fill questionnaires and thereafter to participate in a focus group discussion.

Benefits: By participating in this study you will help in increasing the understanding of the psychosocial and demographic barriers to utilization of VCT services. It is hoped that implementation of the findings of the study will lead to increased VCT services uptake rates among not only secondary school teachers but also other vulnerable groups.

Your participation in the study is voluntary and you have a right to refuse to participate or to answer questions that you feel uncomfortable with. If anything is not clear or you need more information I will provide it to you.

Declaration of the respondent:

I have understood that the aim of the study is to find out the psychosocial and demographic factors affecting utilization of VCT services among secondary school teachers. I realize that I will be required to fill questionnaires and thereafter participate in a focus group discussion. I consent voluntarily to participate in the study.

Signature of respondent.....

Date.....

Signature of investigator.....

Date.....