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**FACTORS INFLUENCING UPTAKE OF VOLUNTARY COUNSELING  
AND HIV TESTING SERVICES  
BY GOVERNMENT HEALTH WORKERS IN CENTRAL PROVINCE KENYA.**

**BY**

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# DECLARATION

## 1. BY THE STUDENT

I, Ephantus M. Maree do hereby declare that this thesis is my original work and has not been submitted for the award of a degree or diploma in any other University or college.

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## DEDICATION

To my late father Geoffrey Maree for teaching me the core values of life and more so the importance of education.

## ACKNOWLEDGEMENTS

Thanks to the lord almighty for getting me this far. I am greatly indebted to my dedicated supervisors Dr M.N. Keraka and Dr A. Kamau for their valuable expertise and time in making this thesis a reality. I will always be grateful for their guidance and constructive criticism. Never in life will I ever forget their encouragement particularly during those moments when the spirits to continue were so low. My gratitude's are also extended to my lecturers at the departments of public health. A lot of appreciation to my secretary Jeldeen Wanjiku and Patrick Muriuki for his encouragement. Lastly, I wish to thank those who assisted me in the field particularly Caro Kinuthial, Sharp Maina, Steve Oloo and Ruth Wambui. May all of you be blessed abundantly.

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## OPERATIONAL DEFINATION OF TERMS

AFFECTED	A person who is feeling the impact of HIV and AIDS through sickness or loss of close person.
COMPREHENSIVE CARE	A range of service offered to HIV positive person including, treatment, clinical, physical, nutritional and psychological support
COUNSELLING	A session where a person with difficulties is assisted to think through a problem and find a possible solution
CONFIDENTIALITY	The right to have medical or other information including HIV kept secret
HIV TESTING	A medical test to determine a person's sero-status
VCT	Voluntary counseling and testing; A process that enable peoples to willingly know their sero-status to help them plan their lives and make informed decisions.
WORKPLACE	Occupation station and places where workers spend time for gainful employment.

## ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti-Retroviral Therapy
CCC	Comprehensive Care Centre
DASCO	District AIDS/STI Coordinator
DHMT	District Health Management Team
ELISA	Enzyme Linked Immunosorbent Assay
HIV	Human Immunodeficiency Virus
JHPIEGO	John Hopkins Programme for International Education Gynaecology and Obstetrics
KAIS	Kenya AIDS Indicator Survey.
KDHS	Kenya Demographic Health Survey
KNASP	Kenya National HIV/AIDS Strategic Plan
MOH	Ministry Of Health
NACC	National AIDS Control Council
NASCOP	National AIDS Control and STD Control Programme
PMTCT	Prevention Of mother To Child Infection
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TB	Tuberculosis
UNAID	United Nations Project on AIDS
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

## ABSTRACT

Voluntary counseling and testing for HIV is an important and effective component of response to HIV/AIDS epidemic. The Government of Kenya is fully committed to providing VCT services through out Kenya at no cost through mainstream government facilities by public health workers. These health workers who provide this noble service are supposed to be the frontline beneficiaries of VCT services. However current situation shows that this is not the case. This study therefore analyzed key factors that influence uptake of voluntary counseling services by public health workers. The level of VCT services utilization by health workers was compared against social demographic, knowledge, practice, attitude and service provision factors. The study adopted a descriptive cross sectional approach encompassing mainly quantitative data collected from the respondents. A pretested questionnaire was used to collect data. The data collected was summarized using frequencies, percentage, means and standard deviations and further presented using graphs, figures and tables. The data was analyzed using the statistical package for social sciences (SPSS) version 11.5. Variables were categorized into groups of factors of interest thus knowledge, attitude, practice and service provision. Proportions were compared using chi square test for non continuous categorical variables and Pearson moments correlation for continuous categorical variables. The health workers had an average age of 41.1 (SD=8.9) years with minimum of 22 and maximum of 57 years. The result showed that most of the health workers (73.1%) had visited VCT. Most of those who had visited VCT did so to know their status (91.4%) while most of those who had not done so gave reason for it. However, the study showed that 30.9% of health workers had only visited VCT centre for testing only once in their lifetime. The study similarly established that 61% of health workers had some form of training in HIV/AIDS. On analysis there was no significant relationship between knowledge and attitude management and outcome variables of VCT uptake and frequency of uptake. Using chi square test for difference in proportions” attitude of service provider” were significant determinant of VCT uptake ( $\chi^2=11.939$ ,  $df=4$ , and  $p=0.018$ ). Waiting time was also found to be significantly associated with VCT uptake ( $\chi^2=10.393$ ,  $df=4$  and  $p=0.034$ ) It is therefore recommended that health sector should avail more staff for voluntary testing and counseling and emphasis on client friendly approach. This has clearly been demonstrated significant findings in variables such as service provider availability and attitude and waiting time..

## CHAPTER ONE: INTRODUCTION

### 1.1 Background To The Study

HIV/AIDS is not simply a health issue but a substantial threat to social and economic development imposing heavy disease burdens on economies at all levels. UNAIDS report on global AIDS epidemic 2011 estimated that there were 34million people living with HIV by end of 2010. Among these 25 million were aged between 15 to 49 years and it is from this age bracket where we derive most of our workers from. Globally there are 16.6 million orphans as a result of HIV/AIDS and 6.6 million HIV patients are on antiretroviral therapy.

Africa and more specifically sub-Saharan Africa bears the most of HIV/AIDS burden as most of the infected live here. Of all the infected cases about 68% (23.1 million) are in sub-Saharan Africa. Similarly of the 1.8 million deaths which occurred globally in 2010 due HIV/AIDS most of them were in sub-Saharan Africa. HIV/AIDS spread rapidly in Kenya in the 1990s reaching prevalence of 20-30% in some parts of the country (NASCO, 2006). The illness has profoundly disrupted economic and social basis of families and country at large.

In the public sector HIV/AIDS has resulted to subsequent death of workers and this has had enormous impact on productivity and earnings. It is estimated that over 1.3 million Kenyans are already living with HIV/AIDS in Kenya (KAIS, 2007). Most of these people do not know their HIV status and hence may be spreading HIV without knowing. Estimate suggests that about 150,000 HIV/AIDS related deaths are occurring in Kenya

every year (KNASP, 2005). It is projected that 130,000 new HIV infections occurred in Kenya in the year 2010 (NACC, 2010).

Combating HIV/AIDS and other diseases is one of the millennium development goals (WHO, 2000). In Sub Sahara Africa where over 68% of HIV cases are, huge amount of monies are being used to address this scourge by various governments and organizations. Kenya is no exception and in the year 2008 about 45 billion Kenya shillings were projected to be used on HIV/AIDS related activities (KNASP, 2005). However no indications were made as to whether these funds were released and how much was used on VCT activities. Nevertheless, most of these enormous expenditures on HIV/AIDS activities can be avoided through taking appropriate measures to minimize HIV/AIDS burden.

Most of the HIV/AIDS deaths and infections are preventable through various strategies which the government and its partners have put into place. These strategies include creating awareness where by 99% of Kenyans are aware of HIV/AIDS (KDHS, 1998). Other important strategies are provision of VCT and anti-retro viral therapy. In Central Province where this study was conducted, these services are readily available and at no cost. This is in spite of the fact that HIV prevalence in central province is fairly low at 3.8% compared to national prevalence of 7.4%. There is need to ensure that this prevalence remains low and hence the critical need to boost testing through VCT centers. The province has 108 VCT centers in addition to various mobile VCT. It is expected the public and health workers within Central Province would take advantage of the numerous VCT to know their sero status through visiting these VCT centers. It is from the VCT

centers where they can get most appropriate information on HIV/AIDS. Effort by ministry of health to have health workers establish their HIV status through VCT in 2007 was not successful as only 11.5% of health workers heeded to the call (MOH 2007). This study therefore intends to investigate the extent to which health workers in Central Province use VCT services.

One of the most effective ways of reducing HIV/AIDS is through encouraging people to know their status through VCT services. These services are offered free throughout the country but many people may not have taken advantage of this including the health workers. This study focuses on factors influencing the uptake of VCT services among health workers in central province.

## **1.2 Problem Statement**

HIV/AIDS continue to be a challenge in Kenya. In response the government of Kenya in collaboration with partners like USAID, Liverpool VCT among others are making efforts aimed at reducing new infections and spread of HIV/AIDS. One of the measures being undertaken is promotion of VCT services to encourage members of public to know their HIV status. In Kenya VCT services are mainly offered through mainstream health care services. The VCT services are provided by health care workers who have undergone special training on voluntary counseling and testing. Whereas the health workers are often willing and encourage the public to use VCT services, evidence suggest that only 2/3 of professional health workers have ever taken VCT at least once in their lifetime

and a 1/3 have never (MOH, 2006). It is important to establish why a 1/3 of health workers have never taken up VCT services despite the services being readily available.

In Kenya there is a continuous struggle with HIV/AIDS given that the prevalence stands at 7.4 % and most of the infected are adults' aged 15 to 49 years (KIAS, 2007). In the year 2010 alone there were about 150,000 HIV deaths in Kenya (NACC, 2011). These high numbers of HIV cases is weighing heavily on Kenyan economy. These negative impacts of HIV/AIDS can be largely minimized if proper management measures like scaling up VCT and ART uptake are instituted. Little is known about HIV prevalence among health workers despite them being a high risk group. Like the general population many health workers fail to take HIV test due to barriers of stigma and lack of suitable VCT since most of the VCT are manned by officers who know them well and this may compromise confidentiality (*Hirrano et al*, 1998). The lack of equivalent effort in addressing issues of social support, policy and legal framework in addressing HIV/AIDS may hinder general population and health workers at large from taking HIV test (*Cook et al*, 1998). This study therefore seeks to investigate factors which determine uptake of VCT services by health workers. The study focuses on the level of HIV/AIDS knowledge by various cadres of health workers and on service provision factors. Issues of HIV/AIDS among the health workers have raised concern especially in sub Saharan Africa. In South Africa the prevalence of HIV among health workers was found to be 20% (HSRC, 2004). In 2005 Botswana lost 17% of its health workforce to HIV/AIDS (Ministry Of Health Botswana, 2005) while in the year 2000 the number of nurses with HIV/ADS doubled in Uganda (MOH, Uganda, 2000). These results are a clear indication of the HIV burden among

health workers and hence the need to address the issues of HIV testing among health workers. In Kenya 88% of health workers are employed in sites where HIV testing services are offered and yet about a third of them have never been tested (MOH and horizons project, 2006). Similarly, the MOH and horizon report of 2006 indicates that vast majority of health workers are worried about occupational exposure to infection. A good percentage of 93% are very concerned about getting infected while on job.

### **1.3 Justification of the Study**

It is important to understand factors which determine uptake of VCT services among health workers in Kenya. This is so because there are immense benefits associated with uptake of VCT services and health workers being providers of VCT services should be major benefactors as they are able to access care service more easily. The expected benefits include knowing ones status. In case of negative status one would take necessary measure to prevent infection. For the positive cases, this would be a good entry point for comprehensive care services. While many health workers have taken HIV test, there is need to continue to promote this testing particularly for those who may have not tested from VCT centers. Health workers may have easy and alternate access to HIV testing facilities at their work place compared to the general public. As a result some may opt to alternate method of HIV testing like self testing instead of doing it from a VCT center. However it is good to get tested in a VCT centre because the services there are offered in a professional way with pre-testing and post-testing counseling being offered among other extra benefits.

There is need to develop positive attitude among health workers towards knowing their HIV status as it is believed those who do so are better service providers as they illustrate themselves as examples in the public (Kenya health workers survey.MOH ,2005 ). According to Kenya health workers survey, 20% of health workers confirmed that they were exposed to HIV risk (MOH, 2005). Despite this risk of exposure about 1/3 of professional health workers had never visited VCT and of these 70% were not planning to do so (NASCOP, 2005). Of the untested 40% gave no reason of not testing at VCT. In Central Province there was effort by the ministry of health to have health workers establish their HIV status in the year 2007 as per HIV/AIDS workplace policy. The results of this exercise were that only 11.5% of the 6799 government health workers were tested (MOH, central province 2007). It is not known why only a small percentage of the health workers got tested. This study seeks to investigate this issue further and understand why health workers do not test.

The government of Kenya has work place policy on HIV/AIDS. The main purpose of this policy is to mitigate effect of HIV/AIDS among public workers. The first and most important beginning is to have the workers establish their HIV status since it is only after this when one can take appropriate measures according to the sero status. For those infected it is expected that they would receive adequate care so that they can continue to be productive at work and minimize absenteeism due to HIV/AIDS related illness. Knowing ones status through voluntary testing and counseling is very appropriate as the client is normally well prepared for the outcome and also advised on the way forward. However getting public servants who includes health workers to know their status may

not be an easy task. Most of these workers especially from health sector have not taken a bold step to voluntarily know their sero- status. It is expected that knowledge obtained from this study will help managers particularly from public sector and especially in health to employ appropriate approach to their workers as far as the issue of workplace policy on HIV/AIDS is concerned. Issues which hinder health workers from freely and regularly taking up VCT will be addressed. This knowledge could be extended to other workers and the general population.

## **1.4 Research Questions**

1. What are the levels of uptake of voluntary and counseling services among health workers of different cadres in Central Province?
2. What are the influences of social demographic factors on VCT services uptake by health workers in central province?
3. What are the influence of knowledge, attitude and practice of health workers toward VCT services uptake in Central province?
4. What are the health provision factors which influence VCT uptake by health workers in Central Province?

## **1.5 Research Hypothesis**

5. Uptake of voluntary counseling and testing does not vary with different cadres among health workers in Central province.
6. Social demographic factors do not influence VCT services by health workers in Central Province.
7. Knowledge, attitudes and practice of health workers do not influence VCT services uptake among health workers in Central Province.
8. Health provision factors do not influence VCT services uptake by health workers in Central Province.

## **1.6 Objectives**

### **1.6.1 Broad objectives**

To establish the factors that influence uptake of voluntary and testing services among government health worker of different cadres in Central Province

### **1.6.2 Specific objectives**

- A. To determine the level of uptake of voluntary counseling and testing uptake among health workers of different cadres in Central Province.
- B. To determine the effect of social demographic factors on uptake of VCT services by health workers in Central Province.
- C. To determine knowledge level, attitude and practice of health workers toward uptake of voluntary counseling services in Central Province.
- D. To determine the health provision factors which influence uptake of VCT services among health workers of different cadres in Central Province.

## **1.7 Significance.**

In Central Province, the only available data indicates that the uptake of VCT services by health workers is fairly low. This study tends to understand the perception of health workers in regard to use of VCT services. The results of this study would be used by DHMT of various hospitals in addressing their health workers needs for VCT services. It is expected that health workers, VCT counselors, policy makers and public will benefit from this study. It is also hoped that the result would encourage those health workers who have not taken up VCT take this bold and significant step in life. The researchers could also use this as a foundation for more research to establish other factors that may

influence the development of voluntary counseling and testing policies. Similarly this research and further research may change the approach toward HIV testing

### **1.8 Delimitation and limitations**

The study limited itself to public health workers in Central Province and especially those in the main district hospitals for easy coordination, supervision and administration. It limited itself to public health workers in district hospitals who had worked for more than one year. All district hospitals in Central Province have VCT centers and it was assumed that those who had worked for more than one year had wide knowledge including the location of the VCT center. It was not possible to cover the seven district hospitals in the province as earlier planned due to financial implications. Therefore the study was done at Thika, Muranga and Kerugoya hospitals. To ensure strict confidentiality the respondents were given questionnaires in open A4 envelops. These answered questionnaires were returned in closed envelops and respondents were not supposed to indicate their names.

### **1.9 Assumption**

The study assumed that the respondents were able to comprehend the questions in questionnaire which was administered in English. It was expected the respondents were honest.

### **1.10 Conceptual framework and theoretical framework.**

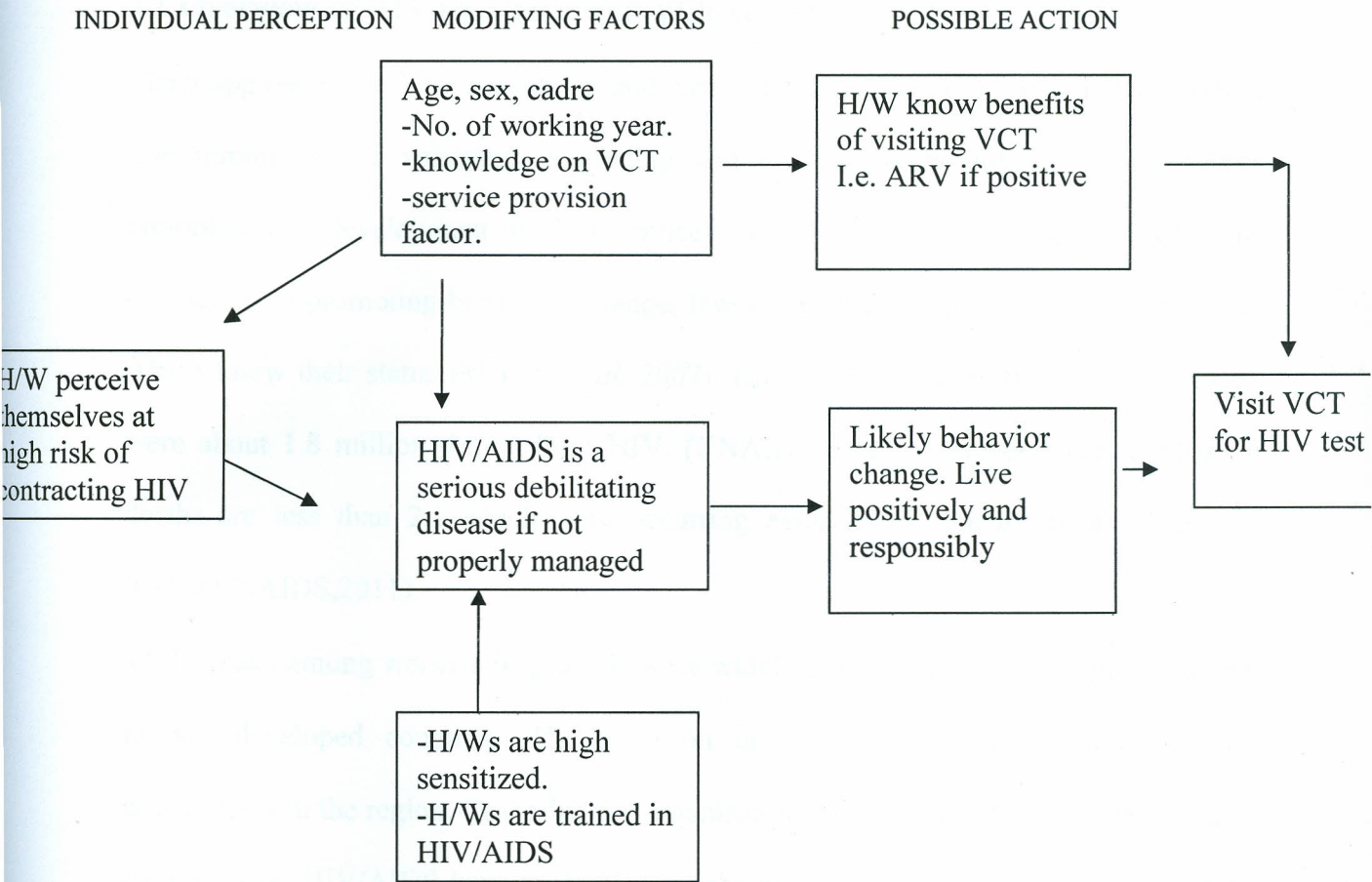
This study was based on the fundamental principles of the Health Belief Model (HBM). This theory was first developed in the 1950's by Social Psychologists, working in the USA Public Health services to investigate why adults were not turning up for the free TB

screening and X-Rays placed in locations quite accessible to them. It was learnt that perceived risk and perceived benefits of action were the major motivational factors for those who volunteered to be screened. HBM is based on the premise that health behavior is a function of specific health beliefs for a given behavior to occur (Edem and Harvey, 1995). A belief is something one accepts as the truth regardless of whether it is actually true. In this model, the cognitive component deals with what one knows and what might happen as a result whereas the affective part is concerned with how deeply one cares about the consequences of his beliefs (Macintyre *et al.*, 2001). According to this model, individuals would be more likely to adopt health seeking behaviors if they perceived themselves to be susceptible to illness (perceived susceptibility) and if they thought that the consequences of the infection were serious (perceived severity) and that an effective solution existed (perceived benefits) and that they could surmount the perceived barriers by adopting an effective behavior. In the perceived barriers belief, the difficulty one perceives in undertaking recommended health action could influence its adoption (Janz and Becker, 1984).

### **Becker's Health Belief Model**

Becker's point of view is based upon the idea that an individual must have the willingness to participate in health interventions and believe that being healthy is highly valued. It was therefore, possible to predict if an individual would engage in positive health behavior by determining the individual's perception of the disease, illness or accident, identification of modifying factors and the likelihood that the individual would take some action (Janz and Becker, 1984). Becker's model was therefore, highly applicable to this study (Figure 14).

**Figure 1.1: Conceptual model**



Health workers perceive themselves to be at higher risk of contracting HIV than the general population. This therefore should make them probably seek VCT services since they also know benefits associated with HIV testing.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Overview of HIV pandemic and VCT services

Many approaches to HIV prevention and care require people to know their HIV status. The importance of voluntary counseling and testing has brought about the wider promotion and development of VCT services. However despite evidence that VCTs is efficacious in promoting behaviour change, fewer than one in ten people in Sub-Saharan Africa know their status (Matoru *et al*, 2007). It is reported that in the year 2010 there were about 1.8 million deaths from HIV. (UNAID, 2011). However these number of deaths are less than 2.1 which were occurring early 2000s due to enhanced use of ARVs(UNAIDS,2011).

VCT uptake among workers in general varies widely globally especially from developed to non developed countries. The trend on uptake mostly depends with level of sensitization in the region. Countries and organization with high level of sensitization and awareness on HIV/AIDS have fairly high uptake of VCT services among workers. This was clearly demonstrated by a study done on highly sensitized tour or safari workers in Botswana where VCT uptake was found to be quite high at 98 %.( ILO, 2008). In South Africa gold mine workers VCT uptake stood at 33% and this was attributed to low levels of awareness creation (Day *et al*, 2003). The disparity in VCT uptake by workers is also demonstrated in a study done in Mwanza, Tanzania where VCT uptake among primary school teachers was at 20 % (Kakoko *et al*, 2006). A similar study of teachers in Ethiopia showed the VCT awareness level at 98.6%, VCT uptake at 46.3% and the uptake was significantly higher in younger teachers (Shemshedin *et al*, 2009).

The trends for VCT uptake by health workers are not any different from other general workers. Big disparities in levels of uptake of VCT services have been noted among health workers in different countries especially in sub Saharan Africa. In Zambia, amongst all the health workers only 25% of them have ever taken HIV test at VCT at least once (MOH Zambia, 2003). The situation in Zimbabwe which neighbors Zambia indicates that 63% of all the health workers have never taken VCT. (Duaya, 2000). In Kenya the uptake of VCT by health workers in general has not been established despite there being an existing gap in their level of knowledge in HIV/AIDS. (MOH, 2005).

The main goal of VCT services includes prevention of acquisition and transmission of HIV/AIDS. Others are encouraging the infected to take early and appropriate medical and social services.

However, despite these vital gains from voluntary testing and counseling there are limitations to uptake of these services by health workers in Central Province. Challenges of VCT uptake include stigma, social economic factors, and quality of service and fear of outcome among others. In developed countries deaths associated with HIV have significantly dropped due to benefits associated with VCT (*Greene et al, 2000*).

## **2.2 Issues with VCT**

### **2.2.1 Role of knowledge, behavior and attitude in VCT**

Greater access to VCT and increased awareness has helped in acceptability and uptake of this service. This acceptability is crucial in management of stigma and has helped in it's

reduction (Lamboury, 1998). This relationship of acceptability of VCT services and reduction of stigma has been documented in western countries and some parts of Africa like Uganda. In countries where VCT coverage is low, the level of stigma is high (UNAID, 2008) compared to regions where VCT is offered more routinely. In Kenya VCT is offered routinely in most of the public health facilities. This makes the service easily accessible and it is expected that voluntary and counseling services should be more acceptable by health workers. Making VCT services easily accessible and available help in normalization of HIV (Cook *et al* 1998).

VCT has been documented as a highly cost effective way of dealing with HIV/AIDS pandemic (Sweat *et al* 2003). It helps in reducing anxiety for those who have never tested for HIV and have doubt on their sero-status. Stress is normally reduced especially to those who test negative as they feel relieved and have decreased anxiety. They also have increased confidence after testing (Sangiwa, 2000). However finding one is sero positive will almost inevitably cause shock and distress and may have negative effect on individual or family (Ankrah, 1993, Lipman *et al*, 2000). This could be one of the reasons why health workers may not be very comfortable with voluntary counseling and testing. It is important to establish why health workers never go for VCT. In Denmark it was noted that nurses and doctors who had not received secondary training in HIV/AIDS had negative attitude toward HIV positives (Krasnik *et al*, 1990).

Individuals who have not been tested holds higher level of AIDS related stigma and negative attitude toward testing than those who have previously had VCT (Hutchinson *et*

al, 2006). Stigmatisation and discrimination accounts for a considerable portion of barriers to VCT uptake in populations in Zimbabwe (Sherr *et al*, 2007) According to study done in Zimbabwe, 63% of health workers had never visited VCT and they attributed this to stigmatization especially from fellow service providers whom they feared would disclose their status. (Duaya, 2000). Similarly these health workers alluded to the fact that 80% of them had known their co workers had HIV from health workers working in VCT. Participants in an Ugandan study reported that many people avoid utilizing VCT services for fear of being seen by family, friends or neighbours, and consequently raising suspicion and infidelity (Bwambale *et al* 2008) A similar study in Zambia showed that only 25% of health workers had taken VCT and the main reason they gave for not taking this test was stigmatization from colleagues (University of Zambia, 2006). Other reason why health workers are not actively taking VCT services is due to lack of adequate knowledge on HIV/AIDS as indicated in Tanzania where 46% of health workers were found to have no education on HIV prevention and counseling skills ( Masini *et al*,1993) . In Tanzanian of all the health workers 18% could not define HIV and AIDS while 57% did not know the difference between HIV and AIDS. This shows limited knowledge on HIV/AIDS by health workers which is quite unfortunate since they should be well informed as service providers. It is expected that those health workers who are better informed in HIV/AIDS should take up VCT services more readily.

In Kenya the scenario is not any different as the Kenya health worker survey of 2005 indicated that a number of health workers have not been trained on HIV prevention and VCT. This survey showed that 45% and 40% of doctors and clinical officers respectively

were not trained on HIV/AIDS. The study revealed that 41% of all the health workers and 51% of nurses did not know important aspects of management of HIV/AIDS like post exposure prophylaxis while 98% of doctors knew. This clearly showed there is a varying gap in level of knowledge of HIV/AIDS prevention and VCT among health workers.

### **2.2.2 Issues of VCT uptake among various cadre of health workers**

Different cadres of health workers have varying level of educational background. The scope of health care service is quite wide and therefore the need to have a divergent cadre of health workers. Basic training of these workers is also different. Some basic training curriculum includes HIV/AIDS while others don't. This being the case, health workers leave college and meet at workplace when then have varying information on HIV/AIDS. Likewise in this sector we have the core workers as professional and a bulk of non professional who provide other non technical support. Due to this divergence in basic information on HIV/AIDS, health workers in different cadres are expected to consume HIV related services like VCT differently. The difference is so big especially between the medics who are highly trained compared to support staff. This translates to difference in knowledge of common ailment and diseases like HIV/AIDS and subsequent prevention measures like taking up VCT.

A Study done in South Africa showed the prevalence of HIV/AIDS among health workers was 13.7 % compared to 20.3% among the non professionals (Shisana *et al*, 2004). In Zambia, 88% of health workers said they knew where to go for VCT. However, when asked whether they have ever tested, 55% of doctors said yes and so were 33% of

nurses. Unfortunately only 12% of clinical officers had visited VCT and taken up test (University of Zambia, 2006). All the information clearly indicates that health workers have varying information and knowledge on HIV/AIDS and this could affect their VCT uptake according to cadres.

### **2.2.3 Factors associated with type of service delivery**

Putting up a facility and having clients come for service are two different issues. Many VCT'S have been put up in the country but few people turn up for services. Most VCT services in Kenya are offered by public health workers and it is expected that the same should lead in uptake of this noble service. Needless to say so, there are those outstanding issues with quality of service in public institutions which may not be any different in our VCT (MOH, 2005). Factors such as access, cost, type of test, waiting time, confidentiality, location of VCT and quality of VCT at large affect VCT uptake (Bwambale *et al*, 2008) There are a number of factors which may favour up take of VCT services in public institutions. Where health systems are weak and resource limited, individuals attitudes and personal perception of the available VCT services create further barrier to testing (Matovu *et al*,2007) .One of these factors is that the services are offered free of charge. Up-take of VCT in communities depends on society factors as well as factors associated with service delivery (Baggaley *et al*; 1997).

There are services delivery factors in VCT such as maintenance of confidentiality which is very crucial. One way of maintaining confidentiality is through anonymous testing which has been shown to improve uptake (Hirrano *et al*; 1998). Improved or enhanced

community mobilization through health education has helped to reduce stigma and increase VCT uptake. Studies in South Africa have shown poor quality service leads to poor uptake (viljoen *et al*; 1998). Type of testing also greatly affect uptake of VCT services. There is the simple rapid test versus long Elisa test. Simple rapid test are more acceptable as they reduce waiting time and anxiety too. A study in Guatemala showed increased VCT service uptake with introduction of simple rapid test.

(Arthmer *et al* ;2000). The quality of service is very important in regard to acceptability of the VCT by the clients.

## CHAPTER 3: MATERIALS AND METHODS

### 3.1 Introduction

This chapter gives a description of the methodology applied in the study. It highlights the study area, study design, study population, sample size determination, sampling design and methods of data collection, analysis, quality control, presentation and dissemination of findings.

### 3.2 Research Design

This survey adopted a descriptive cross-sectional approach encompassing mainly quantitative approaches to data collection management and presentation. Data was collected from various cadres of health workers in public hospitals in central province. This study design was chosen as it was most appropriate for describing the variables given

### 3.3 Variables

Variables in this study were divided into two. These were dependent and independent variables. Mugenda and Mugenda (1999) define a variable as a measurable characteristic that assume different values among the subjects.

#### 3.3.1 Dependent Variables.

The dependent variable is a variable that varies as a function of independent variable (Mugenda and Mugenda, 1999). The dependent variable in this study was utilization of VCT services. This was operationised at the district hospitals VCT centers where the

health worker sought VCT service. The respondents were asked to state whether they had ever taken HIV test at their VCT center or not.

### **3.3.2 Independent Variables.**

Three categories of independent variables were assessed. These were social, demographic factors, knowledge and service provision variables. The social demographic variables of health workers were assessed. They included age, marital status, number of working years, education attained and job description among others. Factors related to level of knowledge, practice and attitude were established through structured questionnaire. Suitability of VCT centers as service provision outlet was also similarly established in accordance with national guidelines for voluntary counseling and testing by Ministry of health.

### **3.4 Location of Study**

This study was conducted in Central Province which is one of 8 the provinces of Kenya. The province has an area of 13,220 sq km and is located between longitude and 38°, 00 east and latitude 01 south and 01 north. Central Province originally had 7 districts (prior to 1992) here in referred to as the larger districts. These have been so far sub-divided to several smaller districts. This study however focused on only three larger districts given their relatively defined health infrastructure. These districts with their corresponding district hospitals are Thika, Kirinyaga, and Muranga. The province covers an area of 13,220 square kilometers and it borders with Nairobi province to the south, Eastern province to the east and Rift Valley province to the west and north. Central province has

a projected population of 4,383,743 (KNBS, 2010) which is served by 18 public hospitals, 54 health centers and 284 dispensaries. Working in these facilities are 6,799 health workers whom the ministry wanted them to established their own HIV status. All the hospital in the province have VCT centers and it is important to establish whether health workers being the service providers were also benefiting from the service.

### **3.5 Target Population**

The study targeted health workers in main public hospitals within the province. These hospitals are well staffed and each of them has a functional VCT and an established care centre for HIV/AIDS. The hospitals have a total population of 6,799 health workers in according to 2008 staff establishment by Ministry of Health (MOH). Study population was gotten from Thika, kerugoya and Muranga district hospitals.

### **3.6 Sampling techniques and sample size.**

#### **3.6.1 Sampling techniques**

This study employed multiple sampling techniques. This research conviniently considered 3 facilities which are more than 10% as required for population sampling (Gay *et al*; 1989). The facilities were selected through purposively sampling, given their close proximity to the principle researcher, and relatively homogenous demographic characteristics of the study population. Stratified random sampling was used to select different cadres of health workers for the study based on major professional levels which constituted a stratum. The proportion of health workers picked for study was equivalent to numbers of health workers in each stratum. Three basic strata were identified as those

of doctors, paramedical and non technical staff. Departmental staff establishment list were used to further pick study subjects randomly.

**Table 3.6 Summary of Research Subjects.**

Facility/Staffing Level	Thika Hospital		Kerugoya Hospital		Murang'a Hospital		Total	
	N	n	N	n	N	n	N	n
Doctors (Medical Officers,Dentist,Pharmacists	29	12	19	8	21	10	69	30
Para-Medics (Nurses,R.C.O, PHO,Lab Tech e.t.c	296	134	165	74	170	77	631	285
Non-Medical/Technical Staff ( Clerical,Admin,S.S	62	28	26	12	42	19	130	59
<b>TOTAL</b>	<b>387</b>	<b>174</b>	<b>210</b>	<b>94</b>	<b>233</b>	<b>106</b>	<b>830</b>	<b>374</b>

**Key**

**N= total number of staff in the category**  
**n= number of respondents from that category**

**3.6.2 Sample size determination**

A sample of health workers with the required characteristics was calculated from a population of 6799 health workers using Fisher *et al's* (1998) formula for sample size determination (As cited in Mugenda and Mugenda( 1999).

$$n = \frac{z^2(pq)}{d^2}$$

Where

n = minimum sample size

z = corresponding level of confidence (which is 95% and corresponds to normal standard deviation of 1.96)

p = proportion in the target population estimated to have a particular characteristic. (Where there is no reasonable estimate a default of 50% or 0.5 was acceptable. This is so because the characteristic 2/3 utilisation of VCT was arrived at in KHWS of 2005 which only targeted HIV direct service provider. Therefore 2/3 proportion is not an ideal VCT utilization characteristic for all health workers)

q = 1 - p

d = the degree of accuracy required (usually set at 0.05 for 95% confidence interval).

Therefore

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 384$$

Given a population size of 6799 health workers, sample size was determined using Fisher, *et al* (1998) method for sample size adjustment for populations less than 10,000'

$$nf = \frac{n}{1 + (n/N)}$$

Where

nf = desired sample size (when population N is less than 10,000)

n = desired sample (when the population N is more than 10,000)

N = the number of government health workers in central province.

Thus

$$nf = 384 / 1 + (384 / 6799)$$

$$nf = 362$$

### **3.6.3 Selection criteria**

#### **3.6.3.1 Inclusion criteria**

- i Health workers serving in government hospitals in Central Province of Kenya.
- ii Health workers employed on permanent and pensionable basis in the selected hospitals.
- iii Health workers who have served for more than one year.

#### **3.6.3.2 Exclusion criteria**

- i Health workers working on casual bases and short term contract.
- ii Health workers who did not give informed consent to the study.
- iii Health workers who have served for less than one year.

### **3.7 Construction of Research Instruments.**

Research instruments used in data collection were pretested questionnaires. The questions in the questionnaires were constructed to address the objectives of the study. The subjects in the study were not supposed to indicate their names in the answered questionnaire. The questions in the questionnaires constructed were administered in English because the study population is literate and therefore could read and answer questions.

### **3.8 Pre- testing**

The tools were pre-tested at Muriranjias district hospital with 30 health workers with similar characteristics as the study population.

### **3.8.1 Validity**

The validity of the research instruments was assured through taking appropriate measures at various levels. At questionnaire development stage questions were appraised in context of research questions and objectives. The academic supervisor had to approve them.

### **3.8.2 Reliability**

Necessary changes were made to the tools after the pre-test. Intensive training of six research assistants was done to ensure that standard techniques were followed. The role of the research assistant was to issue and collect the questionnaires. They also held group discussions with the study subjects before issuing the questionnaire. The principal researcher was present most of the times to conduct first hand supervision.

## **3.9 Data collection technique**

Data was collected from the sampled hospitals between April and May 2010. The study was designed to collect data by using semi-structured, pre-tested questionnaires to get information on knowledge, attitude, beliefs and practices (KABP) on a number of variables by the study subjects. Respondents were given questionnaires to complete and returned them in a sealed envelop individually to ensure confidentiality. Each respondent was accorded ample time to complete the questionnaire. The principle researcher and the research assistants were always available to clarify issues raised by the respondents. This study did not use qualitative techniques like Key informant interviews and focus group discussions that require qualitative techniques. This is because the questionnaire was comprehensive enough in answering the study objectives

### **3.10 Logistical and Ethical Considerations.**

Permission was sought and obtained from the Board of Post Graduate Studies of Kenyatta University. Research permit was obtained from Ministry of Higher Education Science and Technology. Since this study involved use of non-biomedical methods no ethical objections were raised by the board of post graduate studies. In order to conduct the study in the district hospitals clearance was obtained from the PMO and the DMOH in the study districts. Further clearance was sought from the health facilities in-charges. The purpose and the process of the research were fully explained to the research subjects by the research assistants.

All the respondents subjected to the study tools did so under informed consent and anyone who was not willing to participate was not coerced into doing so. Confidentiality, the rights to withdraw from the study at any stage and refusal to answer all or part of the questions were guaranteed. Each study participant was given information about the study before administering the questionnaire. Assurance of complete anonymity was ensured at all stages. The health facility staff were not involved in the questionnaire administrative issues and management. In order to ensure anonymity the respondents were not required to write their names on the data collection forms.

### **3.11 Data processing and analysis**

Data from this study were analyzed with the aid of Statistical Package for Social Sciences. Quantitative data was analyzed using both parametric and non-parametric

methods. Primary analysis entailed univariate analysis where the study variables were descriptively summarized using frequencies and proportions. The variables were then categorized into various groups as per the factors of interest: knowledge, beliefs, attitude, and practices. The independent variables were cross-tabulated against the dependent variables giving comparative proportions. Proportions were compared using the chi square test for the non-continuous categorical variables, Pearson's moment correlation for continuous categorical variables, or Z-test for proportions for categorical variables that did not fit analysis using chi-square. Independent variables that showed statistically significant relationship to the dependent variable were subjected to multivariate analysis to establish the effect of the independent variables. Stepwise logistic regression was used to examine factors that determined the uptake of VCT among the health workers.

In all the statistical examinations the test statistics *P*-value was used to check for statistical significance. Throughout the results presentation, the term significant used interchangeably with statistical significance denotes the probability that the result observed during the study (or more extreme result) was not likely to be due to chance alone. The threshold for statistical significance is an arbitrary value called a *p*-value which is usually set at 0.05 or 5% for a study set at 95% confidence level. If the probability that the observed result was due to chance is less than the set *p*-value, the result is considered statistically significant. Results were displayed using tables, graphs and statistical summaries (Tabachnick and Fidel, 1996)

## CHAPTER FOUR: RESULTS

### 4.1 Introduction

This chapter presents the study results based on the three study objectives namely: To establish the level of uptake of voluntary counseling and testing (VCT) uptake among health workers of different cadres; to examine knowledge, attitude and practice of health workers towards uptake of voluntary counseling services; and to determine the health provision factors which influence uptake of VCT services among health workers of different cadres.

### 4.2 Socio-demographic characteristics of respondents

A total of 374 health workers from public hospitals participated in this study. The respondents were examined for different socio-demographic characteristics. Table 4.1 presents a summary of socio-demographic characteristics of the health workers which included: age, marital status, highest level of education, duration worked as a health worker, and religion (denomination).

**Table 4.1: Summary of socio-demographic characteristics of the health workers**

Characteristic	Category	Observation	
		n	(%)
Cadre of health workers	Medical doctors	29	(8)
	paramedics	280	(77)
	Non technical staff	55	(15)
Age (years)	20-24	21	(6.1)
	25-29	44	(12.3)
	30-34	37	(10.2)
	35-39	50	(13.8)
	40-44	73	(20.1)
	45-49	98	(27.0)
	>50	38	(10.5)
Marital Status	Married	271	(73.0)
	Single	83	(22.4)
	Widow Divorced	8	(2.2)
	Separated	9	(2.4)
Highest Level of Education	Completed Primary	5	(1.4)
	Completed Secondary	31	(8.4)
	Certificate College Level	76	(20.6)
	Diploma College Level	207	(56.1)
	Degree/University Level	50	(13.6)
Duration worked as a health worker	<5 Years	81	(22.0)
	5-10 Years	48	(13.0)
	11-15 Years	48	(13.0)
	16-20 Years	110	(29.8)
	>20 Years	82	(22.2)
Religion/Denomination	Catholic	87	(24.1)
	Protestant	258	(71.7)
	Muslim/Hindus	4	(1.1)
	Other	12	(3.3)

#### 4.2.1 Age distribution of the respondents.

The youngest respondent was 22 years old while the oldest was 57 years. The average age of health workers was 41.1 ±8.9 years. Results of the grouped age distribution showed most of the respondents were in the sexually reproductive age group of 15-49 years. It is only a partly 10.5% of all the respondents who were outside the sexually reproductive age group

#### **.4.2.2 Distribution of respondents by marital status**

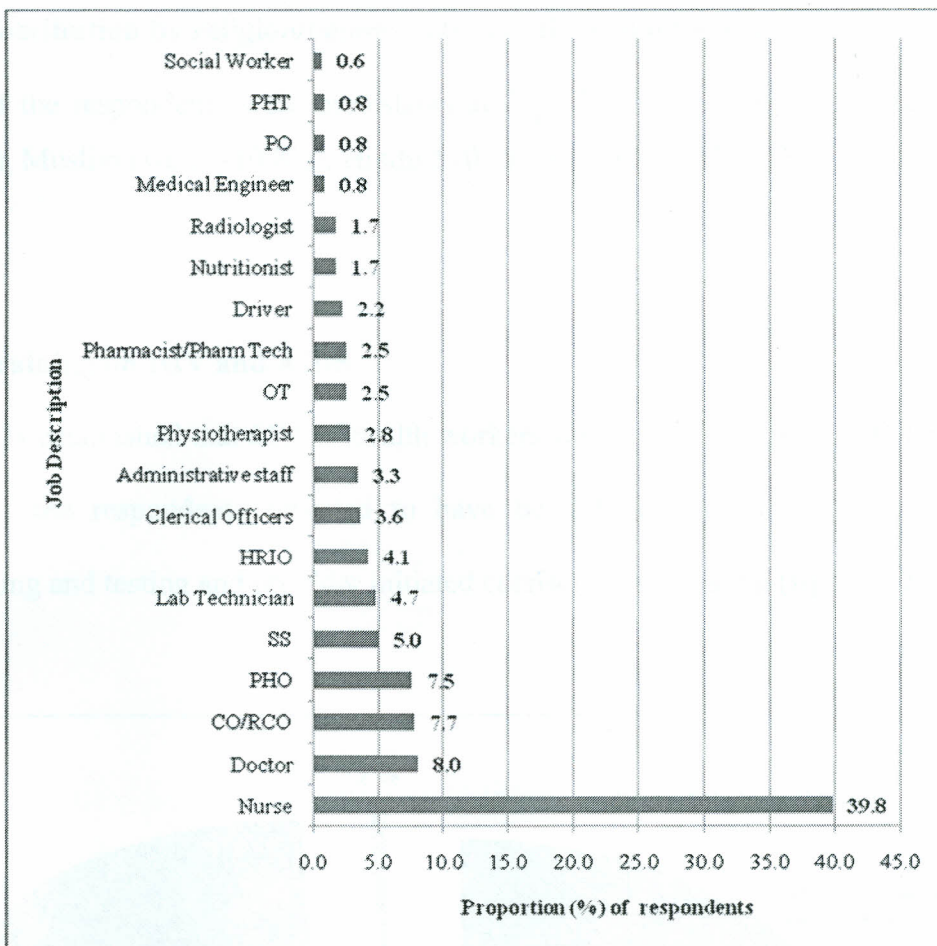
Majority of the health workers who participated in this study were married 271 (73.0%) while some 83 (22.4%) were never married. Those windowed represented 7 (1.9%), separated 9 (2.4%) and divorced 1 (0.3%).

#### **4.2.3 Highest education levels of the respondents.**

Most of the respondent had diploma as their highest level of education 207 (56.1%) followed by certificate level at 76 (20.6%) while degree/university level had 50 (13.6%). Those with secondary and primary level 31 (8.4%) and 5 (1.4%) respectively.

#### **4.2.4 Cadres of health workers.**

This study examined the cadre of the health workers and established that most of the health workers (39.5%) were nurses. Figure 4.3 below illustrates the distribution of the health workers by their cadre. This is so as the nurses formed the bulk of the health workers. Among all the other cadres none had percentage proportion beyond 8%.



**Figure 4.1 Distribution of Respondents by Cadre**

#### **4.2.5 Duration worked as a health service provider by the respondents.**

Information of on duration of work was collected in category form with most of the respondent having worked for duration of between 16-20 years (29.8%). Both categories of those who had worked for 5-10 and 11-15 years stood at 13%. The percentage of those who had worked for less than 5years was 22% while that of those who had worked for over 20 years was 22.2%

#### 4.2.6 Distribution by religion/denomination of the respondents.

Most of the respondents were protestants at 258 (71.7%) followed by Catholics at 87 (24.1%). Muslims were 3 (0.8%), Hindu 1 (0.3%) and others 12 (3.3%).

#### 4.2.7 Training on HIV and AIDS

The study established that 61% of health workers were trained in HIV/AIDS (figure 4.6). Most of the respondents reported to have been trained in PMTCT, basic course, counseling and testing and provider initiated counseling and testing (figure 4.7).

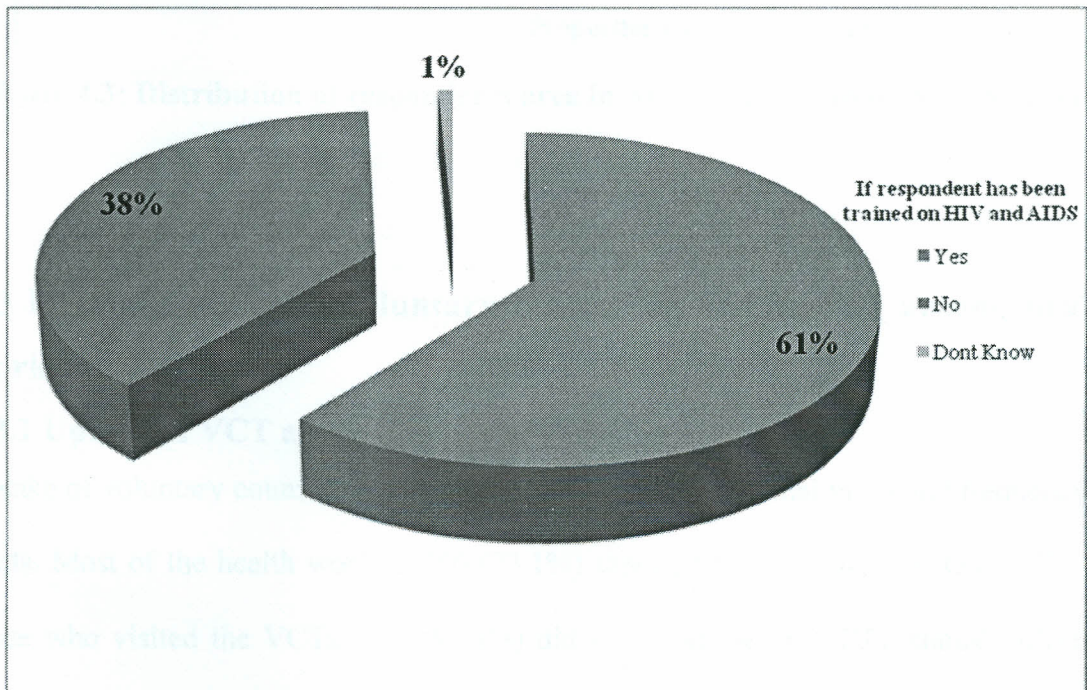
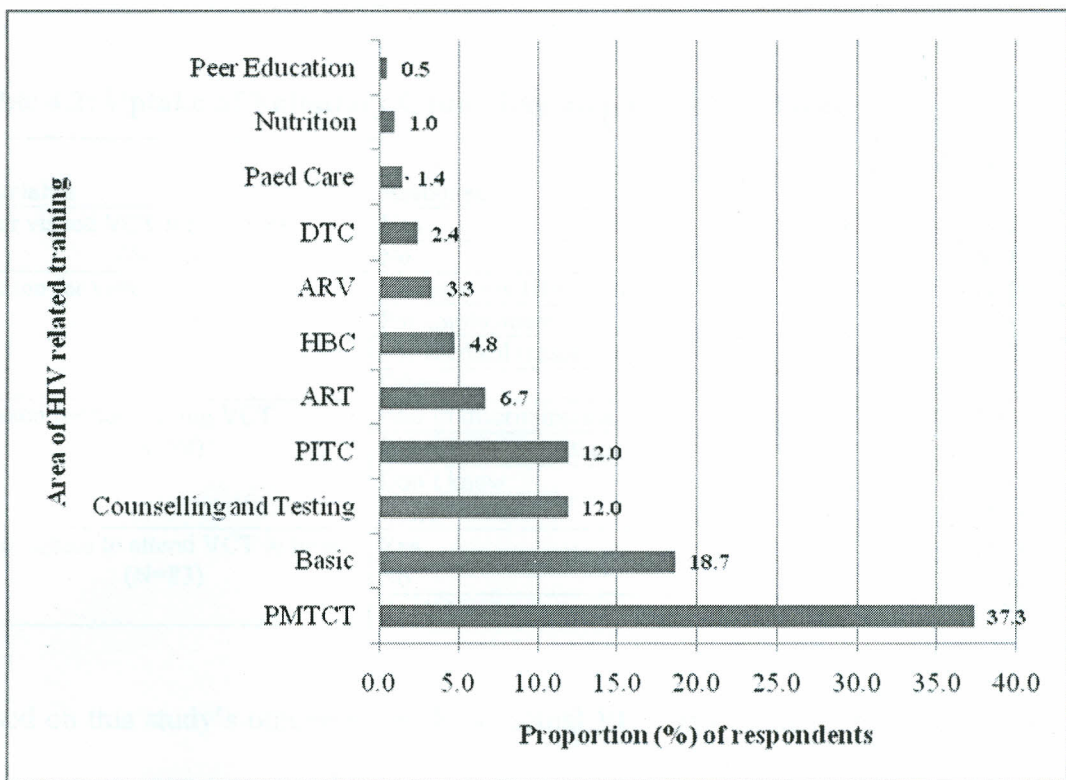


Figure 4.2 distributions of respondents by training on HIV and AIDS



**Figure 4.3: Distribution of respondents area in which the respondents were trained**

### **4.3 level of uptake of voluntary counseling and testing among health workers**

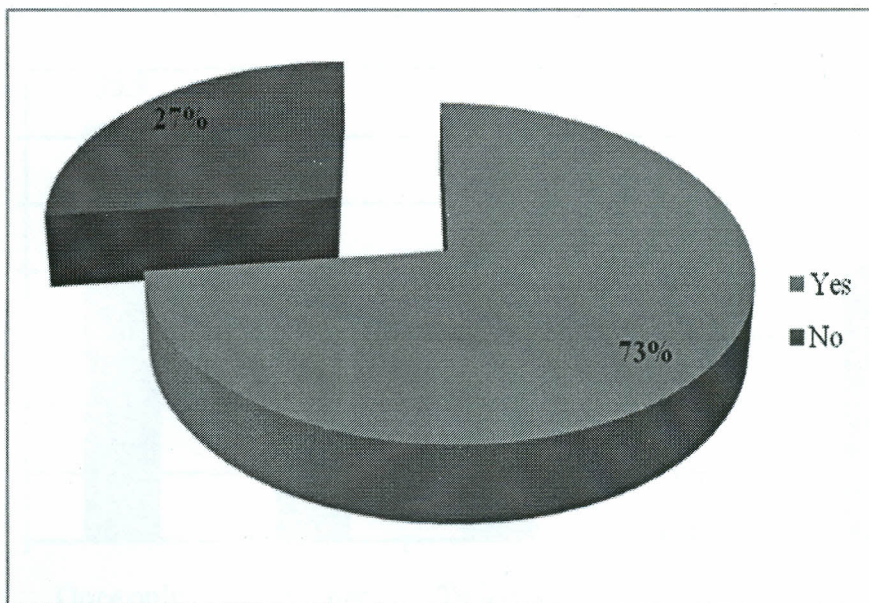
#### **4.3.1 Uptake of VCT and frequency of visits.**

Uptake of voluntary counseling testing was measured using actual visits and frequency of visits. Most of the health workers 266 (73.1%) reported that they had visited VCTs. Of those who visited the VCTs, 243 (91.4%) did so to “know their HIV status”. Most of those who did not utilize the VCT service did not have a reason for not using the service. When asked about their willingness to use VCTs in future, only 49.4% of those who had not utilized were willing to attend (Table 4.3 below).

**Table 4.2: Uptake of Voluntary Counseling and Testing Services:**

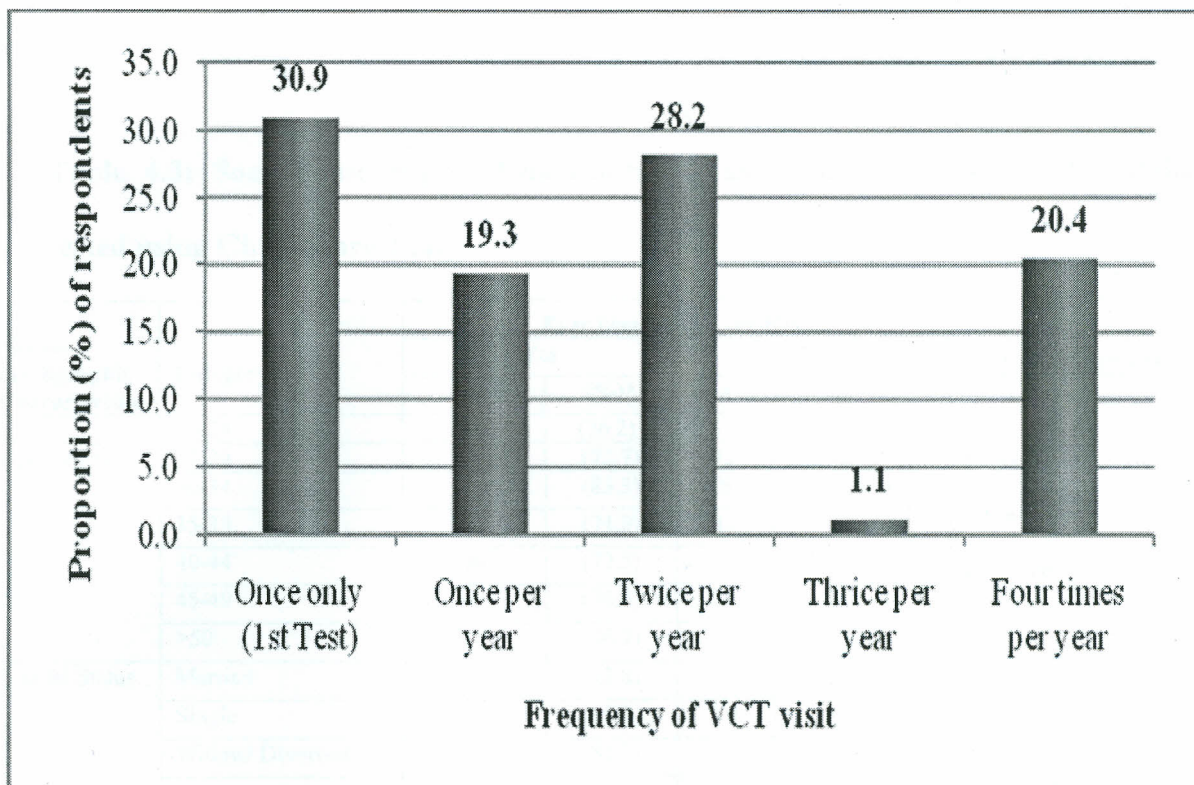
Variable	Response	Observations	
		n	(%)
Ever visited VCT for services (N=364)	Yes	<b>266</b>	<b>(73.1)</b>
	No	98	(26.9)
Reason for visiting VCT (N=266)	To know my HIV status	<b>243</b>	<b>(91.4)</b>
	For employment	3	(1.1)
	For Medical reasons	7	(2.6)
	Other	13	(4.9)
Reason for not visiting VCT (N=98)	Fear of discrimination	5	(5.3)
	Fear of stigmatization	21	(21.1)
	Don't know	<b>32</b>	<b>(32.9)</b>
	Other	<b>40</b>	<b>(40.8)</b>
Willingness to attend VCT in future (N=83)	Yes	<b>41</b>	<b>(49.4)</b>
	No	24	(28.9)
	Don't Know	18	(21.7)

Based on this study's outcome variables "actual VCT uptake" and "frequency of visits", most of the health workers reported to have visited the VCT (73%) as illustrated in figure 4.7. HIV testing uptake amongst health workers in Central Province is higher than that of the nation taking into account that 57% of the public have never tested. This can be attributed to various facts like having greater knowledge in HIV/AIDS and easy access to testing services



**Figure 4.4: Voluntary Counseling and Testing Uptake among Health workers**

The respondents' uptake was also measured based on their frequency of visit to the VCT. Frequency of VCT service annual uptake among health workers was different with 30.9% of them having made only one visit in their lifetime. A proportion of 19.3% of the respondents indicated that they were revisiting VCT centers for retesting on annual basis while 28.2% were doing so biannually. A very small proportion of 1% indicated it was retesting three times a year. Out of 266 health workers who had tested at VCT centers, only 20.4% were taking HIV test four times a year as per MOH recommendations.



**Figure 4.5: Frequency of VCT uptake amongst Health Workers**

#### **4.4 Socio-demographic determinants of VCT up-take among health workers**

Table 4.1 in the preceding socio-demographic section also illustrates the uptake of VCT services among the different socio-demographic categories. This table is represented below with a test of significance in the difference observed among the different categories of the socio-demographic traits. The table illustrates the results of chi-square test for the differences in the proportions of HIV tested individuals across the categories of in the socio-demographic characteristics. The differences in the proportions of people tested across the education level categories were found to be statistically significant ( $p < 0.05$ ) as illustrated in Table 4.3

**Table 4.3: Socio-demographic Characteristics as determinants of VCT uptake; tested using Chi-Square Test**

Socio-demographic Characteristic	Category	Ever been Tested for HIV				Chi-Square Test
		Yes		No		
		n	(%)*	n	(%)*	
Age (years)	20-24	16	(76.2)	5	(23.8)	<b>X<sup>2</sup> 3.065</b> <b>DF = 6</b> <b>P = 0.690</b>
	25-29	32	(72.7)	12	(27.3)	
	30-34	30	(83.3)	6	(16.7)	
	35-39	37	(74.0)	13	(26.0)	
	40-44	50	(72.5)	19	(27.5)	
	45-49	69	(70.4)	29	(29.6)	
	>50	24	(66.7)	12	(33.3)	
Marital Status	Married	193	(72.8)	72	(27.2)	<b>X<sup>2</sup> = .724</b> <b>DF = 3</b> <b>P = 0.948</b>
	Single	60	(75.0)	20	(25.0)	
	Widow/ Divorced	6	(85.7)	2	(14.3)	
	Separated	6	(66.7)	3	(33.3)	
Highest Level of Education	Completed Primary	5	(100.0)	0	(0)	<b>X<sup>2</sup> = 11.444</b> <b>DF = 4</b> <b>P = 0.022</b>
	Completed Secondary	15	(51.7)	14	(48.3)	
	Certificate College Level	60	(81.1)	14	(18.9)	
	Diploma College Level	150	(73.5)	54	(26.5)	
	Degree/University Level	33	(68.8)	15	(31.3)	
Duration worked as a health worker	<5 Years	58	(74.4)	20	(25.6)	<b>X<sup>2</sup> = 4.091</b> <b>DF = 4</b> <b>P = 0.394</b>
	5-10 Years	36	(76.6)	11	(23.4)	
	11-15 Years	36	(76.6)	11	(23.4)	
	16-20 Years	83	(76.9)	25	(23.1)	
	>20 Years	52	(65.0)	28	(35.0)	
Religion/	catholic	64	(75.3)	21	(24.7)	<b>X<sup>2</sup> = 4.914</b> <b>DF = 3</b> <b>P = 0.296</b>
	Protestant	176	(69.8)	76	(30.2)	
	Muslim/ Hindu	4	(100.0)	0	(0)	
	Other	11	(91.7)	1	(8.3)	

#### **4.4.1 Age**

On chi square with the independent variable “uptake of VCT” the VCT uptake amongst the different age categories did not significantly differ ( $\chi^2=3.065$ ,  $df=5$ ,  $p=0.692$ ). The health workers uptake of VCT was not determined by age.

The fact that there was no statistical significant relationship indicated that age did not play a significant factor in determining whether the health workers would take up VCT or not. This is important in programming since it tells a Programme officer to treat all health workers equally without considering age when it comes to promoting uptake of VCT.

#### **4.4.2 Marital status of health workers**

Most of the health workers were married (73.0%) with a sizeable proportion being single (22.4%). On analysis of the difference in VCT uptake by marital status, no significant difference was observed along the different marital status in terms of actual VCT uptake by visit ( $\chi^2=0.729$ ,  $df=4$  and  $p=0.948$ ).

#### **4.4.3 Highest level of education.**

There was significant statistical association between highest level of education and uptake of VCT services. However this was not in any order i.e. the uptake did not increase or decrease with specific order of education level ( $\chi^2=11.4$ ,  $df=3$ ,  $p=0.022$ ).

#### **4.4.4 Cadre of health worker.**

Bivariate analysis established that the cadre of the health workers did not determine the uptake of VCT services by the health workers both in terms of “ever visiting VCT” ( $r= -0.027$ ,  $p=0.715$ ) and “frequency of visits” ( $r= -0.043$ ,  $p=0.421$ ).

#### **4.4.5 Duration worked by health workers**

More than 50% of the health workers had worked for more than 15 years. More specifically 22.0% had worked for <5 years, 13.0% had worked for 5-10 years, 13.0% had also worked for 11-15 years, 29.8% had worked for 16-20 years, and 22.2% had worked for >20 years. Chi square analysis of the duration worked against the indicators of VCT uptake established that duration worked did not have significant influence on the uptake of VCT by actual visit ( $\chi^2=4.091$ ,  $df=4$  and  $p=0.394$ ). Kenyan at large are highly sensitized on HIV/AIDS as awareness of this devastating disease stands at 99% in general public. Health workers are equally aware of HIV/AIDS and therefore it is unlikely that their knowledge on this disease depends on how long they have been in service. This therefore means that duration at place of work may not necessarily determine their HIV test uptake.

#### **4.4.6 Denomination/religion**

Most of the respondents were Christians as they constituted 95.5% of all the research subjects. Hindus and Muslims were the minority. Analysis of religion/denomination against the indicator of VCT uptake established that the religion did not determine the uptake of VCT service by health workers in Central Province ( $\chi^2=4.914$ ,  $df=4$  and  $p=0.296$ ). This could be attributed to the fact that all the health workers are subjected to similar training and working environment despite their religious background. Similarly VCT services are offered to all clients irrespective of their religion.



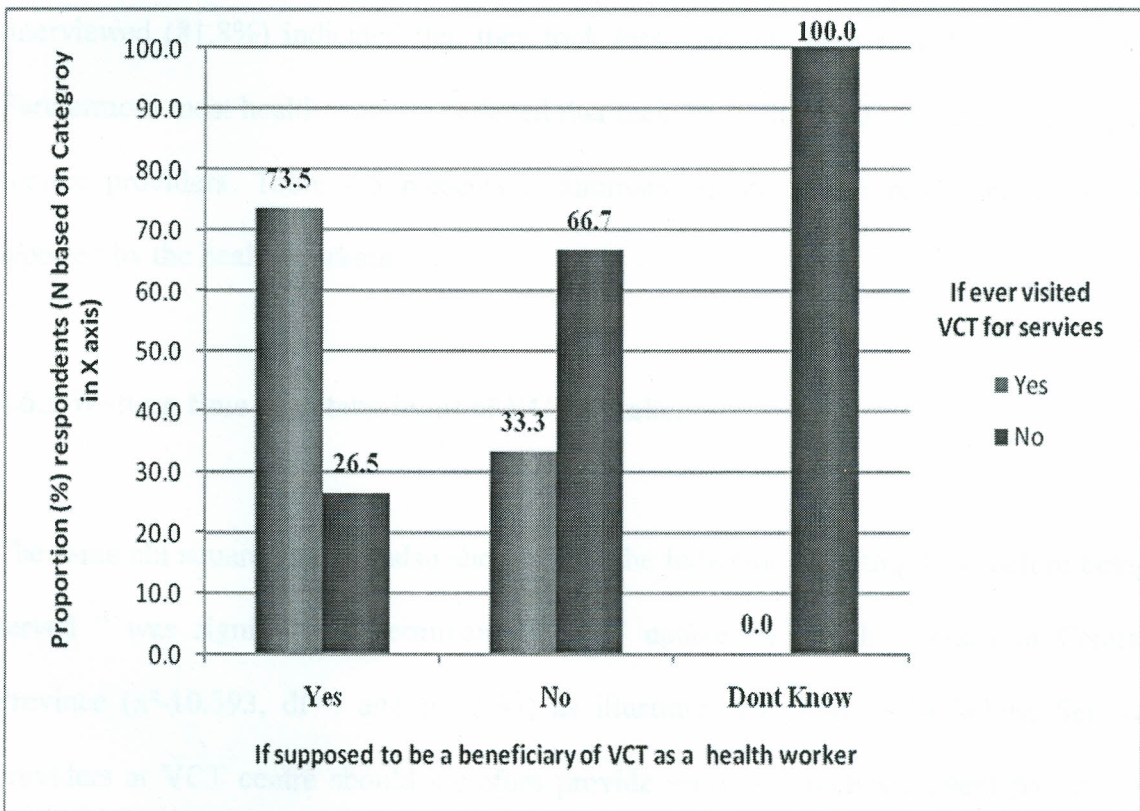
**Table 4.4: Association between use of VCT and knowledge and attitude attributes of the health workers**

Knowledge and Attitudes Indicators	Categories	Have you ever visited VCT for services?				Chi-square tests for differences in the proportions tested
		Yes		No		
		n	(%)	n	(%)	
VCT is a service provided to all Kenyans free	Agree	259	(73.6)	93	(26.4)	$X^2 = 0.437$ <b>DF = 3</b> <i>P = 0.932</i>
	Disagree	3	(75.0)	1	(25.0)	
Availability of VCT centre at your facility	Yes	264	(73.3)	96	(26.7)	$X^2 = 5.798$ <b>DF = 3</b> <i>P = 0.122</i>
	No	0	(.0)	1	(100.0)	
	Don't Know	0	(.0)	1	(100.0)	
As a health worker, are you supposed to be a beneficiary of VCT	Yes	261	(73.5)	94	(26.5)	$X^2 = 5.145$ <b>DF = 2</b> <i>P = 0.076</i>
	No	1	(33.3)	2	(66.7)	
	Don't Know	0	(.0)	1	(100.0)	
Are there benefits of visiting VCT	Yes	263	(73.7)	94	(26.3)	$X^2 = 3.142$ <b>DF = 2</b> <i>P = 0.208</i>
	No	1	(50.0)	1	(50.0)	
trained in HIV/Aids	Yes	165	(74.3)	57	(25.7)	$X^2 = 1.672$ <b>DF = 2</b> <i>P = 0.433</i>
	No	94	(70.7)	39	(29.3)	
	Don't Know	3	(100.0)	0	(.0)	
want to be trained in HIV/AIDS	Yes	87	(75.0)	29	(25.0)	$X^2 = 8.141$ <b>DF = 2</b> <i>P = 0.017</i>
	No	4	(44.4)	5	(55.6)	
	Don't Know	1	(25.0)	3	(75.0)	

Training on HIV and AIDS was considered as a factor that could enhance the knowledge level of the health workers and thus increase their uptake of VCT and other HIV related services. This study established that only 61% of the health workers reported to have been trained on HIV and AIDS

Most reported to have been trained on PMCT, basic training, counseling and testing, and provider initiated counseling and testing.

On analysis of the knowledge and attitude related variables against the outcome variable of VCT uptake and frequency of uptake, almost all of the characteristics had no statistically significant association to the dependent variables as earlier illustrated in table 4.5 through the chi-square test for the differences in proportions tested. The variable being a health worker whether you are supposed to be a beneficiary of VCT services did not have a significant association with VCT uptake as it would be expected ( $\chi^2=5.145$ ,  $df=2$  and  $p=0.076$ ) as illustrated in figure 4.6



**Figure 4.6 Health workers' belief as a determinant of VCT uptake**

## **4.6 Health Provider related Factors as Determinants of VCT Uptake among Health Workers**

### **4.6.1 Physical location of VCT**

Health workers were probed on various health provisions factors that could have affected their uptake of VCT. Generally, most of the health workers believed that the physical location of the VCT centre in their facilities was appropriate. Majority of those interviewed (81.8%) indicated that they took less than one hour to get VCT services. Furthermore most health workers believed that their VCT sites had a good availability of service providers. Table 4.5 presents a summary of the health provision factors as reported by the health workers

### **4.6.2 Waiting time as determinant of VCT uptake.**

The same chi square analysis also showed that the indicator “ waiting time before being served ” was significant determinant of VCT uptake by health workers in Central Province ( $\chi^2=10.393$ ,  $df=4$  and  $p=0.034$ ) as illustrated by figure 4.14 below. Service providers at VCT centre should therefore provide services which are client friendly in order to enhance uptake of HIV testing which is an important entry to comprehensive care. Apart being friendly and caring, service providers should make sure that their clients spend as little as possible time at the VCT centre. Long waiting may discourage

people from attending VCT centre as many may not want to be seen seeking services due to stigma associated with HIV/AIDS.

Question	Response	Percentage
1. How do you rate the availability of VCT services?	Excellent	10
	Very Good	20
	Good	30
	Fair	25
	Poor	15
2. How do you rate the quality of VCT services?	Excellent	15
	Very Good	25
	Good	35
	Fair	20
	Poor	5
3. How do you rate the staff's attitude?	Excellent	10
	Very Good	20
	Good	30
	Fair	25
	Poor	15
4. How do you rate the privacy of VCT services?	Excellent	15
	Very Good	25
	Good	30
	Fair	20
	Poor	10
5. How do you rate the cost of VCT services?	Excellent	10
	Very Good	20
	Good	30
	Fair	25
	Poor	15
6. How do you rate the overall satisfaction with VCT services?	Excellent	15
	Very Good	25
	Good	35
	Fair	20
	Poor	5
7. How do you rate the waiting time at VCT services?	Excellent	10
	Very Good	20
	Good	30
	Fair	25
	Poor	15

**Table 4.5: Summary of Health Provider related factors**

		Have you ever visited VCT for services?				Chi-square tests for differences in the proportions tested
		Yes		No		
		n	(%)*	n	(%)*	
Rating of the appropriateness of physical location of the VCT	Excellent	51	(79.7)	13	(20.3)	$X^2 = 2.116$ <b>DF = 4</b> $P = 0.714$
	Very Good	69	(70.4)	29	(29.6)	
	Good	102	(75.0)	34	(25.0)	
	Fair	23	(74.2)	8	(25.8)	
	Poor	13	(68.4)	6	(31.6)	
Waiting time one expect to take before getting services at the VCT	<60 mins	206	(75.7)	66	(24.3)	$X^2 = 10.393$ <b>DF = 4</b> $P = 0.034$
	61-120 mins	33	(64.7)	18	(35.3)	
	121-240	6	(75.0)	2	(25.0)	
	>241	1	(50.0)	1	(50.0)	
Rating of the availability of service providers in your VCT sites?	Excellent	61	(87.1)	9	(12.9)	$X^2 = 4.866$ <b>DF = 4</b> $P = 0.301$
	Very Good	87	(72.5)	33	(27.5)	
	Good	79	(66.9)	39	(33.1)	
	Fair	19	(79.2)	5	(20.8)	
	Poor	1	(50.0)	1	(50.0)	
Opinion about the altitude of services provider (friendly, caring, and listening?)	Excellent	59	(90.8)	6	(9.2)	$X^2 = 11.939$ <b>DF = 4</b> $P = 0.018$
	Very Good	95	(72.0)	37	(28.0)	
	Good	85	(69.1)	38	(30.9)	
	Fair	15	(75.0)	5	(25.0)	
	Poor	3	(60.0)	2	(40.0)	
Rating of the services provided in terms of maintaining confidentiality	Excellent	69	(79.3)	18	(20.7)	$X^2 = 3.092$ <b>DF = 4</b> $P = 0.543$
	Very Good	76	(69.1)	34	(30.9)	
	Good	68	(75.6)	22	(24.4)	
	Fair	16	(69.6)	7	(30.4)	
	Poor	4	(80.0)	1	(20.0)	
Technical competence of your VCT counselors	Excellent	71	(82.6)	15	(17.4)	$X^2 = 4.866$ <b>DF = 4</b> $P = 0.301$
	Very Good	92	(72.4)	35	(27.6)	
	Good	79	(71.2)	32	(28.8)	
	Fair	8	(88.9)	1	(11.1)	
	Poor	3	(75.0)	1	(25.0)	
Rating of the level of counseling communication and information t from your VCT site	Excellent	60	(81.1)	14	(18.9)	$X^2 = 4.407$ <b>DF = 4</b> $P = 0.354$
	Very Good	92	(74.8)	31	(25.2)	
	Good	90	(69.8)	39	(30.2)	
	Fair	10	(83.3)	2	(16.7)	
	Poor	2	(100.0)	0	(.0)	
Rate the general state of the facility at the VCT	Excellent	32	(78.0)	9	(22.0)	$X^2 = 1.425$ <b>DF = 4</b> $P = 0.922$
	Very Good	86	(76.8)	26	(23.2)	
	Good	108	(72.8)	40	(27.2)	
	Fair	24	(70.6)	10	(29.4)	
	Poor	3	(75.0)	1	(25.0)	
Rate the general cleanliness at the VCT	Excellent	47	(81.0)	11	(19.0)	$X^2 = 2.559$ <b>DF = 3</b> $P = 0.465$
	Very Good	87	(74.4)	30	(25.6)	
	Good	91	(70.0)	39	(30.0)	
	Fair	17	(73.9)	6	(26.1)	

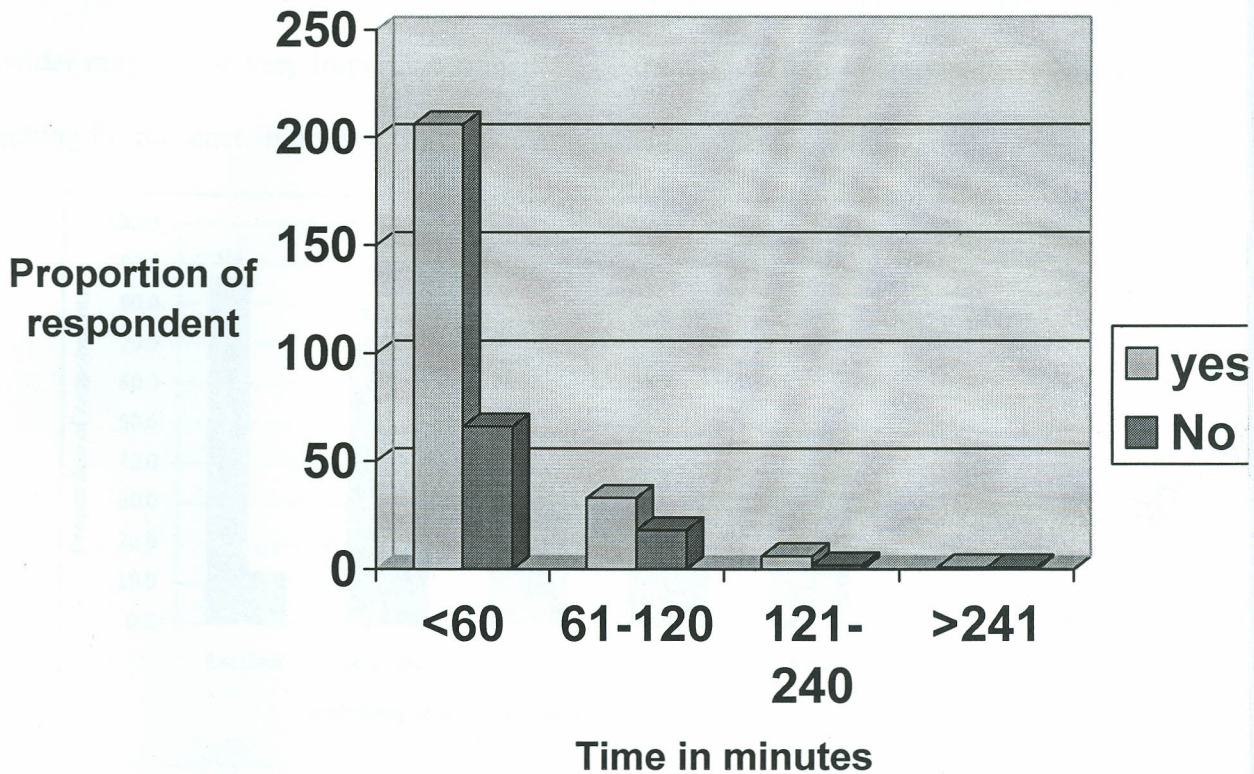
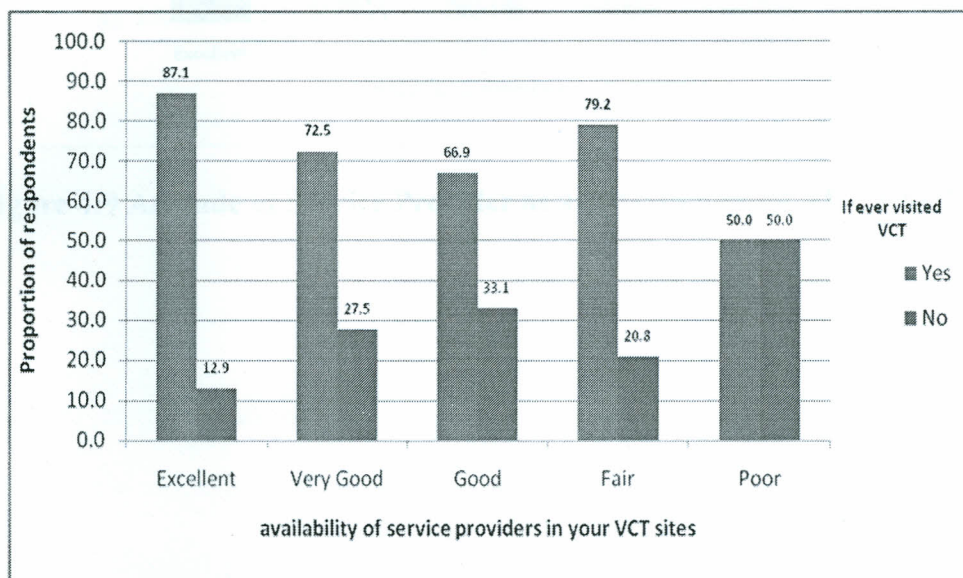


Figure 4.7 Waiting time as determinant of VCT uptake.

**4.6.3: Availability of service provider as determinant of VCT uptake.**

Availability of service providers in VCT sites was associated with VCT uptake by the health workers. The availability was rated from Excellent down to Poor. Facilities that had excellent availability of service providers at their VCT sites recorded higher

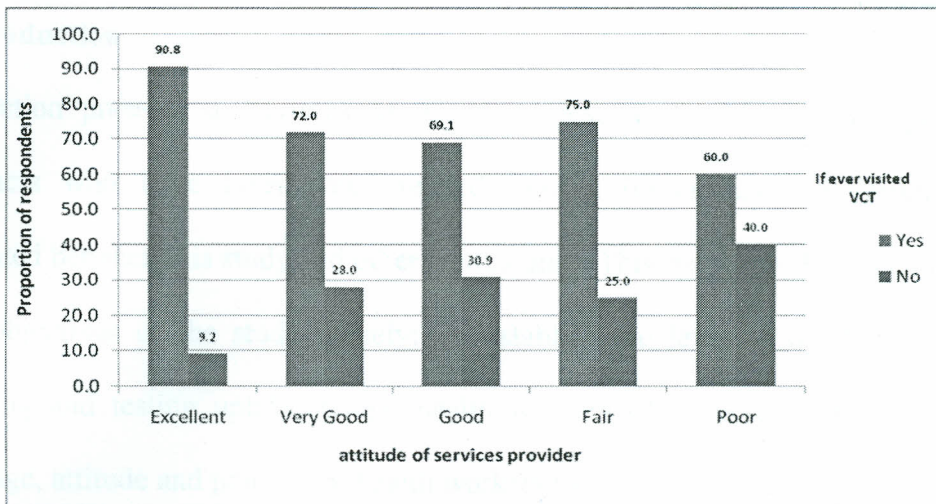
proportion of health workers who reportedly took up voluntary counseling and testing. However, on chi square the association was not statistically significant ( $\chi^2=4.866$ ,  $df=4$  and  $p=0.301$ ) (Figure 4.15). It is expected that health workers may have minimal problems with accessibility of VCT centers. This being the case, availability of service provider may not be very important to them since they can afford to frequently keep on checking for presence of a service provider compared to general public.



**Figure 4.8: Availability of Service Providers as Determinant of VCT Uptake**

#### 4.6.4; Attitude of service provider as determinant of VCT uptake.

The attitude of the service providers was also rated from “Excellent” down to “Poor”. A similar trend observed above was also observed in this case, VCT sites that had “Excellent” attitudes of the service providers recorded higher proportions of VCT uptake amongst the health workers as compared to the lower rates (down to poor). The chi square analysis indicated that attitudes of service provider were a significant determinant of VCT services ( $\chi^2=11.939$ ,  $df=4$  and  $p=0.018$ )



**Figure 4:9 Attitude of Service Provider as a Determinant of VCT Uptake.**

## CHAPTER FIVE: DISCUSSION

### 5.1 Introduction

This section presents discussions of the study results as well as findings of other researchers who have investigated related topics. Similarities and differences are highlighted between this study and other related ones. This section is thematically aligned to the objectives of the study namely: To establish the level of uptake of voluntary counseling and testing uptake among health workers of different cadres; to examine knowledge, attitude and practice of health workers toward uptake of voluntary counseling and testing services; and to determine the health provision factors which influence uptake of VCT services among health workers of different cadres.

The hospital environment was considered appropriate in this study because the study population were different cadres of health workers. Additionally, the choice of health workers was informed on their risk of infection from consistent practice thus a need to understand their level of uptake of VCT services which are crucial in HIV and AIDS prevention and management.

All the health facilities visited were public (Government supported) which had similar infrastructure in terms of policy, buildings, and health worker composition thus offering a homogenous sample. Thematic discussion of the results is presented below according to the study objectives.

## 5.2 Uptake of voluntary counseling and testing among health workers

This study established that the level of VCT Uptake amongst the health workers was high at 73.1%. This indicates that VCT services are acceptable among public health workers in Kenya. This differs with studies of other health workers as evidenced in other studies. This can be attributed to the fact the VCT uptake has in the past been largely associated with the level of sensitization in the different sectors. In organization with high level of sensitization on HIV/AIDS matters, the level of uptake of VCT is fairly high. The finding of this study therefore suggests that the health workers in the region have been well sensitization on HIV given their 73.1% uptake. This is ironically lower than that of tour or safari workers in Botswana where VCT uptake was found to be quite high at 98% in a study reported in ILO, (2008). This negates the assumption that health workers are largely aware of HIV than any other sector workers.

This can be attributed to the low percentage of health worker in this study who indicated that they had received some training on HIV and AIDS. However the uptake observed in this study was higher than those in South Africa gold mine workers where VCT uptake stood at 33% (Day *et al*; 2003) and in Mwanza Tanzania where VCT uptake among primary school teachers was at 20% (Kakoko *et al*; 2006). The uptake among the health workers in Central Province of Kenya was also encouragingly higher than that of health workers in other sub-Saharan African countries; In Zambia, only 25% of the health workers had ever taken VCT at least once while in Zimbabwe 63% of all the health workers had never taken VCT.

### **5.3 socio-demographic determinants of voluntary counseling and testing uptake among health workers**

This study established that most of the health workers were in the sexually reproductive age group (18-45 years). It is also estimated that about 33.2 million people were living with HIV by the year 2007 globally (UNAIDS, 2008) of which majority are workers aged between 19 and 49 years. This study also established that majority health workers were in the same age bracket. This study however established no difference in the uptake of VCT amongst the different age groups. This is despite the fact that the sexually reproductive age group is expected to be at a higher risk than the older age group.

In this study most of the health workers were married (73.0%) with a sizeable proportion being single (22.4%). However, no difference was observed in their VCT uptake. Prevention strategies have in the recent past focused on prevention of infection among married couples given increased incidences of extra marital affairs (NASCOP, 2005), thus a need for increased uptake of VCT as a prevention strategy. Married couples are also responsible of 44% of the new infections (NASCOP, 2008)

This study also established that the cadre of the health workers did not determine the uptake of VCT services by the health workers both in terms of “ever visiting VCT” and “frequency of visits”. These findings contradict those of a study done in Zambia where a difference was observed in VCT uptake amongst the different health cadres where 55% of doctors had been tested compared to 33% of nurses, and only 12% of clinical officers

(MOH, 2006). This study observed no difference in uptake amongst the health workers in Central Province in Kenya. This could be attributed to the fact that in Kenya, awareness and sensitization of HIV/AIDS is fairly high in general public and health workers at large. This finding negates the assumption that health workers have varying information and knowledge on HIV/AIDS based on cadres.

#### **5.4 Knowledge and Attitude as determinants of VCTs Uptake**

This study established that most of the health workers have high levels of awareness and knowledge on HIV and AIDS. This is so because a large percentage of health workers have visited VCT centers for testing as indicated by this study which is at 73.1%. This affirms postulation that lack of knowledge and misconception about HIV and AIDS are key factors in the lack of prevention efforts (Babakian, 2004). Although knowledge alone does not change behaviour, and there is no significant relationship between sexual knowledge and safe sex, it has been shown that knowledge of the facts of HIV transmission plays obvious role in increasing the likelihood of safe sex through perception of individual risk that mediate action based on knowledge (Prohaska, 1990; Macintyre, 2004).

Further results from this study showed that the knowledge and attitude related variables against the outcome variable of VCT uptake and frequency of uptake generally had no statistically significant association to the dependent variables. In most cases the health workers uptake of VCT was independent of their knowledge and attitude. This is in agreement with several other studies that established knowledge does not necessarily

predispose to behaviour change. This emphasizes the influence of other factors like fear of finding one sero-positive which will almost inevitably cause shock and distress and may have effect on an individual or family (Ankrah, 1993; Lipman *et al*; 2000). This could be one most important reason why health workers may not be very comfortable with voluntary counseling and testing and thus important in explaining why health workers never go for VCT.

### **5.5 Health provider related factors as determinants of VCT up-take among health workers**

This study established that the physical location of the VCTs was generally appropriate with most health workers reporting a considerable waiting time of less than one hour to get VCT services. Further still most health workers believed that their VCT sites had generally a good availability of service providers. This study further established that the “waiting time in the VCT sites” and “attitudes of services providers” were significant determinants of VCT uptake. These two factors are directly associated to quality of service which has been evidenced in other studies to be of significant influence in the uptake of VCT. This corresponds with findings that service provision factors like access, cost, waiting time and quality of VCT at large affect VCT uptake (Bwambale *et al*; 2008). It also conforms with findings that weak systems, individual attitude and personal perceptions of the available VCT services create barriers to testing (Matovu *et al*; 2007). This also confirms findings of a study in South Africa which showed that poor quality service may lead to poor uptake of VCT services (Viljoen *et al*; 1998).

This study also established that “confidentiality of the service providers did not determine the uptake of VCT among health workers in Central Province of Kenya. This contradicts with findings from other studies that showed confidentiality being directly related to VCT uptake (Hirrano *et al*; 1998). This study’s findings on confidentiality could be attributed to the fact that confidentiality is a character mostly felt at the client (in this study health worker) level. This is explained by the fact that almost all the health workers reportedly indicated they had no problem with the confidentiality of the service providers.

## CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

This study was designed to answer the following objectives: to establish the level of uptake of voluntary counseling and testing uptake among health workers of different cadres; to examine knowledge, attitude and practice of health workers toward uptake of voluntary counseling services; and to determine the health provision factors which influence uptake of VCT services among health workers of different cadres. Based on the foregoing findings and discussions this study concludes as follows:

The health workers in Central province of Kenya had a generally high uptake of VCT at 73.1% compared to the national level which stands at 57%. However most of them did not meet the requirements in terms of VCT visit frequency of once in three months. Though the initial uptake is comparatively good the health workers were not consistent in follow up VCT visits.

The health workers were generally aware and knowledgeable on the VCT services. However the uptake of VCT was largely independent of VCT awareness and knowledge.

Last but not least the facilities reportedly had good health service provision factors at their facilities in terms of convenience of the location, and quality of service. However, the health workers uptake of VCT was determined by the “waiting time at the VCT” and the “attitude of the service providers at the facilities.

## **6.2 Recommendations**

Based on the findings and the conclusions of this study, the researcher recommends the following:

1. The uptake of VCT services by health workers in Central Province is fairly high. However the uptake was associated with waiting time and service provider attitude. This being the case it is important for the health sector to focus more on client friendly approach towards the provision of the existing VCT services amongst the different target populations.
2. Given the evidenced inconsistency in VCT follow up visits, a health worker focused approach should be used by the by the Ministry of Public Health to encourage the regular VCT uptake by health workers.
3. Despite the high level of awareness and knowledge, and high availability of VCTs, the uptake was still not fully done among the health workers. There is therefore a need for a paradigm shift from voluntary counseling and testing to more need based approaches like provider initiated counseling and testing, and client initiated counseling and testing that address the different HIV testing needs for the various sub-populations.

## **6.3 Further Research**

1. The study was carried out in district hospitals which have VCT centers. Comparative studies should be carried out in other levels of service provision points particularly those without VCTs.

2. There is need to establish factors associated with regular VCT follow ups or attendance since from the study it was clear that most health workers had irregular VCT follow ups.

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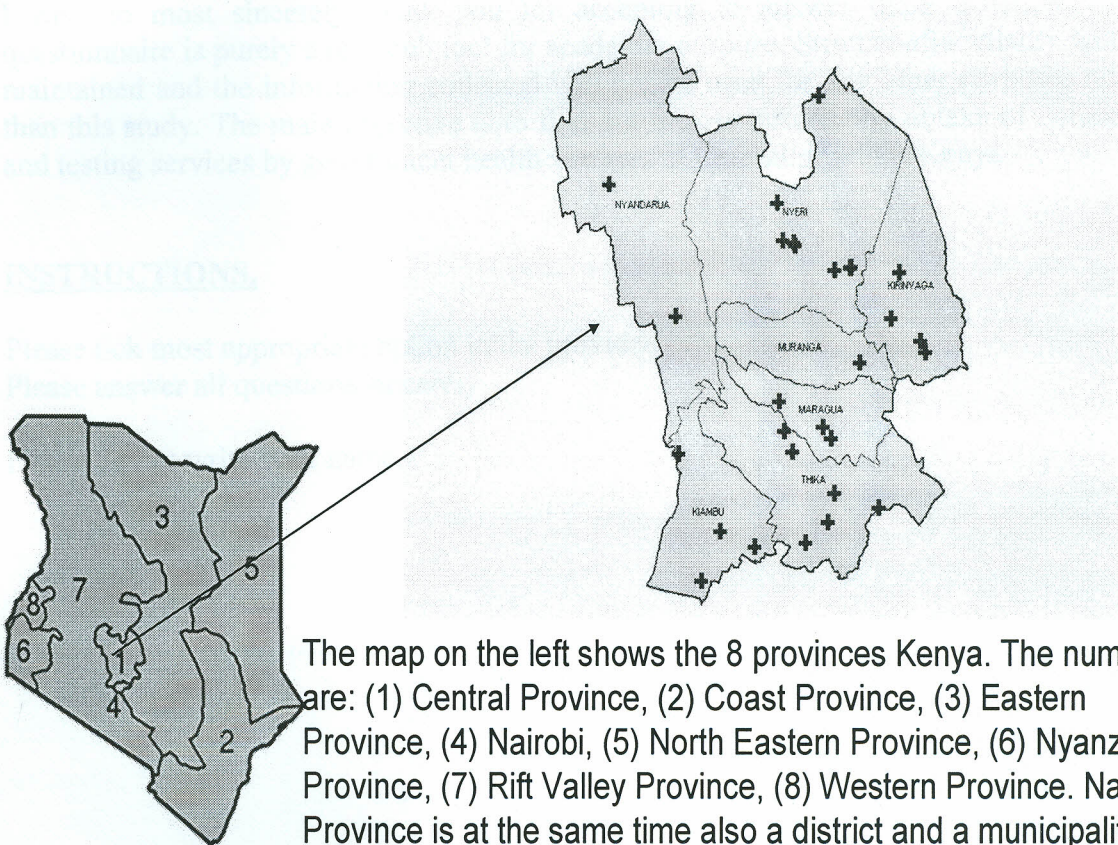
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## APPENDICES

### Appendix I: MAP OF CENTRAL PROVINCE

# STUDY AREA



The map on the left shows the 8 provinces Kenya. The numbers are: (1) Central Province, (2) Coast Province, (3) Eastern Province, (4) Nairobi, (5) North Eastern Province, (6) Nyanza Province, (7) Rift Valley Province, (8) Western Province. Nairobi Province is at the same time also a district and a municipality.

**Appendix 2: Questionnaire**

**FACTORS INFLUENCING UPTAKE OF VOLLUNTARY COUNSELLING AND TESTING SERVICES BY GOVERNMENT HEALTH WORKERS IN CENTRAL PROVINCE KENYA.**

**QUESTIONNAIRE.**

**INTRODUCTION**

The respondent to this questionnaire shall be a G.O.K Health worker in central province. I wish to most sincerely thank you for accepting to answer these questions. This questionnaire is purely a research tool for academic purpose. Strict confidentiality will be maintained and the information collected will not be used for any other purposes rather than this study. The main objective is to find out factors influencing uptake of voluntary and testing services by government health workers in Central province Kenya

**INSTRUCTIONS.**

1. Please tick most appropriate option in the provided box.
2. Please answer all questions sincerely
3. Please do not write your name.

**Date.....**


**Part A: Social Demographic Data.**

- 1.0 Name of your hospital.....
  - 1. Your year of birth.....
  - 2. Your age in years.....
  - 3. What is your Job group?.....
  - 4. What is your Job description i.e. Nurse, Doctor, Physiotherapist etc?.....
- 2.0 What is your marital status?
  - 1. Married
  - 2. Single
  - 3. Widow
  - 4. Divorced
  - 5. Separated
- 3.0 What is the highest level of your education?
  - 1. Completed primary
  - 2. Completed secondary
  - 3. Certificate college level
  - 4. Diploma college level
  - 5. Degree/University level
  - 6. Others specify.....
- 4.0 How many years have you been working as a health worker?
  - 1. <5yrs
  - 2. 5– 10 yrs
  - 3. 11- 15yrs
  - 4. 16- 20 yrs
  - 5. 21 and above yrs
- 5.0 What is your religion/ denomination?
  - 1. Catholic
  - 2. Protestant
  - 3. Muslim
  - 4. Hindu
  - 5. Others (specify)
- 6.0 Which college/s were you trained in as a professional (by name/s and what type of training did you receive.

college	Year of training (i.e. 2001_2004)	Type of training (i.e. dip nursing)

**PART B: Knowledge on attitude and practice.**

**I. Knowledge.**

2.1.1 .Voluntary counseling and testing is a service provided to all Kenyans free.

- 1. Agree
- 2. Disagree

2.1.2.Does the facility where you work have VCT?

- 1. Yes
- 2. No
- 3. Don't know
- 4. other (specify)

2.1.3 As a health worker are you supposed to be a beneficiary of VCT?

- 1. Yes
- 2. No
- 3. Don't know

2.1.4 If 2.1.3 yes please explain why?

2.1.5 If 2.1.3 no please explain why?

2.1.6 Are there benefits of visiting VCT?

- 1. Yes
- 2. No
- 3. Don't know

2.1.7.Are you trained in HIV/AIDS?

- 1. Yes
- 2. No
- 3. Don't know

2.1.8.If (2.1.7) is yes please specify the type of training.....

2.1.9.If (2.1.7) is no, would you want to be trained in HIV/AIDS?

- 1. Yes
- 2. No
- 3. Don't know

2.1.10 If (2.1.9) yes, then which type of training would want to undertake.....

2.1.11If (2.1.9) is no please state why?.....

2.1.12 Is there anything else you can add in relation to HIV/AIDS knowledge?.....

## II. Practice and Attitude.

2.2.1 Have you ever visited VCT for services?

1. Yes (go to 2.2.2)
2. No (go to 2.2.3)

2.2.2 If (2.2.1) yes (ever visited) why?

1. to know my HIV status
2. for employment
3. For medical reasons
4. other (specify)

2.2.3 If (2.2.1) is no (never visited) please indicate why?

1. Fear of discrimination if sero-positive
2. Fear of stigmatization if positive
3. Don't know
4. Other reasons (specify)

2.2.4 If (2.2.1) is yes, how frequent have you been receiving VCT services?

2.2.5 (2.2.1) is no do you ever intend to visit VCT?

1. Yes
2. No
3. Do not know

2.2.6 If (2.2.4) is yes, then when do you intend to visit VCT?.....

2.2.7 What is your general feeling about visiting VCT for service?.....

## PART 3: service provision factors.

### I. Accessibility

3.1.1 How would you rate the appropriateness of physical location of the VCT in your facility?

1. Excellent.
2. Very good.
3. Good.
4. Fair.
5. Poor.
6. Please explain your answer to 3.1 above.....

3.1.2 How long would take to walk from your department to the VCT?.....

3.1.3 How long would you expect to take before getting service at the VCT?

1. Within one hour
2. Between 1hr-2hrs
3. Between 3hrs- 4hrs.
4. Beyond 4hrs.

3.1.4 How would you rate the availability of service providers in your VCT site?

1. Excellent.
2. Very good.
3. Good.
4. Fair.
5. Poor.

## II. Acceptability

- 3.2.1 What is your opinion about the attitude of services provider (friendly, caring, listening etc)?
1. Excellent.
  2. Very good.
  3. Good.
  4. Fair.
  5. Poor.
  6. Please explain your answer in 3.2 above.....
- 3.2.2 How do you rate the services provider in terms of maintaining confidentiality?
1. Excellent.
  2. Very good.
  3. Good.
  4. Fair.
  5. Poor.
- 3.2.3 In your opinion about the attitude of services provider (friendly, caring, listening etc)?
1. Excellent.
  2. Very good.
  3. Good.
  4. Fair.
  5. Poor.
- 3.2.4 How would you rate the level of counseling communication and information you expect from your VCT site??
1. Excellent.
  2. Very good.
  3. Good.
  4. Fair.
  5. Poor.
- 3.2.5 How would you rate the general state of the facility at the VCT?
1. Excellent.
  2. Very good.
  3. Good.
  4. Fair.
  5. Poor.
- 3.2.6 How would you rate the general cleanliness at the VCT??
1. Excellent.
  2. Very good.
  3. Good.
  4. Fair.
  5. Poor.
- 3.2.7 Are there any other factors related to the service provided at VCT you would like to comment on? Please explain where applicable?

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