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**THE EFFECTS OF HIV TESTING AND COUNSELLING ON
BEHAVIOUR CHANGE IN THE PREVENTION OF HIV AMONG
THE MILITARY POPULATION IN KENYA:**

BY

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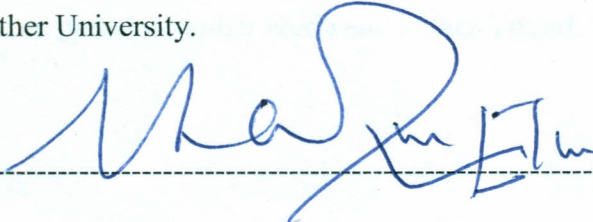
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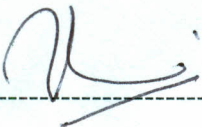
DECLARATION


This thesis is my original work and has not been presented for a degree or any other award in another University.

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DEDICATION

To my family: Wife Hindia; Children, Nasri, Fatuma, Warsame, Nuria, Asha, and Mahat; and my beloved parents, Mother Nuria and Father Yussuf.

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ABBREVIATIONS AND ACRONYMS

AIDS - Acquired Immune Deficiency Syndrome

ART - Antiretroviral Therapy

AIDSCOP- AIDS Control Prevention Project

CACC -Constituency AIDS Control Committee

CCC – Comprehensive Care Clinic

CDC – Centre for Disease Control and Prevention

DHAPP- Department of Defence HIV and AIDS Prevention Programme

DOD - Department of Defence

DOD CIV WKS- Department of Defence Civilian Workers

DTC- District Technical Committee

DTC – Diagnostic Testing and Counselling

CSW – Commercial Sex Worker

FGD – Focus Group Discussion

GPA - Global Programme for AIDS

HIV - Human Immunodeficiency Virus

HTC-HIV Testing and Counselling

HRG - High Risk Group

IDU - Injecting Drug User

KAP – Knowledge, Attitude and Practice

KA- Kenya Army

KAF- Kenya Air Force

KN- Kenya Navy

KNASP- Kenya AIDS Strategic Plan

MOH- Ministry of Health

MSM – Men who have sex with men

MTCT- Mother to Child Transmission

NACC – National AIDS Control Council

NASCOP - National AIDS and STD control programme

OVC- Orphans and Vulnerable Children

PITC – Provider initiated testing and counselling

PMTCT- Prevention of Mother to Child Transmission

ROK - Republic of Kenya

RTA- Royal Thai Army

STDs- Sexually Transmitted Diseases

STIs- Sexually Transmitted Infections

SSPS- Statistical Package for Social Sciences

SHARP- Sexual Health Responsibility Programme

TTM - Trans theoretical Model

TB-Tuberculosis

UN- United Nations

UNAIDS - Joint United Nations programme on HIV and AIDS.

UNICEF – United Nations Children’s Fund

USA- United States of America

UNGASS - United Nations General Assembly Special Session on HIV and AIDS

U.K. – United Kingdom

USAID – United States Agency for International Development

VCT- Voluntary Counselling and Testing

WHO- World Health Organization

ABSTRACT

HIV testing and counselling (HTC) is an important prevention intervention whose aim is to enable an individual know his/her HIV sero-status and is also an entry point to treatment, care and support. Kenya in the new KNASP (2009/13) envisions an HIV free society through universal access to HIV services such as knowledge of HIV status by 2015, where 80% of the Kenyan population would have been counselled and tested. In order to achieve the national universal access targets, utilization of HTC services should increase everywhere throughout the country including the Kenya military. However, HTC services remain underutilized with only 50% of Kenyan between the ages of 15 and 64 years possessing knowledge of their HIV status and up to 83% of those infected with HIV do not know their HIV status.

AIDS is currently the leading cause of death globally in the military, accounting for more than half of in-service and post service mortality in some countries. Such attrition causes loss of continuity at command level and within the ranks, increasing recruitment and training costs for replacements, and generally contributes to reduction in military preparedness, internal stability and external security. HIV and AIDS is one of the worst epidemics with most far reaching health and developmental consequences the world has ever seen. In Kenya, HIV and AIDS was declared a national disaster in 1999. Kenya continues to have a severe, generalized and concentrated HIV epidemic and the estimated HIV prevalence in adults aged between 15 and 49 years was about 7.1% in 2007 reducing marginally to 6.3% in 2008/2009. Throughout the world, the military personnel are the most vulnerable population to HIV and AIDS including sexually transmitted diseases. This is due to demographic factors such as their population being predominantly youthful with highly mobile and sexually active males. Access to alcohol tends to exacerbate risky sexual behaviour and hence increased vulnerability to contracting HIV. Despite the military being a high risk group, no previous study has investigated the effects of HIV testing and counselling as a prevention intervention in Kenya. A descriptive, retrospective and prospective cross sectional study was conducted in the Kenyan military between 2003 and 2006 to evaluate the effect of voluntary counselling and testing as a tool for behaviour change among military personnel in 7 barracks in Kenya. A total of 320 respondents were interviewed and 6 FGDs were held the latter consisting of 60 participants in total. The findings revealed that more males than female respondents participated in the study and that over 79% of them were aged between 18 and 40 years. There was a remarkable increase in the utilization of HTC services from 9% in 2003 to 58.8% in 2006. A number of respondent-related factors including sex, age, marital status, occupation, level of education, concurrent partnerships, STI and knowledge of partners HIV status were identified to promote positive sexual behaviour change. Several factors were significantly associated with utilization of HTC as a behaviour change strategy at 95% confidence level. These included knowledge of partner's HIV status ($\chi^2 = 1.867$, $P > 0.010$), occupation of males ($\chi^2 = 2.583$, $P > 0.011$), and engagement in risky sexual behaviour ($\chi^2 = 2.049$, $P > 0.017$). The findings also showed that at 95% confidence interval, marital status ($\chi^2 = 2.651$, $P > 0.024$) and knowledge of partners' HIV status ($\chi^2 = 1.685$, $P > 0.047$) were significantly associated with the utilization of HTC and PMTCT services as a behaviour change strategy. The findings from retrospective records indicated that the HIV prevalence in the Kenyan military personnel had declined from 13% in 2002 to 5.3% in 2007 as was also a decline in STI cases among the same population. This study indicated that there was a significant behaviour change in the military and a deeper understanding of the effects of HTC as strategic tools in HIV prevention.

CHAPTER 1: INTRODUCTION

1.1 Background Information

Many countries have taken steps to increase utilization of HIV testing and counselling (HTC) services. Among countries for which testing utilization data are available for 2008, the highest number of tests per 1000 population was reported in Botswana (210), Lesotho (186), Sao Tome and Principe (179), Uganda (146) and Swaziland (139). In Ethiopia, testing rates more than doubled between 2007 and 2008—from 51 tests per 1000 population to 121 tests per 1000 population (WHO, UNICEF, UNAIDS, 2009). However, considerable gaps remain. While HIV testing more than doubled in Kenya between 2003 and 2007, an estimated 83% of Kenyans living with HIV remained undiagnosed in 2007 (ROK, 2009). Similarly, fewer than one in five people in Burundi know their HIV status (Ndayirague et al., 2008). According to a household survey in Ethiopia, previously untested men and women were more likely to be infected than their counterparts who had previously accessed testing services (Mishra et al; 2008a). Many countries have therefore taken steps to increase utilization and access of HIV testing and counselling services.

HIV testing and counselling (HTC) is a national strategic intervention in Kenya to reduce HIV transmission and mitigate the effects of the epidemic in line with the national goal of universal access to prevention, treatment care and support to HIV and AIDS (ROK, 2008). Kenya's vision in the new KNASP (2009/13) is to have an HIV free society through universal access to knowledge of HIV status by 2015. This means at least 80% of eligible Kenyans should be counselled and tested by 2015. HTC services remain underutilized with only 50% of Kenyans between the ages of 15 and 64 years possessing

correct knowledge of their HIV status and up to 83% of those infected with HIV not knowing their HIV status (ROK, 2010).

HIV and AIDS is the biggest challenge to mankind in the 21st Century comparable to the Bubonic plague of the middle Ages (Museveni, 2004). AIDS is currently the leading cause of death in the military, accounting for more than half of in-service and post service mortality in some countries. In Uganda, for example, it was found that 7.5% of the soldiers who died within one year of discharge were suffering from AIDS. Such attrition causes loss of continuity at command level and within the ranks, increased recruitment and training costs for replacements, and general reduction in preparedness, internal stability and external security. In this sense, HIV and AIDS can easily serve as a domestic and regional destabilizer and potential war starter (Rodger, 1996). Major General Matshwenyego Fisher, chief of staff in the Botswana defence force, notes that AIDS in the military, as well as in the national environment, is no longer an academic issue, but a reality that has to be tackled with all vigour and effort that is commensurate with its ramification (UNAIDS, 1998).

Globally it is estimated that 33.3 million people are living with HIV and since 1999 the number of new infections globally has fallen by 19%. The total number of people living with HIV and AIDS rose in 2004 globally, to the highest level of 39.4 million, with new infection of 2 million people in 2004. The global HIV and AIDS epidemic killed 3 million people in 2003. Slightly more than half of the people living with HIV were women. Sub-Saharan Africa remains the region most heavily affected by HIV. In 2008, Sub-Saharan Africa accounted for 67% of HIV infections worldwide, 68% of new HIV infections among adults and 91% of new HIV infections among children. The region also

accounted for 72% of the world's AIDS-related deaths in 2008. Majority of the new infections continue to be in sub-Saharan Africa where an estimated 1.8 million become infected in 2009 (UNAIDS, 2010). The total number of people living with the virus in 2008 was more than 20% higher than the number in 2000, and the prevalence was roughly threefold higher than in 1990 (UNAIDS, 2009). In Sub-Saharan Africa more women than men are living with HIV and young women aged 15-24 years were eight times more likely than men to be infected with HIV. It was estimated that 370000 children were newly infected with HIV in 2009 through maternal transmission (UNAIDS, 2010). Mother to child transmission is the most significant source of HIV infection in children below the age of 5 years and an estimated 5.1m children worldwide were infected, most of them through MTCT (UNAIDS, 2004). About 10% of all reported AIDS cases in children occur in less than five years and are mostly attributed to MTCT. Approximately 133,000 births are exposed to the risk of MTCT per year and out of these, 53,000 infants are infected annually. In Kenya, approximately 100,000 children are living with HIV and AIDS (ROK - NASCOP, 2002). Although important progress has been achieved in preventing new HIV infections and in lowering the annual number of AIDS related deaths, the number of people living with HIV continues to increase. AIDS-related illnesses remain one of the leading causes of death globally and are projected to continue as a significant global cause of premature mortality in the coming decades (WHO, 2008). Many African militaries are experiencing diminished readiness problems due to high rates of mortality and mobility among their personnel (DEHAPP, 2005). The government of Kenya declared HIV and AIDS a national disaster in 1999 due to its devastating effects. HIV and AIDS was brought to light in 1984 and it is estimated that by 2000,

about 1.5 million Kenyans had died from HIV and AIDS related diseases and approximately 1.6 million were infected with the HIV and AIDS virus (ROK, 2007). The daily deaths due to HIV and AIDS have been fluctuating between 500 and 200 people with approximately 2000 new infections annually. Most behavioural indicators improved between 2003 and 2007 - the percentage of boys and girls (15-19) who had sex by age 15 years had dropped. The number of women and men reporting more than one sex partner in the past year was similar in both surveys. Condom use during last higher risk has increased among men (46.5% to 51.8%) and women (23.9% to 35.0%) between 2003 and 2007(ROK, 2007).

The military throughout the world are among the most vulnerable population to HIV and AIDS and sexually transmitted diseases. This is due to the demographic factors where their population is mostly youthful and sexually active, and the fact that they are mostly male and highly mobile. The abundance of alcohol tends to exacerbate risky sexual behaviour (ROK, 1997).

1.2 Statement of the Problem

Kenya through the new KNASP III (2009/13) envisions HIV free society with universal access to HIV services such as knowledge of HIV status by 2010 and 80% of Kenyan population should be counselled and tested by 2015. HTC services remain underutilized with only 36% of Kenyan between the ages of 15 and 64 years having correct knowledge of their HIV status and up to 83% of those infected with HIV did not know their HIV status. The military populations throughout the world are not only the most vulnerable to HIV infections, but are also transmitting the virus to the civil population. This is largely

due to the fact that most of the military populations are youthful, sexually active, highly mobile and economically empowered.

In line with the National goal of Universal access to HTC by 2015, utilization should be increased in the Kenyan military which is also an entry point to prevention, care and treatment. In addition, 75% of the Kenyan soldiers are married and periodically separated from their families, together with abundant consumption of alcohol, has increased the risk of HIV infection among the military community. In the absence of a cure and vaccines for HIV and AIDS, interventions that target behaviour change top the priority list. HTC is among the top global and national strategic tools designed to bring the desired behaviour change that will reduce the risk of acquiring or transmitting HIV or any other sexually transmitted infection.

Utilization of HTC services is still low in the Kenyan military despite recent national scale up in the general population. Additionally despite the existence of many potential benefits in prevention of HIV emanating from HTC as a strategic tool in behaviour change, no previous studies have been conducted to determine its effectiveness in the military population of Kenya.

1.3 Hypotheses

H₀: HIV testing and counselling does not promote safe sexual behaviour among the military population in Kenya.

H₁: HIV testing and counselling promotes safe sexual behaviour among the military population in Kenya.

1.4 Research Questions

1. What are the socio-demographic profiles of the military population?

2. What are the levels and trends of HIV infection in the military population?
3. What are the effects of utilization of HIV testing and counselling as strategic prevention tools for HIV in the military population?
4. What are the indicators of behaviour change in prevention of HIV among the military population?
5. What are the factors that promote behaviour change and reduce the risk of infection and transmission of HIV among the military population?

1.5 Objectives of the Study

1.5.1 General Objective

To determine the effects of HIV testing and counselling as a strategic prevention tool through behaviour change among the military population in Kenya.

1.5.2 Specific Objectives:

- (a) To determine the socio-demographic profiles of the study population.
- (b) To determine the levels and trends of HIV infection in the military population.
- (c) To establish the effect of utilization HIV testing and counselling as strategic prevention tool for HIV in the military population.
- (d) To establish the indicators of behaviour change in prevention of HIV among the military population.
- (e) To identify the factors those promote behaviour change and reduce the risk of infection and transmission of HIV among the military population.

1.6 Justification

There is clear indication from several studies conducted in many countries that the military population is highly vulnerable to HIV infection. Comparative studies of sexual behaviour in France, the UK and USA showed that the military personnel have much high risk of HIV infection than groups of equivalent age and sex in the civilian population. Armed forces of the other parts of the world reflect the same phenomenon. Previous research conducted in Kenya indicated that there was HIV awareness rate of up to 90% among the military population, but this has not provided sufficient stimulus for behaviour change. The government first responded to HIV and AIDS epidemic in 1985 when it launched the two medium term plan followed by numerous other activities resulting to the declaration of HIV as national disaster in 1999. Despite all these of efforts HIV epidemic remains generalized in Kenya with Kenya military having high HIV prevalence of 13% in 2003. HIV testing and counselling is a national strategic intervention to reduce HIV transmission and mitigate the effects of the epidemic. One of the cardinal outcomes of HIV testing and counselling intervention is behaviour change. In most countries with generalized epidemics, repeated surveys have shown some positive trends in young people's sexual behaviour. The future course of the world's HIV epidemic hinges in many respects on the behaviour of young people. The Kenyan military HTC utilization has been less 10% in 2003. This study was designed to evaluate the effects of HIV testing and counselling as a behaviour change strategy in HIV prevention among the military population in Kenya which has hitherto not been investigated

1.7 Definition of Terms

HIV Testing and Counselling- Is the primary entry point to prevention, care and treatment of HIV which has shifted over the years from the primary client initiated counseling to a broad scope of interventions which includes VCT, PMTCT, PITC etc. with three core principles of counseling e.g. consent, confidentiality and counselling.

VCT-Voluntary HIV counseling and testing- is the process whereby an individual or couples undergo counseling to enable him/her/them to make an informed choice about being tested for HIV.

Risky Sexual Behaviour- Is a behaviour pattern that exposes an individual to unprotected sex, multiple sexual patterns and sharing of unsterilized injection equipment.

Military Population- is consisting of both uniformed and civilian personnel working for the military and their dependants living in the barracks

Human immunodeficiency Virus- is the organism that causes AIDS

Acquired Immune Deficiency Syndrome- Is the disease process after infection with HIV

High Risk Group- are a group of people with identifiable characteristics such as occupation, workplace or location that practice high risk behavior with the general population

Diagnostic Testing and Counselling- Targets patient with HIV signs and symptoms

Provider Initiated Testing and Counselling- Refers to a situation where HTC is given in a health facility by a health provider to a client or a patient regardless of their reason for attending the health facility

Self-Testing- Conducting HIV testing on oneself

Prevention of Mother to child Transmission -Is the HIV prevention, control and counselling services given to pregnant mothers into the postpartum period. The counselling services is also provided to their spouses

Behaviour Change Intervention- Are intervention designed to change risk sexual behaviour in the context of HIV targeting specific group

Client Initiated Testing and Counselling- Refers to a situation where by an individual, couple or group actively seek HTC at a site where these services are provided

Commercial Sex workers- These are group of people who practice transactional sex which involves exchange of sex for money

Antiretroviral - Antiretroviral are group of drugs used to treat HIV

Prevention Indicators- These are group of HIV prevention indicators designed by World health Organization

Positive Behaviour-Entails pattern of sexual behaviour that enhances HIV prevention and control which includes sexual abstinence, one faithful sexual partners , delayed sexual debut ,use of condoms, HCT etc.

CHAPTER 2: LITERATURE REVIEW

2.1 The Global HIV and AIDS Situation

The global AIDS epidemic has profoundly affected both the quality of life and progress towards poverty alleviation in many of the poor developing countries, especially in Sub-Saharan Africa. In countries that have been less severely affected, it threatens to do so in the absence of effective and timely prevention efforts (World Bank, 2005). In many regions of the world, new infections are heavily concentrated among the youth aged between 15 and 24 years. However, in most countries with generalized epidemics, repeated surveys have shown some positive trends in young people's sexual behaviour. The future course of the world's HIV epidemic hinges in many respects on the behaviour of young people; to adopt or maintain this positive trend including effective management of the contextual factors that affect those choices (UNAIDS, 2006; 2010).

Table 2.1 below summarizes the Global HIV and AIDS situation by comparing the statistics in 2001 and 2009.

The Regional statistics provide an analysis of the number of adults and children living with HIV, those newly infected with HIV, proportional (%) adult HIV prevalence (age bracket 15 – 49 years) and AIDS – related deaths among adults and children.

	Adults and children living with HIV	Adults and children newly infected with HIV	% Adult prevalence (15-49 years)	AIDS-related deaths among adults and children
SUB-SAHARAN AFRICA	2009 22.5 million [20.9-24.2 million]	1.8 million [1.6-2.0 million]	5.0 [4.7-5.2]	1.3 million [1.1-1.5 million]
	2001 20.3 million [18.9-21.7 million]	2.2 million [1.9-2.4 million]	5.9 [5.6-6.1]	1.4 million [1.2-1.6 million]
MIDDLE EAST AND NORTH AFRICA	2009 460 000 [400 000-530 000]	75 000 [61 000-92 000]	0.2 [0.2-0.3]	24 000 [20,000-27 000]
	2001 180 000	36 000	0.1	8300

	Adults and children living with HIV	Adults and children newly infected with HIV	% Adult prevalence (15-49 years)	AIDS-related deaths among adults and children
	[150 000-210 000]	[32 000-42 000]	[0.1-0.1]	[6300-11 000]
SOUTH AND SOUTH-EAST ASIA				
2009	4.1 million [3.7-4.6 million]	270 000 [240 000-320 000]	0.3 [0.3-0.3]	260 000 [230 000-300 000]
2001	3.8 million [3.5-4.2 million]	380 000 [350 000-430 000]	0.4 [0.3-0.4]	230 000 [210 000-280 000]
EAST ASIA				
2009	770 000 [560 000-1.0 million]	82 000 [48 000-140 000]	0.1 [0.1-0.1]	36 000 [25 000-50 000]
2001	350 000 [250 000-480 000]	64 000 [47 000-88 000]	<0.1 [<0.1-<0.1]	15 000 [9400-28 000]
OCEANIA				
2009	57 000 [50 000-64 000]	4500 [3400-6000]	0.3 [0.2-0.3]	1400 [<1000-2400]
2001	29 000 [23 000-35 000]	47 000 [3800-5600]	0.2 [0.1-0.2]	<1000 [<500-1100]
CENTRAL AND SOUTH AMERICA				
2009	1.4 million [1.2-1.6 million]	92 000 [70 000-120 000]	0.5 [0.4-0.6]	58 000 [43 000-70 000]
2001	1.1 million [1.0-1.3 million]	99 000 [85 000-120 000]	0.5 [0.4-0.5]	53 000 [44 000-65 000]
CARIBBEAN				
2009	240 000 [220 000-270 000]	17 000 [13 000-21 000]	1.0 [0.9-1.1]	12 000 [8500-15 000]
2001	240 000 [210 000-270 000]	20 000 [17 000-23 000]	1.1 [1.0-1.2]	19 000 [16 000-23 000]
EASTERN EUROPE AND CENTRAL ASIA				
2009	1.4 million [1.3-1.6 million]	130 000 [110 000-160 000]	0.8 [0.7-0.9]	76 000 [60 000-95 000]
2001	760 000 [670 000-890 000]	240 000 [210 000-300 000]	0.4 [0.4-0.5]	18 000 [14 000-23 000]
WESTERN AND CENTRAL EUROPE				
2009	820 000 [720 000-910 000]	31 000 [23 000-40 000]	0.2 [0.2-0.2]	8500 [6800-19 000]
2001	630 000 [570 000-700 000]	31 000 [27 000-35 000]	0.2 [0.2-0.2]	7300 [5700-11 000]
NORTH AMERICA				
2009	1.5 million [1.2-2.0 million]	70 000 [44 000-130 000]	0.5 [0.4-0.7]	26 000 [22 000-44 000]
2001	1.2 million [960 000-1.4 million]	66 000 [54 000-81 000]	0.4 [0.4-0.5]	30 000 [26 000- 35 000]
TOTAL				
2009	33.3 million [31.4-35.3 million]	2.6 million [2.3-2.8 million]	0.8 [0.7-0.8]	1.8 million [1.6-2.1 million]
2001	28.6 million [27.1-30.3 million]	3.1 million [2.9-3.4 million]	0.8 [0.7-0.8]	1.8 million [1.6-2.0 million]

Table 2.1 Global summary of AIDS epidemic – 2001 & 2009(UNAIDS, 2010)

It appears that the global HIV and AIDS epidemic has as a whole has stabilized in terms of prevalence and incidence. This is attested by the fact that the annual number of new HIV infections has been declining steadily since the late 1990s and because of a significant scale-up on antiretroviral therapy (ART) there have been fewer AIDS-related deaths over the last decade. Despite the fall in HIV incidence, levels of new infections overall are still unacceptably high and with substantial reductions in mortality the number of people living with HIV (PLHIV) has increased globally (UNAIDS, 2010).

Data from 182 countries where multisectoral HIV and AIDS programmes have been implemented indicate clearly that substantial progress has been made towards achieving Universal Access to HIV prevention, treatment, care and support since both prevention and treatment programmes have started bearing tangible fruits(UNAIDS,2010).Further evidence has shown that scaled-up of investments in HIV response could lead to significant reduction in stigma and discrimination, empower people to access information and services to reduce the risk of HIV infection and deliver ART, care and support that would extend and improve the lives of PLHIV (UNAIDS,2010)

2.1.1 The African HIV and AIDS Situation

In Sub-Saharan Africa, AIDS is the major killer of adults at the peak of their reproductive and economic lives. It has wiped out the hard-won gains in life expectancy over the past half-century in the hardest-hit countries. AIDS-related illness is dramatically raising the demand for expensive medical care and fueling a resurgence of tuberculosis (TB), which is the most common opportunistic infection. AIDS related deaths are robbing the workforce of some of its most skilled members, leaving families without breadwinners and children without parents (The World Bank, 2005).The epidemic in East Africa has

reduced since 2001 and stabilized in many countries. HIV incidence slowed in Tanzania to about 3.4 per 10000 persons between 2004 and 2008. The National prevalence in Kenya fell from 14% in mid 1990s to 5% in 2006. The HIV prevalence in Uganda stabilized between 6.5% and 7% and Rwanda at 3% since 2005 (UNAIDS, 2010).

2.1.2 High Risk Groups

HIV and other sexually transmitted diseases (STDs) tend to spread most rapidly among people whose lifestyles include high-risk behaviour patterns, for example, those who have unprotected sex with many partners or who share unsterilized injecting equipment. These individuals are not only more likely to become infected but, by virtue of their behaviour, to unknowingly transmit HIV to others, including spouses and children who do not practice high-risk behaviour. The extent of spread from populations with high-risk to those with lower-risk behaviour depends on the level of interaction between them; it is not easily predicted and varies across cultures and geographic areas (The World Bank, 2005).

High-risk groups (HRGs) are groups of people with identifiable characteristics—such as occupation, workplace, or location—that practice higher-risk behaviour, on average, compared with the general population. Examples include sex workers, injecting drug users (IDUs), and occupations that separate people from their families, such as long-distance truck drivers, sailors, members of the military, migrant workers, or miners (World Bank, 2005). HIV transmission is five times more likely to occur in the presence of other STDs, and empirical studies have concluded that, during peacetime, STD infection rates among military population are between two and five times the infection rates of the civil societies in which they reside (Kingma, 1995). Indeed, evidence

suggests that soldiers commonly consider the acquisition of STD to be a peer symbol of sexual prowess and proof of manhood. During wartime deployments, the military risk increases to as much as 100 times that of the civilians at home (Kingma, 1995). As a result of these factors, the HIV and AIDS pandemic has reached sufficient proportions to constitute a direct threat not only to socio-economic integration and political stability, but also to national and international security and peace in many parts of the world and especially in Africa. In this light, the development and implementation of effective military HIV prevention and AIDS care programmes assumes vital and immediate importance (Rodger, 1997).

2.1.3 Epidemiological Classification of HIV Infection Trends

HIV spreads at different rates within countries and regional differences are common. Epidemiologists have classified countries according to the extent of infection of different population groups. In countries with a nascent epidemic, HIV has yet to spread, even among people who practice high-risk behaviour. An epidemic is concentrated when infection levels have risen substantially among those who practice high-risk behaviour but have yet to rise in the general and much larger low-risk population. A generalized epidemic is one in which HIV has moved out of populations with high-risk behaviour and substantially infected the low-risk population. In reality, there is a continuum in infection rates in different groups; these "stages" are intended to highlight where an epidemic is in relation to that continuum. For the purposes of this report, a nascent epidemic is defined as one in which HIV prevalence is less than 5 percent in high-risk populations. A concentrated epidemic is defined by HIV prevalence of more than 5 percent in high-risk populations but less than 5 percent in the general population and a generalized epidemic

is defined by HIV prevalence of 5 percent or more in the general population (The World Bank, 2005).

2.1.4 The Difference in Risk Factors to HIV Infection between Military and Civilian Populations

Military personnel are a population group at special risk of exposure to sexually transmitted diseases, including HIV. In peace time, STD infection rates among armed forces are generally 2 to 5 times higher than in civilian populations; in time of conflict the difference can be 50 times higher or more. Paradoxically – and fortunately – strong traditions of organization and discipline give the military significant advantages if they move decisively against HIV and AIDS. Recently, comparative studies of sexual behaviour in France, the UK and the USA showed that military personnel (both career and conscripted personnel) have a much higher risk of HIV infection than groups of equivalent age and sex in the civilian population. Armed forces in other parts of the world reflect the same phenomenon. A 1995 estimate of HIV in Zimbabwe, for instance, placed the infection rates for the armed forces at 3 to 4 times higher than the levels in the civilian population (UNAIDS, 1998).

2.1.5 Factors in the Military Environment that Raises the Risk of HIV Infection

The World Bank reports that countries with large numbers of soldiers tend to have greater prevalence of HIV. This is linked to rates of sexually transmitted infections among the military personnel that are two to five times higher than those of the civilian population. The military is not merely the most vulnerable to HIV infection, but they are most likely to spread the infection to their spouses and the general civilian population. High rates of

HIV infection are also found in the civilian populations living near military bases, Navy ports and Garrisons. The military facilities are far from towns, the soldiers have limited opportunities or choice for sexual partners, forcing many men from the same company to share sexual partners over a period of time. It is also likely that these troops have regular contact with same commercial sex workers. Soldiers are generally posted away from their spouses or regular sexual partners, increasing the likelihood of seeking sexual partners from the local environment. The military culture is highly maculated and high levels of stress, boredom; alcohol and sexual activity are common features of the military life the world over (Greig, 2001).

The following is a summary of risk factors that exacerbate HIV infection in the military environment:

a) Military and peacekeeping service often includes lengthy periods spent away from home, with the result that personnel are often looking for ways to relieve loneliness, stress and the building up of sexual tension, b) The military's professional ethos tends to excuse or even encourage risk-taking, c) Most personnel are in the age group at the greatest risk for HIV infection – the sexually active 15 to 24 years, d) Personnel sent on peacekeeping missions often have more money in their pockets than local people, giving them the financial means to purchase sex, e) Military personnel and camps, including the installation of peacekeeping forces, attract sex workers and those who deal in illicit drugs (UNAIDS, 1998).

2.1.6 Opportunities for Engaging in Risky Behaviour

The number of sex partners that a person has is a key factor in the risk of STD infection, especially HIV. The chances of encountering someone with prior exposure to HIV go higher as the number of sex partners goes up. The risk is particularly high with partners who are "one night stands" or sex workers and when they do not use condoms. Military personnel on deployment often indulge in risky activities. For example, a study of Dutch sailors and marines on peacekeeping duty in Cambodia found that 45% reported having sexual contact with sex workers or other members of the local population during five months tour. Another study indicated that 10% of US naval personnel and marines contracted a new STD during trips to South America, West Africa and the Mediterranean during 1989-91. War itself offers a particularly rich breeding ground for HIV infection. The mobilization of large numbers of young men (already a high-risk group for STDs), the practice of intimidation through rape, and displacement of refugees (a highly vulnerable group) are all factors that increase the transmission of the virus (UNAIDS, 1998). To make matters worse, war is often accompanied by the breakdown of health and educational infrastructures, crippling efforts to minimize the spread of HIV during or following conflict (UNAIDS, 1998).

2.1.7 The Risk-Taking Ethos and other Attitudinal Factors

In the military the ethos of risk-taking can further intensify the negative effects of traditional gender roles. These gender roles and expectations grant men the power to initiate and dictate the terms of sex (Greig, 2001). The military personnel are not only a special group because of objective factors such as their relative youth, but also because of their attitudes. Some attitudes include both those purposefully inculcated by the armed

forces in training and those which are learnt informally as part of military "culture" and strongly encouraged through peer pressure. For instance, willingness to accept risk is highly important in combat, but off the battlefield it may increase soldiers' willingness to engage in needlessly risky behaviour such as unprotected sex and purchased sex. The high value placed on aggressiveness may make soldiers prone to pursuing sex with many different partners as a type of "conquest." Finally, the sense of prestige that comes with being part of the uniformed armed forces, reinforced by bonding within units, may tempt soldiers to view civilians — especially women — as people over who power can be exerted. This may increase the likelihood of soldiers engaging in anonymous, purchased or even coercive sex (UNAIDS, 1998).

2.1.8 Separation from Accustomed Community

The practice of posting personnel far from their accustomed community or their families for long periods of time is probably the single leading contributor to high rates of HIV infections in the military. Apart from the emotional stress this places on individuals, the practice encourages commercial sex. As a result, local sex industries grow in response to the demand from military bases and units (Rodger, 1996). It is therefore a prime challenge to military establishments to re-think this traditional feature of operational practice in the light of health and social issues, both of which highlight the importance of finding ways to support stable family relationships and marriages (Rodger, 1996).

2.2 Impact of HIV Infections in the Military

2.2.1 Effects on Military Preparedness

Many countries are concerned that the armed forces readiness can be compromised by HIV and AIDS. Commanders from some countries with high HIV prevalence worry about being able to "field" a full contingent for deployment on relatively short notice as the infection affects rising numbers of personnel. Even if new recruits can be found, readiness and smooth teamwork are compromised if absences are filled in by people who have not served together previously. Preparedness is also affected as the skills and experience of highly trained individuals are lost due to AIDS and its opportunistic infections (UNAIDS, 1998).

2.2.2 Impact on Infected Individuals and Families

Apart from illness and death due to AIDS, the greatest impact on armed forces personnel who are known or even suspected to be HIV-positive may be discriminated on their career advancement and social lives, especially in societies or workplaces where there are no measures to protect them from stigmatization. They will often be discriminated against in different ways in both operational and social settings. Opportunistic infections such as tuberculosis or pneumonia or conditions such as Kaposi sarcoma may not appear in a person with HIV for many years after the original infection. Onward transmission of the virus to spouses (and children), partners, sex workers, and other members of the community is therefore a serious risk, particularly in those in the early stages of HIV infection before symptoms appear. The virus can be passed unknowingly between husband and wife and to infants if a pregnant woman (UNAIDS, 1998).

2.2.3 Risk of Transmission to Civilian Populations

HIV and AIDS in the armed forces is a threat not only to military personnel and their families but also to the wider community. In many countries, a large proportion of the nation's young adults spend one or more years in the military either through conscription or high rates of volunteering. This means that the number of people who return to civilian life is large both numerically and in its potential impact on all parts of society. At risk from transmission by sexual intercourse, regular or casual sex partners and sex workers.

In addition, infected military personnel may transmit the disease to the wider community through unscreened blood donations, sharing of infected needles, and to medical personnel who accidentally come into contact with their blood (UNAIDS, 1998).

General Jacques Abgrall (1998), the deputy director of the Scientific and Technical Action in the Central Directorate of French Army health services says:

Our study of the epidemiological data on HIV infection in French military personnel has shown us that tours of duty overseas multiply the risk of infection by a factor of 5. In spite of our prevention efforts, some individuals remained impervious to the usual preventive messages, although there has been a significant downturn in new infections in recent years. Nevertheless, the number of new (HIV) seropositive cases and of sexually transmitted diseases as a whole remains higher overseas than in mainland France, which means that the preventive message targeted to overseas staff must be more insistent and more repetitive.

2.3 HIV Prevention and Control in Kenya

The Government of Kenya first responded to HIV and AIDS epidemic in 1985 when it launched the first of two medium term plans. In the 1990's, funding, coordination, and

public recognition increased. The Parliament's 1997 sessional paper on AIDS in Kenya stressed the advocacy and policy development. Subsequent public debates increased awareness and governmental commitment at the highest levels following the 1999 presidential declaration of AIDS as a natural disaster and resulted in the establishment of the National AIDS Control Council (NACC) (ROK, 2000). In June 2001, the United Nations General Assembly special session on HIV and AIDS unanimously adopted the declaration of commitment on HIV and AIDS, which aimed at having in place national strategies to address and respond to the spread of HIV globally by 2003. One of these objectives focuses specifically on national uniformed services and was prompted not only by the special nature of the profession which exposes defence personnel to risky behaviour leading to high incidence of sexual transmitted infections, but also by their prominent role as guarantors of national security without which the society is threatened (UNAIDS, 2002).

The response of the Kenyan military to HIV and AIDS infection reflects to a great extent the history of HIV and AIDS prevention and control in Kenya. HIV and AIDS programmes were initially started to help in increasing awareness and knowledge. Knowledge, Attitude and Practice (KAP) survey conducted in 1996 in the Kenyan military indicated 90% knowledge on HIV and AIDS modes of transmission and risky behaviour. However, the increased rates of sexually transmitted diseases and low condom use and acceptability in the military indicated that risky behaviour persisted (ROK, 1996). This situation was exacerbated by the fact that over 75% of the Kenyan soldiers are married and periodically separated from their families thus increasing the pool of intermittently single males (ROK, 1996).

The military is an agency with several intrinsic characteristics that can be used to carry out HIV and AIDS prevention and control operations effectively and efficiently.

These characteristics include the following:

a) Discipline – The military has a strong and unified command hierarchy. b) The ability to take swift action – The military has been trained in rapid situational analysis, assessment, and response. c) Basic organizational infrastructure – There exists a strong fundamental medical organization in the military. d) Organizational readiness – The military preparedness to deal with disease outbreaks forms the basis for coping with HIV and AIDS prevention and control (UNAIDS, 2008).

2.4 Voluntary HIV Testing and Counselling (HTC)

2.4.1 Definition

Voluntary counselling and testing is a HIV-prevention intervention that the client initiates. It gives clients an opportunity to explore their HIV risks and to learn their HIV status in complete confidence (ROK, 2003).

2.4.2 Principles of HTC

Consistent international policy and technical standards, the Ministry of Health (MoH) emphasize that all HTC services Kenya in should be conducted with the best interests of the clients/patient. HTC should never be coercive or mandatory. Three core principles of HTC are, *consent*, *confidentiality*, and *counselling*—otherwise known as the ‘3Cs’, are central to HTC in Kenya. It constitutes a very important component of effective response to HIV and AIDS epidemic.

The Government of Kenya is fully committed to encouraging the provision of VCT services throughout the country so that individuals who want to know their HIV status have access to these services (ROK, 2001). HIV testing and counselling (HTC) has experienced very rapid growth since it was launched in 2001. HTC has contributed significantly to the reduction of stigma associated with HIV and AIDS, and the promotion of behaviour change. It has also facilitated access to prevention, care and treatment for people living with HIV and AIDS. The programme started with three pilot sites that were established in government health facilities. Lessons from these sites provided a strong basis for the development of the national guidelines and standards, which in turn led to the rapid growth that was observed in the first three years of implementation. In line with international commitment and a declaration from the Joint United Nations Programme on HIV and AIDS (UNAIDS), Kenya has renewed this pledge of 'universal access' by setting the goal of 80% knowledge of HIV status by 2015. Approaches to HTC in Kenya have shifted over the years from primarily client-initiated models, to the broad scope of approaches that are currently in place. By the end of 2007, there were at least 900 VCT sites in Kenya, most of which were situated in health facilities (hence called integrated sites). About 15% of these sites are in community settings, hence referred to as 'stand-alone' sites. Other models of HTC have been introduced in recent years, including mobile, 'moonlight', and door-to-door HTC, among others. Many service providers also provide HTC services to groups with special needs such as the youth, rape victims, people with disabilities, and persons engaged in high-risk behaviour such as commercial sex worker (CSW), injecting drug user (IDU) and men who have sex with men (MSM). Hospitals and health centers in Kenya have begun

incorporating provider-initiated HIV testing and counselling (PITC) as part of routine health care to all patients and clients. The PITC approach reflects the recognition that many HIV positive clients are symptom free and the health facility provides an opportunity where they can learn their HIV status. Therefore, these guidelines recommend an expansion of the Diagnostic Testing and Counselling (DTC) approach that was introduced in Kenya in 2004 to full PITC. VCT services can help clients make informed decisions about marriage, pregnancy, and sexual relationships. Overall, VCT services can help decrease the fear, anxiety, stigma and sense of helplessness associated with AIDS (ROK, 2008).

2.4.3 Types of HIV Testing and Counselling

a) Client- Initiated HIV Testing and Counselling

Client-initiated HTC refers to a situation whereby an individual, couple, or group actively seeks out HIV testing and counselling at a site where these services are provided and/or accessible. Previously in Kenya this took place primarily in the context of voluntary counselling and testing (VCT); however HTC may be initiated by clients in settings other than VCT sites such as health facilities, mobile sites etc.

b) Provider-Initiated HIV Testing and Counselling

Provider-initiated HIV testing and counselling refers to a situation in which the HTC service provider, who may be a health care worker or other type of HTC service provider, offers an HIV test to a client or patient regardless of their reason for attending the facility.

c) Self-testing for HIV

Recent advances in testing technologies have availed several non blood-based HIV tests. Some of the common examples include oral fluid and urine based testing. It is anticipated that in the near future other simple non blood test kits will become available in the coming years. (ROK, 2008)

2.5 VCT Services in the Kenya Military

HIV and AIDS interventions among the Kenya Armed Forces have until now been supported by the US (Department of Defence, USAID and CDC) and UNICEF. The HIV and AIDS programme within the military services began in 1994. The programme began by training peer educators. The military initially established Voluntary Counselling and Testing (VCT) programme in 16 sites, for which a total of 64 counsellors have been trained. Three of the VCT trainers are HIV positive and open about their status. There is a condom distribution programme and condoms are easily available in the barracks. Although there has been a noticeable decline in STDs it is unclear whether this is a result of increased abstinence or as a result of the condom distribution programme. The Department of Defense (DOD) has formed HIV and AIDS Service Committees to develop strategic plans for combating the epidemic in each of the three services (Army, Air force, Navy). The Committees are each chaired independently by the Deputy Service Commanders and consist of the Deputy Service Commander (Chair), a medical officer, an HIV and AIDS coordinator, a chaplain, a member of the educational service, a spouse of a soldier, a sailor or air-force personnel, and a youth representative (secondary school level).

The Services Committee receives reports from its sub branches or 'area committees' in each of the three military services. These area committees meet on a monthly basis to generate plans of action on HIV and AIDS and STIs for their area. They identify training needs and suggest candidates for training which are then presented to the Service Committee to decide priorities and allocate resources (UNAIDS, 2002)

The functions of the Service Committee include:

- a) Plan HIV and AIDS interventions.
- b) Coordinate training.
- c) Liaise with other HIV and AIDS campaigners.
- d) Data collection and dissemination

The Kenya military have consistently shown more willingness and greater awareness of the problem presented by HIV than the other uniformed services including the police. The military reaction to HIV interventions dates back to as early as 1980's. However HIV and AIDS interventions are led by the medical service and as result somewhat marginalized from the main command structure and tends to be based on the medical model. The DOD programme currently offers VCT services that cover 40 military bases where over 26000 clients were counselled and tested, in addition to 4754 mother counselled and tested in 14 PMTCT sites (Walter Reed Project, 2006). Minimum requirement for VCT are:

- a) Informed consent: All models of VCT must ensure that testing is truly voluntary. People should have the right to opt out or refuse testing if they do not think that it is in their best interest. In some settings it is suggested that written consent is obtained before testing.

b) Confidentiality: Although there are many advantages of sharing HIV status all people undergoing VCT must be assured of the confidentiality of their test results. Although confidentiality must be protected all people who undergo VCT should be encouraged to share their test result with health care staff and sexual partners.

c) Legislation to prevent discrimination: Unless seropositive people can be assured that they will not be discriminated against following testing VCT services should not be promoted and supported.

d) Quality control: It is essential that the quality of both testing and counseling can be assured with appropriate monitoring and evaluation as a key and planned component of interventions.

2.5.1 VCT Approaches/models

There are several approaches to the delivery of VCT that are currently used. The advantages and disadvantages of each model as appropriate for ethical VCT delivery will be presented and discussed in the context of providing services for UN peacekeepers.

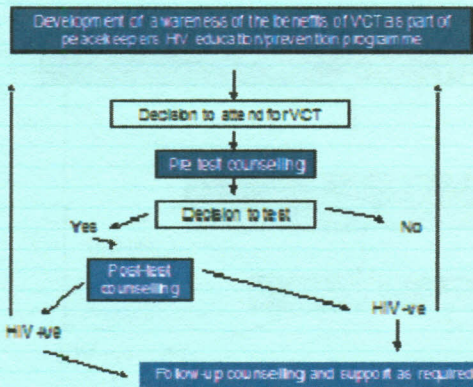
2.5.2 Present VCT models

Model 1- Individual pre- and post-test counselling and testing ("classic" model, most free-standing VCT sites)

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Model 1

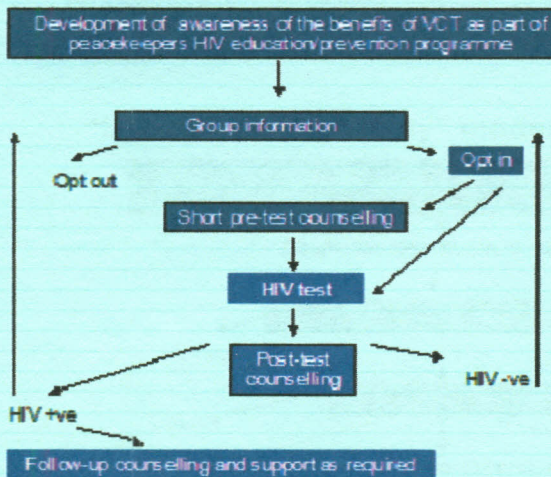
Classic VCT model



Model 2- Group information, opt-in individual pre-test counselling, individual post-test counselling (e.g. PMTCT in the UK until recently, Botswana etc. outreach counselling for workplace, youth groups etc.)

Model 2

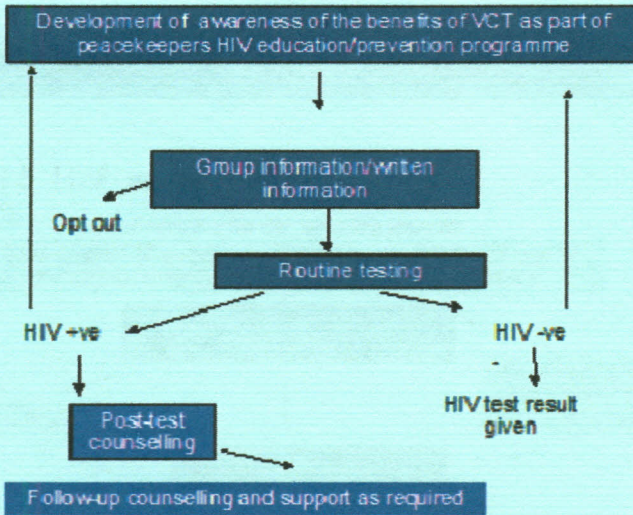
"opt in" model



Model 3- Group information, opts-out individual testing, individual post-test counselling for seropositive, sero-negatives are informed of their negative status (e.g. PMTCT in Thailand and recent UK model).

Model 3

“opt out” model

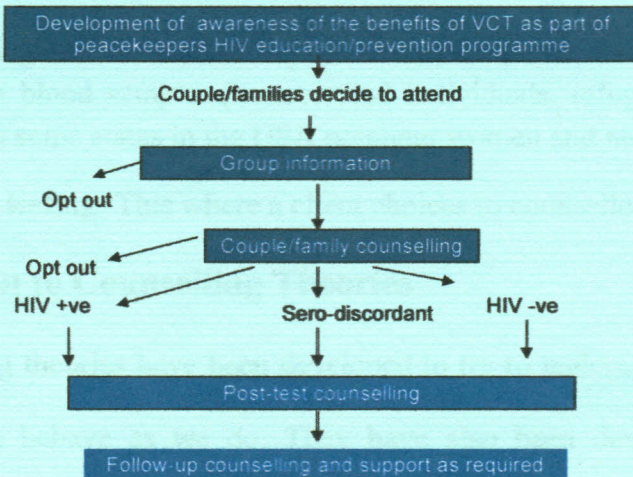


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Model 4- Group information, opts-in couple/family pre-test counselling, and individual/couple/family post-test counselling (shared confidentiality model).

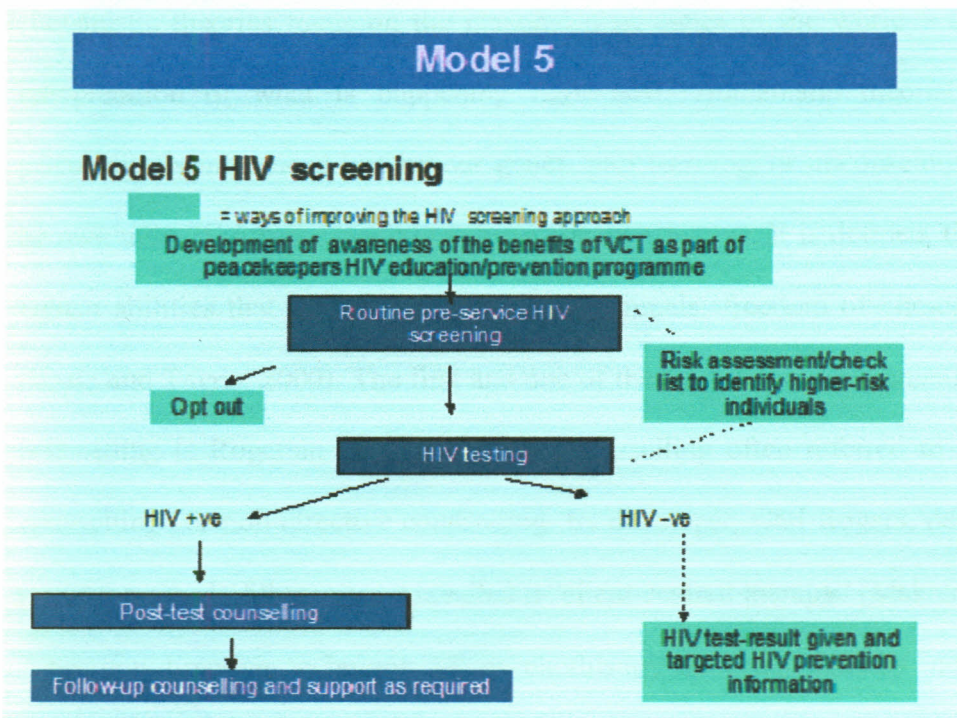
Model 4

“Shared confidentiality” model



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Model 5- No pre-test information, screening/testing (with an option to opt-out), individual post-test counselling for those found HIV+ (screening of STI attendees, drug treatment programme attendees and women attending antenatal clinics in Russia, USA- some PMTCT sites)



Mandatory testing- This is when HIV testing is a precondition for obtaining a service or benefit. (Pre-employment HIV testing, screening of migrant workers, pre-immigration testing and pre-recruitment screening of military personnel, where failure to agree to HIV testing will prevent recruitment)

Compulsory screening- This is where a person has no choice in being tested and is required to provide a blood sample. (Incarcerated individuals, refugees, prisoners, sex workers, IDUs, and in some states in the USA pregnant women and newborn infants)

Counselling without testing- This where a client chooses to be counselled and declines to be tested or opts out

2.6 Introduction to Counselling Theories

Numerous counselling theories have been developed to try to understand why we are as we are and why we behave as we do. They have also been developed to try and understand what would help us to change.

2.6.1 Humanistic Theories of Counselling

Humanistic theories focus on the persons' own views of the world – their subjective interpretation of what is happening right now. Humanistic theorists believe that personality is influenced less by our genes, past learning, or unconscious conflicts than by our own unique human capacity to shape our own futures. It is defined, they say, by the human abilities that separate us from other animals: freedom of choice and free will (Wade and Tavris, 2000). The first and one of the most important humanistic theories of counselling is Rogerian or client-centred counselling often referred to as “self-theory counselling” or non-directive counselling. Its developer, Carl Rogers, developed a non-medical method of therapy and labelled it “client-centred therapy” (Makinde, 1984).

This non-directive technique of psychotherapy is fundamentally non-authoritarian approach in which the patient is referred to as client (an equal) and the counselling session as an interview. Thus, the approach places importance on the immediate situation, rather than on the client's past history.

It lays emphasis on the phenomenological experiences of the client. The counselor's task is marked by open-mindedness, neither interpreting nor directing the client. The counselor functions as a catalyst in assisting the client to achieve maturity through insight and self-scrutiny. The client acquires a need for self-regard and possesses a self-actualizing tendency, a self that aids in growth and mental health. Hence, counselling is essentially a process of change in which emotional blocks are removed, allowing maturation and assimilation of new experiences. The client himself uproots emotional obstacles, releases expression, attains insight and thus opens the road to growth and health.

Rogers, unlike Freud, does not see man as anti-social, anti-cultural, carnal and innately evil and destructive. He sees man as being naturally good and that any badness is generally the result of the influence of his society or environment. Rogers' view is that man is always driving towards growth, health and adjustment and that man possesses the capacity to experience awareness of himself in the society in which he belongs. The client centred approach maintains that there are three core conditions which provide a climate that is conducive to growth and therapeutic change. They contrast starkly with those conditions believed to be responsible for psychological disturbance. The first is unconditional positive regard, which means that the counselor accepts the client unconditionally and non-judgmentally. The second is empathic understanding and this means that the counselor accurately understands the client's thoughts, feelings, and meanings from the client's own perspective. The third, congruence, means that the counsellor is authentic and genuine. The counsellor does not present an aloof professional façade, but is present and transparent to the client (Stone, 1976).

Existentialism is another theory of humanism and it tries to understand human behaviour through the exposition of philosophy, theology, psychology, and psychiatry. Some of its popular contributors are Rollo May, Gordon Allport, and Victor Frankl. Existentialism believes that psychology and psychiatry should be directed towards growth and human potentialities rather than mental illness and cure. It emphasizes that man is a dynamic process who is always changing. Man is a being in existence and not a being in essence; man is totally free and responsible for acts and actions; man is changing, he is searching, thinking and feeling, he is growing and choosing goals. Frankl's logo therapy which is a variance of existentialism identifies three factors in human existence: spirituality,

freedom, and responsibility. Spirituality goes beyond purely religious experience and refers to what is uniquely human. Freedom means the sense of freedom to take a stand in life and to form opinions about it. Responsibility refers to a person being responsible to self conscience or to a god for actions, responses, and choices (Makinde, 1984).

The assumptions of humanistic theories of counselling are:

a) Human beings are good; b) Human beings have the capacity to solve their problems; c) Human beings always strive towards self-fulfillment.

Humanistic psychology is a school of psychology that emerged in the 1950s in reaction to both behaviourism and psychoanalysis. It is explicitly concerned with the human dimension of psychology and the human context for the development of psychological theory. These matters are often summarized by the five postulates of humanistic psychology given by Bugental in the 1960's namely: human beings cannot be reduced to components; human beings have in them a uniquely human context; human consciousness includes an awareness of oneself in the context of other people; human beings have choices and responsibilities; and human beings are intentional – they seek meaning, value, and creativity (Bugental, 1964).

2.6.2 Criticism of Humanistic Psychology

Criticism of humanistic psychology has come from several commentators. Among these is Roy Wallis who has criticized humanistic psychology from a sociological perspective, including the movement's approach to spiritual values (Rowan, 2001). Humanistic psychology has also been criticized for lacking an integrated, clearly defined theory. One of the commentators that have raised such objections is Leonard Geller who believes that

humanistic theory is incoherent because it tries to approach both biology and psychology in a way that, in his opinion, is illogical (Rowan, 2001). Further, humanistic psychology has been criticized for promoting an optimistic but often vague view of the mind, and for promoting narcissistic interests. Rowan (2001) believes that such suspicions are understandable as long as a large amount of time is spent on discussing such issues as the self and self-actualization. However, according to Rowan, humanistic discourse is not about egotism, selfishness, or rational self-management, but about movement towards a fuller sense of self. We would, therefore, consider the popular association of humanistic discourse with narcissistic and overly optimistic worldviews unfortunate.

2.6.3 Psychoanalytic Theories

Freud's psychoanalytic theory, coming as it did at the turn of the century, provided a radically new approach to the analysis and treatment of "abnormal" adult behaviour. Earlier views tended to ignore behaviour and looked for a physiological explanation of "abnormality." Freud claimed that all human beings are born with certain instincts, that is, with a natural tendency to satisfy their biologically determined needs for food, shelter and warmth. The satisfaction of these needs is both practical and a source of pleasure which Freud refers to as "sexual" (Freud, 1905).

The basic assumptions of psychoanalytic theories are:

a) Our feelings, thoughts, beliefs and actions are influenced by our past. b) If we focus on the past we may find clues to the present problems. c) We may not be aware of the events in the past, which have influenced us, as many of these memories will be stored in our unconsciousness. d) If we make our subconscious conscious that we are able to see the influences and take steps to change them (ROK, 2003).

Sexuality has been an integral part of the larger group of interrelated theories that constitute the core theories. The most elegant of these interrelated parts pertains to Freud's expanded consideration of human sexuality and its development. It is constructed out of smaller parts that can become functionally integrated at mature developmental levels in late adolescence and early adulthood. Yet, the resulting psychoanalytic theory of sexuality, understood in complex ways, has become one of the most ignored and neglected of our theories, perhaps more ignored than even conceptions of intrapsychic conflicts or dynamic conceptions of integrated drive theory of aggression (Guttman, 1985).

2.6.4 Criticism of Psychoanalytic Theories

An early and important criticism of psychoanalysis was that its theories were based on little quantitative and experimental research, and instead relied almost exclusively on the clinical case study method. In comparison, brief psychotherapy approaches such as behaviour therapy and cognitive therapy have shown much more concern for empirical validation (Morley, 1999).

2.6.5 Cognitive Behavioural theories

According to Eiser (1980), cognitive theory assumes that an individual is an active processor of information. Effects of stimulus depend on how information is categorized and interpreted by the perceiver. Interpretation of a stimulus depends on attributes of the stimulus and on the perceiver's expectations and standards of comparison. Hence, individuals act based on what they have selectively learnt and understood to be effective

and purposive behaviour. Learning theories developed from a school of thought called behaviourism. A basic assumption of behaviourism is that virtually all behaviours are products of experience. Behaviourists concentrate on behaviour they can observe and measure. Behaviour should be sought primarily at the psychological level rather than at a more basic level such as biological level (Sarafino and Amstrong, 1980).

According to ROK (2003) survey the basic assumptions of cognitive behavioural therapy are a) We are rational beings; b) We have reasons for all our actions even if we do not understand them; c) All behaviour is learnt and can be unlearnt if we understand our reasoning; d) Setting goal for behaviour change enables us to achieve the changes we want.

Different techniques can be used in cognitive behavioural therapy. These include:

a) Relaxation – this reduces stress and builds self-esteem and confidence; b) Reinforcement – praise and reward of the behaviour you want remembered; c) Aversion therapy – punishing, disapproving, criticizing behaviour you do not want; d) Self-management – planning, structuring process of change, establishing own goals and not those of other people; e) Counselors need to focus on concrete and measurable goals.

2.6.6 Theories and Models in Behaviour Change in HIV and AIDS Prevention

Communication is central to prevention strategies aimed at influencing individual and social behaviour. Since there are many variations in the contexts that determine behaviour, it is evident that communication approaches to HIV and AIDS prevention and care need to be re-evaluated. This is especially important when behaviour models are

imported or adapted to regions of the world that bear the main burden of the pandemic: Asia, Africa, Latin America, and the Caribbean. Most theories underlying the models and frameworks used in HIV and AIDS prevention were derived from psychology and communication. Further, many of these formulations have been borrowed from family planning and population programmes, which have successfully advanced the understanding and use of information, education and communication (IEC) (UNAIDS, 1999).

Many theories and models of health behaviour change, including reasoned action, social learning, cognitive and the hierarchy of effects are based on individual psychology. The models of behaviour change most often used to guide health communication programmes are the same ones used to inform health promotion programmes. These theories and models include:

- a) **The Health Belief Model (HBM)**, developed in the 1950s to predict individual response to and use of screening and other preventive health services. The health belief model relates largely to the cognitive factors pre-disposing a person to a behaviour concluding with a belief in ones self efficacy to the behaviour. The model still leaves much to be explained by factors enabling the reinforcing one's behaviour and those factors become increasingly important when the model is used to explain and predict more complex lifestyle behaviours that need to be maintained over a lifetime. A systematic, quantitative review of studies that had applied the health belief model among adults into the late 1980s were found to be lacking in consistence of predictive powers for many behaviours probably because its scope is limited to predisposing factors (Harrison, 1992).

- b) **The Theory of Reasoned Action** attempts to explain individual behaviour by examining attitudes, beliefs, behavioural intentions, and observed and expressed acts.
- c) **Social Learning and Cognitive Theories** are based on the assumption that individual behaviour is the result of interaction among cognition, behaviour, environment and physiology.
- d) **The AIDS Risk Reduction Model** which is based on the belief that one has to label behaviour as risky before a change can be effected. Once the behaviour is considered risky, a commitment is made to reduce the risk. Fear or anxiety and social norms are considered factors that influence moving from one stage to the next.
- e) **Stages of Change** are based on the conception that individual behaviour goes through a process involving a series of five interrelated stages.
- f) **Hierarchy of Effects model** focuses on individual behaviour change in a linear fashion, which begins with exposure to information and assumes that knowledge, attitudes, trials and adoption of desired behaviour will necessarily follow.
- g) **Diffusion of Innovation** focuses on the communication process through which new ideas or products become known and used in a target population. Social marketing is an approach to promoting the acceptability of social ideas through the mass media. While the effectiveness of these theories and models have been questioned in the light of the growth of HIV and AIDS epidemic in Africa, Asia, and Latin America, their value as important theories and models remains unchanged (UNAIDS, 1999).

2.6.7 The Transtheoretical Model (TTM)

The Transtheoretical model (TTM) — currently, the most popular stage model in health psychology (Horwath 1999) — has proven successful with a wide variety of simple and complex health behaviours, including smoking cessation, weight control, sunscreen use, reduction of dietary fat, exercise acquisition, quitting cocaine, mammography screening, and condom use (Prochaska, 1994).

2.6.8 The Stages of Change

The TTM explains intentional behaviour change along a temporal dimension that utilizes both cognitive and performance-based components. Based on more than two decades of research, the TTM has found that individuals move through a series of stages – precontemplation (PC), contemplation (C), preparation (PR), action (A), and maintenance (M) – in the adoption of healthy behaviours or cessation of unhealthy ones (Prochaska and Velicer, 1997).

Pre-contemplation is the stage in which an individual has no intent to change behaviour in the near future, usually measured as the next 6 months. Precontemplators are often characterized as resistant or unmotivated and tend to avoid information, discussion, or thought with regard to the targeted health behaviour (Prochaska, 1992).

Contemplation is the stage in which individuals openly state their intent to change within the next 6 months. They are more aware of the benefits of changing, but remain keenly aware of the costs. Contemplators are often seen as ambivalent to change or as procrastinators (Prochaska and DiClemente, 1984).

Preparation is the stage in which individuals intend to take steps to change, usually within the next month. PR is viewed as a transition rather than stable stage, with individuals intending progress to A in the next 30 days (Prochaska, 1992).

Action stage is one in which an individual has made overt, perceptible lifestyle modifications for fewer than 6 months (Prochaska and Velicer, 1997).

Maintenance stage is one in which individuals are working to prevent relapse and consolidate gains secured (Prochaska, 1992). Maintainers are distinguishable from those in the A stage in that they report the highest levels of self-efficacy and are less frequently tempted to relapse (Prochaska and DiClemente, 1984).

The TTM uses the stages of change to integrate cognitive and behavioural processes and principles of change, including processes of change such as how one changes (Prochaska, 1979, Prochaska et al, 1988), pros and cons, that is, the benefits and costs of changing (Janis & Mann 1977; Prochaska, et al, 1994; Prochaska and Velicer, 1994); and self-efficacy, that is, confidence in one's ability to change (Bandura 1977; DiClemente, et al, 1985) all of which have demonstrated reliability and consistency in describing and predicting movement through the stages (Prochaska and Velicer, 1997).

2.6.9 Prochaska's Model

Prochaska's model stipulates six stages:

- a) Precontemplation – lack of awareness that life can be improved by a change in behaviour.

- b) Contemplation – recognition of the problem, initial consideration of behaviour change, and information gathering about possible solutions and actions.
- c) Preparation – introspection about the decision, reaffirmation of the need and desire to change behaviour, and completion of final pre-action steps.
- d) Action – implementation of the practices needed for successful behaviour change such as exercising class attendance.
- e) Maintenance – consolidation of the behaviours initiated during the action stage.
- f) Termination – former problem behaviours are no longer perceived as desirable, for example, skipping a run results in frustration rather than pleasure (Prochaska, 1997).

2.6.10 Assumptions of TTM

- a) No single theory accounts for all complexities of behaviour change.
- b) Behaviour change occurs over time and is not a single event.
- c) Stages of change can be identified with a person and group of people by moving forward and backward through stages in a spiral manner.
- d) Most people do not achieve behaviour change on the first or even second attempt.

2.7 Prevention of Mother to Child Transmission (PMTCT)

PMCT refers to services that counsel pregnant women about HIV testing and provide prevention services inclusive of treatment with breastfeeding counselling and supplemental feeding. Other related services include programmes to prevent women of reproductive age from becoming infected with HIV; efforts to improve family planning programmes to prevent unwanted pregnancies and antiretroviral treatment for pregnant women and mothers who are already HIV positive and their infants; safe delivery

practices; and counselling that supports safer infant feeding practices. Antenatal clinics provide entry points through counselling and testing for HIV (WHO, 2003).

2.7.1 Breast Milk and Mother to Child Transmission

Prior to the introduction of antiretroviral therapy for antenatal treatment, the transmission rate of HIV from mothers to infants in Europe and USA where most women did not breast feed was 15 – 25%. In contrast, the transmission of HIV from mothers to infants in Africa where the majority breast fed was 25 – 40% (Dunn, 1992). In Africa, these interventions such as comprehensive care that includes counselling, ARV therapy, elective caesarean section during delivery and the use of infant feeding formulas instead of breast feeding are generally not available. Therefore, prolonged breast-feeding is a norm and 20% to 40% of the infected mothers transmit the virus to their infants. Counselling and support for safer infant feeding practices and modified obstetric procedure can greatly reduce maternal child transmissions (ROK - NASCOP, 2002).

PMCT has become an important intervention in the prevention and control HIV in developing countries. MTCT of HIV can occur during pregnancy, labor, delivery and breast feeding. 5% to 8% of the infections occur during pregnancy through the trans-placental route. Labor and delivery pose the greatest danger of transmission with 10% to 20% infection rate (WHO, 2001). Breastfeeding accounts for up to 20% of transmission rates (Decock, 2000). In a multicentre retrospective study of mother to infant transmission in Brazil where 39% of mothers breastfeed for a median duration of 30 days (a range of 1 day to 2 years), the risk of transmission was twice that for women who breastfed as compared to those who did not. This study suggests that breastfeeding can double a mother's risk of transmission of HIV to her child (Hermione, 2000). The

colostrums is the milk produced for the first three days after delivery. In a small study of cellular fraction of the milk, HIV DNA could be found in about 70% of the colostrums. 50% of the milk and plasma was also tested for the HIV protein P24 antigen and HIV was found in 24% of the colostrums but Zero percentage in latter milk. (Ruff, 1994). When primary maternal HIV infection occurs during pregnancy or during breastfeeding period, there is an increased risk of transmission to the infant, as the mothers will have a high level of HIV in their blood (Dunn, 1992).

2.8 HIV and Sexual Behaviour Trends among Young People

In 2001, the United Nations' Declaration of commitment on HIV and AIDS outlined a goal of reducing HIV prevalence by 25% in the young people of the most affected countries by 2005. Monitoring progress in new infections and determining the real time trends in HIV incidence and in particular the impact of prevention programmes on HIV incidence ideally required longitudinal studies of a large number of people. Given the practical difficulty of conducting such studies, it has been proposed that HIV prevalence in young women aged 15-24 years attending antenatal clinic be studied as a proxy measure for incidence (UNAIDS, 2006).

2.9 Policy Development and HIV and AIDS Prevention

Government policies, laws, and regulations can either promote or hinder HIV and AIDS. The political will and courage of national leaders determine whether or not a country can put a lid on HIV and AIDS or bring it proactively to the domain of public discourse.

The sustainability of HIV and AIDS programmes including their focus on multi-sectoral partnerships, strategic alliance and capacity building are highly dependent on the national policy of HIV and AIDS (UNAIDS, 2000). The UNAIDS frame work calls for refocusing

communication interventions on the basis of five key contextual domains namely government policy, socio-economic status, culture, gender relations, and spirituality. These contextual domains, while lying outside the control of individuals, have significant influence on their HIV and AIDS related behaviour (UNAIDS, 2000).

The Ministry of Health instituted an AIDS control committee in 1987 when it developed the first 5-year strategic plan for AIDS control (1987–1991). The second plan was for the period 1992–1996. The development of Sessional Paper No. 4 of 1997 on AIDS in Kenya marked an important change on the political front and outlined a new institutional framework. With the creation of the National AIDS Control Council, AIDS control units (ACUs) were put in place in all the ministries where the disastrous effects of HIV and AIDS had been felt the most and where it was anticipated that interventions would have the greatest beneficial effect. Increased public and political commitment was evidenced in 1999 when President Moi declared AIDS a national disaster. A declaration of “total war on AIDS” was one of the first acts of President Kibaki in 2003 and bringing together an ecumenical group of religious leaders has been an important step in this fight. Constituency AIDS control committees (CACCs) and district technical committees (DTCs) embody this multisectoral response in partnership with ACUs and civil society. Kenyans are currently involved in a comprehensive effort to confront all aspects of the disease’s spread and impact as contained also in the HIV and AIDS Prevention and Control Act (2006) and KNASP III (2009/10 – 2012/13).

The government has put in place policies and infrastructure to help implement programmes at all levels and has issued guidelines for conducting activities in all HIV and AIDS-related areas. Greater international and national commitment to address HIV and AIDS throughout

the world has been seen through the United Nations General Assembly Special Session on AIDS (UNGASS), the Abuja Declaration, and the Millennium Development Goals (ROK, 2005).

The social and political environment of a country, community, or workplace has profound influence on efforts to reduce the spread of HIV and AIDS. The laws, rules, policies and practices of governments, religious organizations and the private sector can support or constrain prevention activities. Some policies may even inadvertently promote the transmission of HIV (UNAIDS, 1991). According to an international survey done in 1995-96, HIV testing is carried in some form by 93% of the responding militaries. About 80% of the military establishments that conducted pre-recruitment HIV screening rejected candidates who tested HIV positive and an equal percentage restricted HIV positive personnel from combat, overseas deployments, and piloting aircrafts (UNAIDS, 1998).

2.10 The Kenyan Military HIV and AIDS Policy

The military has no written policy on HIV and AIDS. However, there are protocols followed in relation to HIV testing and counselling during recruitment (Rodger, 1998).

2.10.1 Recruitment

All potential recruits and cadets are tested for HIV before recruitment and commencement of training and all HIV positive individuals are excluded from recruitment. In addition, all tested recruits are informed of their test results and counselled.

2.10.2 HIV Testing during Active Duty

HIV testing is usually voluntary except in a few exceptional circumstances where testing is mandatory. The testing sites are usually in major hospitals, formations, brigades and units' health facilities. All active duty personnel who test positive are counselled and retained in active duty, unless there are other medical indications to remove them from active duty and are supported in the military (ROK, 2006).

2.10.3 Mandatory HIV Testing during Active Duty

Mandatory testing for the military was first established in USA in 1985. Military authorities in many parts of the world are under considerable pressure to institute or maintain mandatory HIV testing, whether before recruitment, prior to foreign missions or at regular intervals. At same time, this policy has been criticized from various points of view and it is argued that mandatory testing is a violation of human rights and cannot be justified by military specific demands. The testing is not cost effective and the asymptomatic individual does not bear on the person's right to work or fitness for work and there is no evidence that it achieves public health goals (UNAIDS, 1998).

According to the 2006 ROK survey, mandatory HIV testing in the Kenyan military is done only in the following circumstances:

- a) Peace keeping missions
- b) Foreign training missions

Those found to be HIV positive are excluded from the missions but remain in active duty unless there are contraindicating medical problems, in which case the individuals are moved to their bases for recuperation but are not discharged from service.

2.11 Theoretical Framework

To increase the use of improved, effective and sustainable responses to reduce HIV transmission and to mitigate the impact of the HIV and AIDS pandemic through behaviour change

Increase quality, availability, and demand for services to change sexual risk behaviours and reduce transmission of HIV

Improve knowledge and capacity to address, the key policy, and other contextual constraints to preventing and mitigating the impacts of HIV.

To generate and use data to understand the levels and trend of HIV in the military population

2.12 Behaviour Change Interventions

Vast majority of people infected with HIV in sub-Sahara Africa are infected during unprotected heterosexual intercourse. In Namibia improvement across key knowledge and behaviour indicators including comprehensive knowledge of HIV, age of sexual debut, engagement of high risk sexual behaviour and proper use of condoms among male and male aged 15-24 years were associated with decline in HIV prevalence from 10% in 2007 to 5% in 2009 (UNAIDS, 2010) . Understanding the behaviour that puts people at risk of HIV infection is the fundamental challenge of HIV and AIDS prevention. In response to rapid shifts in the epidemiology of the HIV and AIDS pandemic, strategies for conducting behavioural research have changed and moved away from repetitive studies of knowledge, attitudes, and beliefs towards research that provides practical

information to guide intervention. As the pandemic expands, behavioural research has moved beyond studying the behaviour of traditional, “high risk groups” to population previously considered at low risk of HIV infection, such as adolescent and women. Moreover, as the number of people living with HIV increased dramatically, there is need to understand the risk behaviour of those infected and put in place testing intervention to support their behaviour change (USAID, 1991). Individual behaviour plays some part in many diseases and the connection between lung cancer and smoking is well established (Doll, 1984).

Dietary factors are thought to be significant in relation to circulatory diseases and some cancers (Coma Report, 1984) and therefore persuading people to change risky aspects of their lifestyle seems appropriate. Indeed, developing preventive strategies at national, organizational, and local levels is currently a major part of health promotion. There is a high level of agreement with the population that health is, to considerable extent, dependent on behaviour and in one’s hand (Blaxter, 1990). Health becomes a personal struggle and a goal to be worked towards at the community, national, and global levels. Health is therefore seen as a resource for everyday life, not the objective of living. It is a positive concept emphasizing social and personal resources as well as capacities (WHO, 1984).

2.12.1 HTC Services as a Strategy for Behaviour Change

HTC programmes have additional benefits such as providing the opportunity to counsel women about safer sex options and refer them to treatment as this becomes more widely available. Couples counselling has been shown to be more successful in promoting behaviour change (Allen, 1992); facilitating communication between couples (Van der

Straten, 1995); and decreasing HIV transmission (Allen, 2003). In practice, it is often difficult to encourage individuals to participate in couples counselling (Ba, 1995). However, some programmes have improved participation rates through integrated approaches and communities outreach (McKenna, 1997). Although widely promoted, couples counselling, both within antenatal care services and within PMTCT programmes in particular, is infrequently offered and poorly studied (Thomas, 2001).

A cluster-randomized trial of two strategies providing voluntary counselling and testing at the workplace found out that highly acceptable VCT did not reduce HIV incidence in this predominantly male cohort. HIV incidence was highest in the high uptake VCT arm, lending support to a US trial in which rapid testing appeared to have adverse behavioural consequences in some HIV-negative clients. Careful comparison of outcomes under different counselling and testing strategies is needed to maximize HIV prevention from global scale-up of VCT (Corbett, 2007). Denison's study observed that VCT recipients were significantly less likely to engage in unprotected sex when compared to behaviours before receiving VCT, or as compared to participants who had not received VCT [OR 1.69; 95%CI 1.25–2.31]. VCT had no significant effect on the number of sex partners [OR 1.22; 95%CI 0.89–1.67] (Denison, 2007). In a rural cohort in Uganda where VCT services are free and accessible, there was self-selection of individuals accepting VCT, and no impact of VCT on subsequent risk behaviour or HIV incidence (Matovu, 2005).

2.12.2 Safer Goal Behaviour

a) Abstinence

People can choose not to have sex or they can also decide to wait, or delay sex, until a later time in their life. They can choose personal relationships that do not involve sex.

b) Out Course vs. Intercourse

Outer course is non-penetrative contact such as massaging, hugging and kissing. Non-penetrative contact can eliminate transmission risk of HIV and many (though not all) STDS (SHARP, 2001).

c) Monogamy

Monogamy is sex between two people who only have sex with each other, as part of long-term relationship. If neither partner is infected, there is no risk of disease transmission. People who get to know their partners' sexual history before deciding to have sex can also reduce the chances of exposure to disease. A series of short-term relationships is not as safe because of the increased risk that one of those partners may be infected.

d) Use of Condoms and other Barriers

When used correctly and consistently, condoms can significantly reduce the risk of getting HIV and AIDS or other sexually transmitted diseases. A variety of male and female condoms and oral barriers are also available.

e) Reduced Number of Sexual Partners

Though not as safe as monogamy, reducing their number of sexual partners can reduce the risk of HIV and AIDS by reducing the chances of potential exposure.

f) Avoiding Sex with High-risk People

People who may be at high risk of having a sexually transmitted infection include those who have sex for money or sex for drugs. Others are people who share needles because this results in infection of HIV and Hepatitis B and C, which spread sexually. Non-monogamous men who have sex with men are also at high risk of being infected not only with HIV, but Hepatitis B because the risk of transmitting the virus is greater with anal intercourse than vaginal or oral (US Navy, 2001).

2.13 Evaluating HIV and AIDS prevention and Control Programmes

One of the greatest challenges in HIV and AIDS prevention efforts has been the evaluation of the preventive effort of the epidemic. Early in the epidemic, it was assumed that biological indicators could be used to evaluate HIV and AIDS prevention and control programme. Many evaluation plans called for collecting data on the incidence of HIV and other sexually transmitted infections, as well as information on self-reported behaviour, at the beginning and end of the programme cycle. Experience with HIV and AIDS prevention has demonstrated that many of the early expectations about evaluation were unrealistic (USAID, 1991).

Given the difficulties and high costs associated with direct measurement of impact of HIV prevention programmes through large scale incidence studies, evaluations are developing to be alternative methods of impact assessment. Their focus is establishing linkages between outcome data from programme interventions and pattern of HIV prevalence and incidence. These methods fall under several categories, including application of simulation models, models to estimate HIV incidence rates and prevalence in selected populations, methodologies for linking behavioural and biological data, and

tools for cost-effectiveness analysis. AIDSCAP has created the AVERT model to estimate the impact of intervention outcome and the number of HIV infections averted among the target population (USAID, 1991).

2.13.1 Prevention Indicators

The Global Programme for AIDS (GPA) of the World Health Organization has developed the following prevention indicators (WHO, 1992):

- a. Knowledge of preventive practices
- b. Sexual behaviour
- c. Case management of STDs
- d. Condom availability and use
- e. STD and HIV prevalence

2.13.2 Gender and Sexuality

In most countries, women are at risk of HIV infection. Recent estimate suggest that nearly half of those infected with HIV worldwide are women, and of the estimated 2.3 million who died from HIV related diseases in 1997 about half were female (UNAIDS, 1997). Women constitute more than 50% of all adults with HIV infection in Sub-Sahara Africa, more than 40% in the Caribbean, around 20% in Central and South America, and about 30% in South and East Asia (UNAIDS, 1996).

There is evidence to suggest that women have increased physiological vulnerability to HIV infection. It has been estimated that risk of transmission from man to woman per exposure can be up to 2.5 times higher than that from woman to man . Stereotypical gender roles and unequal power relationships between men and women, as well as

increased economic and social vulnerability, mean that women are less likely to control how, when, and where sex takes place (Mane, 1994-1996). In most countries, women's experience is constructed in relation to male sexual needs and wishes in a context of dependence and in some cases a discourse of romantic love (UNAIDS, 1999).

Women's social economic positions in turn affects their ability to enter sexual relationships with men as equal partners and even where there is a measure of equality, powerful norms about sexuality and sexual behaviour construct and contain women's behaviour (George, 1997). Women find themselves in circumstances where men expect them to provide sexual services either privately in the context of relationships and marriages, or commercially in the context of prostitution, on terms that are not of their making and circumstances which deny women the right to sexual autonomy and sexual pleasure. Women in a diverse range of countries have reported being unable to act upon what they know about HIV and AIDS for fear of implying, through request for condom use, that a partner is not loved or not trusted. Such requests may disturb the intimacy that is control to many relationships and can result in violence, abandonment, or rape (Ankrah and Attika, 1997).

2.14 Successful HIV and AIDS Prevention and Control Programme: An Experience of the Royal Thai Army (RTA)

During the early stages of the epidemic in Thailand, the government recognized the potential threat that HIV and AIDS could pose to national security and its implications on uniformed services, and has acted on it by engaging its armed forces in a country-wide national programme to educate its soldiers on HIV and AIDS. The swift and committed action taken by the Thailand authorities and the Royal Thai Army has assured that

Thailand is now internationally recognized as a country successful in tackling the HIV epidemic (Kristoffersson, 2000).

Thailand was one of the most severely affected countries during the early stages of the AIDS pandemic. However, the country openly addressed the problem and implemented strict and continuous preventive measures. These measures have been well recognized for their effectiveness in reducing the cumulative number of HIV infections from the previously estimated number of 6-8 million infected by the year 2000 to a more recent computerized projection of 1 million infected people. The number of new infections is estimated to be around 25,000 per year – down from the estimated annual figure of over 100,000 persons. The success of Thailand's HIV-prevention-and-control campaigns has been internationally acknowledged. The effectiveness of HIV and AIDS prevention and control programmes in Thailand is well recognized internationally and is due to the following factors:

- a) The perception by all Thais that HIV and AIDS is a threat to national security).
The fact that policy-makers have openly admitted that Thailand has an HIV and AIDS problem.
- c) Efficient mechanisms of management at all levels in terms of both organization and resource allocation.
- d) Relevant counter-measures and plans.
- e) Sustained commitment in the fight against HIV and AIDS.
- f) The total mobilization of all sectors of Thai society.

The Royal Thai Army, along with other partners in Thai society, has several significant roles to play in solving the HIV and AIDS problems. Those roles can be summarized as follows:

1) Partnering in the situation analysis and assessment of HIV and AIDS as a threat to national security. 2) Playing a role in HIV surveillance by assessing the prevalence and trends of HIV infection among the RTA conscripts. These indicators have enabled Thailand to continuously monitor the spread of HIV and to plan an effective prevention campaign. 3) Preventing and solving HIV and AIDS problems by conducting quantitative and qualitative research on behavioural risk factors of HIV infection. This led to the development of targeted intervention models first piloted with conscripts and later adapted for use with other risk groups. The RTA has been significantly involved in the implementation of the 100% condom use programme, especially in the north. The RTA has also sought to integrate HIV and AIDS intervention programmes into the anti-drug campaigns. 4) Providing care and support to people living with HIV and AIDS by establishing appropriate policies regarding HIV-infected RTA personnel. 5) Conducting research and development activities, such as the AIDS vaccine trials. 6) Collaborative, concrete actions with domestic and international partners to solve HIV and AIDS problems. The RTA has taken a key role in the multi-sectoral cooperation that is key to effective action against HIV and AIDS. This is a good example of civil military cooperation in combating against HIV and AIDS (UNAIDS, 2000)

The RTA has been internationally recognized for the following achievements:

- a) Formulation of clear and appropriate policy on HIV prevention in the RTA.
- b) Establishment of an epidemiological surveillance database, which is widely recognized as a sound means of assessing the situation and trends of the epidemic and of evaluating the success of national HIV and AIDS programmes.
- c) Development of HIV prevention models suitable for military settings.

- d) Alleviation of HIV and AIDS-related problems among the general public.
- e) Development of basic infrastructure for conducting clinical vaccine trials.
- f) Establishment of technical coordination and collaboration networks at the national and international levels.

The factors that have contributed to the success of the RTA's operations include the following:

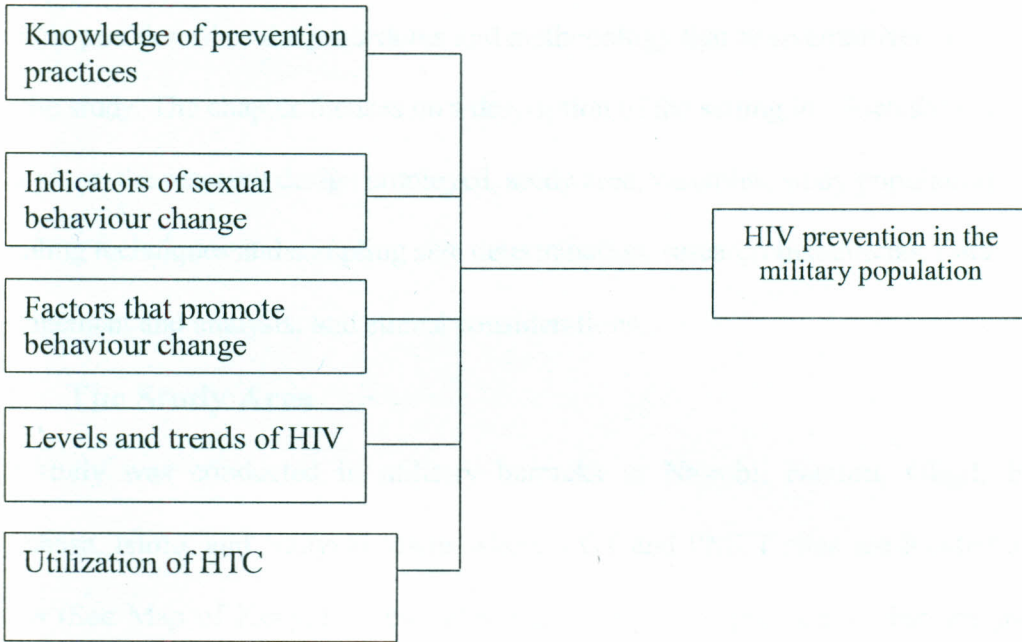
- a) Strong organizational infrastructure and management.
- b) Relevant strategies and measures.
- c) Determination for long-term commitment.
- d) Total mobilization of resources and multisectoral coordination in the expected long term fight against HIV and AIDS.

Shortage of personnel and financial resources are two of the most important obstacles in the RTA's fight against HIV and AIDS. Continuity and sufficient support are needed to make a sustainable impact on the epidemic. The lessons learnt from the RTA's experience in HIV and AIDS prevention and impact alleviation can be used as a basis for further development towards more effective and efficient models. It can also be a useful example for other agencies in Thailand and other countries with similar problems and similar socio-cultural backgrounds to apply and adopt for their own use (UNAIDS, 2000).

2.15 Conceptual Framework

Independent Variables

Dependent Variables



Source: Researcher's Proposal (2010).

CHAPTER 3: MATERIALS AND METHODS

3.1 Introduction

This chapter describes the procedures and methodology that were employed in carrying out the study. The chapter focuses on a description of the setting in which the research took place, the research design employed, study area, variables, study population, sampling techniques and sampling size determination, research instruments, data management and analysis, and ethical considerations.

3.2 The Study Area

The study was conducted in military barracks in Nairobi, Nakuru, Gilgil, Eldoret, Mombasa, Isiolo, and Nanyuki towns where VCT and PMCT sites are located in these towns (See Map of Kenya). These sites were selected to provide a wide geographical coverage as much as possible taking into account the various HIV ethnic and regional prevalence disparities. Kenya is situated in the eastern part of the African continent.

The country lies between 5 degrees North and 5 degrees South latitude and between 24 and 31 degrees East longitude. It is almost bisected by the equator. Tanzania borders it to the South, Uganda to the West, Ethiopia and Sudan to the North, and Somalia to the South East and is divided into 8 provinces and 72 districts. It has a total area of 582,646 square kilometers of which 571,466 square kilometers from the land area. Approximately 80% of the land area of the country is arid or semi -arid and only 20% percent is arable. The country falls into two regions: lowlands and highlands. Rainfall and temperatures are influenced by altitude and proximity to lakes or the ocean. The country has 42 ethnic groups, which are distributed throughout the country and a total population 32.2 million people (KDHS, 2003).

3.3 Study Design

This was a descriptive, retrospective, and cross-sectional study. In a cross-sectional study, both the dependent and independent variables are measured at the same time, in the present (Wassertheil-Smoller, 2004). The study used probability as a method of sampling. Equal numbers of participants were selected from testing and counselling sites from all the regions using random selection of those willing to participate and fulfilling the inclusion criteria in the study population. The study used both qualitative and quantitative methods of data collection. The instruments used in data collection included questionnaires, focus group discussion and interviews.

The descriptive cross-sectional study employed in this survey was designed to collect information from the target population. The approach is a common strategy in social science research. The descriptive research is a description of the state of affairs as it exists at present (Kothari, 1990). Descriptive research studies are concerned with describing the characteristics of a particular individual or groups (Mugenda, 1999). The design is in agreement with views of Lokesh (1984) who agrees that descriptive research studies are designed to obtain pertinent and precise information concerning the status of a phenomenon and whenever possible to draw valid conclusion from facts discovered. Descriptive research determines and reports the way things are. Kothari (1990) further stated that qualitative research is concerned with qualitative phenomenon, that is, phenomenon in relation to or involving quality of kind. It is concerned with subject assessment of attitudes, opinions, and behaviours. It aims at discovering the underlying motives and desires, using in-depth interviews for this purpose.

Cooper (2003) describes a cross-sectional study as that which is carried out once and represents a snapshot of one point in time. Mugenda and Mugenda (1999) state that qualitative research includes designs, techniques and measures that do not produce discrete numerical data. More often the data are in a form of words rather than numbers and these words are often grouped into categories. According to Kerlinger, research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions.

3.4 Variables

3.4.1 Independent Variables

An independent variable is a variable that a researcher manipulates in order to determine its effect or influence on another variable (Mugenda and Mugenda, 1999). The independent variables were socio-demographic factors, socio-economic factors, knowledge of HTC and perception of risky behaviour.

3.4.2 Dependent Variables

A dependent variable attempts to indicate the total influence arising from the effects of the independent variable (Mugenda and Mugenda, 1999). Utilization of VCT and PMTCT services was the dependent variable.

3.5 The Study Population

The study population is the experimentally accessible population (Mugenda and Mugenda 1999). The study population was the Kenyan military with an estimated 20,000 people. However, these are only the uniformed personnel. The population is estimated to be about 100,000 when spouses and children are included (USAID, 2000).

3.6 Inclusion Criteria

- a) The military population and their dependents that are above the age of 15 years.
- b) Those that consent to participate in the study.

3.7 Exclusion Criteria

- a) The military population who are below 15 years of age.
- b) Those that unwilling to participate in the study.

3.8 Sampling Techniques and Sample Size Determination

3.8.1 Sample Size Determination

The minimum sample size was calculated using the formula previously used by Fisher et al, (1998):

$$N = \frac{Z^2 PqD}{d^2}$$

P = the people who sought for HTC services among the target population which is equal to 29%.

Z = standard normal deviate (1.96) which corresponds to the 95% confidence level.

d = Degree of accuracy desired (0.05).

$$Q = (I - P) = 1 - 0.29 = 0.71$$

D = 1 (Design effected)

$$N = \frac{1.96^2 \times 0.29 \times 0.71 \times 1}{0.05^2} = 316 \text{ (approximately 320)}$$

3.8.2 Sampling Technique

The military barracks in Nairobi, Nakuru, Gilgil, Eldoret, Mombasa, Isiolo, and Nanyuki towns were chosen purposively due to the presence of VCT and PMTCT sites. Each individual barracks was sampled proportional to size. Thereafter, stratification of the study population from each barracks was conducted and divided into three groups namely the soldiers, civilians, and the dependents of the military personnel. The study population was sampled conveniently where purposeful random sampling was applied and the investigator administered questionnaires to each individual in the selected military barracks.

The table below shows the proportionate sampling from the barracks:

NAME OF BARRACKS	QUANTITY (Absolute numbers)
Nairobi	100
Nakuru	50
Eldoret	50
Nyanyuki	50
Mombasa	50
Isiolo	20
Total	320

3.8.3 Data Collection Procedures

The researcher used both primary and secondary data. Primary data were sought using three developed research instruments, namely questionnaires, focus group discussions

and interviews. Secondary data were collected through document analysis by the researcher on visit to various military institutions between 2003 and 2006. Each item in the questionnaire comprised structured (closed ended) and unstructured (open ended) questions.

3.9 Research Instruments

3.9.1 Questionnaires

Questionnaires were administered to all 320 participants. These contained information about their health, knowledge, beliefs, cultures, religion, and sexual relationships in relation to HIV and AIDS (Appendix III).

3.9.2 Focus Group Discussions

Focus group discussions and interviews were held with uniformed military and civilian personnel and their dependents constituting the military population to collect information on the sexual behaviour change since the introduction of HIV counselling and testing services (Appendix II).

3.9.3 Interviews

Interviews were conducted to seek views from uniformed military, civilian personnel and their dependents constituting the military population and collected information was about sexual behaviour change since the inception of HIV testing and counselling services in the barracks.

3.10 Construction of Research Instruments

A self-administered questionnaire with open and closed questions was used to collect the data on the utilization of HIV counselling and testing services in the HTC sites. A rough draft of the questionnaire was prepared, giving due thought to the appropriate sequence of putting questions. Technical defects were minutely scrutinized and removed after re-examination. The questions contained simple but straightforward questions that the respondents could not face any difficulty in answering the questions. This instrument captured socio-economic and socio-demographic factors, knowledge of HIV transmission and information on sexual behaviour change.

3.11 Pilot Study

Pre- testing of the research instruments was done before the actual data collection to enhance the validity and reliability of the responses. These included the military personnel, their dependents, and civilians. Vague questions were rephrased to convey the same meaning to all participants while some comments made by the respondents were incorporated into the final questionnaire.

3.11.1 Validity

Validity is the accuracy and meaningfulness of inferences, which are based on research results. It is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study (Mugenda and Mugenda, 1999). Cross checking, inspection and scrutinization of the information on the research instruments ensured accuracy, relevance, completeness, consistency and uniformity of the collected data.

3.11.2 Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda and Mugenda, 1999). The conditions under which the measurements took place were standardized, that is, the external sources of variation such as boredom and fatigue were minimized to the extent possible by broadening the sample of respondents.

3.12 Data Management and Analysis

After data collection, the questionnaires were coded, summarized, and cleaned for possible errors. A database was designed in the statistical package for social sciences (SPSS) where the completed questionnaires were keyed in. Both qualitative and quantitative methods of analysis were used to analyze the data. Percentages and frequencies were used to describe results obtained from the data collected on the level of effects of HIV counselling and testing as a strategy in behaviour change in the prevention of HIV and AIDS in the Kenyan military. The percentages were also used to assess where there was effect in the level of preventive and behaviour change among the Kenyan military on HIV and AIDS as stated in the hypotheses of the study.

Chi-square (χ^2) is a statistical test used to compare written observed frequencies in certain categories. It differs significantly from those which would be expected under certain theoretical assumptions. In this study, Chi-square test was used to establish if there was a significant relationship between the HIV counselling and testing as strategic intervention for sexual behaviour change in the military. The Chi-square was also used to test hypotheses. A P-value of less than/equals (≤ 0.05) was considered significant and where

necessary, a 95% confidence level was also computed to generate the upper and lower limits of the test statistics for purposes of rejection of the null hypothesis. If the test statistic was not within the bounds, then this led to the rejection of the hypothesis. Descriptive statistics namely frequencies, Percentages and means were used. Results were presented in form of Figures, pie chart, bar graphs, and tables.

3.12.1 Quantitative Data

Data were coded, sorted, entered into the computer and processed using SPSS software version 11.5. Descriptive statistics namely frequencies, pie chart, bar graphs and percentages were used to describe, organize and summarize collected data. Chi- square test was used to test for the strength and significance of association between the variables while multivariate logistic regression was used to test the strength of the relationship between the variables. This statistical method was preferred to address the issues of confounding factors and also to give the relationship at the 95% confidence intervals.

3.12.2 Qualitative Data

Data from Focus Group Discussions and interviews were analyzed thematically and the summary written for the necessary explanation of the quantitative data. Retrospective record review was also done and the information was used to support the research findings.

3.13 Ethical Considerations

- (a) Written authority has been sought from the ethical committee and Office of the President and the ministry of Education Science and Technology for authority and permission to undertake the study.

- (b) Informed consent has also been sought from the study population.
- (c) Participation in the study was voluntary, and all participants were free to withdraw at any time without penalty and loss of privileges.
- (d) Anonymity, confidentiality and privacy have been safe guarded.

Socio- Demographic Characteristics of the Study Population

1. Gender of the Respondents

In sample population, 40% of the respondents were male and 60% were female. The gender distribution is shown in figure 1.1 below.

2. Age and Education Level of the Respondents

As shown in Table 1.1 below, the majority of the respondents were aged 18-30 years. 20% of the respondents were aged 11-17 years and the remaining 70% were aged above 17 years. The majority of the respondents were aged 18-30 years. The majority of the respondents were aged 18-30 years. The majority of the respondents were aged 18-30 years.

3. Marital Status

As shown in Table 1.1 below, the majority of the respondents were married. 70% of the respondents were married, 20% were single, and 10% were divorced. The majority of the respondents were married.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents the findings of the study. The quantitative data were based on responses from 320 study population while the qualitative results were 6 FGDs consisting of 60 participants and review of records. The results are presented in figures, graphs and tables qualitatively in relation to the specific study objectives including socio-demographic characteristics of the study population.

4.2 Socio- Demographic Characteristics of the Study Population

4.2.1 Gender of the Respondents

In the sampled population, 218 (68.1%) of the respondents were male while 102 (31.9%) of them were female. More male than female respondents therefore participated in this study.

4.2.2 Ages and Education Level of the Respondents

As shown in Table 4.1 below, the majority of the respondents (46.9%) were aged 18-30 years, 32.8% were aged 31-40 years and the remaining 20% were aged above 40 years. 69% of these respondents were male and 31% were female. Most of the respondents were educated with 54.1% of the respondents having secondary and post-secondary education, and only 7.5% having primary level of education and below.

4.2.3 Marital Status

Majority (72.8%) of the respondents were married, 75 (23.4%) never married whereas 5 (1.6%) were separated, 5 (1.6%) widowed and 2 (0.6%) of the respondents did not respond. One hundred and thirty five (42.2%) of the respondents were married with one

wife, 13 (4.1%) were in polygamous union, 5 (1.6%) were widowed, 5 (1.6%) were separated and only 75 (23.4%) were never married.

Table 4.1: Socio- demographic characteristic of the study population

Demographic Characteristics		No. of respondents (n)	Proportion of respondents (%)
Age of the respondents	18-30 years	150	
	31-40years	105	32.8
	>41 years	62	19.4
	Non respondent	1	0.3
Level of education	No formal education	3	0.9
	Primary	24	7.5
	Secondary	173	54.1
	Post-secondary	117	36.6
	Non response	1	0.3
Marital status	Married monogamous	135	42.2
	Married polygamous	13	4.1
	Never married	75	23.4
	Steady partners not living together	37	11.6
	Steady partner living together	46	14.4
	Widowed	5	1.6
	Separated	5	1.6
	Non response	2	0.6

4.3 Levels and Trends of HIV Infection in the Kenyan Military

The VCT and PMTCT sites which provide HIV testing and counselling services in the Armed Forces and are located in several barracks in Nairobi, Mombasa, Nakuru and Gilgil, Nyanyuki and Isiolo and the data collected from these sites are sent to data centre in

DOD headquarters for analysis. The military populations consist of uniformed and civilian personnel, the spouses and children. Data collected and analyzed in March 2002 and in June 2006 showed that, a total of 25,195 clients both military and civilian population utilized HTC services (ROK, 2008).

Table 4.2 below gives a summary of the HTC utilization in VCT sites between 2002 and 2006.

Table 4.2: VCT uptake in the year 2002 – 2006 in the military in Kenya

Year	2002	2003	2004	2005	2006
VCT Uptake	4137	6234	6253	6209	2362
Tested	3946	5989	5966	5576	2275
% Tested	95.4	96.0	95.4	89.8	96.3
% +Ve	11.9	9.7	9.5	9.1	11.2

Source: DOD Kenya (2008)

The annual percentage of the people testing positive has been on the decline since the year 2002. This general decline is inconformity with national decline of prevalence of HIV in Kenya. The VCT uptake rose in the first year of introducing HTC to the Armed Forces resulting increased utilization of HTC services in all sites and barracks in the Armed forces in all regions (ROK, 2008). Based on this survey, a correlation analysis for HIV prevalence over the years indicated that the trend of percentage prevalence of HIV and AIDS in the Kenya military continued to show significant decline over the years between 2002 and 2007 ($r = -0.985$, $P > 0.000$)

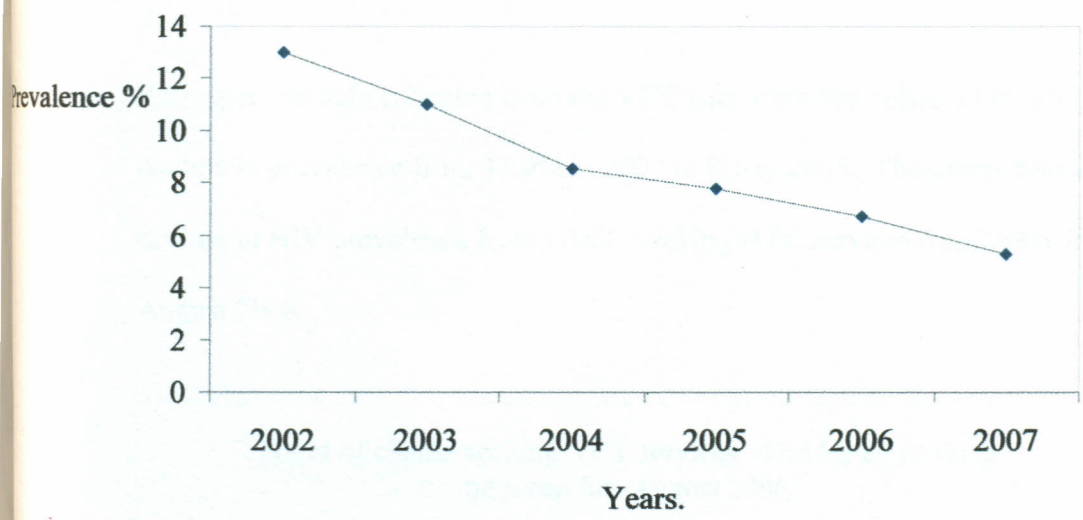


Figure 4.1: HIV prevalence within the Kenya military services (2002 – 2007)

According to the Ministry of Defence data centre, HIV prevalence in the military has declined steadily from 13% in year 2003 to 5.3% in year 2007 (Figure 4.2).

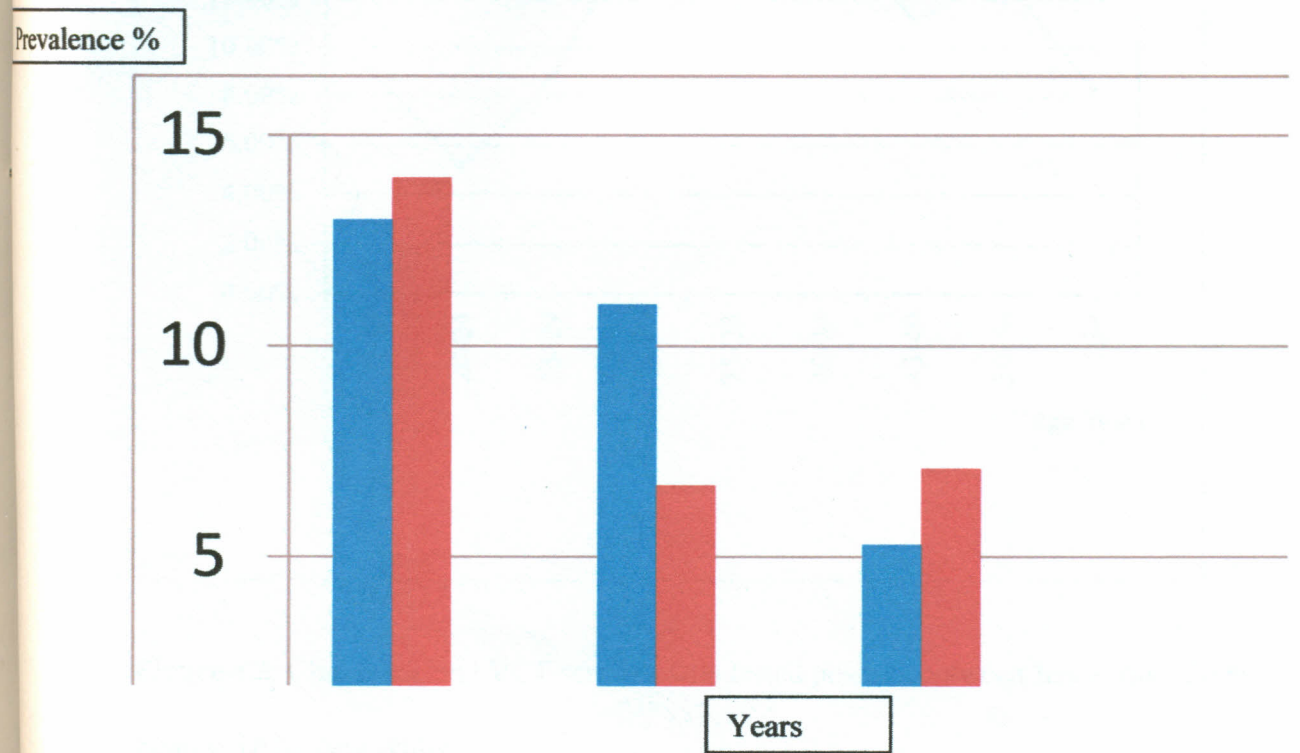


Figure 4.2: HIV prevalence national and military

Retrospective data collected from the VCT sites from the military barracks revealed decline in prevalence from 11.9% in 2002 to 9.1 in 2005. The graph below also indicates decline in HIV prevalence from clients seeking HTC services from 2006 January to August 2006.

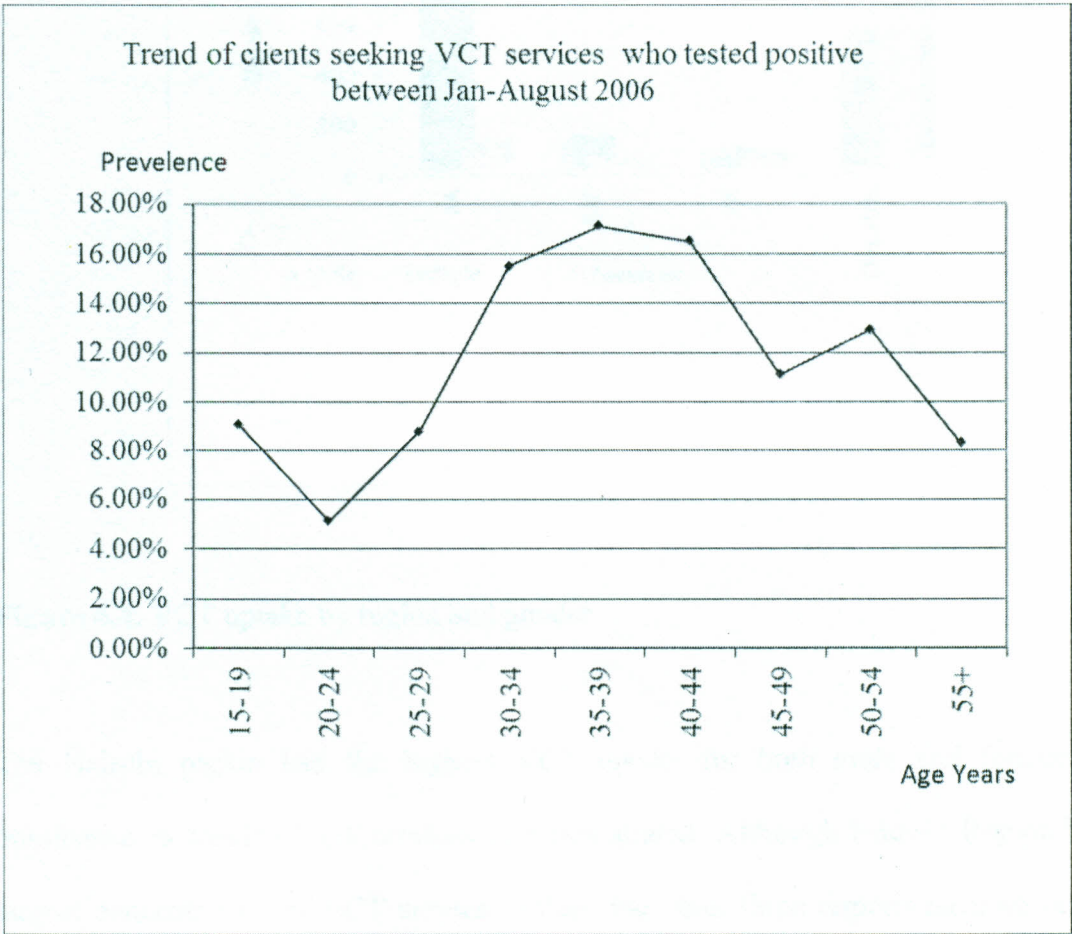


Figure 4.3: Clients seeking VCT services who tested positive between Jan. – Aug. 2006

Source: DOD data centre

STI prevalence declined in Kenya, only 5% women and 2 % of men reported having been infected with STI or having experienced STI symptoms (KDHS, 2009). This finding is inconformity with retrospective record review of the armed forces memorial hospital

indicating decline of STI infections among the military population by 41% from 2004 to 2007.

4.3.1 HTC Utilization and HIV Prevalence by Region and Gender

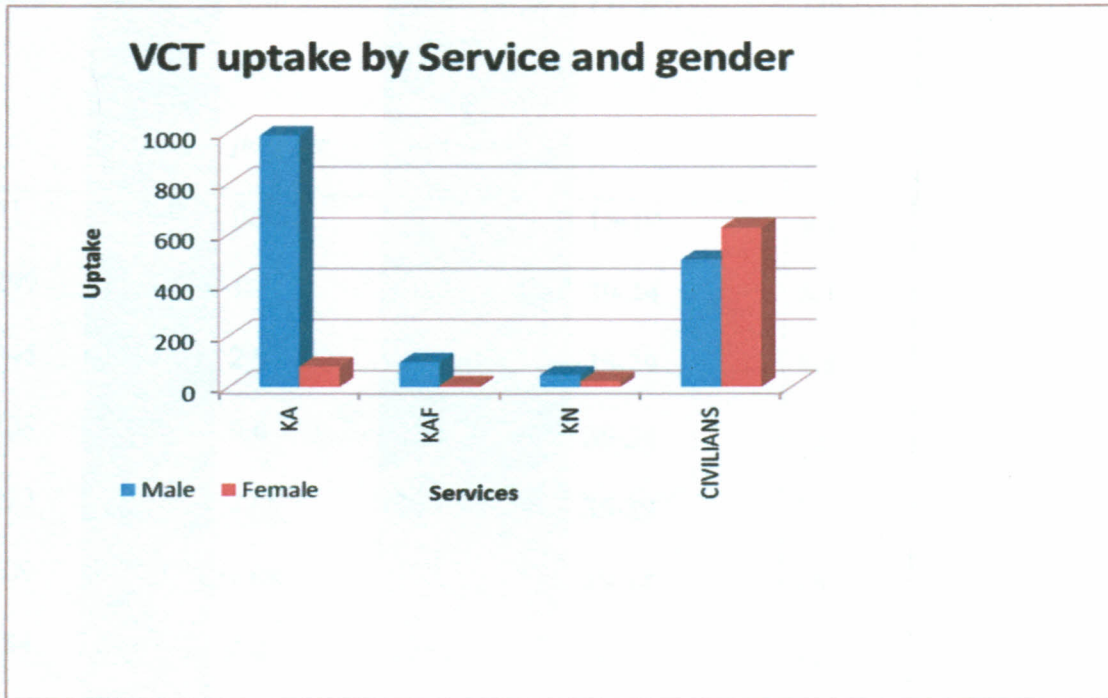


Figure 4.4: VCT uptake by region and gender

The Nairobi region had the highest VCT uptake for both male and female. Male dominance in seeking VCT services is demonstrated. Although Nairobi Region has the largest concentration of VCT service outlets, the other three regions have an untapped potential for improvement in order to bridge the huge gap in inter-region VCT uptake.

4.3.2 Percentages of Clients Testing Positive in VCT Sites by Age Group and Gender

Table 4.3: Percentage of clients testing positive by age group and gender

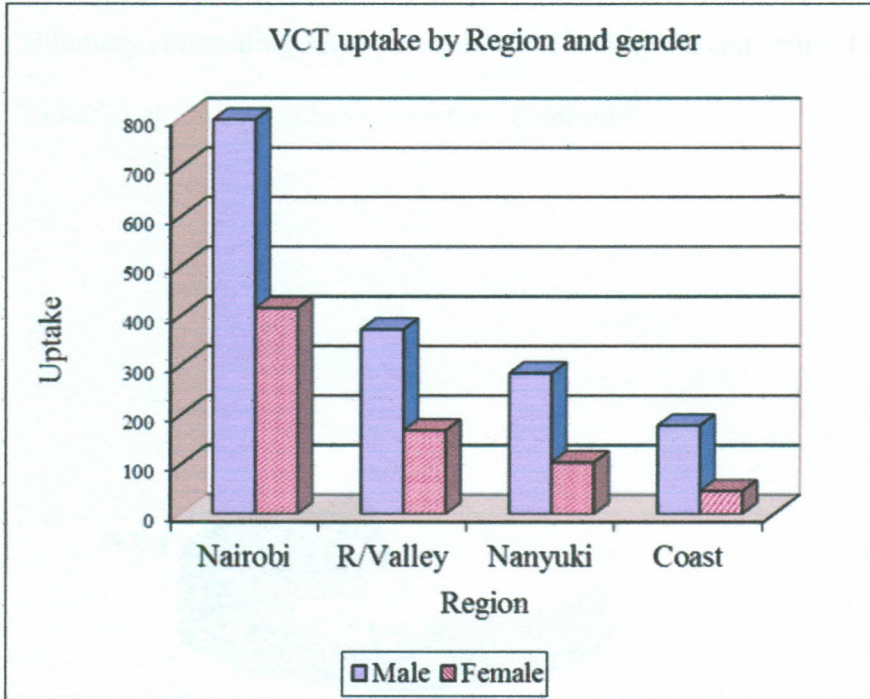
<i>Age group (Years)</i>	<i>Men tested</i>	<i>Women tested</i>	<i>% of men who are HIV positive</i>	<i>% of women who are HIV positive</i>	<i>Age group (Years)</i>	<i>% Overall</i>
15-19	41	47	0.0	17.0	15-19	9.1
20-24	299	211	1.7	10.0	20-24	5.1
25-29	345	179	2.9	20.1	25-29	8.8
30-34	208	102	9.6	27.5	30-34	15.5
35-39	223	75	12.6	30.7	35-39	17.1
40-44	209	46	15.8	19.6	40-44	16.5
45-49	184	24	9.2	25.0	45-49	11.1
50-54	58	12	5.2	50.0	50-54	12.9
55+	10	2	0.0	50.0	55+	8.3

The people in the age groups 25 to 44 years old still remain to be the most affected with HIV and AIDS. The military recruits who are in the age group 18 to 26 years old after undergoing thorough medical examinations, which includes HIV and AIDS testing. These young recruits are largely single and are sexually very active. Even after marriage, the nature of the military duties requires them to be deployed away from their young families/working stations for a long period. This separation increases their chances of engaging in sexual risk behaviour. About 75% of all HIV infections are as a result of heterosexual sexual intercourse. Thus, it's important to emphasize the ABCD of prevention in HIV to all soldiers to stimulate the desired behavioural change among the

military population (ROK, 2008). An effective HTC is an important entry point to PMTCT, care and ART.

4.4 Utilization of HIV Counselling and Testing Services

Fig 4.5 VCT uptake by region and Gender



4.4.1 VCT Services

The VCT uptake in the whole of Armed forces for the first eight months of the year 2006 stood at 2362 clients. About $\frac{1}{2}$ each of the population utilizing the HTC services were military personnel and civilians. About $\frac{3}{4}$ of these populations are male and the rest female. Half of the clients are from Nairobi region, whereas $\frac{1}{5}$ of the clients are from Rift valley and Nanyuki barracks respectively and the remaining $\frac{1}{10}^{\text{th}}$ are from the barracks in Coast region. The VCT uptake by the female military personnel is very low as compared to their male counterparts. For the civilian population, the VCT uptake is almost on a 50-to-50 basis although the female are slightly more. The uptakes are

generally low in both the Kenya Air Force and Navy. More efforts should be marshaled to enlighten the KAF and KN, and more so the female counterparts on the importance of VCT in shaping their sexual behaviour. 187 (58.4%) of the respondents had utilized voluntary counselling services while 126 (39.4%) did not utilize the services. However, 7 (2.2%) of the respondents were non-committal.

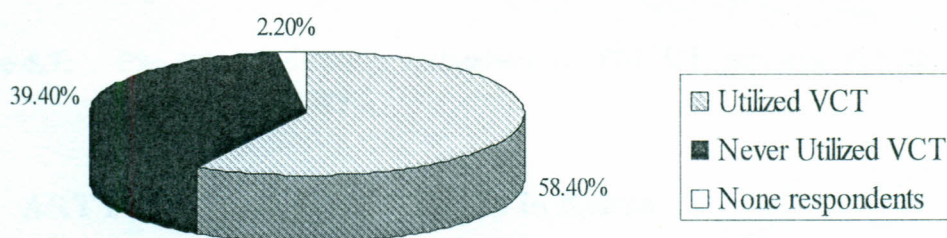


Figure 4.6: Pie chart indicating utilization of VCT services in the last 6 months

4.4.2 Utilization of PMTCT Services

Fair proportion of the respondents 136 (42.5%) had utilized PMTCT services in the last or current pregnancy, while 118 (36.9%) did not utilize the services (Fig 4.7). 66 (20.6%) of the respondents declined to indicate their previous utilization of the services.

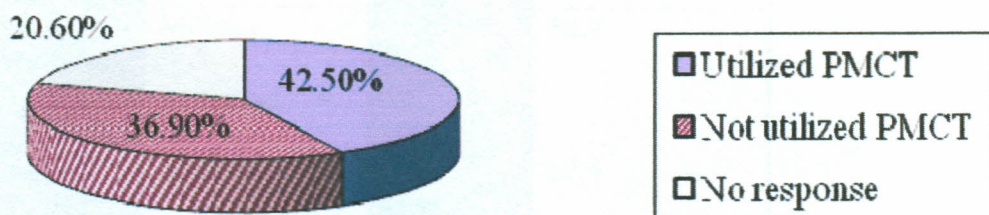


Figure 4.7: Pie chart indicating utilization of PMTCT services during the last or current pregnancy

4.4.3 ART Programme in the Military in Kenya

A total of 1310 patients have been attending Comprehensive Care Clinics (CCC) since the programme on ART started in early 2004. Only 868 representing 66% of the total have been put on ART after meeting the medical criteria. This is illustrated in Table 2.4.

Table 4.4: Distribution of CCC patients by Services

<i>Services</i>	<i>Group</i>	<i>Uptake</i>	<i>% uptake</i>
KA	Military personnel	769	58.7
	Spouses	234	17.9
	Children	65	5.0
KAF	Military personnel	96	7.3
	Spouses	40	3.1
	Children	15	1.1
KN	Military personnel	46	3.5
	Spouses	29	2.2
	Children	9	< 1
DOD CIV WKS	Adults	7	< 1
	Children	0	0
	TOTAL	1310	100

The Kenya Army military personnel with their families are the largest users of the CCC services representing about 82% of the total registered patients. The Kenya Air force

personnel consist of about 11%, the Kenya Navy 7% and civilian workers with less than 1%. The military personnel are considered to be highly vulnerable as far as contracting HIV is concerned. Stigma and discrimination associated with HIV and AIDS pandemic are some of the factors affecting prevention and control of HIV in the military. Hence, there is need to strengthen mechanisms of reducing stigma and discrimination among the infected military personnel, their spouses and children. This will increase access to treatment and care to the military personnel and their dependents (ROK, 2008).

4.5 Factors that promote positive sexual behaviour change and reduce the risk of infection and transmission

These included:

1. Sex of the respondent
2. Age
3. Marital status
4. Sexual orientation
5. Occupation
6. Level of education
7. Number of sexual partners (concurrent partnerships)
8. STI infection
9. Knowledge of partners HIV status

4.5.1 Gender Factor on the Respondents' Utilization of VCT

In the sampled population, that constituted 218 (68.1%) of the male respondents and 102 (31.9%) of female respondents. There was no statistically significant relationship

between gender and utilization of HIV testing and counselling services, VCT ($\chi^2 = 1.816$, $P > 0.110$) PMTCT services ($\chi^2 = 0.964$, $df = 1$, $P > 0.927$).

Figure 4.8: Pie chart indicating Gender of the respondents

Table 4.5: Respondents seeking for VCT services in the last six months

	Seeking VCT services (%)	Not seeking for the services (%)	Total (%)
Male	124 (56.9)	94 (43.1)	218 (100)
Female	63 (61.8)	39 (38.2)	102 (100)

4.5.2 The Age of Respondents

Majority of the respondents 150 (46.9%) were aged between 18-30 years, 105 (32.8%) were aged between 31-40 years, while 62 (19.4%) were aged over 41 years. There was no statistically significant relationship between age and utilization of HIV testing and counselling services, VCT ($\chi^2 = 1.261$, $df = 1$, $P > 0.478$).

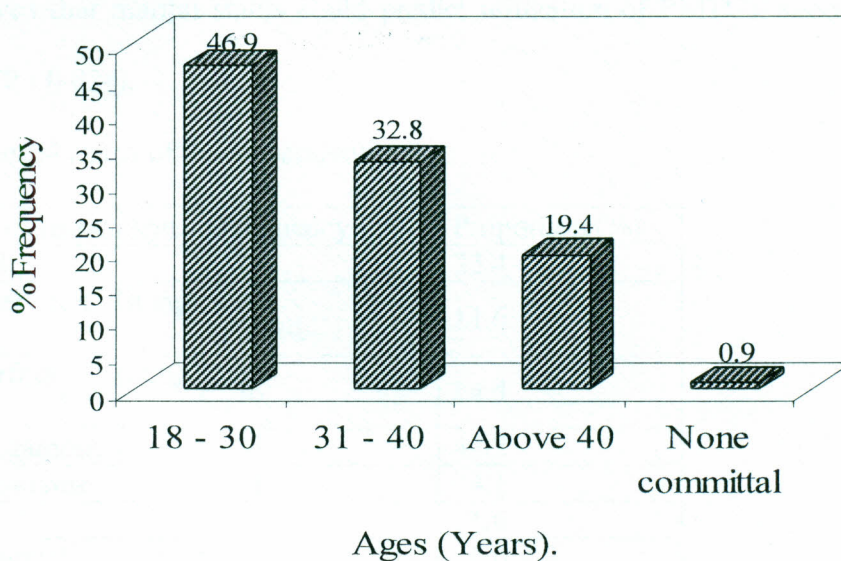


Figure 4.9 The age of respondents

Table 4.6: Respondents age and their utilization of VCT services

Ages(Years)	Number utilized VCT	Did not utilize VCT services
18 – 30	110	100
31 – 40	10	70
Above 40	7	17
None committal	1	0
Total	128	187
χ^2 – value	1.261	

4.5.3 Marital Status of the Respondents

Most of the respondents 75 (23.4%) were never married, 37 (11.6%) had steady partners but were not living together with them, 46 (14.4%) had steady partners living with them, 135 (42.2%) were married in monogamous relationships, 13 (4.1%) were married in polygamous relationships, 5 (1.6%) were widowed, while 5 (1.6%) were either separated or divorced (Table 4.7). There was no statistically significant relationship between marital status and utilization of VCT ($\chi^2 = 0.651$, $df = 1$, $P > 0.87$). However, the study findings showed that marital status could predict utilization of PMTCT services ($\chi^2 = 2.651$, $df = 1$, $P < 0.024$).

Table 4.7: Marital status of the respondents

Marital status of respondent	Frequency	Proportion (%)
Never married	75	23.4
Steady partner not living together	37	11.6
Steady partner living together	46	14.4
Married monogamous	135	42.2
Married polygamous	13	4.1
Widowed	5	1.6
Separated/divorced	5	1.6
No response	4	1.2
Total	320	100.0

4.5.4 Occupation of Respondents

Majority of the respondents 230 (71.9%) were uniformed personnel, 18 (5.6%) were spouses of the military personnel, 20 (6.3%) were children of the military personnel, while 48 (15.0%) were civilian workers (Table 4.8). There was a statistically significant relationship between occupation and utilization of HIV testing and counselling services, VCT ($\chi^2 = 2.583$, $P < 0.011$). The findings revealed that the military personnel were likely to utilize VCT services compared to the respondents who were not working for the military. However occupation could not predict the utilization of PMTCT services ($\chi^2 = 1.749$, $P > 0.149$).

Table 4.8: Occupation of respondents

Occupation of respondents	Frequency	Proportion (%)
Uniformed personnel	230	71.9
Spouse	18	5.6
Child	20	6.3
Civilian worker	48	15.0
No response	4	1.2
Total	320	100.0

4.5.5 Level of Education of the Respondents

Majority 173 (54.4%) of the respondents had secondary, 117 (36.8%) had post-secondary education, 24 (7.5%) had primary education while 3 of the respondents (0.9%) had no formal education. There was no statistically significant association between the level of

education and utilization of HIV testing and counselling services, VCT ($\chi^2 = 1.277$, $df = 1$, $P > 0.642$) or PMTCT ($\chi^2 = 0.571$, $df = 1$, $P > 0.374$).

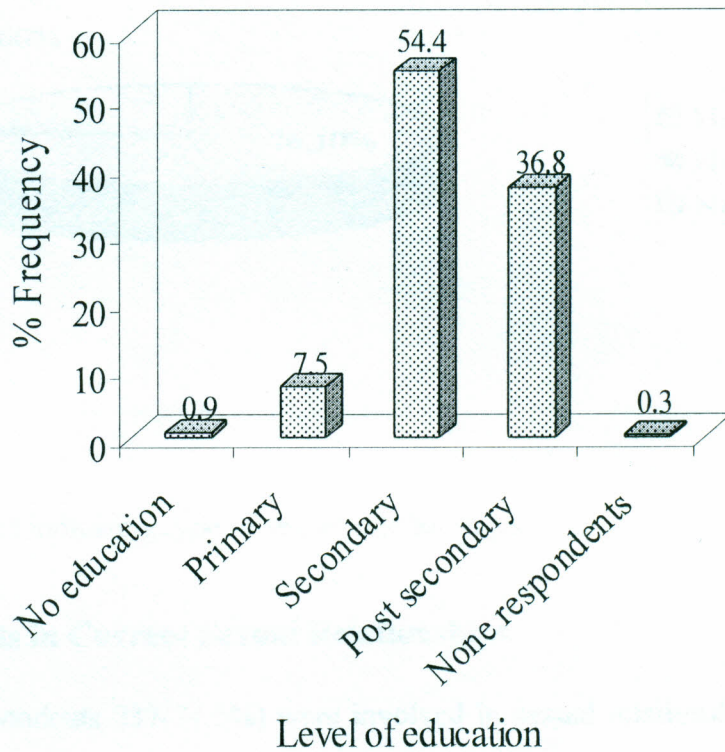


Figure 4.10: Level of education of the respondents

4.5.6 Type of Sexual Relationships

Majority of the respondents 252 (76.1%) were involved in heterosexual relationships while 7 (2.2%) were involved in homosexual relationships (fig 4.11). There was no significant statistical relationship between the type of sexual relationship and utilization

of HIV testing and counselling services, VCT ($\chi^2 = 1.318$, $df = 1$, $P = 0.251$) or PMTCT ($\chi^2 = 1.102$, $df = 1$, $P = 0.705$).

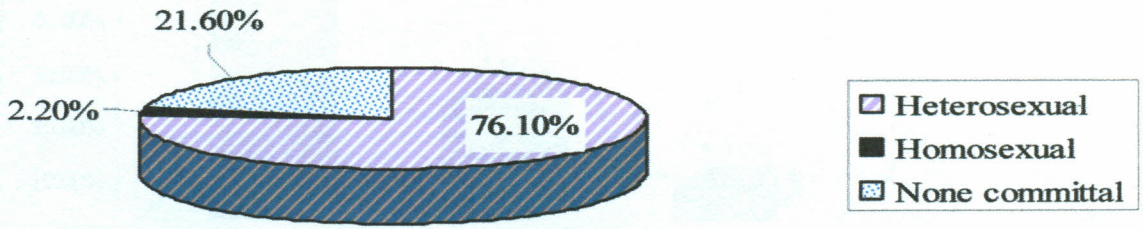


Figure 4.11: Pie chart indicating type of sexual relationships

4.5.7 Respondents in Current Sexual Relationships

Majority of the respondents 237(74.5%) were involved in sexual relationships while 66 (20.8%) were not in sexual relationships (Fig 4.12). There was no statistically significant association between being in a current sexual relationship and utilization of HIV testing and counselling services, VCT ($\chi^2 = 0.952$, $df = 1$, $P > 0.888$) or PMTCT ($\chi^2 = 1.389$, $P > 0.374$).

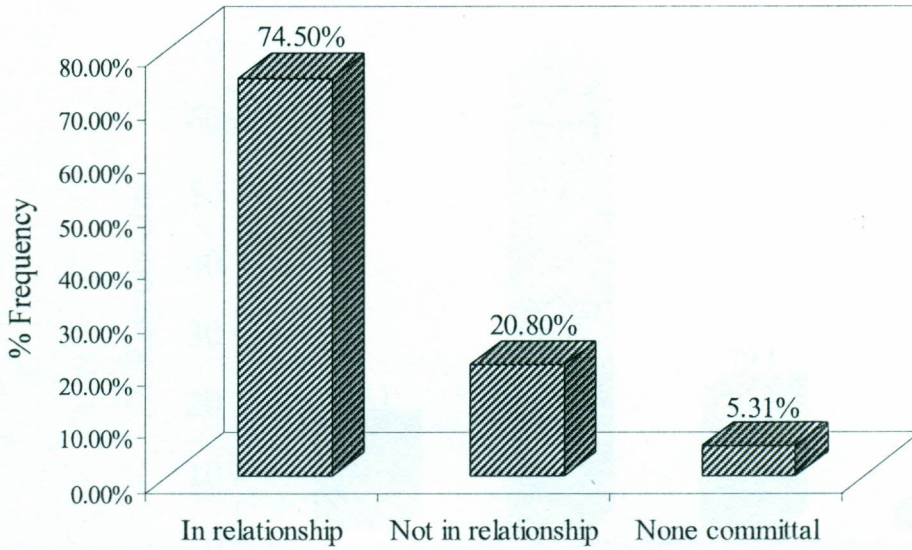


Figure 4.12: Respondents in current sexual relationships

4.5.8 Number of Sexual Partners in the Last Six Months

Majority of the respondents 205 (64.1%) had one partner, while 45 (14.1%) had no sexual partners in the last 6 months, and 61 (19.1%) had more than two partners (Fig 4.13). There was no significant relationship between the number of sexual partners in the last 6 months and utilization of HIV testing and counselling services, VCT ($\chi^2 = 0.975$, $df = 1$, $P > 0.937$) or PMTCT ($\chi^2 = 1.437$, $df = 1$, $P > 0.280$).

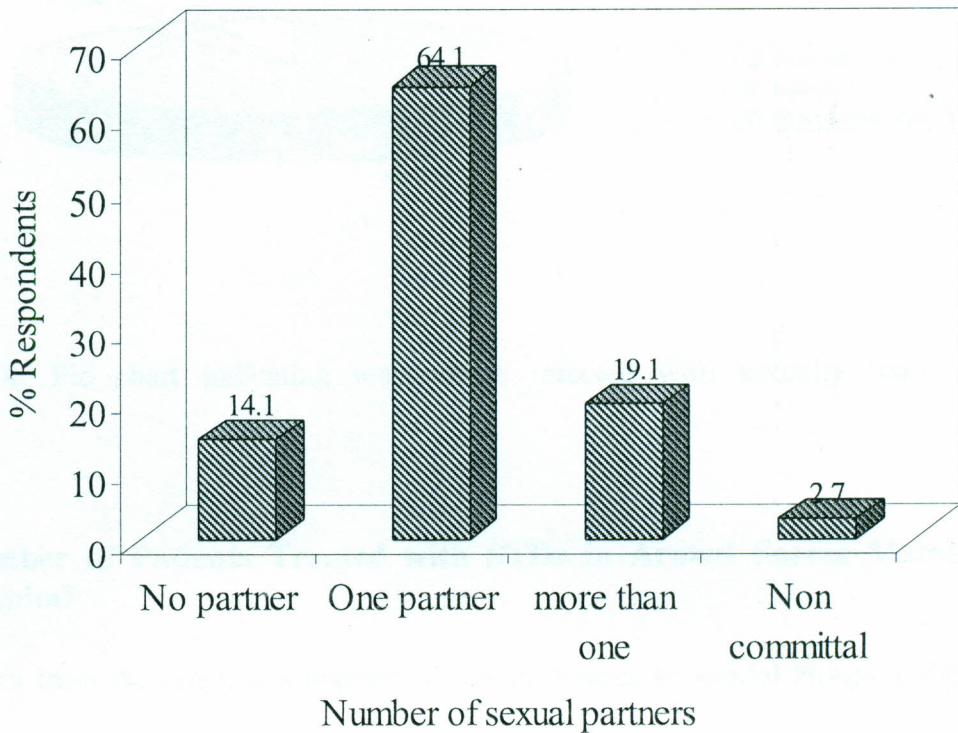


Figure 4.13: Number of sexual partners in the last 6 months

4.5.9 Respondents Infected with Sexually Transmitted Diseases

Most of the respondents 289 (90.3%) were not been infected with sexually transmitted infections, while 15 (4.7%) were infected with STI (Fig 4.14). There was no statistically significant relationship between having a sexually transmitted disease and utilization of HIV testing and counselling services, VCT ($\chi^2 = 1.054$, $df = 1$, $P > 0.921$) or PMTCT ($\chi^2 = 0.770$, $P > 0.685$). However, there was a statistically significant association between the number of sexual partners in the last 6 months and being infected with sexually transmitted infections ($\chi^2 = 15.749$, $P < 0.0001$). The findings showed that respondents with more than one partner were likely to be infected with a sexually transmitted infection.

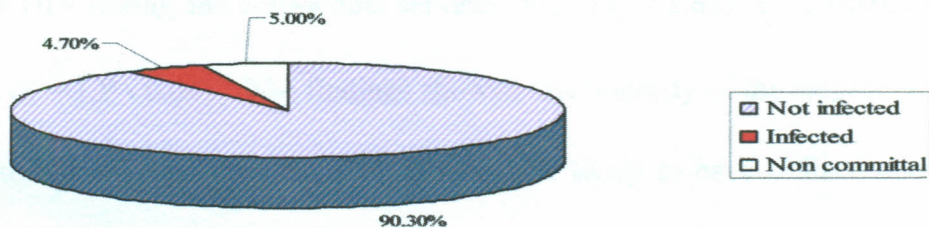


Figure 4.14: Pie chart indicating respondents infected with sexually transmitted infections

4.5.10 Number of Patients Treated with STDs in Armed Forces Memorial Hospital

The statistics from the outpatient register of Armed Forces Memorial Hospital showed that the number of patients treated for sexually transmitted diseases was on the decline from year 2004 to year 2007 (Table 4.9).

Table 4.9: Number of patients treated with STIs in Armed Forces Memorial Hospital

Years	2004	2005	2006	2007
Number of patients	97	83	73	57

Source – Out patient register AFMH

4.5.11 Knowledge of Partners' HIV Status

Most of the respondents 204 (63.8%) had knowledge of their partners' HIV status while 86 (26.9%) had no knowledge about the HIV status of the partners (fig 4.15). There was a

statistically significant relationship between knowledge of the partner's HIV status and utilization of HIV testing and counselling services, VCT ($\chi^2 = 1.867, P < 0.010$), PMTCT ($\chi^2 = 1.685, df = 1, P < 0.047$). The findings showed that majority of the respondents who had knowledge about their partners' HIV status were likely to have utilized both VCT and PMCT.

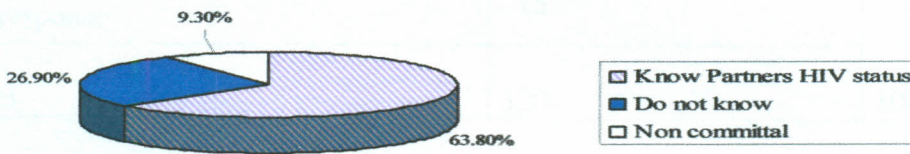


Figure 4.15: Pie chart indicating knowledge of partners' HIV status

4.5.12 Use of Condoms in the Last 6 months

Large proportion of the respondents 120 (37.5%) never used a condom in the last 6 months, however, 66 (20.6%) used a condom sometimes, 52 (16.3%) used a condom always, while 67 (20.9%) had sex with only one steady partner (Table 4.10). There was no statistically significant relationship between condom use and utilization of HIV testing and counselling services, VCT ($\chi^2 = 0.941, P = 0.816$) or PMTCT services ($\chi^2 = 0.697, P = 0.175$).

Table 4.10: Use of condoms in the last 6 months

Use of condoms in the last 6 months	Frequency	Proportion (%)
Never	120	37.5
Sometimes	66	20.6
Always	52	16.3
Have sex with only one faithful steady partner	67	20.9
No response	15	4.7
Total	320	100.0

4.5.13 Reasons for Lack of use of Condoms

Substantial proportion of the respondents 71 (22.2%) failed to use a condom because they did not enjoy sex with a condom, 46 (14.4%) found it a sign of mistrust with partner, while the rest had varied reasons for not using condoms (Table 4.11).

Table 4.11: Respondents reasons for lack of use of condoms

Reasons for lack of use of condoms	Frequency	Proportion (%)	r-values
No enjoyment of sex	71	22.2	0.52*
Is a show of mistrust	46	14.4	0.41
Only have one faithful partner	5	1.6	0.09
Under influence of alcohol/drugs	119	37.2	0.63*
Condoms not available	8	2.5	0.10
No response	71	22.2	0.52*
Total	320	100	

* indicate a significant relationship at 95% CI

4.5.14 Circumstances Leading to Risky Sexual Behaviour

Most of the respondents 176 (51.9%) indicated the influence of alcohol/other drugs as the major cause of risky behaviour, 82 (25.6%) indicated separation from regular partner while on military missions outside regular station. There was no statistically significant association between the circumstances leading to risky sexual behaviour and utilization of HIV testing and counselling services, VCT ($\chi^2 = 1.1$, $df = 1$, $P < 0.176$).

Table 4.12: Circumstances leading to risky sexual behaviour

Circumstances leading to risky sexual behaviour	Frequency	Proportion (%)
Influence of drugs and/or alcohol	166	51.9
Separation due to posting outside regular station	82	25.6
No response	72	22.5
Total	320	100.0

4.5.15 Exchanging Sex for Money

Majority of the respondents 258 (80.6%) never traded sex for money, only 33 (10.3%) purchased sex for money see (Fig 4.16). There was no significant relationship between exchanging sex for money and utilization of HIV counselling and testing services, VCT ($\chi^2 = 0.671$, $df = 1$, $P < 0.250$).

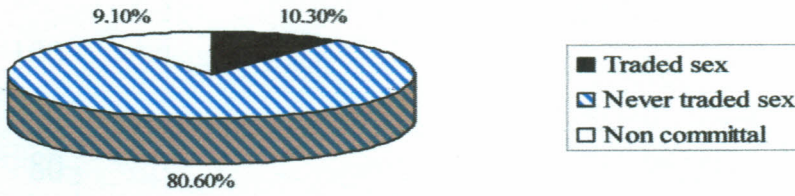


Figure 4.16: Pie chart indicating respondents exchanging sex for money

4.5.16 Respondents Living with Spouses in the same Barracks

Majority 165 (51.6%) do not live with their spouses in the same barracks and 96 of the respondents (30.0%) live with their spouses in the same barracks. There was no statistically significant relationship between living with the spouse in the barracks and utilization of HIV testing and counselling services, VCT ($\chi^2 = 0.765, P > 0.282$) or PMTCT services ($\chi^2 = 1.489, P > 0.119$).

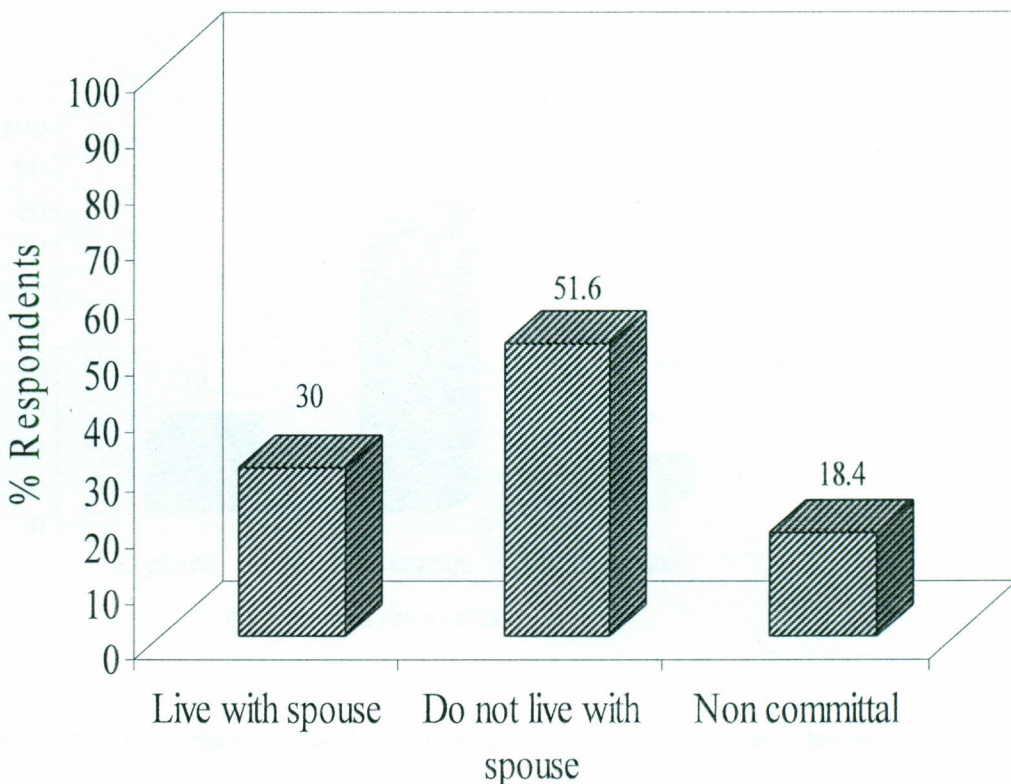


Figure 4.17 Respondents living with spouses in the same barracks

4.6 Indicators of Behaviour Change

4.6.1 Presence of Risky Sexual Behaviour after HTC and Knowledge of HIV Status

Majority, 232 (72.5%) of the respondents did not engage in risky sexual behaviour after HTC services and knowing their status, while only 61 of the respondents (19.1%) engaged in risky sexual behaviour after HTC and knowing their status. There was a statistically significant relationship between engaging in risky sexual behaviour after HTC services and utilization of VCT services ($\chi^2 = 2.049$, $df = 1$, $P < 0.017$), however the study revealed that knowing HIV status did not predict utilization of PMTCT, ($\chi^2 = 1.403$, $df = 1$, $P > 0.281$).

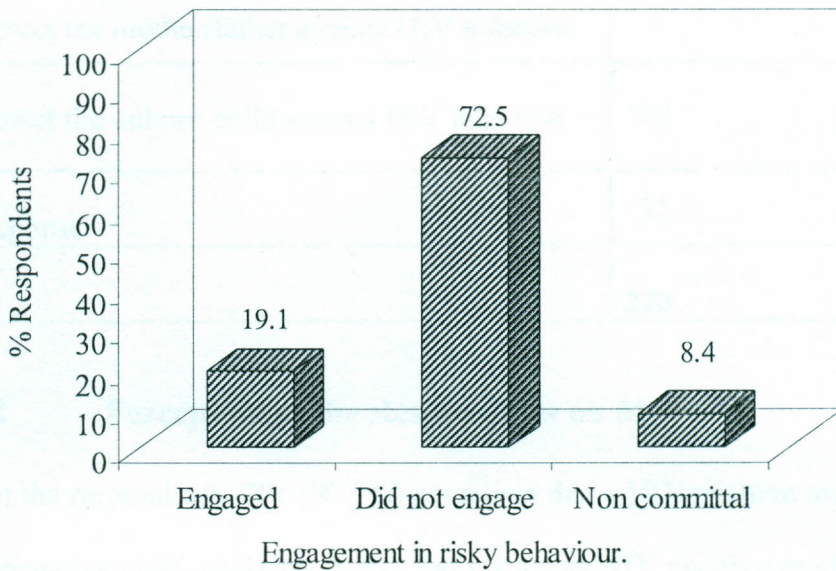


Figure 4.18 Presence of risky sexual behaviour after HTC services and knowledge of HIV status

4.6.2 Knowledge of Prevention of Mother to Child Transmission

4.6.2.1. Importance of Counselling and Testing during Pregnancy

Majority of the respondents, 302 (94.4%) indicated knowledge of their HIV status after HTC during pregnancy protects the unborn child against HIV infection while 3 (0.9%) of the respondents did not have adequate knowledge on MTCT. There was no statistically significant relationship between knowledge of MTCT and HTC services ($\chi^2 = 0.722$, $df = 1$, $P > 0.667$).

Table 4.13: Importance of counselling and testing during pregnancy

Knowledge of prevention of mother to child transmission	Frequency	Proportion (%)
To protect the mother/father against HIV infection	3	0.9
To protect the unborn child against HIV infection	302	94.4
No response	15	4.7
Total	320	100.0

4.6.2.2 Perception of the Respondents on MTCT

Most of the respondents, 291 (90.9%) perceived that a HIV positive mother could deliver a HIV negative child while 16 (5.0%) did not know HIV positive mother could deliver a HIV negative child. The study findings showed that there was no statistically significant relationship between perception of possibility of a HIV positive mother delivering a HIV negative child and utilization of HTC services ($\chi^2 = 0.836$, $df = 1$, $P = 0.668$).

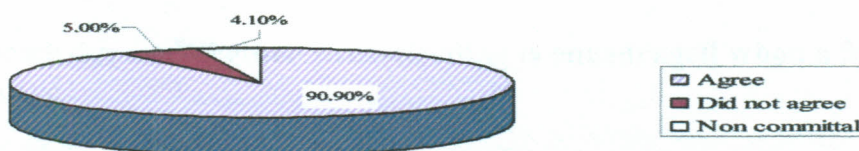


Figure 4.19: Pie chart showing perception of the respondents

4.6.3 Reason for knowing one's HIV Status

Most of the respondents 123 (38.4%) wanted to know their HIV status in order to take more precaution in the future. 40 (12.5%) were protecting one's sexual partner while 103 (32.2%) wanted to plan for the future and a small minority, 1.5% sought HTC as a result of medical advice.

Table 4.14: Importance of knowing one's HIV status

Importance of knowing one's HIV status	Frequency	Proportion (%)
To start taking more precautions	123	38.4
To protect one's sexual partner	40	12.5
To seek medical advice	5	1.6
To plan for the future	103	32.2
No response	49	15.3
Total	320	100.0

4.6.4 Knowledge on Whether Breastfeeding is encouraged when a Mother is HIV- Positive

Most of the respondents, 268 (83.75%) had no knowledge about advantages of breastfeeding when a mother is HIV-positive while fifty two of the respondents (16.2%) knew that breastfeeding is encouraged even when a mother is HIV-positive. However, there was no significant relationship between knowledge on advantages of breastfeeding by a HIV positive mother and HTC services ($\chi^2 = 1.664$, $df = 1$, $P > 0.268$).

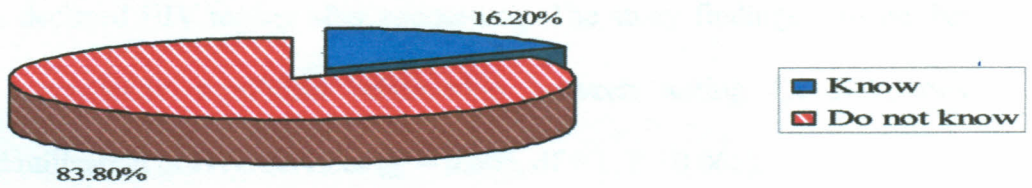


Figure 4.20: Pie chart indicating Knowledge on advantages of breastfeeding by a HIV positive mother

4.6.5 HTC during Last or Current Pregnancy

Majority, 62.8% of the respondents had received HTC services during the last or current pregnancy while 56 (17.5%) did not receive HTC services and Sixty three of the respondents (19.7%) were none committal. There was statistically significant relationship between pregnancy and HTC services utilization, ($\chi^2 = 1.798$, $df = 1$, $P < 0.000$).

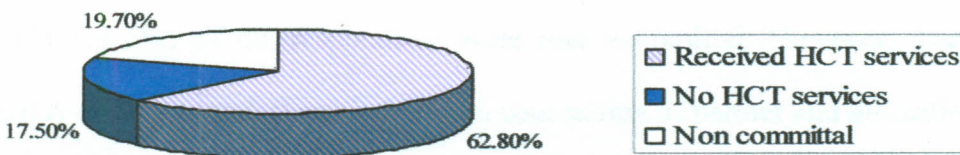


Figure 4.21: Pie chart indicating HTC utilization during the last or current pregnancy

4.6.6 Testing for HIV after Counselling

A larger number of the respondents 245 (76.5%) were tested for HIV after counselling whereas 23.4% declined HIV testing after counselling. The study findings showed that there was no statistically significant relationship between testing for HIV after counselling and utilization of HTC services ($\chi^2 = 0.605$, $df = 1$, $P > 0.068$).

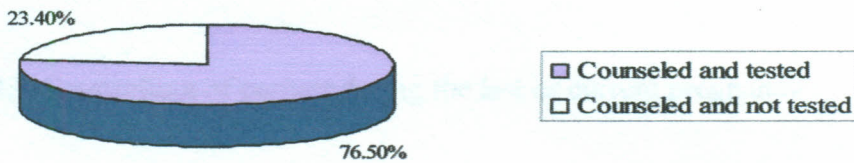


Figure 4.22: Pie chart showing respondents tested for HIV after counselling

4.6.7 Counselling of partner during the last or current pregnancy

Most of the respondents 122 (38.1%) had their partners counselled during the last or current pregnancy while 37 (11.6%) of the respondents' partners had not been counselled while 121 (50.3%) of the respondents were non-committal. However, there was no statistically significant relationship between counselling of partner and utilization of HTC services ($\chi^2 = 1.257$, $df = 1$, $P > 0.476$).

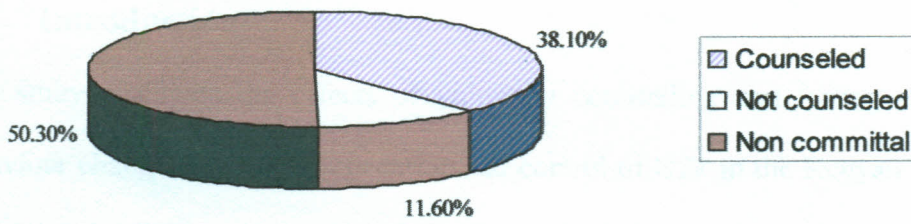


Figure 4.23: Counselling of partner during the last or current pregnancy

4.6.8 Partner testing for HIV during the last or current pregnancy

One hundred and four of the respondents (32.5%) had their partners tested during the last or current pregnancy while 67 (20.9%) of the respondents' partners had not been tested (Fig 4.20). However, there was no statistically significant relationship between testing of partners and utilization of HTC services ($\chi^2 = 1.257$, $df = 1$, $P < 0.476$).

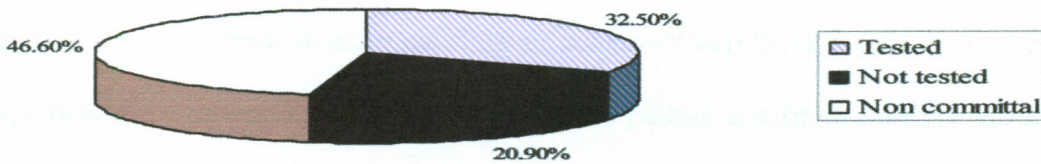


Figure 4.24: Partner testing for HIV during the last or current pregnancy

CHAPTER 5: DISCUSSION

5.1 Introduction

This study evaluated the effects of voluntary counselling and testing as a strategic behaviour change tool in the prevention and control of HIV in the Kenyan military. The findings from FGD participants and respondents' demographic characteristics indicated that the majority were adults and had formal education.

5.2 Socio-demographic Characteristics of the Study Population

The military environment is consisting of youthful, sexuality active and male dominated population, where 80% of the respondents were below the age of 40 years, 76% are involved in heterosexual relation and 2.2% are men who have sex with men in addition 69% of the respondents were male. Kenya AIDS indicator survey (KAIS, 2007) revealed high prevalence and increase in infection rate between the age groups of 15 to 49 years with prevalence of 9.2% in 2007 from 8.7% in 2003 among the female population and male prevalence of 5.8% in 2007 compared to 4.6% in 2003. In addition majority of infections among youth occur between the ages of 20 to 29 years (KDHS, 2003, 2008/9). The vast majority of people with HIV infection in Sub-Saharan Africa are infected during unprotected heterosexual intercourse and estimated 44% of new infection in Kenya is through heterosexual transmission in marriage or cohabitation (UNAIDS, 2010). A study in Kenya reveals heterosexual sex with union /regular partner contributes 44.1%, casual heterosexual sex 20.3%, commercial sex and men who have sex with men 14.1% and prison 15.2%. (ROK, 2010). The risk of infection is especially disproportionate for girls and young women. In Kenya young women between the ages of 15 to 19 years are three times more likely to be infected with HIV than their male counterpart, while 20 to 24

years old women are five times more likely to be living with HIV than men in the same age cohort (UNAIDS, 2009). Research in 12 countries in Eastern and Southern Africa shows prevalence of discordant couples is high ranging from 35% and 85%.(UNAIDS,2010).Prevalence of HIV in discordance is high with 50% in marriage or cohabitation(KAIS,2007). In addition the existence of men who have sex with high level of HIV infection contributing up to 20% of new infection in Senegal and 15% in Kenya. Available evidence suggest that in Sub Sahara Africa majority of men who have sex with women also have sex with women.(UNAIDS,2010).

The military throughout the world are most susceptible population to HIV and other sexually transmitted diseases. This due to their demographic factors where their population is mostly youthful and sexually active, are mostly male and highly mobile (World Bank, 2005). Education and marital status are major factors that influence HIV transmission among women. Women between the ages of 15 to 64 years with high education have significant lower prevalence of HIV than those with lower education status primary 10% prevalence ,secondary7% prevalence and tertiary 4% prevalence whereas in marital status women who widowed have the highest prevalence of 20.7%, divorced 17.1%, polygamous 12.2%, monogamous 7.8%and never in union 4.7% (KAIS,2007).Individuals who divorced, separated or widowed tend to have significantly higher HIV prevalence than those who are single ,married or cohabiting with divorced or widowed women experiencing especially high prevalence(UNAIDS,2009).

5.3 Levels and Trends of HIV and AIDS in the Kenyan Military

HIV incidence has fallen in 33 countries by 25% between 2001 and 2009 and 22 of these countries are in Sub-Saharan Africa. In 2009 the new HIV infections were 2.6 M people compared to 3.1M people in 1999 indicating 19% decline and most of these new infections continue to occur in Sub-Saharan Africa (UNAIDS,2010).The global HIV prevalence has stabilized and there is a decline in new infections from 4.3 million in 2006 to 2.5million in 2007. Downward trends in HIV prevalence are occurring in a number of countries where prevention effects aimed at reducing new HIV infections are showing results (UNAIDS, 2007). The epidemic in East Africa has declined since 2001 and stabilizing in many countries. In Uganda HIV prevalence between 6.5% and 7% since 2001.In Rwanda HIV prevalence has been 3% since 2005. The Kenya national prevalence has declined from 14% in the mid 1990's to 5.1% in 2006 (UNAIDS, 2010). The Kenyan military has also registered significant decline in prevalence from 13% in 2002 to 5.3% in 2007 (ROK, 2008). A 1995 estimate of HIV in Zimbabwe for instance placed the infection rates for the military at three to four times higher than the levels of the civilian population (UNAIDS, 1998).In Mozambique 39% of the military blood donors were HIV positive and estimate of HIV prevalence among the militaries of DRC Congo and Angola ranged from 40% to 60% (Len Curran *et al*, 2002).

In Kenya, behaviour trend data points to significant reduction over time in the kinds of sexual behaviour that places people at the risk of infection. The HIV prevalence among pregnant women declined significantly by more than 25% in both rural and urban areas. Decline in prevalence appears to be related to combination of factors especially reduction in casual sex relations with non- regular partners, along with increase in condom use,

later sexual debuts, and primary and secondary abstinence. In addition, combination of increased AIDS awareness, growing anxiety about AIDS mortality, and increased access to health and preventive services appears to have prompted such behaviour change (UNAIDS, 2006).

5.4 Utilization HIV Counselling Services and Testing

HIV counselling and testing (HTC) is a national strategic intervention in Kenya to reduce HIV transmission and mitigate the effects of the epidemic and it's in line with national goal of universal access and HTC is an entry point to prevention, care and treatment to HIV and AIDS (ROK, 2008). Kenya through the vision of new KNASP (2009/13) envisions HIV and AIDS free society through universal access to knowledge of HIV status by 2010, where 80% of Kenyan population should be counselled and tested by 2010. HTC services remain underutilized with only 36% of Kenyan between the ages of 15 and 64 years possessing correct knowledge of their HIV status and up to 83% of those infected with HIV did not know their HIV status (ROK, 2010).

The utilization of the HIV counselling and testing services has increased significantly in the military from 9% in 2003 to 58.8% in 2006. HTC utilization increased nationally from 1000 persons in 2000 to 400,000 people in 400 sites in 2004 (ROK, 2008). The military HTC utilization increased from 8224 in 2003 to 26,000 in 2006 (Walter Reed, 2006). These findings implied that utilization of VCT services was followed by a marked increase in knowing the partners' HIV status. This was positive in that the partners could take early measures to protect themselves from either future infection or promote positive living among the infected. Couples counselling has been shown to be more successful in

promoting behaviour change (Allen, 1992) and decreasing HIV transmission (Allen, 2003).

The findings also showed a statistically significant relationship between the occupation of the respondents and utilization of HTC in VCT services (OR=2.583, 95% CI 1.239-5.385, $p \leq 0.011$). It showed that the military personnel were likely to utilize HTC in VCT services compared to the non- military personnel. This finding gives evidence that utilization of VCT services could be followed by a marked reduction in HIV transmission through positive behaviour change. 83% of the new infected persons between the ages of 15 to 64 years did not their HIV status.(KAIS,2007) In both Kenya and Zambia, there is increasing evidence that a proportion of the decline is due to a reduction of the number of new infection which is in part due to a reduction in risky behaviour (UNAIDS, 2007).

The study findings also revealed a significant statistical relationship between the presence of risky sexual behaviour and utilization of HTC in VCT services (OR= 2.049, 95% CI 1.139-3.686, $p \leq 0.017$). This showed that the respondents who had utilized HTC in VCT services were not likely to engage in risky sexual behaviour after counselling and knowing their status compared to those who had not utilized HTC in VCT services. This finding revealed that knowledge about the existence of risks does imply behaviour change. These findings compare to several studies that have been conducted to assess the effectiveness of VCT in behaviour change. Several factors were observed to predict utilization of PMTCT services. There was a statistically significant relationship between marital status and utilization of HTC in PMTCT services ($\chi^2 = 2.651$, $P > 0.024$). This finding showed that marital status could predict utilization of HTC in PMTCT services in that the married respondents were likely to have utilized the services compared to those

who are not married. Since HTC in PMTCT services are provided for mothers visiting antenatal clinic, their spouses (couple counselling) and it not is mandatory in Kenya, but majority of the married couples were likely to utilize the service. Prevalence of HIV discordance in Kenya is high with 50% of the married or co-habiting couples are discordant with estimated population of 450,000 and with HIV prevalence rate of 10 to 12% (KAIS, 2007) In Zimbabwe, a cluster-randomized trial of two strategies providing voluntary counselling and testing at the workplace found out that highly acceptable VCT did not reduce HIV incidence in this predominantly male cohort. HIV incidence was highest in the high uptake VCT arm, lending support to a US trial in which rapid testing appeared to have adverse behavioural consequences in some HIV-negative clients (Corbett, 2007). VCT gives clients an opportunity to explore their HIV risks and to learn their HIV status in complete confidence (ROK 2003). Understanding the behaviour that puts people at risk of HIV infection is the fundamental challenge of HIV and AIDS prevention (USAID, 1991).

5.5 Factors that Promote Positive Sexual Behaviour and Reduce the Risk of Infection and Transmission of HIV

The finding of this study indicates about 91% of the study population were not infected with any STIs six month prior to the study. In addition about 78% of the respondent either abstained (14.2%) or had only one sexual partner (64.7%). There was a significant relation between STI and the number of sexual partners ($X^2=15.749, df=2, P \leq 0.0001$).

Retrospective record review from Armed forces memorial hospital which is referral hospital for the military had shown decline of STIs from 2004 to 2007 by 41.2%. HIV testing among the infected was associated with 60% transmission risk in multiple setting

(KAIS, 2007). HIV transmission is five times more likely to occur in the presence of STIs and empirical studies have concluded that during peace time STI infection among the military population were between two to five times the infection rates among the surrounding civilian societies (Kingma, 1998). General Jacques Abgrall, the Deputy Director of Scientific and Technical Action, Central Directorate of French Army Health Services reported by UNAIDS (1998) summarized the situation thus:

“Our study of the epidemiological data on HIV infection in French military personnel has shown us that tours of duty overseas multiply the risk of infection by a factor of 5. In spite of our prevention efforts, some individuals remained impervious to the usual preventive messages, although there has been a significant downturn in new infections in recent years. Nevertheless, the number of new (HIV) sero positive cases and of sexually transmitted diseases as a whole remains higher overseas than in mainland France, which means that the preventive message targeted to overseas staff must be more insistent and more repetitive”. A study of Dutch sailors and marines on peacekeeping duty in Cambodia found that 45% reported having sexual contact with sex workers or other members of the local population during five months tour. Another study indicated that 10% of US naval personnel and marines contracted a new STD during trips to South America, West Africa and the Mediterranean during 1989-91. War itself offers a particularly rich breeding ground for HIV infection. The mobilization of large numbers of young men (already a high-risk group for STDs), the practice of intimidation through rape, and displacement of refugees (a highly vulnerable group) are all factors that increase the virus prevalence. To make matters worse, war is often accompanied by the

breakdown of health and educational infrastructures, crippling efforts to minimize the spread of HIV during or following conflict (UNAIDS 1998).

This study revealed about 52% of the respondent did not live in the same barracks with their spouses. The practice of posting personnel far from their accustomed community or families for long period is the single leading contributor of HIV in the military (Rodger, 1996). This study indicates 73% of the study population did not engage in risky sexual behaviour after HTC and knowing their HIV status. A study conducted in some developing countries showed that although VCT recipients were significantly less likely to engage in unprotected sex when compared to behaviour before receiving VCT, or as compared to participants who had not received VCT, it had no significant effect on the number of sex partners (Denison, 2007).

The HIV testing and counselling in PMTCT services can be used as a strategy to promote positive sexual behaviour. The findings also revealed a statistically significant relationship between the knowledge of partners' HIV status and utilization of PMTCT services ($\chi^2 = 1.685$, $P > 0.047$). This finding showed that the respondents who had knowledge about their partners' HIV status were likely to have utilized PMTCT services compared to those who had not utilized the services. This showed that PMTCT could encourage partners to know their HIV status thereby resulting in a changed sexual behaviour.

The Kenyan the military has no HIV and AIDS policy, but at the national level there were significant political will and enormous drive to bring the necessary institutional policy framework. The development of Sessional Paper No.4 of 1997 on AIDS in Kenya marked an important change in the political front and outlined a new institutional

framework with the formation of National AIDS Control Council (NACC) and subsequent formation of AIDS control units (ACUs). The increase in the political commitment was further demonstrated by the declaration by President Moi of AIDS as a national disaster and President Kibaki declaring total war against AIDS (ROK, 2005).

Military leadership did not demonstrate commensurate will through the creation of firm institutional policy framework despite the fact that the military population were among the most vulnerable and were categorised as a high risk group. This resulted in under funding of prevention and control of HIV programmes and failure to attract multi-sectoral collaboration and partnership. Most activities in terms of prevention and control of HIV became a part of the multi-sectoral civil military efforts overseen by the National AIDS Control Council, which operates under the authority of the country's national development plan (Rodger, 1996). These activities has resulted in the establishment of HIV counselling and testing centres in all major barracks in the country, leading to a marked improvement in the utilization of VCT and PMTCT services. Most of the respondents (90%) in FGDs have identified lack of HIV and AIDS policy as a major impediment to HIV prevention and control, particularly the post recruitment and housing policies because most of the current soldiers undergo mandatory HIV testing. Military personnel are generally young and sexually active, are often away from home and are governed more by peer pressure than accustomed social taboo, are imbued with feelings of invincibility and inclination towards risk taking, and are always surrounded by ready opportunities for casual sex (Kingma, 1995). HIV counselling and testing has a vital role within a comprehensive range of measures for HIV and AIDS prevention and support and it is believed that mandatory testing without informed consent or under duress is not only

a violation of human rights, but there is also no evidence that it achieves public health goals (UNAIDS, 1998). A Report by UNAIDS (1998) observed thus,

“The first reaction of many organizations not just the military is to test in order to keep people who are infected from being recruited. But the fact is most of infections occur after people have been recruited. In fact, it’s doubtful that involuntary testing is the answer to anything”.

5.6 Indicators of Behaviour Change

The Global Programme for AIDS (GPA) of the World Health Organization has developed the following prevention indicators (WHO, 1992):

- a. Knowledge of preventive practices
- b. Sexual behaviour
- c. Case management of STDs
- d. Condom availability and use
- e. STD and HIV prevalence

In Namibia improvement across key knowledge and behaviour indicators including comprehensive knowledge of HIV ,age of sexual debut, engagement of high risk sexual behaviour and condom use among male and female between ages of 15 to 24 years were associated with decline in HIV prevalence from 10% in 2007 to 5% in 2009 (UNAIDS,2010). Some 95% of the study population had adequate knowledge on HIV maternal transmission. HIV and AIDS awareness in Kenya is universal with 99 percent of women and 100 percent of men age 15-49 having heard of AIDS. Comprehensive knowledge about HIV and AIDS is a useful composite measure and is defined as knowing that both consistent use of condoms during sexual intercourse and also having

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just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy looking person can have the AIDS virus, and knowing that AIDS cannot be transmitted by mosquito bites or by sharing food with a person who has AIDS. Comprehensive knowledge about HIV and AIDS is lower among the youngest and oldest age groups (i.e., 15-19 and 40-49). 75% of women and 81 % of men know that the chance of getting HIV can be reduced by using condoms. Similarly, 92 % of women and 93 % of men know that limiting sex to one faithful partner reduces chances of getting HIV. Almost 90 % of women and men know that abstaining from sex reduces the chances of getting HIV. The level of education attained by women and men age 15-49 strongly relates to their knowledge of ways to avoid contracting HIV and AIDS. Women and men who have no education show much lower levels of knowledge of HIV and AIDS prevention methods than those with some education (KDHS,2009). This study revealed 81% of the study population did not engage in commercial sex.

Transactional sex involves exchange of sex for money, favours, or gifts. Transactional sex is associated with high risk of contracting HIV and other sexually transmitted infections due to compromised power relations and the tendency to have multiple partnerships as a result (KDHS,2009). It's estimated that 32 % of the new infection in Ghana, 14% in Kenya and 10% in Uganda are linked to commercial sex workers. Paid sex remains an important factor in many HIV epidemics in Western, Central and Eastern Africa (UNAIDS, 2010).

Consistent condom use has been low among the study population where only 16.4% use condom consistently, while 38.4 % never used condoms and 20.8% used sometimes. Correct and constant use of condoms has been found to greater 90% effective in

prevention of HIV and other STIs (UNAIDS, 2010). Condoms have helped to reduce HIV infection rates where AIDS has already taken hold, curtailing the broader spread of HIV in settings where the epidemic is still concentrated in specific populations. Condoms have also encouraged safer sexual behaviour more generally. Recent analysis of the AIDS epidemic in Uganda has confirmed that increased condom use, in conjunction with delay in age of first sexual intercourse and reduction of sexual partners was an important factor in the decline of HIV prevalence in the 1990s. Thailand's efforts to de-stigmatize condoms and its targeted condom promotion for sex workers and their clients dramatically reduced HIV infections in these populations and helped reduce the spread of the epidemic to the general population. A similar policy in Cambodia has helped stabilize national prevalence, while substantially decreasing prevalence among sex workers. In addition, Brazil's early and vigorous condom promotion among the general population and vulnerable groups has successfully contributed to sustained control of the epidemic (UNAIDS, 2009). Majority of the study population 73% did not engage in risky sexual behaviour after HTC and knowing their HIV status in VCT and PMTCT services. There is significant relation between HTC (OR=2.049, 95%CI 1.139-3.686, $P \leq 0.017$ and risk perception. There is decline of HIV prevalence in the general population of Kenya and in particular the military population as indicate by the graph below comparing the prevalence of HIV of military and the general population of Kenya.

5.7 Conclusion and Recommendations

5.7.1 Conclusion

HIV counselling and testing has been successful as a strategic tool in behaviour change in the general prevention and control of HIV and AIDS in the Kenyan military. However,

the prevalence rate is still high for high risk group and there is a great need to intensify and accelerate the military HIV and AIDS prevention and control programme to protect both the military and the civil population from transmission and infection. This requires swift and committed action by the government, other collaborating agencies, and the military commanders as demonstrated by the Royal Thai Army which is now recognized internationally as the among the most successful military HIV and AIDS prevention and control programmes.

5.7.2 Summary of Conclusion

- The military is youthful and male dominated population.
- There is general decline in prevalence of HIV among the military personnel.
- HTC is well utilized by the military personnel in all service delivery points.
- There are many positive sexual behaviour changes resulting to reduction in infection of STI including HIV.
- There are positive indicators of prevention of HIV in the military population of Kenya.

5.7.3 Recommendations

5.7.3.1 Operational Recommendations

- NASCOP and DOD should strengthen gains made in promoting positive sexual behaviour change with specific consideration to these youthful and male dominated populations.
- NACC and NASCOP should encourage a strong collaboration between the military and other stake holders in the public sector to increase utilization of

voluntary counselling services and maximize the available resources to strengthen the fight against HIV in the military.

- NACC and NASCOP should work with DOD towards behaviour surveillances in the monitoring and evaluation of prevention and control of HIV and AIDS programmes and an appropriate tool designed to reduce the levels and trends of HIV among the military population.
- NACC and DOD enhance factors that promote risk perception and good health seeking behaviour by designing the appropriate behaviour change models.

5.7.3.2 Research Recommendation

There is need to carry out further and more in-depth research in this field of study.

5.7.3.3 General Recommendations

There is need to enhance appropriate policies and strategies that will not only strengthen but accelerate the gains made and encourage multi-sectoral collaboration in the prevention and control of HIV and AIDS in the military with special emphasis to behaviour change.

5.7.4 Suggestions for Future Research Work

- The effect of substance abuse in the military in relation to HIV prevention and control in the military
- The Value of the policy of recruiting HIV negative soldiers in the prevention and control of HIV in the military.
- Determine the effects and extents of men who have sex with men in the military in relation to HIV prevention and control

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7.0 Appendices

7.1 Map of Kenya showing the position of the study area (Appendix I)



7.2 Topics discussed in focus group discussions and interviews (Appendix II)

- i) Socio-cultural factors that promote risky sexual behaviour in the military.
- ii) Socio-economic factors that promote risky sexual behaviour in the military.
- iii) Socio-cultural indicators of changed risky sexual behaviour in the military.
- iv) Factors that promote HIV and AIDS prevention and control in the military.
- v) The role of military leadership at all levels in the prevention and control of HIV and AIDS in the military.
- vi) The role of religion in the prevention and control of HIV and AIDS in the military.

7.3 Research Instruments Questionnaires (Appendix III)

This questionnaire seeks to gather information on the impact of voluntary counselling and testing in the military as a tool for behaviour change in the control and prevention of HIV and AIDS. Please respond to these questions honestly and all the information given will be treated with utmost confidence.

1. Please indicate your sex
 - (a) Male
 - (b) Female.

2. How old are you?
 - (a) 18 – 30 years
 - (b) 30 – 40 years
 - (c) 41 years and above

3. Are you married?
 - (a) Never married
 - (b) Steady partner not living together
 - (c) Steady partner living together
 - (d) Married monogamous
 - (e) Married polygamous
 - (f) Widowed
 - (g) Separated/ divorced

4. If yes, is your spouse living with you in the same barracks?
 - (a) Yes

- (b) No
5. What is your occupation?
- (a) Soldier
 - (b) Officer
 - (c) Spouse
 - (d) Child
 - (e) Civilian worker
6. What is your level of education?
- (a) None
 - (b) Primary
 - (c) Secondary
 - (d) Post-secondary
7. Have you sought VCT services in last 6 months?
- (a) Yes
 - (b) No
8. If yes, why?
- (a) Planning to get married
 - (b) Planning to get pregnant
 - (c) Client risk behaviour
 - (d) Partners risk behaviour
 - (e) Feeling unwell
 - (f) UN mission
9. Have you or your spouse sought PMCT services during last / current pregnancy?

- (a) Yes
 - (b) No
10. If no, explain why.
11. Are you currently or recently in sexual relationship?
- (a) Yes
 - (b) No
12. If yes, is it?
- (a) Heterosexual
 - (b) Homosexual
13. About how many people have you had sex with in past six months or so?
- (a) Never
 - (b) One
 - (c) More than two
14. When are you likely to engage in risky sexual behaviour?
- (a) Under influence of drugs and/ or alcohol
 - (b) Away from barracks on attachments
 - (c) Away on UN missions
 - (d) Within the barracks
15. Have you used condoms in the last six months?
- (a) Never
 - (b) Sometimes
 - (c) Always
 - (d) No sex

- (e) Have sex with only one faithful steady partner
16. Do you know your partner HIV status? Yes/No
17. Have you had any risky sexual behaviour after VCT or PMCT counselling and knowing your status?
- (a) Yes
- (b) No
18. Have you ever traded sex for money?
19. Why is it hard to use condoms? Explain.....
20. What do you think is the riskiest thing you did in last 6 months that placed you at risk of getting HIV? Explain.....
21. Why is PMCT counselling and testing necessary during pregnancy?
- (a) To protect the mother for HIV infection
- (b) To protect the child for HIV infection
- (c) To protect the father from HIV infection
22. Is it possible for a HIV positive mother to deliver HIV negative child?
- (a) Yes
- (b) No
23. Why is it important to know your HIV status? Explain_____
24. Do you know HIV can be transmitted through breast-feeding?
- (a) Yes
- (b) No
25. Is breastfeeding encouraged even when the mother is HIV positive?
- (a) Yes

(b) No

26. Have you been infected with any sexually transmitted diseases in last 6 months?

(a) Yes

(b) No

27. Did you attend antenatal clinic in your last or current pregnancy?

(a) Yes

(b) No

27. If yes did you receive PMCT counselling?

(a) Yes

(b) No

28. Were you tested for HIV after counselling?

(a) Yes

(b) No

29. Was your partner counselled too?

(a) Yes

(b) No

30. Was he tested for HIV after counselling?

(a) Yes

(b) No

31. Do you think there was adequate privacy and confidentiality?

(a) Yes

(b) No

32. How will you rate the counsellors' performance in your VCT/PMCT?

- (a) Very Good
- (b) Good
- (c) Fair
- (d) Poor

Yusuf Elmi
Kenya University
P.O. Box 3174
NAIROBI

Following your application for assistance to carry out research on
"Strategy Development and Testing as a Strategic Behaviour Change
Tool of the Kenyan and Global Militaries in the 21st Century", your
proposal was approved and you were authorized to undertake
your research in Kenya for a period ending

It is advised to report to the Commander, Kenya Army, Kenya Air
Force and the Kenya Navy before embarking on the research project.

During the course of the research, you are expected to submit your
research findings to the relevant military establishments.

YUSUF ELMI
SIR, P.O. BOX 3174



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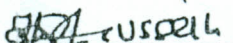
Mohamed Yussuf Elmi
Kenyatta University
P. O. Box 43844
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Voluntary Counselling and Testing as a strategic behaviour change tool in the prevention and control of HIV/AIDS in the Military*". I am pleased to inform you that you have been authorized to undertake research in selected Districts in Kenya for a period ending *31st December, 2010*.

You are advised to report to the **Commander, Kenya Army, Kenya Air Force and the Kenya Navy** before embarking on the research project.

On completion of the research, you are expected to submit **one hard copy and one soft copy** of the research report/thesis to our office.


SAID HUSSEIN
FOR: SECRETARY/CEO

Copy to:

The Commander
Kenya Army
Kenya Air Force
Kenya Navy



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811622/810901-19

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Fax: +254-2-811455

16th January, 2007

TO WHOM IT MAY CONCERN

RE: LT COL MOHAMMED YUSUF ELMI REG. NO. 184/15233/05

The above mentioned is registered as a PHD student in this department. He has successfully defended his thesis research proposal at the department and due for formal registration and fieldwork:

Any assistance accorded to him will be highly appreciated.

Thank you for your support.



R. L. P. OTEBA

CHAIRMAN, DEPT. OF PUBLIC HEALTH

4 RESEARCH AUTHORIZATION DOCUMENT (Appendix v)



OFFICE OF THE PRESIDENT

Telegrams: "DEFENCE", Nairobi
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Email: dod@arcc.Or.ke
When replying please quote

DEPARTMENT OF DEFENCE
ULINZI HOUSE
P.O Box 40668
NAIROBI

DOD/MED/300/221

06 march 2006

To whom it may concern

RE: RESEARCH ON PREVENTION AND CONTROL OF HIV AND AIDS IN THE
KENYA MILITARY: THE EFFECTS OF VOLUNTARY COUNSELLING AND
TESTING AS A STRATEGIC TOOL IN BEHAVIOUR CHANGE

MAJOR MOHAMED YUSUF ELMI- (186090) STUDENT REGISTRATION NO-
184/15233/05

1. In reference to request letters from Kenyatta University and the above mentioned officer who is a PhD student in Kenyatta University, authority is therefore granted for the officer to conduct the above mentioned research.
2. Your support and corporation will be highly appreciated.

Q.I. Ekessa
Brig (DR)
Chief of medical services

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