DETERMINANTS OF THE UPTAKE OF VOLUNTARY COUNSELLING AND TESTING SERVICES AMONG KENYAN YOUTH AGED 15 TO 35 YEARS IN DAGORETTI SOUTH CONSTITUENCY IN NAIROBI COUNTY, KENYA

BY

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DECLARATION

Declaration by the candidate

This thesis is my original work and has not been presented to any University for an award of a degree. No part of this thesis may be reproduced without the prior written permission of the author and/or Moi University.

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DEDICATION

This study is dedicated to Almighty God who, for all time and seasons, is my strength and whom I praise for His many blessings and unending favour. My wife Milcah Chesebe and my daughter's Marion any Maya for their love, inspiration, support and motivation, and whose drive for the best continues to inspire me. To my lovely mother, Mrs. Martha Kandie, I highly recognize the passion with which you educated and inspired me to aim for the best.

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ABSTRACT

Background: Voluntary Counselling and Testing (VCT) services play a crucial role in the management and prevention of the spread of HIV. Despite this important role, its uptake remains low in various parts of the Country, including Dagoretti South Constituency, located in Nairobi City County. The limited information about the determinants of uptake of VCT services in Dagoretti South Constituency prompted the need to conduct a study to document the underlying factors influencing uptake of VCT services among the youths aged 15-35 years.

Objective: To assess the uptake of VCT services, describe the socio-demographic characteristics, determine psychological factors that affect the perception and use of HIV counseling and testing services among youths aged 15-35 years attending health facilities in Dagoretti South Constituency.

Methods: A descriptive cross-sectional study design was used involving 329 respondents were involved in this study. Mult-stage sampling procedure was used to select both the facilities and individual participants. Data was collected using interview - administered questionnaires. Descriptive data were analyzed using measures of central tendency and dispersion. Chi -square to assess the association between exposure and uptake of HIV testing services with p-value < 0.05 being considered significant.

Results: At least 216 (67.3%) had utilized VCT services. Age (χ^2=12.166; p=0.007), gender (χ^2=6.447; p=0.011), marital status (χ^2=4.901; p=0.027), social life influences HIV testing decisions (χ^2=5.141; p=0.047), awareness of any VCT Centre nearby (χ^2=5.570; p=0.018), were significantly associated with utilization of VCT services.

Conclusion: The findings revealed high VCT uptake driven by accessibility, service quality, and social support

Recommendations: The study recommends that both male and female youths aged 15-35 years should be encouraged through strategic campaigns to undertake VCT test. Both local and national Government should work hand-in-hand with other non-state actors dealing with HIV and HTC to continuously train VCT Counsellors and healthcare providers to enhance their knowledge on HTC. Families and peers should be encouraged to motivate each other to undertake VCT services.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
CDC	Centre's for Disease Control and Prevention
ECDC	European Centre for Disease Prevention and Control
HIV	Human Immunodeficiency Virus
HTC	HIV Testing & Counseling
IREC	Institutional Research Ethics Committee
MOH	Ministry of Health
NACC	National Aids Control Council
NASCOP	National AIDS and STI Control Programme
NGO	Non-Governmental Organizations
SPSS	Statistical Package of Social Sciences
STD	Standard Deviation
UK	United Kingdom
UNAIDS	Joint United Nations Program on HIV/AIDS
US	United States
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

DEFINITION OF TERMS

Socio-demographic factors: These are characteristics of individuals that can influence their behaviors and attitude towards uptake of VCT services.

VCT facility-related factors: These refer to the characteristics, including the location, accessibility, availability of services, quality of services and personal working in the facilities that can influence the uptake of VCT services.

Quality of counselling: Refers to the efficiency and effectiveness of counselling services offered at a VCT facility that can influence the satisfaction and use of such facilities in future.

Social and psychological factors: These refer to the social and mental dynamics of an individual that can influence the perception and utilization of VCT services.

Uptake of VCT services: These refer to the utilization of VCT services without any form of coercion or intimidation to utilize them

Stigma: The shame that is associated with positive outcomes of an HIV test from society as well as at an individual level.

Age: The number of years a person has lived, impacting their behaviors and perception of risks.

Gender: The state of being male or female that can influence access to and utilization of health services, including VCT.

Attitudes towards HIV VCT: Personal feelings and dispositions towards HIV/AIDS and utilization of VCT services. The feelings can either be positive or negative.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

In this chapter, the study presents the background to the study, statement of the problem, research questions, study objectives, justification of the study and significance of the proposed study. It will also present the study limitations and delimitations and assumptions made.

1.2 Background:

The Voluntary counselling and testing (VCT) services remain the tool towards successful management and prevention of the spread of HIV. The VCT services provides an opportunity for individuals to know their HIV status in a conducive environment where they can also be advised on the way forward based on the outcomes of the test. According to the National Guidelines for HIV Testing and Counselling in Kenya released in 2010, it is important to provide counselling services prior to the test (pre-test) and after the test (post-test) to those interested to undertake HIV test (individuals, a couple or a group). The pre-test should provide basic information on HIV and everyone should be accorded time to ask questions and must give their consent to undertake HIV test. Other information that should be provided during this session include the testing process, benefits of undertaking the test, importance of disclosing outcomes to sexual partner(s) and HIV support and treatment in case of positive outcomes. The post-test session should provide counselling based on the outcomes to the patient, including risk reduction, emotional support and other follow-up services among others (National AIDS and STI Control Programme & Ministry of Public Health and Sanitation, 2010). The counselling services received after the test will facilitate individuals to understand their status and what needs to be done to minimize exposure

and seek appropriate care and treatment. According to the UNAIDS (2020), the VCT services help in reducing stigma related challenges while helping individuals lead a healthier life with the disease.

The VCT services provide an opportunity for early detection of HIV before medication can be initiated. This significantly reduces the HIV viral load among individuals affected as well as the chances of transmitting the virus to other individuals unknowingly (WHO, 2023). The services also enhance access to medical care and treatments and any other support services that may be required by the affected individuals thus improving their quality of life. The facilitation of access to VCT services remains one of the key contributors towards the fight against HIV/AIDS across the globe.

The uptake of VCT services vary from country to country due to various reasons ranging from individual perspectives and perceptions to provision of relevant support from both local and national Government and other relevant stakeholders. Among the developed countries, the uptake of the VCT services has been considered a success. For instance, in the United States (US) the government has enhanced campaigns on the importance of VCT Centers for testing. The services have also been integrated with the primary healthcare services that have significantly improved the testing rates among citizens. The increased testing rates have contributed to the reduced rates of the spread of the virus (CDC, 2022). In Germany, the stigma related challenges with testing have been countered with confidential testing, boosting uptake of VCT services in the country (European Centre for Disease Prevention and Control, 2020). The introduction of Community-based VCT services and the creation of a conducive environment for the Non -Governmental Organizations (NGOs) to provide VCT services has boosted

the uptake of VCT services in Australia (Australian Department of Health, 2020). All these developed countries have demonstrated that having the right strategies and promoting the work of NGOs by providing a conducive environment can increase the uptake of VCT services, a key element in combating the spread and management of HIV/AIDS.

The uptake of VCT services among Africa countries continues to improve based on the reports and findings from various organizations and research. The Non- Governmental Organizations (NGOs), Community Based Organizations (CBOs,) Faith Based Organizations (FBOs) together with public and private health facilities are in the front line in provision of VCT services in the continent among other players. According to the South African National AIDS Council, (2017), the enhancement of the creation of awareness on the importance of knowing one's status and the introduction of mobile testing have contributed to improved uptake of VCT services. The implementation of community-driven initiatives on the importance of knowing one's status has boosted the uptake of VCT services in Uganda (Uganda AIDS Commission, 2018). These efforts are indicative that the uptake of VCT services in the continent can be increased by putting in place the right policies and working hand in hand with the NGOs and other organizations.

In Kenya, a notable success has been registered in the past decade on the uptake of VCT services. The study conducted by (Cheruiyot et al., (2019), revealed that the uptake of VCT services among university students aged between 18 to 24 years stood at forty five percent. The findings were arrived at through a survey and review of the available data at the Jomo Kenyatta University of Agriculture and Technology (JKUAT) Hospital VCT Centre for the period 2010 - 2016, making the outcomes generalizable. This was

an increase from the previous thirty-eight percent reported in 2014 on a similar university setting (Mwangi et al., 2014). This has been realized through the introduction of various initiatives aimed at encouraging individuals to visit VCT facilities for testing. Such initiatives include enhancement of outreach programs, integration of VCT services at the local health centers and providing a conducive environment for the (NGOs), (FBOs) and other organizations to facilitate access to VCT services. These initiatives have increased uptake of VCT services in the country (NACC, 2020). Whereas there is an improvement regarding uptake of VCT services in the country, stigma, culture and inadequate resources amongst other factors continue to influence the uptake of VCT services (Wairimu, 2020).

In Nairobi County, Muhia, (2023) noted that approximately eleven percent of the residents were still ignorant of the VCT services and their availability. These respondents were drawn from the Kawangware informal settlements in Dagoretti South. From the same study, it was reported that over seventy four percent of the respondents did not use VCT services. This is indicative that there is a need to understand why there exists low uptake of VCT services in Dagoretti South Constituency in Nairobi City County. Identifying the obstacles in the uptake of VCT services will be key towards the fight against the spread and management of HIV/AIDS.

Several studies have been conducted to identify factors influencing uptake of VCT services in various countries across the globe. For instance, the study conducted by Abdullah and Mark, (2018) in Saudi Arabia revealed that stigmatization, limited knowledge on availability of VCT services and fear of positive outcomes were the key factors influencing uptake of VCT services. In China, Lin et al., (2022) identified age, ethnicity, area of residence, level of income and increased understanding of HIV as key

factors influencing utilization of VCT services. The study conducted by Djibuti et al., (2015) in Georgia revealed that marital status, stigmatization, inadequate knowledge and peer pressure were the key factors influencing utilization of VCT services.

The studies conducted among African countries have identified various factors influencing uptake of VCT services in the continent. Among the factors identified include stigma, the lack of cure for HIV/AIDS, lack of awareness, education, gender, attitude towards HIV, marital status, poverty, age and involvement in sexual intercourse (Apanga et al., (2015), Teklehaimanot et al., (2016), Derebew et al., (2023), and Abdalla & Abusalih, (2021)). From these studies, a lot has been done by the governments in association with other collaboration with stakeholders. More however still needs to be done to increase the uptake of VCT services and hence facilitate the fight and management of HIV/AIDS.

Other studies conducted in East Africa have also identified various factors that influence the uptake of VCT services. The critical factors identified include fear of the outcomes, knowledge and attitude towards the facilities, level of education, age, stigmatization, involvement in sexual activities, distance and location of VCT facilities, privacy in the facility and confidentiality of outcomes among the counselors (Mlughu et al., (2020) and Sanga et al., (2015)).

In Kenya, studies conducted identified stigma, social relationships, confidentiality of the outcomes, access to VCT facilities, time taken to test and receive counselling, fear when seen at VCT Centers, age, marital status and counsellor's characteristics (Muiru, (2014), Mwangi et al., (2014) and Cheruiyot, (2022)). In Dagoretti South Constituency , the study undertaken by Muhia, (2023) in Kawangware Informal Settlements identified the time taken queuing at the VCT Centers, lack of awareness on VCT

services, attitude towards VCT services, Counsellor's perceptions and confidentiality of the outcomes as the main factors influencing uptake of VCT services. There is a need to come up with strategies aimed at addressing these factors through community sensitization, improvement of accessibility and establishment of more VCT Centers, to increase access to testing services. This will contribute towards success in treatment and management of HIV/AIDS in the country.

The data from the Ministry of Health (MOH), indicate that, over 1.3 million Kenyans lived with HIV by the end of 2017, Nairobi City County accounted for the majority of these cases with approximately 182,856 persons living with HIV, followed by Homa Bay County with over 128,000 persons. From the same report, out of the 182,856 cases reported in Nairobi, the youths aged 15-24 years were approximately 24,918 (13.6%) by the end of the year 2017. Furthermore, the new cases reported alone in this age bracket (15-24 years) in the year 2017 were 2,587 (Ministry of Health, 2018). The prevalence of HIV in Nairobi county was 6.1% (Ngunu-Gituathi, 2018). As of 2024, those who were within the age bracket of 15-24 years are currently aged between 21-30 years. The study conducted by Omanga et al., (2023) in Kenya revealed that the youths were actively involved in sexual activities in the Country for various reasons, with majority of them getting involved in risky sexual behaviors. This places them at higher position in getting infected with HIV. According to the article written by Gathura (2018) on the Standard Newspaper, the key hotspots with the highest number of individuals living with HIV in Nairobi were Embakasi with about 6% followed by Dagoretti with 5.6% among the cases reported in Nairobi. Mwaniki et al., (2023) recommended the need to develop tailored strategies aimed at averting the high prevalence of HIV among the young population in Nairobi County.

In conclusion, the identification of the key determinants of the uptake of VCT services is important for the development of interventional strategies to combat the spread of HIV/AIDS in Dagoretti South Constituency. The availability of limited information on determinants of uptake of VCT services in Dagoretti South Constituency provides an opportunity for this study to avail context specific determinants that will aid the fight and management of HIV in the Constituency that can be scaled up to other parts of the Country. The improvement of uptake of VCT services in this Constituency will contribute towards the global goals of reducing the transmission of disease.

1.3 Problem statement

Voluntary Counselling and Testing services play a crucial role in the management and prevention of the spread of HIV. Despite this important role played by VCT services, its uptake remains low in various parts of the Country, including Dagoretti South Constituency, located in Nairobi County. The study conducted by Muhia (2023) in Kawangware, a location within the constituency revealed that approximately eleven percent of the respondents did not know that VCT services existed while over seventy-four percent did not utilize the services provided at VCT Centers across the Constituency. This necessitates the need to identify empirical evidence on the determinants of uptake of VCT services in Dagoretti South Constituency.

According to the MOH, 13.6% of the persons living with HIV in Nairobi County are youth aged between 14 to 24. Studies have further indicated that the young people aged 15-35 years are unaware or reluctant to visit VCT for testing due to various reasons (Salazar-Austin et al., (2017) and Anaba et al., (2022)).

1.4 Justification

The effective control and management of HIV/AIDS rely on the availability of information to help in the development of the right counter strategies aimed at addressing the limitations to the fight against the disease. Whereas the national Government, County Government and other relevant stakeholders have developed various initiatives and programs aimed at improving the uptake of VCT services, significant challenges continue to persist, especially among the young people aged 15-35 years. Therefore, it is important to identify the key determinants influencing uptake of VCT services among the youth in Dagoretti South Constituency. The finding will help in the development of tailored interventional strategies to improve the uptake of VCT services which will contribute positively towards the fight against HIV/AIDS in Dagoretti South Constituency?

1.5 Research Question

What are the factors influencing uptake of VCT services among youths aged 15-35 years in Dagoretti South Constituency?

1.6 Objectives of the Study

1.6.1 Broad Objective

To describe the determinants of VCT services utilization among youth aged 15-35 years in Dagoretti South Constituency in Nairobi County.

1.6.2 Specific Objectives

i. To describe the socio-demographic characteristics that influence the utilization of Voluntary Counseling and Testing (VCT) services among youths aged 15-35 years in Dagoretti South Constituency.

ii. To determine the uptake of VCT services among youths aged 15-35 years in Dagoretti South Constituency.

iii. To determine the social and psychological factors that affect the perception and use of HIV Counseling and Testing services at VCT sites among youths aged 15-35 years in Dagoretti South Constituency.

1.7 Significance of the Study

The study is being conducted to investigate the determinants of VCT services utilization among youth aged 15-35 years in Dagoretti South Constituency in Nairobi County. The findings of this study will benefit the County Government of Nairobi City to develop specific strategies aimed at addressing the factors that influence the uptake of VCT services. It will also guide in resource allocation to combat the transmission of HIV/AIDS. The study findings will be utilized by the National Government to guide in resource allocation and in policy development aimed at managing HIV/AIDS. The National Government will also use the findings to guide areas of priority in the development of mitigation measures. The study findings will be used by the NGOs, FBOs, CBOs and other stakeholders dealing with HIV/AIDS to determine specific actions to be undertaken to counter specific factors influencing uptake of VCT services. The study findings will also be used by global bodies and agencies such as the UNAIDS and WHO in development of policies and materials that will contribute to the achievement of the global goals on matters HIV/AIDS. The findings will also be used by researches to guide future similar studies to guide the management and prevention of the transmission of HIV/AIDS.

1.8 Limitations and Delimitations

1.8.1 Limitations

The transient nature of the youths aged 15-35 years in Dagoretti South Constituency will limit the generalization of the findings of this study to other regions. The study will utilize self-reporting questionnaires to collect data. This may lead to subjectivity in the responses since respondents may exaggerate certain perspectives on the uptake of VCT services making the entire results unreliable. The sensitivity of the study on HIV and the associated stigma may result in reluctance to provide accurate responses among the selected respondents influencing the accuracy of the findings. The research design adopted was cross-sectional research design that provides information at a single point in time. This limits the long-term observation of the trends in uptake of VCT services and in making conclusive decisions about the causal effects.

1.8.2 Delimitations

The study is delimited to Dagoretti South Constituency in Nairobi County. This provides an opportunity for closer examination of the local context of the constituency where findings will be more applicable in this region and may be scaled up to other regions. The chosen age bracket of 15-35 years is more relevant because of their active involvement in sexual activities and thus the findings will be insightful. The data will be collected using questionnaires in a survey to ensure that a lot is achieved with limited resources and timeframe. As such the findings of this study will be based on the data collected using this survey method and other methods will not be used.

1.9 Assumptions of the Study

This study assumes that the selected participants will provide their honest opinions and reliable data on the determinants of uptake of VCT services, the sensitivity of the matter

notwithstanding. The study assumes that the selected participants will be a representative of the entire population of the youth within the proposed category of 15-35 years to allow for generalization of the outcomes. The study assumes that the study variables are measurable through a survey. The study also assumes that the findings can be generalize to other regions within the Country.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter discusses review of literature related to study variables and how they influence the uptake of VCT services. It presents the history of HIV/AIDS Counselling and Testing, the socio-demographic characteristics that influence the utilization of Voluntary Counseling and Testing (VCT) services, the effectiveness of VCT facilities in addressing HIV Counseling and Testing needs, and the social and psychological factors that affect the perception and use of HIV Counseling and Testing services at VCT sites. The chapter also summarized the gaps from the reviewed literature which the proposed study seeks to fill.

2.2 Theoretical framework

2.2.1 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) was advanced by Ajzen in 1985 with an intention to explain human behaviors that can be managed through self-control. According to Sansom (2021), the theory focuses on explaining behaviors of individuals that are influenced by their intentions. These intentions are further influenced by attitudes, subjective norms and perceived behavioral control. Whereas the individual intentions influence behaviors, there exists external factors that can alter the behaviors of individuals irrespective of the intentions. This is based on how an individual controls a certain behavior.

This theory has been used to explain certain health behaviors in human beings including drugs and substance abuse, smoking, alcohol consumption and utilization of health services, making it suitable for this study whose object is to examine the determinants

of uptake of VCT services among the youths aged 15-35 years (LaMorte, 2022). The TPB asserts that behaviors are determined by individual intentions and the ability to control those intentions based on the expected outcomes.

According to Brookes (2023), TPB is anchored on six principles including attitude, behavioral intention, subjective norms, social norms, perceived power and perceived behavioral control. For instance, an individual engaging in sexual activities is aware that he/she can contract HIV/AIDS or become a parent. In the context of the current study, the uptake of VCT services is informed by the outcomes which can either be positive or negative. This indicates that the attitude towards these outcomes can influence the uptake of VCT services. The behavioral intention covers the motivating factors that influences a certain behavior where the stronger the intention to get involved in a certain behavior, the higher the chances of performing the behavior. The behavioral intention will aid the understanding of how the effectiveness of VCT facilities contributes towards addressing the HIV testing and counselling needs. The subjective norms revolve around whether the people in your environment are supportive of the behavior. The social norms bring into perspective the culture where engagement in certain behaviors is determined the certain community codes. The subjective and social norms will help in explaining the social and psychological factors influencing the uptake of VCT services. The perceived powers involve the understanding and knowledge of a certain behavior that influences involvement in it. The perceived behavioral control refers to the individual views on how easy it is to get involved in a certain behavior. These two principles will guide the understanding of how socio-demographic factors influences uptake of VCT services.

The theory provides a structural framework that will guide the understanding of the various factors that influences uptake of VCT services in Dagoretti South Constituency. The researchers including, Abamecha et al., (2013), Muhia (2023) and Anaba et al., (2022) among others have successfully utilized the Theory of Planned Behavior to explain various perspectives influencing utilization of VCT services. The present study focusing on socio-demographic characteristics, effectiveness of VCT facilities, social and psychological factors influencing uptake of VCT services makes this theory appropriate for this study.

2.2.2 Health Belief Model (HBM)

The Health Belief Model (HBC) will be utilized to explain the key factors influencing uptake of VCT services among the youths in Dagoretti South Constituency. The model focuses on individual beliefs regarding their health status that can alter their health-related decisions. The HBM model is anchored on six principles (Rosenstock et al., 1994). The perceived susceptibility principle avers that young people are at risk of getting infected with HIV. The principle of perceived severity revolves around the belief that HIV/AIDS has serious consequences among the victims. The principle of perceived benefits advances the idea of early detection through utilization of the VCT services to facilitate detection, management and prevention of the disease. The principle of the perceived barriers raises the challenges faced in an attempt to access VCT services including distance, confidentiality, stigma and fear of the outcomes. The principle of cues to action focuses on what motivates the youths to utilize VCT services and know their status, including sensitization, peer pressure and media campaigns among others. Finally, the principle of self-efficacy revolves around confidence in accessing and utilizing VCT services for their own good.

The HBC framework is suitable for this study and will be helpful in understanding how the various beliefs influence uptake of VCT services among the youths. It will identify key areas that will require action to be taken to avert the consequences such as stigma that comes with being seen in a VCT facility. The HBM framework has been successfully utilized by various researchers including Ofori, (2019), Mwangi et al., (2014), Ayosanmi et al., (2020), and Jozani et al., (2019) in explaining various beliefs regarding HIV and utilization of VCT services.

2.3 HIV/AIDS Counseling and Testing

HIV counseling and testing consists of three stages which are pre-test Counseling, post-test counseling and follow- up. The pre-test session introduces basic HIV information to the client or patients wishing to receive a HIV test, and may be provided to an individual, a couple, or a group. Group information is not a substitute for individual or couples Counseling. However, whether attending as an individual, a couple, or a group, all persons should be given time to ask questions and receive personalized information and should give consent to receive HIV testing (NASCOP, 2008).

Globally, although the uptake of VCT services for HIV/AIDS has remained below average, its significance is widely acknowledged (UNAIDS, 2022). It is an effective way of enhancing the knowledge of people about HIV and measures that can be taken to prevent the transmission of HIV. Particularly, people who test positive for HIV will know when to start treatment, as well as how to reduce the risk of co-infections and prevent mortality from AIDS. Studies have established that the transmission of HIV from an infected person to an uninfected person can be reduced by over ninety five percent if early detection is done and treatment initiated immediately (Cohen et al., 2011). Individuals who test negative will have the opportunity to protect themselves

through evidence-based preventive measures such as safe sex, usage of condoms, and being faithful to one sexual partner. Most economic evaluation studies have further reported that VCT is cost-effective and can lead to a positive sexual behavioral change in HIV high-prevalence settings and lowering of HIV/AIDS rates (Apanga et al., 2015).

In the United States, HIV/AIDS counseling and testing services are widely available, yet utilization rates remain uneven, particularly among vulnerable populations such as men who have sex with men (MSM), racial and ethnic minorities, and individuals in rural areas. According to a 2020 study conducted at the University of California, Los Angeles (UCLA), nearly 30% of MSM had never been tested for HIV, despite being at high risk (Johnson et al., 2020). The study emphasized that stigma, fear of discrimination, and concerns about privacy were significant barriers to testing. Furthermore, racial minorities, particularly African Americans and Hispanics, were less likely to seek HIV testing due to a combination of cultural barriers, mistrust of healthcare systems, and socioeconomic factors (Johnson et al., 2020). The expansion of Community-based testing programs, integrated HIV screening in routine healthcare, and targeted public health campaigns have been critical strategies in addressing these disparities. However, healthcare access remains a persistent issue, particularly in rural areas, where healthcare infrastructure is limited. In Europe, the uptake of VCT services vary from Country to Country. Countries such as the United Kingdom, France and Germany have integrated VCT to their healthcare facilities increasing uptake of VCT services. This has also helped those who feared visiting isolated VCT Centers because of the stigma that comes with the positive outcomes (Magno et al., 2022). The European Centre for Disease Prevention and Control (ECDC) indicated in their annual report that the uptake of VCT services has significantly increased on an annual basis. This has

been associated with Government initiatives that encourage members of the general public to undertake HIV tests and know their status (USAID, 2019).

A study conducted at St. Michael's Hospital in Toronto found that indigenous people, who have a disproportionately high prevalence of HIV, often face barriers to HIV testing due to cultural stigma and geographical isolation (Simpson et al., 2021). The study revealed that more than 40% of indigenous respondents reported never having been tested for HIV, with most citing a lack of culturally appropriate services and fear of discrimination. Moreover, newcomers to Canada, particularly from countries with high HIV prevalence, may also face language barriers and limited awareness about the availability of HIV testing services (Simpson et al., 2021). In Mexico City, a study found out that although more than 70% of individuals had heard of HIV testing services, only 50% had ever been tested for HIV (Lopez et al., 2020). The study identified factors such as lack of awareness, fear of a positive diagnosis, and cultural stigma around HIV as significant barriers to utilization. Additionally, individuals living in rural areas, where healthcare infrastructure is limited, were less likely to access testing services. Mexico's Government has made strides in increasing access to HIV testing services by offering free services at public health Centers and implementing educational campaigns to reduce stigma. However, further work is needed to overcome the deep-rooted cultural and social barriers that continue to prevent people from seeking testing.

A study conducted in Tokyo, Japan, in 2020 revealed that while HIV awareness was high, many individuals were reluctant to undergo testing due to concerns about confidentiality and a strong cultural stigma surrounding HIV (Tanaka et al., 2020). The research found that 45% of respondents had never been tested for HIV, and among those who had, only 20% had been tested within the past year (Tanaka et al., 2020). In

China, a study conducted in Shanghai found that approximately 60% of people living with HIV (PLHIV) had never been tested, largely due to social stigma and a lack of awareness about testing opportunities (Zhang et al., 2021). Efforts to address these barriers have included expanding HIV education and offering free, anonymous testing services, particularly in major urban centers. Similarly, in Malaysia, the government has launched national awareness campaigns to promote HIV testing, but challenges remain in reaching rural populations and certain high-risk groups, such as migrant workers and MSM.

The uptake of VCT services among African countries has been on the rise. Most countries in sub-Saharan Africa have increased their investment in the establishment of VCT facilities. This has been realized through the support from the international community, donors and other well-wishers. The widespread campaigns in South Africa, Uganda and Nigeria have increased uptake of VCT services due to increased knowledge and awareness among the general public (UNAIDS, 2022). Notably, some regions within these countries (South Africa, Uganda and Nigeria) are lagging due to unequitable sharing of national resources by the national governments. A study conducted in Johannesburg found that 70% of adults had been tested for HIV, but uptake was still lower in rural areas and among men (Moyo et al., 2021). The study identified fear of a positive result, stigma, and gender-related barriers as the primary factors influencing testing behavior. Similarly, in Kenya, a study conducted in Nairobi found that women were more likely to access HIV testing than men, with the latter group often avoiding testing due to cultural expectations of masculinity and fear of appearing weak (Mutua et al., 2020). In response to these challenges, South Africa has implemented community-based HIV testing initiatives and mobile testing units to increase accessibility, especially in remote areas. The use of community health workers

and peer educators has also proven effective in reducing stigma and encouraging individuals to seek testing. A study conducted in Lagos in 2020 revealed that while the availability of HIV testing services had increased, stigma and gender-related challenges still deterred many women from seeking HIV testing (Okeke et al., 2020). The study also highlighted that individuals living in rural areas were less likely to access HIV testing services due to transportation barriers, lack of awareness, and cultural beliefs. The Nigerian government has responded with targeted outreach programs, such as home-based HIV testing and counseling services, which have proven effective in increasing testing rates in underserved areas (Okeke et al., 2020). Nevertheless, significant efforts are still needed to overcome the deep-seated stigma and gender inequalities that influence HIV testing behaviors.

In Kenya, the uptake of VCT services has been on the rise. This has been achieved through the efforts of Non-Governmental Organizations s, Faith based Organizations, Community based Organization's and other stakeholders who are working in close collaboration with the National and County Governments (NASCOP, 2020) and (Kenya National Bureau of Statistics, 2015). Several VCT centers have been established within the Country in an effort to increase the uptake of VCT services. Various campaign strategies have been initiated to increase awareness on the importance of knowing one's status. The increase in the uptake has been witnessed both in the rural and urban areas (Kenya National Bureau of Statistics, 2015). In Nairobi City County, the uptake of VCT services is higher compared to other regions in the Country. This has been accelerated by the availability of better healthcare services that are easily accessible. The city has numerous VCT facilities that provide free services (Kenya National Bureau of Statistics, 2015).

2.4 Socio-demographic Characteristics Influencing the Utilization of VCT services

Researchers have investigated the socio-demographic characteristics that influence the utilization of VCT services across the globe. Various characteristics have been highlighted as key factors influencing the utilization of VCT services. For instance, Anaba et al. (2022) reported that age, gender and level of education have an influence in the uptake of VCT services. The study noted that individuals who had gone beyond secondary level of education had higher chances of seeking VCT services. Equally, the youths had higher chances of visiting VCT Centers compared with the older generation. On matters of gender, the study established that women sought VCT services more than their male counterparts. However, the prenatal and postnatal clinics contributed to more women seeking VCT services compared to their male counterparts. This is an indication that the age, level of education and gender influences the uptake of VCT services.

A study conducted in New York City in 2020 found that young adults aged 18-24 were less likely to seek HIV testing compared to older adults, with only 45% of young adults reporting having been tested for HIV within the last year (Nguyen et al., 2020). The study attributed this trend to a lack of awareness, perceived low risk, and fear of a positive result, particularly among young men. Gender also played a role, as women were more likely to utilize VCT services than men, reflecting general healthcare-seeking behavior patterns (Nguyen et al., 2020). Furthermore, race and ethnicity were significant factors, with African American and Latino populations demonstrating lower HIV testing rates than white populations, often due to mistrust of the healthcare system and cultural stigma surrounding HIV testing. The results of this study underscore the importance of culturally tailored interventions to increase VCT uptake among these groups.

In Canada, socio-demographic factors such as income and education level have been shown to influence the use of VCT services. A 2021 study conducted in Toronto revealed that individuals with lower income levels and those who had completed only high school were less likely to utilize HIV testing services compared to their higher-income and more educated counterparts (Smith et al., 2021). The study indicated that these groups often face greater barriers to accessing healthcare services due to financial constraints, limited knowledge of HIV, and logistical challenges such as transportation and work schedules (Smith et al., 2021). The research also noted that people living in rural areas, where healthcare infrastructure is often limited, were less likely to access VCT services compared to those in urban Centers. A study conducted at a hospital in London in 2019 found that men who have sex with men (MSM) and individuals from Black, Asian, and Minority Ethnic (BAME) backgrounds had lower utilization rates of VCT services compared to the general population (Williams et al., 2019). The study attributed these disparities to cultural and social stigma, particularly among immigrant communities, as well as concerns about confidentiality and the fear of being labeled as "high-risk." The study found that MSM were less likely to access testing services if they were not in a stable sexual relationship or if they felt that their sexual practices would be judged by healthcare providers (Williams et al., 2019). This emphasizes the importance of targeting specific high-risk groups and reducing stigma through tailored outreach and educational campaigns. Additionally, individuals who identified as transgender were also shown to face significant barriers to accessing VCT services, largely due to a lack of trained healthcare providers who understand their unique needs.

A study conducted in Paris by Lefebvre et al. (2020) found that younger individuals, particularly those aged 18-24, were less likely to seek HIV testing than older adults. This is often due to the misconception that HIV is no longer a significant health threat,

especially with advances in HIV treatment. Additionally, individuals with lower educational attainment were less likely to seek VCT services, as they had lower levels of awareness regarding the importance of early HIV testing and treatment (Lefebvre et al., 2020). Geographic disparities also existed, with individuals in rural areas having less access to healthcare facilities offering HIV testing, which in turn influenced their likelihood of utilizing VCT services. A study in Dhaka found that women, particularly married women, were less likely to access HIV testing services compared to their male counterparts (Ahmed et al., 2019). The study revealed that social and cultural norms in Bangladesh discourage women from seeking HIV testing due to concerns about the potential social stigma associated with HIV and the perception that HIV testing is associated with infidelity (Ahmed et al., 2019). Age also played a role, with younger individuals being more likely to seek HIV testing, especially when HIV awareness programs targeted them in schools and universities. Marital status was another significant factor, as married individuals, particularly women, often did not perceive the need for HIV testing due to the belief that their spouses were unlikely to have been exposed to HIV.

Apanga et al. (2015) found that stigmatization is associated with visits to VCT Centers. Culture, traditions and limited information regarding services offered at VCT Centers and their importance influenced uptake of VCT services. The researchers further noted that the young people residing in rural settings were less likely to seek VCT services compared to those from urban settings. This category of youths feared the outcomes of such visits and how society will accommodate them since they will be seen as immoral people. In another study, Teklehaimanot et al. (2016) established that those with limited financial resources rarely sought VCT services because of the cost that may be incurred

travelling to VCT Centers when none could be accessed by walking. The availability of VCT Centers influenced access to VCT services in rural areas.

A study conducted in 2021 in Lagos, Nigeria, found that women were more likely to utilize VCT services than men, but both genders faced significant barriers such as cultural stigma and a lack of education about the importance of HIV testing (Okeke et al., 2021). The study revealed that educated individuals were more likely to seek HIV testing, suggesting that education is a crucial factor in improving VCT utilization (Okeke et al., 2021). Urban areas demonstrated higher rates of HIV testing compared to rural areas, where access to healthcare services and HIV education programs was more limited. Similarly, in Uganda, a 2020 study in Kampala found that individuals with higher education levels and those living in urban areas were more likely to utilize VCT services, while those from rural areas or with lower educational attainment faced greater barriers to accessing HIV testing (Ndyanabo et al., 2020).

In South Africa, the utilization of VCT services has been influenced by a variety of socio-demographic characteristics, including gender, socioeconomic status, and HIV-related stigma. A study conducted in Johannesburg in 2020 found that women were more likely to seek HIV testing compared to men, though stigma and fear of discrimination remained substantial barriers for both genders (Moyo et al., 2020). The study revealed that socioeconomic status was a significant factor, as individuals from higher-income backgrounds were more likely to access VCT services due to better access to healthcare and information. In contrast, individuals from low-income backgrounds, particularly those in informal settlements, faced significant barriers such as cost, transportation, and a lack of HIV-related education (Moyo et al., 2020). Furthermore, the study found that HIV-related stigma, particularly in rural areas, played

a crucial role in deterring people from seeking HIV testing services. This indicates the importance of addressing stigma and providing more accessible HIV testing services to reduce the socio-demographic disparities in VCT utilization in South Africa.

The study conducted by Mlughu et al. (2020) in Tanzania established that the age, gender and level of education had an impact on uptake of VCT services. The study further noted that young men utilized VCT services to a lesser extent compared to young women because of the stigmatization that will be experienced in case of positive results. The members of the society who were well educated utilized VCT services more than the less educated members. This was associated with an increased understanding of the importance of VCT services. These findings indicate that socio-economic factors influence the uptake of VCT services.

In Kenya, Muiru (2014) established that the age, marital status and level of education could be used to predict uptake of VCT services. The young and unmarried members of society were reported to be reluctant to visit VCT centers because of the fear of being discriminated against. Those with higher levels of education made frequent visits to VCT facilities compared to those with little education. This is an indication that the level of awareness influences the uptake of VCT services. There is therefore a need to increase sensitization on the importance of visiting VCT centers and knowing one's status for early treatment.

In Nairobi County, where the present study will be conducted, the study conducted by Muhia (2023) reported that the age, level of education and employment status had an impact on uptake of VCT services. The researcher further noted that the younger generation and those with higher level of education made frequent visits to VCT centers in the county compared with any other category of respondents. The study revealed that

the uptake of VCT services varies with age where the old utilize VCT services less compared to the young. Those who were in formal and informal employment were also reported to have frequent visits to VCT centers compared to those who were unemployed. This was associated with the availability of financial resources as well as health insurance packages provided by their employers.

2.5 The uptake of VCT services

The various dimensions of the effectiveness of VCT facilities in addressing HIV counselling and testing needs have been investigated across the globe by various researchers. The study conducted by Abdullah and Mark (2018) found that the uptake of VCT services was largely determined by their accessibility, the professionalism of the counsellors and quality of services offered and confidentiality of the test outcomes. The study noted that the provision of quality services by qualified professionals, confidentiality of the test outcomes and ease of access of VCT services increased uptake of VCT services. The findings indicate the need to ensure professionalism in VCT service provision that comes with confidentiality of information and establishment of more VCT facilities closer to the people to ease their access and utilization.

In the United States, the uptake of VCT services has been relatively high in urban centers but remains lower in rural areas. A study conducted in 2019 at the University of California, San Francisco, highlighted that approximately 70% of individuals in urban hospitals accepted HIV testing during routine health screenings (Hughes et al., 2019). However, in rural areas, the rate of testing was substantially lower, at around 45%, reflecting the challenges posed by stigma and limited access to healthcare (Hughes et al., 2019). Additionally, structural barriers such as limited healthcare facilities and a lack of awareness about VCT services contribute to these disparities.

Despite these challenges, the United States has made significant progress in integrating VCT into healthcare systems, with the Centers for Disease Control and Prevention (CDC) promoting HIV testing as part of routine healthcare (CDC, 2020). Germany, with its well-developed healthcare system, has shown a strong uptake of VCT services. According to a 2020 study in Berlin, 85% of individuals attending HIV testing clinics were tested for HIV after receiving pre-test counseling (Kaiser et al., 2020). The success of VCT services in Germany can be attributed to its robust public health infrastructure, widespread awareness campaigns, and the normalization of HIV testing within routine medical care. However, the study also noted a need to address the uptake of VCT among certain high-risk groups, including men who have sex with men (MSM) and migrants from high-prevalence regions, who may face cultural or social barriers to seeking care (Kaiser et al., 2020).

Similar studies have also been conducted in African continent on effectiveness of VCT facilities. For instance, Derebew et al., (2023) reported in their study that the availability of resources, professionalism of the counsellors/healthcare providers and sensitization programs put in place determines the uptake of VCT services. The study noted that by equipping VCT Centre's with adequate facilities, including well-trained staff on matters VCT, the younger generation are more likely to seek VCT services. The end-product will be an increase in uptake of VCT services which is a key input in ensuring success against the fight and management of HIV/AIDS. A 2018 study conducted in Manila found that only 40% of individuals in high-risk populations, such as commercial sex workers and MSM, were accessing VCT services (Garcia et al., 2018). This low uptake can be attributed to a combination of stigma surrounding HIV, a lack of confidentiality in healthcare settings, and limited access to services in rural areas. Despite these challenges, the Philippines has made strides in increasing awareness and access to VCT,

particularly in urban centers. The government's "HIV Testing Day" initiative has contributed to a modest increase in the national uptake of VCT services (Garcia et al., 2018).

In Thailand, the uptake of VCT services has been higher, particularly in regions with strong healthcare systems. A study in Bangkok reported that 72% of individuals attending HIV clinics accepted HIV testing after counseling, with uptake rates even higher among at-risk populations (Pimco et al., 2021). Thailand's strong healthcare infrastructure, government support for HIV awareness campaigns, and the integration of VCT services into routine healthcare have all contributed to this high uptake. However, stigma remains a barrier for certain vulnerable groups, such as MSM and transgender individuals, who may avoid seeking HIV testing due to fear of discrimination or social rejection (Pimco et al., 2021). A study in Kingston found that less than 50% of individuals in at-risk groups accessed VCT services, despite the availability of free testing in health facilities (McKenzie et al., 2019). The study highlighted the role of stigma, fear of positive diagnosis, and a lack of awareness as key barriers to VCT uptake. Although the Jamaican government has made efforts to integrate HIV testing into primary healthcare, the cultural stigma surrounding HIV/AIDS remains a significant challenge. Additionally, many individuals may not view HIV testing as a priority, particularly in rural areas where healthcare resources are limited (McKenzie et al., 2019).

In countries like Bangladesh and Bolivia, VCT uptake is also heavily influenced by cultural and socioeconomic factors. A 2019 study in Dhaka found that only 30% of individuals from high-risk groups, including intravenous drug users, accessed VCT services (Rahman et al., 2019). Similarly, a study in La Paz, Bolivia, showed that only

40% of individuals in high-risk populations sought VCT services (Hernandez et al., 2020). In both countries, stigma, limited healthcare resources, and a lack of education about HIV prevention and testing contribute to the low uptake of VCT services. Efforts to increase the accessibility and acceptability of VCT, including community-based testing and mobile health initiatives, are crucial to improving service uptake in these regions (Rahman et al., 2019; Hernandez et al., 2020). In another study, Sanga et al. (2015) established that the effectiveness of VCT facilities relies on ease of accessibility, professionalism in service delivery and the extent of involvement of the community. The researchers reported that the VCT facilities that were easily accessible received more people seeking VCT services. The quality of services offered also determined whether more visits to the facility will be made. This implies that the establishment of the VCT facilities should be done with adequate engagement of the community to ensure that it is fully utilized.

A study conducted in Uganda in 2020 found that 60% of individuals at risk of HIV sought testing at local health facilities, with uptake rates higher in urban areas compared to rural ones (Kalungi et al., 2020). In Zimbabwe, a 2021 study found that 68% of individuals in Harare attended VCT services, while uptake was much lower in rural areas, at 45% (Chikodzore et al., 2021). Factors such as poverty, stigma, and limited access to healthcare services hinder the widespread adoption of VCT in these countries. However, innovations such as home-based testing and peer education programs have been successful in increasing testing uptake in some regions (Kalungi et al., 2020; Chikodzore et al., 2021). A study in Johannesburg found that approximately 80% of individuals in high-risk groups sought VCT services (Moyo et al., 2019). Similarly, a study conducted in Dar es Salaam, Tanzania, reported an uptake of 75% among individuals attending HIV clinics (Mhando et al., 2020). These countries have

implemented strong national strategies to promote VCT, including integration into routine healthcare and widespread awareness campaigns. Nevertheless, issues such as stigma, particularly in rural areas, and limited resources remain significant barriers to wider uptake (Moyo et al., 2019; Mhando et al., 2020).

Studies conducted in the Kenyan context have also reported similar findings. For instance, Mwangi et al. (2014) noted that the effectiveness of the VCT facility is largely influenced by its accessibility to the public, the quality of services offered and the level of integration with other health services. The integration with other health services was noted to be impactful since no one will guess which services are being sought by individuals visiting the health facility. The challenges faced by the young population in accessing VCT services can be addressed through increasing accessibility, improving the quality of services offered at the facility and integrating the facility with other health services to ensure confidentiality.

In Nairobi County, Wairimu (2020) conducted a study to identify factors influencing effectiveness of VCT facilities. The study reported that confidentiality, ease of access and quality of services offered were the key factors that influence the effectiveness of the VCT facility. The availability of well-trained counsellors in a facility who understand the needs of the young people as well as their language in an urban setting influenced the uptake of VCT services. The establishment of VCT facilities should therefore be done by putting into consideration their ease of accessibility and ensuring availability of quality services and professionalism in service delivery to address challenges associated with confidentiality of the test results.

2.6 The Social and Psychological Factors that Affect the Perception and Use of HIV Counseling and Testing Services at VCT sites

The social and psychological factors that affect the perception and use of HIV counseling and testing services at VCT sites have been investigated by several researchers. For instance, at the global stage, Salazar-Austin et al. (2017) conducted a study and reported that stigmatization, fear of the test outcomes and peer influence had an impact on whether a person will seek VCT services. These factors influenced the youth from seeking VCT services, indicating the need to come up with strategies on creating awareness among the young generation on the importance of knowing their status through seeking VCT services.

A study conducted at the University of California, Los Angeles (UCLA), found that fear of social rejection and discrimination was one of the most significant barriers to HIV testing among high-risk groups, such as men who have sex with men (MSM) and African American communities (Johnson et al., 2019). The study revealed that nearly 40% of participants were reluctant to undergo HIV testing due to concerns about confidentiality and social stigma. This reflects broader societal views that often associate HIV with marginalization and risky behaviors. Furthermore, a lack of trust in healthcare providers, especially among racial and ethnic minorities, exacerbates this issue. Health professionals' ability to provide culturally competent care plays a pivotal role in increasing the perception of safety and acceptance at VCT sites (Johnson et al., 2019). Despite these barriers, public health campaigns and the integration of HIV testing into routine medical care have helped improve VCT uptake, particularly in urban areas with better access to healthcare.

A study conducted in 2020 in Rome found that many individuals, particularly in rural areas, feared testing due to potential social isolation and the shame associated with a positive diagnosis (Ricci et al., 2020). In this study, researchers noted that a significant proportion of participants were unwilling to seek HIV testing even in healthcare settings, citing the perceived social stigma attached to HIV. The study found that 25% of participants in rural Italy reported that they would only consider HIV testing in the presence of clear symptoms of HIV, indicating a lack of education and awareness about the benefits of early detection (Ricci et al., 2020). Furthermore, religious and cultural influences in Italy, where HIV testing is still perceived by some as taboo, exacerbate the fear and reluctance surrounding VCT services. In Latvia, a 2021 study found that social stigma was a significant factor in the low use of HIV testing services. The research, conducted in a hospital in Riga, revealed that nearly 30% of at-risk individuals, including intravenous drug users and MSM, avoided HIV testing due to fears of discrimination and isolation (Stalidzans et al., 2021). In contrast, Denmark reported much higher uptake rates, with a 2020 study showing that 80% of individuals who attended HIV clinics in Copenhagen accepted HIV testing (Hansen et al., 2020). The difference in uptake between these two countries can be attributed to varying levels of social acceptance and public health infrastructure. Denmark's comprehensive public health campaigns and high levels of trust in the healthcare system have helped reduce stigma and increase testing rates, while in Latvia, cultural taboos and a lack of public awareness continue to undermine the effectiveness of HIV prevention efforts.

In India, social and psychological factors such as stigma and fear of rejection significantly influence the use of HIV counseling and testing services. A study conducted in 2020 in Delhi revealed that individuals from marginalized communities, including sex workers and men who have sex with men, were hesitant to use VCT

services due to fears of social ostracism and discrimination (Patel et al., 2020). The study found that nearly 40% of MSM participants reported avoiding HIV testing because of the stigma associated with homosexuality and HIV/AIDS in Indian society. In rural areas, where traditional cultural norms hold strong sway, fear of judgment from family and the community exacerbates these psychological barriers (Patel et al., 2020). Additionally, limited education and misconceptions about HIV, including the belief that HIV testing is only necessary for those already showing symptoms, contribute to the low uptake of VCT services in India. Despite the national government's efforts to increase awareness through campaigns and mobile testing units, stigma continues to undermine these efforts. In Bangladesh, a similar study conducted in Dhaka in 2019 highlighted the pervasive role of social stigma in limiting HIV testing. The research showed that while 60% of people living with HIV (PLHIV) had been tested at VCT centers, many did not return for follow-up services due to the ongoing stigma they faced after a positive diagnosis (Rahman et al., 2019). Psychological factors such as denial and fear of a positive diagnosis were also prominent. Participants reported experiencing feelings of hopelessness, fear of social exclusion, and anxiety about the potential impact of a positive test result on their families (Rahman et al., 2019). These emotional responses led to a significant number of individuals delaying testing or avoiding follow-up care altogether, further complicating the fight against HIV in the country. While outreach efforts and peer education programs have been effective in increasing awareness, these social and psychological barriers continue to pose challenges to the widespread use of VCT services.

Studies conducted in the African continent have also identified several social and psychological factors influencing the perception of uptake of VCT services. Abdalla and Abusalih (2021) reported that fear of the test outcomes, stigma that comes with

HIV/AIDS, and inadequate knowledge about services had a significant influence on the perception of uptake of VCT services. It is therefore important to reach out to the young people on their preferred platforms and equip them with the necessary knowledge to address stigmatization challenges and the importance of VCT services in the fight and management of HIV/AIDS in society.

A study conducted in 2021 in Johannesburg, South Africa, found that psychological factors such as fear of stigma, denial, and depression were major contributors to the low uptake of VCT services in rural areas (Moyo et al., 2021). The research revealed that 30% of individuals who tested positive for HIV experienced severe depression, leading to avoidance of further health services (Moyo et al., 2021). In Zambia, a 2020 study in Lusaka indicated that over 50% of participants reported feeling anxious about HIV testing, with a substantial number of individuals unwilling to test due to fear of rejection by their families and communities (Sichone et al., 2020). This highlights the critical role that social and psychological factors play in influencing individuals' decisions to use VCT services in sub-Saharan Africa. While education campaigns have helped to normalize HIV testing in urban areas, rural communities continue to struggle with deeply ingrained fears and misconceptions about HIV.

A study conducted in Addis Ababa found that HIV-related stigma was significantly reduced when healthcare providers engaged in open communication about the benefits of early diagnosis and treatment (Tsegaye et al., 2021). The study highlighted that 70% of participants who received supportive counseling were more likely to accept HIV testing compared to those who did not (Tsegaye et al., 2021). Similarly, in Rwanda, community-based HIV testing programs have successfully encouraged individuals to seek testing by providing a supportive environment that alleviates fears of

discrimination (Ndahiro et al., 2020). The findings from both countries suggest that reducing psychological barriers through counseling and education can increase the uptake of HIV testing, particularly in rural and underserved regions. Similar results were also reported by Mlughu et al. (2020) who conducted a similar study in Tanzania. These researchers established that the fear of test outcomes, stigma and peer pressure influenced the perception on the uptake of VCT services in the country. The study noted that the supportive peer network on uptake of VCT services has a positive influence and that stigma and fear of the outcomes could best be dealt with by equipping the youths with knowledge about the importance of knowing one's status for early mitigation and treatment to be done.

Cheruiyot (2022) conducted another similar study in Kenya and reported that confidentiality of information, stigma and fear of the test outcomes influenced the perception of the uptake of VCT services. The major social and psychological factors identified in this study were stigma and fear of the test outcomes. All the stakeholders and resources should be mobilized towards dealing with stigma and fear of the test results. The youths should be informed that no matter how long they will hide, the infection of HIV will expose itself and early treatment is the only sure way of life continuity. Counselling services will provide a guideline on how those affected will cope with the disease.

Another study was conducted by Muhia (2023) in Nairobi County to identify the barriers that influenced uptake of VCT services among the youths. This study was conducted in Kawangware Informal Settlement, one of the target areas for this study. The study established that stigma, fear of the test outcomes and inadequate information inhibited youths from visiting VCT facilities to get tested. This study was restricted to

the informal settlement within Dagoretti South Constituency and thus the results cannot be generalized to the entire constituency with the majority of the young generation living in informal settlements. Our proposed study will cover the entire constituency and provide empirical evidence on social and psychological factors influencing perception of uptake of VCT services.

2.7 Summary of the Literature Review and Gaps Identification

The literature reviewed revealed that age, gender, level of education, socio-economic status and marital status were the main socio-demographic factors influencing utilization of VCT services among the young generation across the globe. Equally, accessibility of VCT facilities, quality of counselling services, and confidentiality of information were the key determinants to an effective VCT facilities and influenced access to VCT services. Stigma, fear of the test outcomes and peer pressure have also been identified as key social and psychological factors influencing utilization of VCT services.

Whereas the above information is available, little is known about the specific determinants of uptake of VCT services in Dagoretti South Constituency. While various factors have been identified, little remains known on how they influence uptake of VCT services in this constituency. Most of the literature was from studies conducted outside the country limiting generalization of their findings to Dagoretti South constituency. The findings were also from varying demographics across the globe. The proposed study aims to fill this gap by providing empirical evidence based on the data that will be collected from the youths who will be available and willing to participate in this study during data collection exercise. The findings will be context-specific to this constituency but can be generalized to similar settings within the Country.

2.8 Conceptual framework

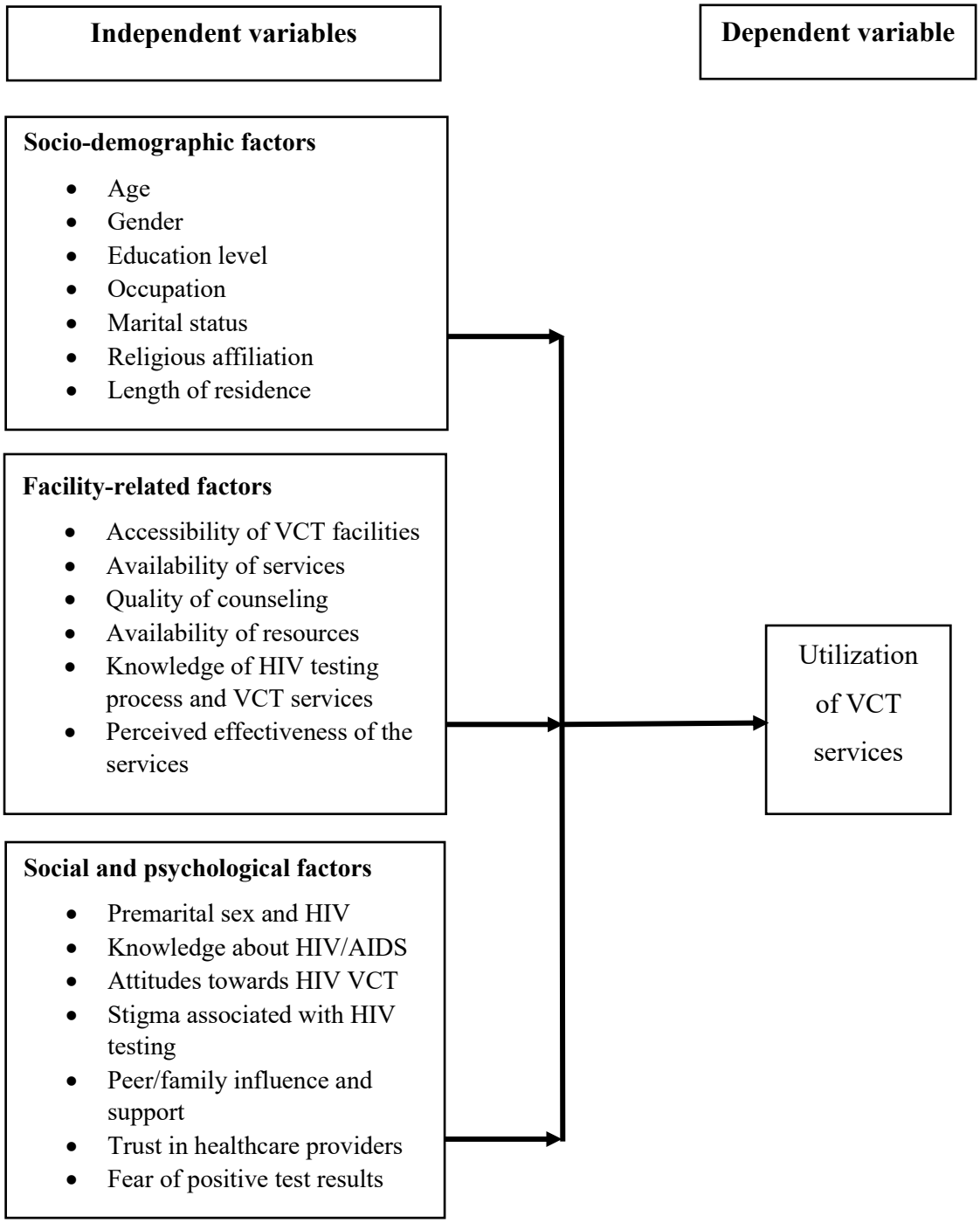

Figure 2. 1: Relationship among Subject Factors as a Theoretical Model

Figure 2.1 above illustrates the supposed relationship between independent and dependent variables. The independent variables for this study will include the socio-demographic factors, the VCT facility-related factors, and the social and psychological factors. The socio-demographic factors will be assessed in terms of age, gender,

education level, occupation, marital status, religious affiliations and length of residence. The VCT facility-related factors will be assessed in terms of accessibility of VCT facilities, availability of services, quality of counselling, availability of resources, outreach and knowledge of HIV testing process and VCT services and perceived effectiveness of the services. The social and psychological factors will be assessed in terms of premarital sex and HIV, knowledge about HIV/AIDS, attitudes towards HIV VCT, stigma associated with HIV testing, peer/family influence and support, trust in healthcare providers/Counsellors, and fear of positive test results. The dependent variable for this study will be the uptake of VCT services.

CHAPTER THREE;

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the study presents the research design, research variables, location of study, target population, and sampling techniques and sample size determination criteria. It also presents research instruments that were used, pilot study procedure, data analysis techniques and logistical and ethical considerations.

3.2 Study site

The proposed study was conducted in Dagoretti South Constituency. The constituency is in Nairobi City County, Kenya and has five wards including Mutu-ini, Uthiru/Ruthimitu, Waithaka, Riruta and Ngando. The choice of this locale was informed by its diverse socio-economic profile of youths aged 15-35 years. Nairobi County has the largest population of people living with HIV totaling 182,856 by the end of the year 2017. From this population of persons living with HIV in the county, the youths aged 15-24 constituted 13.6% (24,918) (Ministry of Health, 2018). According to Gathura (2018), the key hotspots with the highest number of individuals living with HIV in Nairobi were Embakasi with about 6% followed by Dagoretti with 5.6%.

3.3 Target Population

The target population were the youths living in Dagoretti South Constituency aged between 15-35 years. According to the City Population (2020), the population of those aged between 10-39 years was 267,374. Even though this age bracket falls slightly outside the target population of those aged 15-35 years, the exact population could not

be ascertained because there is no clear breakdown. However, at Dagoretti South Constituency only 1360 youths visit the selected health facilities.

3.4 Research Design

The study employed descriptive cross-sectional research design. This study design enabled the collection of primary data from the respondents based on the research questions. The choice of the descriptive research designed was informed by the need to answer the what, where and the how phenomenon of the study to determine the factors associated with the uptake of VCT services in the constituency. Further, the descriptive survey design facilitated comparisons to be made on the relationships among the study variables. The researcher intended to collect data at a single period with no subsequent studies to follow. Hence a snapshot of what was happening on the ground regarding uptake of VCT services was obtained, making cross-sectional research design more suitable (Wright et al., 2016).

3.5 Sample Size Determination

The study used Fisher's exact formula (1998) to determine the sample size for this study.

$$\boldsymbol{n = \frac{Z^2 P(1 - Pp)}{d^2}}$$

Where:

n Sample size [where population> 10,000]

Z Normal standard deviation at the desired confidence interval. In this case it will be taken at 95% confidence interval giving a **Z** value of 1.96.

Pp Proportion of the population with the desired characteristic.

1-Pp Proportion of the population without the desired characteristic.

d Degree of precision at 95% confidence interval which is 0.5 Since the proportion of the population (youths) utilizing VCT services is unknown, 50% will be used.

$$\boldsymbol{n = \frac{1.96^2 0.5(1-0.5)}{0.05^2}}$$

n=384

Since the target population was <10,000, the alternative formula was applied using the following formula (Charan & Biswas, 2013).

$$\boldsymbol{nf = \frac{n}{1 + {}^{n}/_{N}}}$$

Where:

nf the desired sample size for population <10,000

N total study population which is 1360

n the calculated sample size which is 384

$$\boldsymbol{nf = \frac{384}{1 + {}^{384}/_{1360}}}$$

$\boldsymbol{nf}$**=299**

The sample size for this study was 299. To take care of the non-response and incomplete responses, 10% of the calculated sample size was added (Tumiran, 2024). Therefore, the final sample size was **329** respondents.

3.6 Sampling Techniques

Purposive sampling technique was used to select three wards including Riruta, Waithaka and Uthiru in Dagoretti South Constituency. The choice of the three wards

was informed by the population size and area covered by the ward where Riruta has the highest population of 65,320 followed by Waithaka with a population of 31,054. Most of the residents from these two wards live in informal settlements with low level of income. Uthiru is the largest ward in terms of size and hosts one of the largest polytechnics in the country (Kabete National Polytechnic) with a population of over 9,000 students. The researcher visited the MOH sub-county offices to obtain a list of registered public and private health facilities providing VCT services integrated with other health services (list attached at the appendix). From this list, the constituency has 8 public hospitals and 24 private hospitals. From the three wards of Riruta, Waithaka and Uthiru selected to be involved in this study, there exist 4 public health facilities and 15 private hospitals. Among the public health hospitals, one (1) was from Riruta, one (1) was from Waithaka and two (2) were from Uthiru. One (1) public hospital was picked from each of these wards, where Uthiru Muthua Dispensary was purposively selected from Uthiru Ward because of its proximity to Kabete National Polytechnic. From this list also, the number of private hospitals offering VCT services were 15, where 6 were from Riruta, 5 from Uthiru and 4 from Waithaka. Simple random sampling was used to select 5 private hospitals from the three wards, 2 from Riruta because of the huge population, 2 from Uthiru because of the large area coverage and one from Waithaka. This was done by listing all the private health facilities in a piece of paper and randomly picking the indicated numbers. The final list is indicated in table 3.1 below.

The following formula was used to calculate the required sample size per facility. The average quarterly (three months - January to March 2015) attendance at the eight VCT centres was 1360 (N=1360). The calculated sample size for this study is 329 (n=329), therefore the proportionate constant for each VCT site was calculated as follows:

K=n/1360, where n was the three months' attendance per each site. The constant K was then applied to determine the sample size for each VCT Centre, by multiplying the constant K with the calculated sample size of 329.

Table 3. 1: Proportionate sampling for Youths in Selected Health Facilities

Health Facility	Quarterly attendance	Sample size (n)
Riruta Health Centre	256	62
Waithaka Health Centre	180	44
Wema Health Centre	220	53
Uthiru Muthua Dispensary	184	45
Kivuli Health Centre	160	39
Mary Mission Health Centre	130	31
St Luke Health Centre	124	30
Hope Community VCT	106	25
Total	**1360**	**329**

Systematic sampling was finally employed to select the individuals who participated in the study. The questionnaires were administered in each facility proportionately until the sample size for that facility was achieved.

3.7 Inclusion and exclusion criteria

3.7.1 Inclusion criteria

The selection included all participants aged 15-35 years who had already consented to participate in the study.

3.7.2 Exclusion criteria

The researcher excluded all those who were above 35 and below 15 years of age, those who were unwilling to consent and those under 18 years of age whose parents/guardians were not available for consent from the sample frame. The researcher replaced those

who did not give their consent until the desired sample size was achieved. The study also excluded those who were not residents of Dagoretti South Constituency.

3.8 Data Collection Process

The data was collected using semi structured questionnaires. The questionnaire consisted of both open- and closed- ended questions. The questionnaire was subdivided into seven sections. Section A captured socio-demographic characteristics, section B contained questions on HIV/AIDS transmission, section C contained questions related to utilization of VCT services, section D covered questions related to perception on the uptake of VCT, section E covered questions related to the perceptions of HIV stigma and impact on testing, section F involved items related to the visit to VCT Centre and section G covered information on VCT/ Counsellors. The questionnaire was developed guided by the study objectives and the literature reviewed.

The independent variables for this study included the socio-demographic factors, the VCT facility-related factors, and the social and psychological factors. The socio-demographic factors were measured in terms of age, gender, education level, occupation, marital status, religious affiliations and length of residence. The VCT facility-related factors were measured in terms of accessibility of VCT facilities, availability of services, quality of counselling, availability of resources, outreach and knowledge of HIV testing process and VCT services and perceived effectiveness of the services. The social and psychological factors were measured in terms of premarital sex and HIV, knowledge about HIV/AIDS, attitudes towards HIV VCT, stigma associated with HIV testing, peer/family influence and support, trust in healthcare providers/Counsellors, and fear of positive test results. The dependent variable for this study was the uptake of VCT services. The data collection process was conducted in a

sequential manner. The researcher trained eight research assistants to assist in data collection exercise. After successful completion of the pilot study and necessary adjustments done to the research tools, the data collection exercise began. The researcher, with the help of the trained research assistants explained the purpose of the study to the respondents and those who gave their consent were issued with questionnaires to fill. The respondents below 18 years were also involved after seeking consent from their parents or guardians. The data collection exercise proceeded until the sample size was achieved.

3.8 Pilot Study

The data collection tool was pre-tested on 10% of the main study sample size at Acacia Medical Centre to identify and rectify any issues related to clarity, wording, and relevance of the questions. The facilities selected were those outside of the 8 selected facilities for the main study. A total of 32 participants-(10% of the study participants) were involved in pre-test of the questionnaire. Connelly (2017) suggests that the sample size for a pre-test should be 10% of the total sample for the main study. In addition, the pilot study was done to verify the validity and reliability of the questionnaire and ensure that the questions and the structure of the tool do not bring any confusion to the respondents. Any challenges encountered were addressed accordingly with the help of the supervisors. The time taken by each respondent was also approximated.

3.8.1 Validity of the instruments

Criterion validity was applied to verify that the variables being measured align with the intended constructs, ensuring that no unrelated variables are included. To assess the instrument's validity, it was reviewed by my supervisor, a subject matter expert, to determine whether it effectively addresses the study's objectives and if the questions

are likely to elicit the desired responses. Any necessary revisions were made to improve validity before the instrument is distributed for data collection. Additionally, a pre-test was conducted to refine and adjust the questionnaire as needed.

3.8.2 Reliability of the instrument

The researcher assessed the reliability of the research instruments prior to their use, analysis, and final presentation through a process of testing and retesting. To evaluate reliability, the half-split test method was employed. In this approach, the test items were divided into two halves, ensuring that each half contains equivalent content. The scores for both halves were calculated separately. A reliable test showed a strong correlation between the scores of the two halves. The Pearson Product Moment Correlation Coefficient were employed to assess the reliability of the instruments. A correlation coefficient of 0.75 or higher were regarded as sufficient to determine the reliability of the tools. As noted by Mugenda and Mugenda (2003), a correlation coefficient of 0.8 or greater indicates a strong relationship between the measures. During the questionnaire design process, special attention was given to ensuring that the items align with the study's objectives.

3.9 Data Analysis

The questionnaires collected from the participants were checked for completeness and whether they met the inclusion criteria. The codebook was then developed using SPSS and the data collected entered with the help of the research assistants. Data cleaning followed to ensure that the typos were corrected before actual analysis. Analysis was done where descriptive and inferential statistics were obtained. The descriptive statistics provided frequencies, mean and standard deviations. The inferential statistics, including Chi-square tests, correlation analysis and regression analysis, were used to

test the association between independent variables and the dependent variable. The qualitative data from the open-ended questions was analyzed thematically to identify key issues that can be used in making the study conclusions.

3.10 Ethical Considerations

The researcher obtained approval to conduct the study from the Institutional Research and Ethics Committee (IREC), which was then used to secure an introductory letter from Moi University. This letter was presented to the sub–County Health Officer representing the Ministry of Health (MOH) to notify them of the study's objectives, target population, and study sites. Following this, the researcher visited all eight selected health facilities to seek permission to collect data and proceeded with distribution of questionnaires to respondents until the required sample size for each facility was achieved. Participation was entirely voluntary, and only those who provided informed consent were involved. For participants under 18 years, consent was first obtained from parents or guardians, followed by assent from the minors themselves. Respondents were given clear instructions on how to complete the questionnaires, with clarifications provided upon request. They were also informed of their right to withdraw at any point without consequence. No incentives were offered, but the purpose and expected outcomes of the study were thoroughly explained. To ensure confidentiality, respondents were instructed not to include any personally identifiable information, such as names or ID numbers, on the questionnaires. The collected data were used strictly for the purposes of the study and were destroyed after approval by the university examination board. Throughout the process, the researcher upheld ethical principles, including privacy, informed consent, and the avoidance of any form of gender bias or discrimination based on social norms.

CHAPTER FOUR:

RESULTS

4.1 Introduction

This chapter displays results of the findings. The results have addressed the specific objectives of the study by using quantitative data. Descriptive and inferential statistics have been used to elaborate the results. It is organized under the following subheadings: socio-demographic characteristics of the respondents, utilization of VCT services, socio-demographic factors influencing utilization of VCT services, and social and psychological factors that affect the perception and use of HIV Counseling and Testing services at VCT sites among youths aged 15-35 years in Dagoretti South Constituency.

4.2 Response Rate

A total of 329 structured questionnaires were self-administered in tandem with the calculated sample size, of which 321 respondents meet inclusion criteria and questionnaires were completely filled; therefore, the response rate was 98.4% of the required sample size, which was deemed satisfactory for the purpose of obtaining dependable and adequate data. The literature suggests that a low response rate may introduce bias into survey results (Brick & Williams, 2013). Consequently, the present study posits that a high response rate is indicative of greater reliability in the data collected. Pike (2007) observed that survey researchers have traditionally assumed that achieving a high response rate is the most effective approach to obtaining unbiased estimates. The data was presented in tabular form, pie charts and bar graphs. The characteristics of the participants are summarized in the following section.

4.3 Socio-demographic characteristics of the respondents

The respondents' ages ranged from 15 to 35 years, the mode was 23 years, median 24.8 years and the mean age was 25.33 ± 4.90. Most of respondents 138 (43.0%) were between 20–24 years, 90 (28.0%) were aged between 25–30 years, and 65 (20.2%) aged between 31–35 years. At least 191 (59.5%) were females, 181 (56.4%) never been in marital union, 302 (94.1%) of the respondents were affiliated with Christianity faith, and 15 (4.7%) to Islamic faith.

In terms of educational attainment, more than half of respondents 189 (58.9%) had post-secondary education, 91 (28.3%) had completed secondary education, 37 (11.5%) had primary education, and 4 (1.2%) had no formal education. Employment status revealed that 138 (43.0%) of respondents were students, 71 (22.1%) were formally employed, 59 (18.4%) were self-employed, and 53 (16.5%) were unemployed. Additionally, 238 (74.1%) had lived in the area for over one year, while 52 (16.2%) had been residents for less than six months, and 31 (9.7%) between 6 to 12 months as indicated in table 4.1.

Table 4. 1: Socio-demographic characteristics of the respondents

Characteristics		Frequency	Percent
Age group	15-19 years	28	8.7%
	20-24 years	138	43.0%
	25-30 years	90	28.0%
	31-35 years	65	20.2%
Gender	Male	130	40.5%
	Female	191	59.5%
Marital status	Single	181	56.4%
	Married	122	38.0%
	Divorced/separated	17	5.3%
	Widowed	1	0.3%
Religion	Christian	302	94.1%
	Islamic	15	4.7%
	Hindu	2	0.6%
	Others	2	0.6%
Level of education	No formal education	4	1.2%
	Primary	37	11.5%
	Secondary	91	28.3%
	Post-secondary	189	58.9%
Employment status	Student	138	43.0%
	Employed	71	22.1%
	Self Employed	59	18.4%
	Unemployed	53	16.5%
Length of residence	Less than 6 months	52	16.2%
	6-12 months	31	9.7%
	Over 1 year	238	74.1%

4.4 Voluntary HIV testing services

4.4.1 Utilization of VCT Services

Out of 321 respondents, most of the respondents 216 (67.3%) had utilized VCT services with 111 (51.4%), 63 (29.2%), and 10 (4.6%) having utilized VCT months, years and days preceding the study respectively. In addition, 151 (69.9%) received pre-test

counseling and 135 (62.5%) had HIV tests during the visit to VCT as indicated in table 4.2.

Table 4. 2: Utilization of VCT Services

Characteristics		Frequency	Percent
Uptake of VCT	Yes	216	67.3%
	No	105	32.7%
Last HIV test	Day (s)	10	4.6%
	Week (s)	32	14.8%
	Month (s)	111	51.4%
	A year (s)	63	29.2%
Received pre-test counseling	Yes	151	69.9%
	No	65	30.1%
Tested during the visit to VCT	Yes	135	62.5%
	No	70	32.4%
	Don't Know	11	5.1%

4.4.2 Supportive group for HIV testing

At least 126 (58.3%), 117 (54.2%), and 102 (47.2%) of respondents received support form family and friends, religious and traditional leaders in their community, and received support from relatives respectively as shown in figure 4.1.

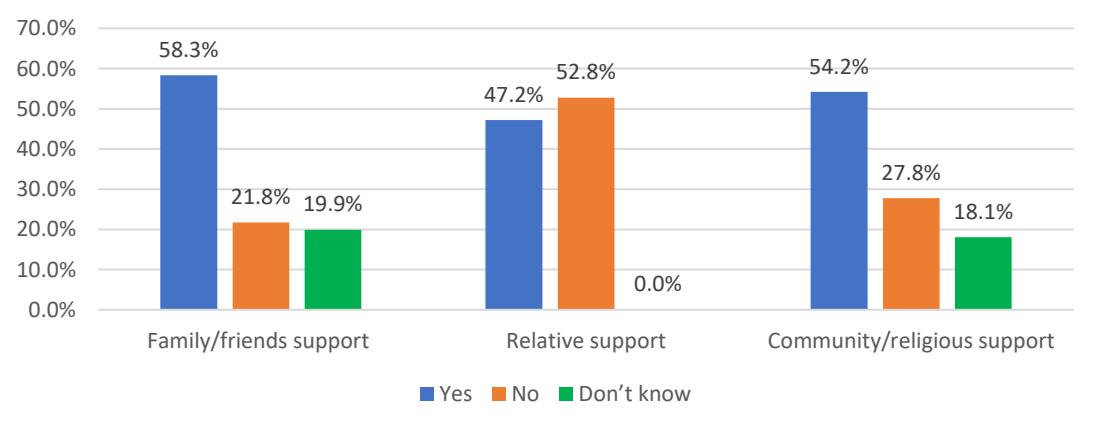

Figure 4. 1: Supportive Group for HIV Testing

4.4.3 Reasons for getting HIV tests

Majority of respondents 199 (92.1%) utilized VCT services to know their HIV status as shown in figure 4.2.

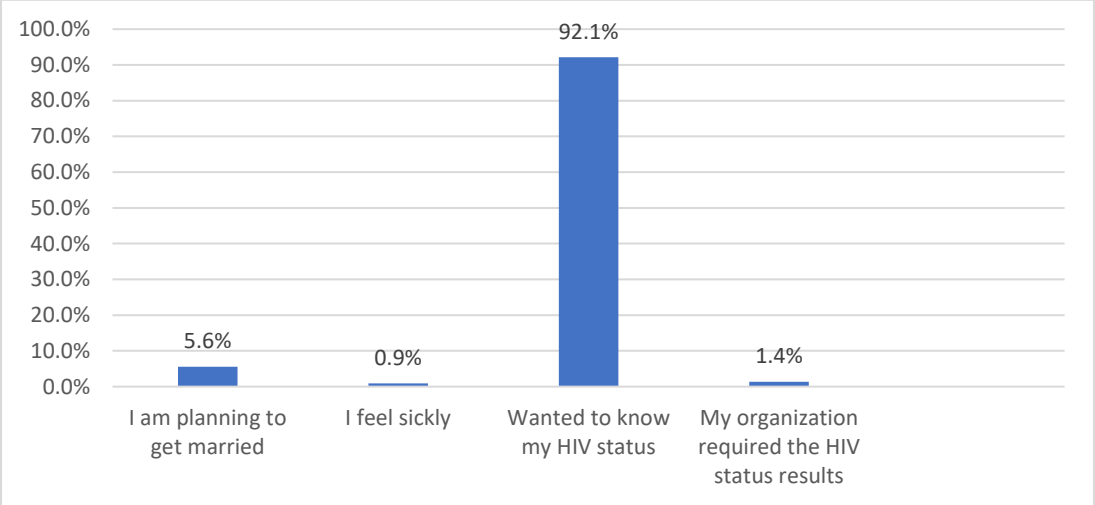

Figure 4. 2: Reasons for getting HIV tests

4.4.4 Consultation before HIV test

Slightly less half 102 (47.2%) didn't consult anyone before undergoing for HIV test and 64 (29.6%) consulted their partner/spouse as indicated in table 4.3.

Table 4. 3: Consultation before HIV test

Characteristics		Frequency	Percent
Person consulted before HIV test	Sister/brother	7	3.2%
	Parents	10	4.6%
	Friend	32	14.8%
	Religious leader(s)	1	0.5%
	Partner/spouse	64	29.6%
	None	102	47.2%

4.4.5 Future plan to undergo HIV test

At least 37 (35.2%) had future plans for HIV testing between 3-6 months with 20 (19.0%) and 21 (20.0%) in more than 12 months and less than 3 months respectively. Additionally, 48 (45.7%), 31 (29.5%), and 26 (24.8%) would prefer government hospital, self-testing and visiting village VCT for HIV test as indicated in table 4.4.

Table 4. 4: Future plan to undergo HIV test

Characteristics		Frequency	Percent
Plans to test for HIV in the near future	Less than 3 months	21	20.0%
	Between 3-6 months	37	35.2%
	Between 7-12 months	27	25.7%
	More than 12 months	20	19.0%
Preferred location for future HIV test	Within my village VCT	26	24.8%
	Self-testing	31	29.5%
	At a government hospital in town	48	45.7%

4.4.6 Quality of services offered at the VCT Centre

The responses indicated a high level of satisfaction with the quality and delivery of VCT services. Most participants strongly agreed or agreed with positive statements about their experiences, including the clarity of communication (96.8%), language accessibility (96.5%), and understanding of the pre-test process (94.8%). Confidence in counselors was equally strong—where 96.5% found them knowledgeable, while 95.1% were satisfied with their support. Furthermore, 92.7% believed the VCT centers were well equipped, and 96.5% felt their questions were properly addressed. Overall satisfaction with the entire testing process was 95.8%, and belief in the counselors' qualifications stood at 95.8%. The consistently low means (between 1.70 and 1.81) and

standard deviations (0.544–0.620) suggest uniform positive experiences, indicating effective, client-centered VCT services as indicated in table 4.5.

Table 4. 5: Quality of services offered at the VCT Centre

	SA	A	D	SD	Mean	STD
Information on the testing process was properly communicated	85 (29.7%)	192 (67.1%)	6 (2.1%)	3 (1.0%)	1.74	0.544
I was welcomed and spoken to in a language I understood	101 (35.3%)	175 (61.2%)	6 (2.1%)	4 (1.4%)	1.70	0.582
The counsellors took me through the pre-testing process	102 (35.7%)	169 (59.1%)	11 (3.8%)	4 (1.4%)	1.71	0.607
I feel the counsellors were knowledgeable	84 (29.4%)	192 (67.1%)	5 (1.7%)	5 (1.7%)	1.76	0.569
I am satisfied on how the counsellors took me through.	90 (31.5%)	182 (63.6%)	11 (3.8%)	3 (1.0%)	1.74	0.575
The Centre was well equipped for VCT	80 (28.1%)	184 (64.6%)	15 (5.3%)	6 (2.1%)	1.81	0.620
My questions were well answered and responded	90 (31.6%)	185 (64.9%)	7 (2.5%)	3 (1.1%)	1.73	0.557
I am satisfied on how my entire testing process was handled	82 (28.8%)	191 (67.0%)	6 (2.1%)	6 (2.1%)	1.78	0.586
I feel my counsellor was qualified enough	86 (30.2%)	187 (65.6%)	8 (2.8%)	4 (1.4%)	1.75	0.572

4.5 Socio-demographic factors influencing utilization of VCT services

4.5.1 Socio-demographic factors influencing utilization of VCT services

The uptake of Voluntary Counseling and Testing (VCT) services varied across different demographic groups. Higher VCT uptake was observed among respondents aged 20–30, especially those aged 20–24 (72.5%). Females (72.8%) were more likely to utilize VCT services than males (59.2%). Married individuals (74.6%) showed higher uptake compared to singles (62.6%). Education level played a significant role—those with post-secondary education had the highest uptake (72.5%), while those with primary

education or less had the lowest (48.8%). Among occupations, students (69.6%) and the self-employed (69.5%) were more likely to use VCT than employed individuals (60.6%). Uptake also increased with longer residence in the area, peaking at 71.2% among those living there for less than six months. Age (χ^2=12.166; df=3; p=0.007), gender (χ^2=6.447; df=1; p=0.011), marital status (χ^2=4.901; df=1; p=0.027), and level of education (χ^2=8.950; df=2; p=0.011) were significantly associated with uptake of VCT services (Table 4.6).

Table 4. 6: Socio-demographic factors influencing utilization of VCT services

		Yes		No		
Variables		Freq	Percent	Freq	Percent	Statistics
Age	15-19 years	11	39.3%	17	60.7%	χ^2=12.166; df=3; p=0.007
	20-24 years	100	72.5%	38	27.5%	
	25-30 years	63	70.0%	27	30.0%	
	31-35 years	42	64.6%	23	35.4%	
Gender	Male	77	59.2%	53	40.8%	χ^2=6.447; df=1; p=0.011
	Female	139	72.8%	52	27.2%	
Marital status	Single	124	62.6%	74	37.4%	χ^2=4.901; df=1; p=0.027
	Married	91	74.6%	31	25.4%	
Level of education	≤ Primary	20	48.8%	21	51.2%	χ^2=8.950; df=2; p=0.011
	Secondary	59	64.8%	32	35.2%	
	Post-secondary	137	72.5%	52	27.5%	
Occupation	Student	96	69.6%	42	30.4%	χ^2=1.924; df=3; p=0.588
	Employed	43	60.6%	28	39.4%	
	Self Employed	41	69.5%	18	30.5%	
	Unemployed	36	67.9%	17	32.1%	
Length of residence	Less than 6 months	37	71.2%	15	28.8%	χ^2=2.602; df=2; p=0.272
	6-12 months	17	54.8%	14	45.2%	
	Over 1 year	162	68.1%	76	31.9%	

4.5.2 ANOVA summary of socio-demographic factors

The ANOVA results indicate that the regression model predicting the uptake of Voluntary Counseling and Testing (VCT) based on demographic variables was statistically significant. The model explains a significant portion of the variance in VCT uptake, with an F-value of 4.898 and a p-value of less than 0.001. This suggests that at least one of the predictors—age, gender, marital status, level of education, occupation, or length of residence—has a significant effect on the likelihood of VCT uptake. The regression model accounts for 6.055 of the totals 70.547 sum of squares, while the residual (unexplained variance) is 64.492, indicating that the included variables collectively contribute meaningfully to the prediction of VCT service utilization (Table 4.7).

Table 4. 7: ANOVA summary of socio-demographic factors

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	6.055	6	1.009	4.898	<0.001[b]
	Residual	64.492	313	0.206		
	Total	70.547	319			

a. Dependent variable: Uptake of VCT
b. Predictors: (Constant), Level of education, Length of residence, Gender, Age, Occupation, Marital status

4.6 Social and psychological characteristics

4.6.1 Engagement in coitus

Majority of respondents 258 (80.4%) reported having engaged in coitus, with 183 (70.9%) indicating they had only one sexual partner, however, a notable portion reported having two 37 (14.3%), and 38 (14.7%) had more than two sexual partners. Risky sexual behavior was evident, as slightly more than half 140 (54.3%) admitted to

having unprotected sex, with 65 (25.2%) reported always used condoms, while 103 (39.9%) never used. Furthermore, more than half 147 (57.0%) of respondents did not use a condom during their last sexual encounter as indicated in table 4.8.

Table 4. 8: Engagement in coitus

Characteristics		**Frequency**	**Percent**
Engaged in coitus	Yes	258	80.4%
	No	63	19.6%
Sexual partners	One	183	70.9%
	Two	37	14.3%
	More than two	38	14.7%
Unprotected sex	Yes	140	54.3%
	No	111	43.0%
	Not sure	7	2.7%
Frequency of using a condom	Never	103	39.9%
	Sometimes	90	34.9%
	Always	65	25.2%
Used a condom during the last sexual encounter	Yes	111	43.0%
	No	147	57.0%

4.6.2 Urgent need for HIV testing

Slightly less than two thirds 40 (63.5%) felt an urgent need to take an HIV test, with the primary motivation for testing 36 (90%) were aware that HIV can be transmitted through various means, not just sexual contact and 304 (94.7%) would encourage friends who are not sexually active to get tested. Further, the findings showed that schools play a major role in disseminating information about HIV/AIDS and VCT, with 201 (62.6%) of participants citing school education programs as their main source. Additionally, 227 (70.7%) of respondents reported receiving VCT information from a government agency as indicated in table 4.9.

Table 4. 9: Urgent need for HIV testing

Characteristics		Frequency	Percent
Urgent need to take HIV test	Yes	40	63.5%
	No	21	33.3%
	Not sure	2	3.2%
Reason to take HIV test	There are other means of HIV transmission	36	90.0%
	For pleasure purposes	3	7.5%
	Peer pressure	1	2.5%
Encourage friends (not sexually active) to test for HIV	Yes	304	94.7%
	No	17	5.3%
Source of information on HIV/AIDS & VCT	School education programme	201	62.6%
	TV/Newspaper	64	19.9%
	Family members	31	9.7%
	Workplace HIV test programs	25	7.8%
Government agency provided VCT info	Yes	227	70.7%
	No	94	29.3%

4.6.3 Perceptions of HIV/AIDS

Slightly more than half 169 (52.6%) were willing to share a dish with someone who is HIV-positive, 111 (34.6%) were not, and 41 (12.8%) were uncertain—indicating persistent misconceptions about HIV transmission. Views on family confidentiality are divided, with 139 (43.3%) preferring secrecy about a relative's status and 136 (42.4%) opposing it. Positively, 305 (95.0%) believes HIV-positive individuals should be allowed to keep their jobs, showing strong workplace inclusion. However, stigma remains a major barrier to testing, influencing the decision for 215 (67.0%) with 69 (21.5%) of respondents mentioned stigma do not influence HIV testing decisions as indicated in table 4.10.

Table 4. 10: Perceptions of HIV/AIDS

Characteristics		Frequency	Percent
Willing to share dish with HIV-positive person	Yes	169	52.6%
	No	111	34.6%
	Don't Know	41	12.8%
Would keep family member's HIV secret	I would want it to remain secret	139	43.3%
	I would NOT want it to remain secret	136	42.4%
	Don't Know	46	14.3%
HIV-positive colleague should keep job	Yes, should be allowed to work	305	95.0%
	No, should NOT be allowed to work	16	5.0%
Stigma influences HIV testing decisions	Yes	215	67.0%
	No	69	21.5%
	Don't Know	37	11.5%

4.6.4 Easing HIV test request

Most 133 (41.4%) of the respondents indicate that better knowledge about service availability would ease their decision to get tested with 91 (28.3%) mentioning good counselling also plays a key role, and 46 (14.3%) mentioned mobile VCT would ease HIV test request as indicated in table 4.11.

Table 4. 11: Easing HIV Test Request

Characteristics		Frequency	Percent
What would ease HIV test request	More awareness on the availability of service	133	41.4%
	Test done anonymously	10	3.1%
	More emphatic attitude from service staff	4	1.2%
	Opening hours increased	11	3.4%
	Good counselling	91	28.3%
	Post Counselling Follow Up	9	2.8%
	Availability of Medical Care	4	1.2%
	Mobile VCT	46	14.3%
	VCT Centre's in an isolated place	13	4.0%

4.6.5 Rights of people with HIV

At least 128 (39.9%) believe that the rights of people living with HIV are protected while 57 (17.8%) feel they are not. Further, 146 (45.5%) mentioned they don't openly discuss about HIV/AIDS as shown in figure 4.3.

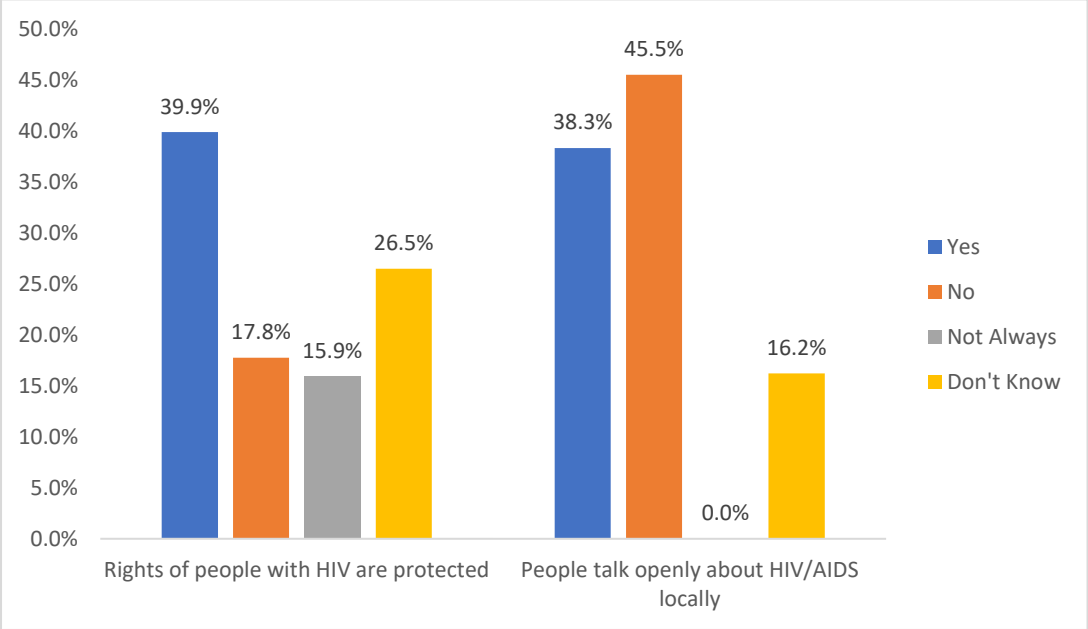

Figure 4. 3: Rights of People with HIV

4.6.6 Preferences of HIV Testing Centre's

Slightly less than two third 207 (64.5%) would prefer HIV testing services to be integrated within general health services as shown in figure 4.4.

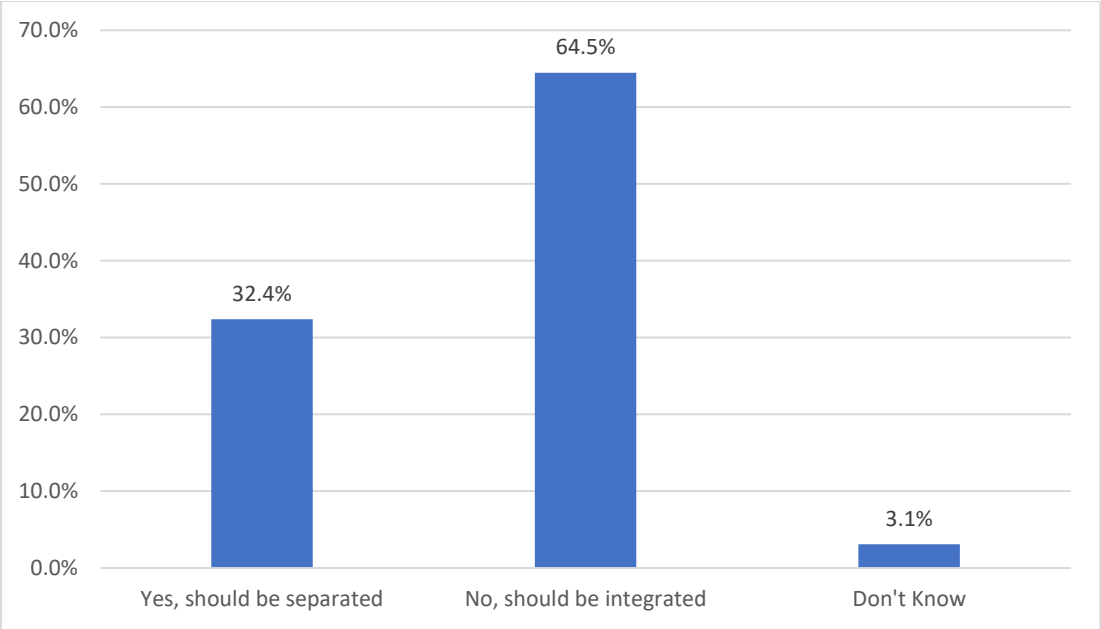

Figure 4. 4: Preferences of HIV testing Centre's

4.6.7 Accessibility of health facility

Table 4.12 shows that 290 (90.3%) were aware of VCT centre in their locality, 204 (70.3%) of respondents lived within 2 km of a health facility, while 60 (20.7%) live 3-5 km and 13 (4.5%) resided more than 15 km to the health facility. For transport, 206 (71.0%) walk to VCT Centre, and 52 (17.9%) used vehicles as means of transport to VCT. Further, 192 (59.8%) felt comfortable with the location of VCT Centre while 90 (28.0%), and 5 (1.6%) felt very comfortable and very uncomfortable with the location of VCT Centre respectively.

Table 4. 12: Accessibility of health facility

Characteristics		Frequency	Percent
Aware of any VCT Centre nearby	Yes	290	90.3%
	No	31	9.7%
Distance to nearest VCT/health Centre	Less than 2 km	204	70.3%
	3-5 km	60	20.7%
	6-8 km	13	4.5%
	More than 8 km	13	4.5%
Available means of transport to VCT	Walking distance	206	71.0%
	Boda boda	32	11.0%
	Motor vehicle	52	17.9%
Comfort with location of VCT Centre	Comfortable	192	59.8%
	Very comfortable	90	28.0%
	Uncomfortable	34	10.6%
	Very uncomfortable	5	1.6%

4.6.8 Perception of staff attitude

Majority 271 (96.4%) of respondents perceived healthcare workers were friendly and 10 (3.6%) mentioned they are unfriendly shown in figure 4.5.

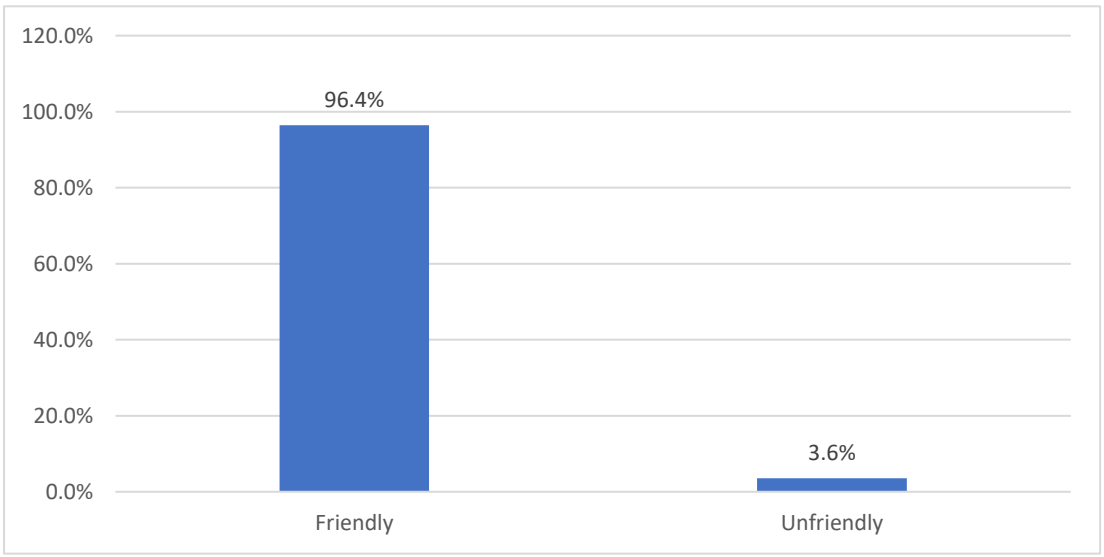

Figure 4. 5: Staff attitude

4.6.9 Social and psychological factors influencing utilization of VCT services

Table 4.13 highlights various factors influencing the utilization of Voluntary Counseling and Testing (VCT) services. Respondents who had engaged in coitus were more likely to use VCT services 183 (70.9%) compared to those who had not engaged 33 (55.0%). Most of respondents encouraged friends to test, even if not sexually active had higher uptake rates 214 (70.4%) further, respondents received VCT information from workplace programs 18 (72.0%) and government agencies 162 (71.4%) had higher uptake of VCT services. Awareness of a nearby VCT Centre 201 (69.3%) and comfort with its location 200 (70.9%) further contributed use of VCT services, while discomfort significantly reduced uptake 16 (41.0%). Interestingly, those uncertain about social life influencing testing had the highest uptake 30 (81.1%).

Additionally, engaging in coitus (χ^2=5.670; df=1; p=0.017), encourage friends (not sexually active) to test for HIV (χ^2=25.143; df=1; p=0.0001), government agency providing VCT information (χ^2=5.851; df=1; p=0.016), social life influences HIV testing decisions (χ^2=5.141; df=2; p=0.047), awareness of any VCT Centre nearby (χ^2=5.570; df=1; p=0.018), and comfortability with location of VCT Centre (χ^2=13.913; df=1; p=0.0001) were significantly associated with utilization of VCT services as indicated in table 4.13.

Table 4. 13: Social and psychological factors influencing utilization of VCT services

Variables		Yes n (%)	No n (%)	Statistics
Engaged in coitus	Yes	183 (70.9%)	75 (29.1%)	χ^2=5.670; df=1; p=0.017
	No	33 (55.0%)	27 (45.0%)	
Encourage friends (not sexually active) to test for HIV	Yes	214 (70.4%)	90 (29.6%)	χ^2=25.143; df=1; p=0.0001
	No	2 (11.8%)	15 (88.2%)	
Source of information on HIV/AIDS & VCT	School education Programme	135 (67.2%)	66 (32.8%)	χ^2=0.337; df=3; p=0.953
	TV/Newspaper	42 (65.6%)	22 (34.4%)	
	Family members	21 (67.7%)	10 (32.3%)	
	Workplace HIV test programs	18 (72.0%)	7 (28.0%)	
Government agency provided VCT info	Yes	162 (71.4%)	65 (28.6%)	χ^2=5.851; df=1; p=0.016
	No	54 (57.4%)	40 (42.6%)	
Social life influences HIV testing decisions	Yes	145 (67.4%)	70 (32.6%)	χ^2=5.141; df=2; p=0.047
	No	41 (59.4%)	28 (40.6%)	
	Don't Know	30 (81.1%)	7 (18.9%)	
Aware of any VCT centre nearby	Yes	201 (69.3%)	89 (30.7%)	χ^2=5.570; df=1; p=0.018
	No	15 (48.4%)	16 (51.6%)	
Comfort with location of VCT Centre	Comfortable	200 (70.9%)	82 (29.1%)	χ^2=13.913; df=1; p=0.0001
	Uncomfortable	16(41.0%)	23 (59.0%)	

4.6.10 ANOVA summary of social and psychological factors

The ANOVA results show that the regression model examining the relationship between selected social and psychological factors and the uptake of VCT is statistically significant. The model explains a meaningful portion of the variance in VCT uptake, with an F-value of 6.427 and a p-value of <.001, indicating that the included predictors have a significant collective effect. Specifically, variables such as stigma perception, peer encouragement, sources of information, government involvement, VCT awareness, sexual experience, and comfort with service location contribute to predicting VCT utilization. The regression model accounts for 8.780 of the total 69.283 sum of squares, while 60.503 remains as residual variance, showing that these social and psychological factors play a substantial role in influencing individuals' decisions to access VCT services.

Table 4. 14: Model Summary of Social and Psychological Factors

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.780	7	1.254	6.427	0.001[b]
	Residual	60.503	310	0.195		
	Total	69.283	317			

a. Dependent Variable: Uptake of VCT
b. Predictors: (Constant), Stigma influences HIV testing decisions, encourage friends (not sexually active) to test for HIV, Source of information on HIV/AIDS & VCT, Government agency provided VCT info, Aware of any VCT Centre nearby, Engaged in coitus, Comfortability

4.6.11 Multiple coefficients on determinants of utilization of VCT services

The regression analysis in Table 4.15 reveals that multiple factors significantly influence the utilization of voluntary counseling and testing (VCT) services. The model indicates that age, gender, level of education, awareness of VCT, and health facility characteristics all have positive and statistically significant effects on VCT uptake. Among these, the level of education (β = 0.606) and awareness of VCT services (β =

0.542) emerge as the most influential predictors, suggesting that individuals with higher education and greater awareness are more likely to utilize these services. Health facility factors (β = 0.518) also play a crucial role, highlighting the importance of accessible and well-functioning health systems in promoting service use. Gender (β = 0.429) and age (β = 0.445) show moderate but meaningful effects, indicating that targeted interventions based on demographic characteristics may also enhance VCT uptake. Overall, the findings emphasize the need for strategies that improve public awareness, strengthen health systems, and promote education to increase the utilization of VCT services.

Table 4. 15: Multiple Coefficients on Determinants of Utilization of VCT Services

	Unstandardized Coefficients		Standardized Coefficients		
Utilization of VCT services	B	Std. Error	Beta	t	Sig.
(Constant)	1.932	0.261		1.885	0.000
Age	0.658	0.201	0.445	1.655	**0.017**
Gender	0.649	0.192	0.429	2.725	**0.049**
Level of education	0.866	0.168	0.606	1.382	**0.005**
Awareness of VCT	0.858	0.150	0.542	5.190	**0.0001**
Health facility factors	0.719	0.108	0.518	2.739	**0.013**

Resulting model: $Y=1.9 + 0.45X_1 +0.43X_2 + 0.61X_3+0.54X_4 + 0.52X_5$
Where; Y= Uptake of VCT services,
X_1= Age, X_2= Gender, X_3= Level of education, X_4= Awareness of VCT, X_5= Health system characteristics

CHAPTER FIVE:

DISCUSSIONS

5.1 Introduction

In this chapter, the study presents the discussion of the findings. This includes a summary of key findings, in comparisons with findings from previous similar studies and the implications of these findings.

5.2 Discussion

5.2.1 The uptake of VCT services

The findings of the study provide valuable insights into the utilization and perceptions of voluntary counselling and testing (VCT) services, aligning with and occasionally divergent from findings from related literature across global and local contexts. A significant proportion (67.3%) of the 321 respondents reported having utilized VCT services, a figure consistent with findings from studies from other regions. For instance, the uptake was comparable to urban settings in the United States (Hughes et al., 2019) and Harare, Zimbabwe (Chikodzore et al., 2021), where rates were around 68 to70%. It also aligns with data for studies from Kenya, such as Wairimu (2020), who noted high uptake in accessible urban facilities. This consistency reinforces the understanding that accessibility, confidentiality, and professional service provision strongly influence VCT utilization (Abdullah & Mark, 2018; Mwangi et al., 2014).

The timing of the last HIV test among the respondents indicated that over half had been tested within the last few months (51.4% within months and 14.8% within weeks), suggesting a relatively recent engagement with testing services. This pattern supports global recommendations for regular testing, particularly in high-prevalence regions,

and mirrors findings from Thailand (Pimco et al., 2021) where recent testing was common among urban populations.

Notably, 69.9% of participants received pre-test counselling, and 62.5% underwent HIV testing during their VCT visit, highlighting relatively good adherence to VCT protocols. These findings are in line with those from Germany, where 85% of individuals received counseling before testing (Kaiser et al., 2020). Such alignment emphasizes the role of counseling in encouraging testing and ensuring informed decision-making.

Community support played a key role in testing uptake, with family, religious leaders, and relatives cited as influential. This supports findings by Sanga et al. (2015), who noted that community involvement significantly boosts VCT effectiveness. However, 47.2% of respondents didn't consult anyone prior to testing, pointing to the potential for further community sensitization and normalization of HIV testing.

In terms of motivation, a compelling 92.1% of respondents sought testing to know their HIV status, aligning with findings from Uganda (Kalungi et al., 2020) and Thailand (Pimco et al., 2021), where knowledge-seeking was a dominant reason for testing. However, future testing intentions appeared moderate, with only 20% planning to test in less than three months. This may reflect a sense of complacency or the perception that recent testing is sufficient, underlining the need for continuous education on regular testing intervals.

Most respondents preferred government hospitals for future testing (45.7%), followed by self-testing (29.5%), consistent with trends toward integrating VCT into formal

healthcare and increasing the availability of self-testing kits, as observed in various global initiatives (CDC, 2020).

The quality of services at VCT Centre's was rated highly, with over 95% of respondents expressing satisfaction with communication, counselor competence, and overall experience. These findings closely mirror those reported by Wairimu (2020) in Nairobi, emphasizing professionalism, language accessibility, and confidentiality as key to high service quality and uptake.

5.2.2 Socio-demographic factors influencing the utilization of VCT services

The findings highlighted the critical role of socio-demographic factors in shaping the utilization of voluntary counselling and testing (VCT) services. The data indicates that age, gender, marital status, and level of education were statistically significant determinants of VCT uptake, while occupation and length of residence showed no significant association. Young adults aged 20–24 demonstrated the highest uptake (72.5%), which aligns with studies by Anaba et al. (2022) and Mlughu et al. (2020), who reported that younger populations were more likely to seek HIV testing due to targeted awareness programs and school-based interventions. However, this contrasts with studies conducted in New York and Paris (Nguyen et al., 2020; Lefebvre et al., 2020), which found lower uptake among youth due to perceived low risk, fear, or misinformation.

The higher uptake among females (72.8%) compared to males (59.2%) was also consistent with global patterns (Nguyen et al., 2020; Okeke et al., 2021), often attributed to increased healthcare interactions during pregnancy and maternal care. This gender disparity underscores the importance of male-targeted interventions to address

barriers such as stigma, fear, and societal expectations, as also noted by Moyo et al. (2020) and Mlughu et al. (2020).

Married individuals (74.6%) were more likely to utilize VCT services than single individuals (62.6%). This trend supports findings from Kenya (Muiru, 2014) and Bangladesh (Ahmed et al., 2019), where marriage was often associated with greater health responsibility and spousal encouragement. Nevertheless, in other contexts such as Bangladesh, cultural norms sometimes discouraged married women from testing due to the assumption of monogamy and social stigma (Ahmed et al., 2019).

Education emerged as a strong predictor of VCT uptake, with those holding post-secondary qualifications showing the highest utilization (72.5%), and those with only primary level of education or less showing the lowest (48.8%). This trend has been widely documented (Smith et al., 2021; Muiru, 2014; Okeke et al., 2021), suggesting that higher education levels improve awareness, reduce stigma, and increase agency in health-seeking behavior. This consistency emphasizes the need to integrate HIV education into early schooling and adult literacy programs.

Further, occupation and length of residence were not statistically significant predictors, although students and the self-employed exhibited slightly higher uptake rates. This could suggest that other factors such as flexible schedules or proximity to educational campaigns influence testing behaviors. Similarly, those who had recently moved to the area had higher uptake (71.2%), possibly due to increased exposure to new information or health services, though the difference was not statistically significant. The ANOVA results further affirm that socio-demographic factors collectively have a significant effect on VCT utilization ($F=4.898$, $p<0.001$), echoing findings from Muhia (2023) and Moyo et al. (2020), who advocated for demographically tailored interventions. These

insights underline the importance of designing HIV testing campaigns that account for age, gender, marital status, and education, while also addressing socio-cultural barriers such as stigma and misinformation. Reducing disparities in VCT access will require not only infrastructural investment but also targeted community engagement and education strategies.

5.2.3 Social and psychological factors that affect the perception and use of HIV counseling and testing services at VCT sites

The findings demonstrate that social and psychological factors play a critical role in shaping individuals' decisions to utilize voluntary counseling and testing (VCT) services. The study reveals that individuals who have engaged in sexual activity were more likely to use VCT services, with 70.9% uptake among this group. This suggests that perceived risk or actual exposure may drive the decision to test. Furthermore, peer influence, particularly encouraging friends to seek testing, significantly affects VCT uptake. Those who encouraged others to get tested, even without being sexually active themselves, showed notably higher VCT use (70.4%), indicating that positive peer reinforcement may act as a strong motivator for health-seeking behavior.

The availability and dissemination of information also play a key role. Information provided by government agencies and workplace HIV programs correlates with higher VCT uptake, with 71.4% and 72.0% respectively, suggesting institutional and formal communication channels were more effective in promoting testing than informal ones. Awareness and accessibility further influence behavior: Those who were aware of a nearby VCT center and felt comfortable with its location were more likely to utilize the services (69.3% and 70.9% respectively). Conversely, those who felt uncomfortable with the VCT center location showed a markedly lower uptake rate (41.0%),

emphasizing that the environment where services are offered can either facilitate or hinder access.

Interestingly, respondents who were uncertain about whether their social life influences their decision to test had the highest uptake (81.1%). This may indicate a segment of individuals whose decisions are based on pragmatic health reasons rather than external social pressures, or perhaps a misunderstanding of how deeply social dynamics influence health decisions. Statistical analysis supports the significance of these factors, with variables such as engagement in coitus ($p=0.017$), peer encouragement ($p=0.0001$), government information ($p=0.016$), and comfort with VCT center location ($p=0.0001$) showing strong associations with VCT utilization.

The regression analysis further reinforces these conclusions. With an F-value of 6.427 and $p<0.001$, the model confirms that social and psychological factors collectively accounted for a significant portion of the variance in VCT uptake. Compared to other studies, these results were consistent with findings globally and across Africa. For example, studies in South Africa, Tanzania, and Kenya (Moyo et al., 2021; Mlughu et al., 2020; Cheruiyot, 2022) also identified stigma, fear of outcomes, peer influence, and institutional trust as critical factors affecting VCT service utilization. Similarly, research in India and Europe (Patel et al., 2020; Ricci et al., 2020) supported the notion that fear of stigma and limited information deter individuals from testing.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

In this chapter, the study presents the conclusions and recommendations. Recommendations for practice and that for further research/study were provided.

6.2 Conclusions

The findings demonstrated a relatively high uptake of voluntary counselling and testing (VCT) services, driven by accessibility, quality of service delivery, and community support. Most respondents had recent HIV tests, received pre-test counseling, and expressed satisfaction with the VCT experience. However, gaps in consultation before testing and moderate future testing intentions highlight the need for enhanced awareness and ongoing education. Strengthening community engagement and expanding accessible, professional VCT services will be essential in sustaining and improving HIV testing rates.

The findings reveal that socio-demographic factors such as age, gender, marital status, and level of education significantly influence the utilization of VCT services. Young adults, females, married individuals, and those with higher education levels were more likely to seek HIV testing. These results underscore the need for targeted interventions addressing barriers faced by males, less educated populations, and single individuals. Enhancing awareness, reducing stigma, and increasing accessibility through tailored strategies will be key to improving VCT uptake across diverse demographic groups.

The findings found that social and psychological factors significantly influence the utilization of Voluntary Counseling and Testing (VCT) services. Key determinants include sexual activity, peer encouragement, government-provided information,

awareness of nearby centers, and comfort with service locations. High uptake was associated with those receiving information from trusted sources and feeling socially supported. Conversely, discomfort and stigma reduced service use. These results underscore the need for targeted awareness campaigns, stigma reduction strategies, and improved service accessibility to enhance VCT uptake across communities.

6.3 Recommendations

6.3.1 Recommendations for practice

i. There is a need to encourage both male and female youths aged 15-35 years to undertake a VCT test to know their status. Campaign strategies should be strategically developed to positively influence uptake of VCT among the young male and female youths aged between 15-35 years.

ii. There is a need for the government in collaboration with other non-state actors to facilitate frequent trainings of VCT counsellors and other healthcare providers to enhance counselling services and knowledge of VCT and testing process.

iii. There is a need to design targeted campaigns aimed at encouraging family members and the young people aged 15-35 years to support and encourage each other in ensuring that a good perception on HIV Counseling and Testing services at VCT sites among youths is maintained.

6.3.2 Recommendations for further research

Further studies should be conducted to determine specific stigma related issues that affects the perception and use of HIV counseling and testing services at VCT sites among youths aged 15-35 years to facilitate development of counter strategies.

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APPENDICES

Appendix A: Consent Form

TITLE: DETERMINANTS OF THE UPTAKE OF VOLUNTARY COUNSELLING AND TESTING SERVICES AMONG KENYAN YOUTH AGED 15 TO 35 YEARS IN DAGORETTI SOUTH CONSTITUENCY IN NAIROBI COUNTY, KENYA

Introduction

My name is Koech Moses Kevin, I am a student at Moi University pursuing a master's degree course in Public Health. I am carrying out research to investigate the determinants of the uptake of Voluntary Counselling and Testing services among Kenyan youth aged 15 to 35 years in Dagoretti South Constituency in Nairobi County, Kenya

Procedures to be followed

Participation in this study will require that I ask you some questions and no procedure will be performed on you. You have the right to refuse participation in this study. Please remember that participation in the study is Voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you give at this clinic or any other organizations now or in the future.

Benefits

There are no direct benefits or reward but the results obtained will help in identifying the gaps so that measures to reduce the unmet needs can be undertaken.

Risks and discomforts

I don't foresee any potential risk and discomforts from your participation in the research.

Compensation

There shall be no compensation for taking part in the study.

Voluntary participation

Your participation in the study is voluntary and you may choose to stop participating. Your decision will not be influenced by anyone and it will be respected.

Confidentiality

Confidentiality of participants will be maintained during data collection process and after the study. To ensure anonymity participant will not write their names anywhere in the questionnaire instead codes will be used.

In case you wish to contact the researcher for any inquiries about the study, feel free to do so through the following contacts;

Researcher's Name: Koech Moses Kevin

Phone Number: _____Email Address:_____

Supervisor's Name:

Email address: _____

Legal Rights and signatures;

I consent to participate in the above-mentioned study conducted by Koech Moses Kevin. I have understood everything about this project and wish to participate voluntarily in the study.

Signature of interviewee.....Date.....

Signature of researcher.....Date…….....

Appendix B: Research Assent Form

RESEARCH ASSENT FORM

This assent form is for children who can read, write and less than 18 years of age.

Introduction:

My name is **Kevin Koech**, a Masters Research student from Moi University, School of Public Health. I'm conducting a study on **determinants of the uptake of Voluntary Counselling and testing services among Kenyan youth aged 15 to 35 years in Dagoretti South Constituency in Nairobi County, Kenya.** I would like you to understand the purpose of this study is to provide you with a closed ended questionnaire to fill in as per the instructions provided. The participants will then be required to return the filled in questionnaire immediately to the researcher .If you agree, I will ask you to sign this paper (or if you cannot read / write, make your thumb mark in front of a witness). I will give you a copy of this paper for your record. Feel free to seek clarification on anything that you do not understand either from me or from Institutional Research Ethics Committee on the contacts given below.

VOLUNTARY AGREEMENT

Study Participant Code NO: ----------

Verification of Consent	**Agree**	**Disagree**
	1	**2**

Signature.....Date .....

What is a research study?

Research studies help us learn new things. We can test new ideas. First, we ask a question. Then we try to find the answer.

This paper talks about my research study and my request for your participation. I encourage you to ask any questions that you may have at any time during the interview.

Important things to know…

- It is your right to choose whether to participate or not.
- You can say 'No' or you can say 'Yes'.
- No one will be upset if you say 'No'.
- If you say 'Yes', you can always say 'No' later.
- You can say 'No' at anytime.
- Your choice will not compromise your rights to healthcare at all.

Why I'm doing this research?

I'm doing this research to establish more about the determinants of the uptake of Voluntary Counseling and testing services among Kenyan youth aged 15 to 35 years in Dagoretti South Constituency in Nairobi County, Kenya.

What will happen if you choose to participate in this research?

If you decide to participate in this study, I would ask you to do the following:

- I will give you a closed end questionnaire and request you to fill in your most truthful answers.
- Once you complete filling in all the answer i request you to give me back the questionnaire.

What are the risks of the study?

The study will not expose you to unusual risks, as it does not involve collection of any specimen/sample.

What are the benefits of my participation?

The results of data analysis will assist researchers to carry out further studies on the determinants of VCT uptake in Kenya.

What else should I know about this research?

Take the time you need to make your choice. If you have any questions concerning this research, you may ask your parents to contact Ethics committee through the following address;

IREC

Attn: Catherine Okwiri,

IREC Administrator

P.O. Box 4606-30100

Eldoret - Kenya

By E-mail:

irec@mtrh.or.ke or cokwiri@gmail.com

Cell: 0787723677

Is there anything else?

Code of Participant…….

Name of Researcher: KEVIN KOECH

Signature of Researcher ……

Date ……. Time …….

Appendix C: Questionnaire

QUESTIONNAIRE FOR STUDY: DETERMINANTS OF THE UPTAKE OF VOLUNTARY COUNSELLING AND TESTING, AMONG KENYAN YOUTH AGED 15 TO 35 YEARS IN DAGORETTI SOUTH CONSITUENCY, NAIROBI COUNTY.

INDIVIDUAL INTERVIEW SCHEDULE

Confidentiality and consent: I am going to ask you questions some of which may be very personal. Your answers are completely confidential. Your name will not be written on this form, and will never be used in connection with any of the information you tell me. I would greatly appreciate your help in responding to this survey.

Date _____/_____/_____

Please answer questions by putting a tick **(✓)** in the appropriate box.

SECTION A: GENERAL INFORMATION (RESPONDENT)

1A	Age of Respondent	1 = 15 – 19 ( ) 2 = 20 – 24 ( ) 3 = 25 – 30 ( ) 4 = 31 – 35 ( )
2A	Gender	1 = Male ( ) 2 = Female ( )
3A	Marital Status	1 = Single ( ) 2 = Married ( ) 3= Divorced ( ) 4 = Separated ( ) 5 = Widow/Widowed ( )
4A	Education Level	1 = No Education ( ) 2= Primary ( ) 3 = Secondary ( ) 4 = Post-Secondary ( )
5A	Occupation	1 = Student ( ) 2= Employed ( ) 3 = Self- Employed ( ) 4 = Unemployed ( )
6A	Religious Affiliation	1 = Christian ( ) 2 = Islam ( ) 3= Hindu ( ) 4 = Other ( )
7A	Length of Residence	1= Less than 6 Months ( ) 2 = 6 – 12 Months ( ) 3 = Over 1 year ( )

SECTION B: SOCIAL SUPPPORT FACTORS

Section I: HIV/AIDS transmission

	Please answer the following questions		
1B	Have you had any sexual intercourse in your life? 1 =Yes ( ) 2 =No ( ) **If No skip to 6B**		
2B	If **Yes in 1B above** how many sexual partners have you had in the last six months? 1 = One ( ) 2 = Two ( ) 3 = More than two ( )		
3B	Have you had any unprotected sex in the last six months? 1 = Yes ( ) 2 = No ( ) 3 = Not Sure ( )		
4 B	How often have you used a condom in the last six months? 1 = Never ( ) 2 = Sometimes ( ) 3 = Always ( )		
5 B	Did you use a condom during the last sexual encounter? 1 = No ( ) 2 = Yes ( )		
6B	If **NO** in number **1B above**, is there any urgent need for you to take HIV test? 1 = Yes ( ) 2 = No ( ) 3 = Not Sure ( )		
7 B	If your response in **6B above is Yes,** why do you need to take HIV test? 1 = There are other means of HIV transmission ( ) 2 = For curiosity purpose ( ) 3 = Because I have been forced by my parents/guardians ( ) 4 = Peer pressure ( )		
8 B	Would you encourage other friends who are not sexually active to take HIV test? 1= Yes ( ) 2= No ( )		
9B	Where did you get information on HIV/ AIDS and VCT -T***ick only one option*** 1 = School education program ( ) 2 = TV/Newspapers ( ) 3 = Family Members ( ) 4 = Workplace HIV/AIDS Program ( )		

10B	Has any government agency or entity visited your school or workplace/home giving information on VCT	1 =Yes ( )	2 = No ( )

Section II: Perceptions of HIV/AIDS

	Please answer the following questions	
1B	Would you be willing to eat from the same dish with a person you knew had the virus that causes AIDS?	1 = Yes ( ) 2 = No ( ) 3 = I don't know ( )
2B	If a member of your family became ill with the virus that causes AIDS, would you want it to remain a secret or not?	1 = Yes ( ) 2 = No ( ) 3 = Not sure ( )
3B	If a colleague in your work place has the virus that causes AIDS but is not sick, should he or she be allowed to continue working with you? 1 = Yes ( ) 2 = No ( ) 3 = I don't know ( )	
4B	Do you think social life influences people decision to go for a HIV test in Dagoretti South Constituency? 1= Yes ( ) 2 = No ( ) 3 = I don't know ( )	
5B	What would make it easier for people to ask for an HIV test? ***Tick only one option*** 1 = More awareness on availability of the service ( ) 2 = Testing done anonymously ( ) 3 = More empathetic attitude from service staff ( ) 4 = Opening hours increased ( ) 5 = Good counselling ( ) 6 = Post counselling following up ( ) 7 = Availability of medical care ( ) 8 = Mobile VCT ( ) 9 = VCT centres in an isolated place ( )	
6B	Do you think the rights of people with AIDS or those with the virus that causes AIDS are protected in Dagoretti South Constituency? 1 = Yes ( ) 2 = No ( ) 3 = Not always ( ) 4 = Not sure ( )	

7B	Do you think that people talk openly about HIV/ AIDS in Dagoretti South Constituency? 1 = Yes ( ) 2 = No ( ) 3 = Not sure ( )	
8B	Would you say that your family and friends supported you or did not support you taking a HIV test?	1= Yes ( ) 2 = No ( ) 3 = don't know ( )
9B	Would you support or do not support your relative going for HIV testing?	1= Support relatives and friends having a HIV test ( ) 2 = Do not support relatives and friends having a HIV test ( )
10B	Would you say religious and traditional leaders in your community support you going for HIV testing?	1= Yes ( ) 2 = No ( ) 3 = don't know ( )
12B	What was the reason of getting tested? 1= I am planning to get married ( ) 2 = I feel sickly ( ) 3 = Wanted to know status ( ) 4 = The organization requires HIV test? ( )	
13B	Whom did you consult before visiting the VCT Centre for testing? ***Tick only one option*** 1= Sister/Brother ( ) 2 = Parents ( ) 3 = Teacher ( ) 4 = Friend ( ) 5 = Religious Leader ( ) 6 = Partner/Spouse ( ) 7 = None ( )	

SECTION C: HEALTH FACILITY RELATED FACTORS

Section I: VCT Services

	Please answer the following questions		
1C	Are you aware of any Voluntary Testing Centre in your village or nearest medical facility?	1 =Yes ( )	2 = No ( )
2C	If yes, what is the distance, in estimate?		

	1 = less than 2km ( ) 2 = 3-5 km ( ) 3 = 6-8 km ( ) 4 = more than 8 km ( )		
3C	What means of transport is available to the nearest VCT or health centre? 1 = Walking distance ( ) 2 = Boda boda ( ) 3 = Motor vehicles ( )		
4C	Do you know your HIV status?	1 = Yes ( ) 2 = No ( ) **If No Skip to….. No. 10C --- 12 C**	
5C	If yes when is the last time you tested your HIV status?	1= A Day ( ) 2=A week ( ) 3=A month ( ) 4=A year ( )	
6C	During the visit, did you receive Pre-test Counselling?	1= Yes ( ) 2 = No ( )	
7C	When you visited the test Centre, were you tested?	1= Yes ( ) 2= No ( ) 3= don't know ( )	
8C	During your visit, who accompanied you to the testing Centre -T***ick only one option*** 1 = I was not accompanied ( ) 2 = I was accompanied by friend/workmate/classmate/ guardian ( ) 3 = I was accompanied by Family Member ( ) 4 = I was accompanied by spouse ( )		
9C	During your visit to the facility what was the attitude of the health provider?	=Friendly ( )	2=Unfriendly ( )
10C	If **No** in **1C above** when do you plan to get tested in the near future? 1= Less than 3 Months ( ) 2 = Between 3 – 6 Months ( ) 3 = Between 6 – 12 Months ( ) 4 = More than 12 Months ( )		
11C	If you will be tested in the period above, where would you want to be tested (location)		

	1 = Within my locality VCT ( ) 2 = Self-Testing ( ) 3 = At a Government hospital in town ( )
12C	Are you comfortable with the location of the VCT Centre in your neighbourhood? 1 = Comfortable ( ) 2 =Very Comfortable ( ) 3 = Uncomfortable ( ) 4 = Very uncomfortable ( )
13C	Should HIV testing centres be separated or be part of other services? 1 = Yes, should be separate ( ) 2 = No, should be Integrated ( ) 3 = Don't know ( )

Section II: Visit to VCT Centre (For those who have visited a test Centre)

	Please answer the following questions
1C	Information on the testing process was properly communicated in a language I understand. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
2C	I was welcomed and spoken to in a language I understood at the VCT Centre when I last visited. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
3C	The counsellors took me through the pre-test process, and made me understand the various aspects of HIV Testing. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
4C	I feel the counsellors were knowledgeable on the HIV testing process. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
5C	I am satisfied on how the counsellors took me through. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )

6C	In your opinion, do you think the VCT you visited was well equipped for voluntary testing & counselling? 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
7C	My questions were well answered and responded to, when I last visited the testing Centre. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
8C	How long did the testing session last? 1 = 0 – 30 Minutes ( ) 2 = 30 Minutes ( ) 4 = 1 Hour ( ) 4 = More than 1 Hour ( )
9C	I am satisfied on how my entire testing process (pre-test, test & post-test) was handled. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )
10	I feel my counsellor was qualified enough and had good knowledge of VCT. 1 = Agree ( ) 2 = Strongly Agree ( ) 3 = Disagree ( ) 4 = Strongly Disagree ( )

THANK YOU FOR PARTICIPATING!

Appendix D: List of Public and Private Health Facilities in Dagoretti South Constituency

1. Abandoned Child Care
2. Chandaria Health Centre
3. Dagoretti Approved Dispensary
4. Dagoretti Community Dispesary
5. Fremo Medical Centre
6. Gachui Medical Centre
7. Glory Health Clinic
8. Riruta Health Centre
9. Good Shepherd Dispensary
10. Hope Community VCT
11. Imani Health Servises
12. Kivuli Health Centre
13. Lea Toto Dagoretti
14. Wema Health Centre
15. Lea Toto Kawangware
16. Mary Mission Health Centre
17. Miliki Afya Limited
18. Mutuini Sub-District Hospital
19. Nile Medical Care
20. Orient Medical Care
21. Orthodox Dispensary
22. Providence Whole Care
23. R - Care Health Clinic
24. St Anns Medical Centre
25. St Joseph's Dispensary (Dagoretti)
26. St Lukes (Kona) Health Centre
27. St Michael Clinic
28. Swop Kawangware
29. Tumaini Africa
30. Uthiru Muthua Dispensary
31. Uzima VCT Centre
32. Waithaka Health Centre

Appendix E: Plagiarism Certificate

SR798

ISO 9001:2019 Certified Institution

THESIS WRITING COURSE

PLAGIARISM AWARENESS CERTIFICATE

This certificate is awarded to

KEVIN KOECH

SPH/PGH/1026/12

In recognition for passing the University's plagiarism Awareness test for Thesis **entitled: DETERMINANTS OF THE UPTAKE OF VOLUNTARY COUNSELLING AND TESTING SERVICES AMONG KENYAN YOUTH AGED 15 TO 35 YEARS IN DAGORETTI SOUTH CONSTITUENCY IN NAIROBI COUNTY, KENYA with** similarity index of 6% and striving to maintain academic integrity.

Word count:22462

Awarded by

Prof. Anne Syomwene Kisilu
CERM-ESA Project Leader Date: 04/03//2025

Appendix F: Work plan

Activity	**Duration**	**Duration Weeks**					
		Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**
Presentation of Proposal	1 day						
Revision and incorporation of comments from panel	5 days						
Pilot study	1 day						
Revision of tools	1 day						
Seeking introduction letter from university	3 days						
Data collection	10 days						
Data analysis and processing	5 days						
Submission of project report	1 day						

Appendix G: Working budget

1. Personnel Costs			
Item	**Quantity**	**Unit Cost (KES)**	**Total Cost (KES)**
Research Assistants	15	3,000	45,000
Data Entry Clerks	4	5,000	20,000
Data Analyst	1	10,000	10,000
Subtotal (A)			**75,000**
2. Travel and Transport			
Item	**Quantity**	**Unit Cost (KES)**	**Total Cost (KES)**
Local Transport	3	5,000	15,000
Car hire for field visits	3	10,000	30,000
Subtotal (B)			**45,000**
3. Equipment and Supplies			
Item	**Quantity**	**Unit Cost (KES)**	**Total Cost (KES)**
Stationery	1	12,000	12,000
Software (SPSS, NVivo)	1	20,000	20,000
Subtotal C			**32,000**
4. Data Collection Costs			
Item	**Quantity**	**Unit Cost (KES)**	**Total Cost (KES)**
Printing Questionnaires	200	20	4,000
Printing of study reports	6	1,500	9,000
Subtotal (D)			**13,000**
5. Miscellaneous Expenses			
Item	**Quantity**	**Unit Cost (KES)**	**Total Cost (KES)**
Communication (Months)	5	1,000	5,000
Subtotal (E)	-	-	5,000
Grand Subtotal (A+B+C+D+E)			170,000
Contingency (10%)			17,000
Grand Total (Grand Subtotal + Contingency)			**187,000**

Appendix H: IREC Approval letter

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471/2/3

MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

Reference: IREC/2014/119
Approval Number: 0001262

15th September, 2014

Mr.Kevin Koech,
Moi University,
College of Health Sciences,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

15 SEP 2014
APPROVED

Dear Mr.Koech,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"Determinants of the Uptake of Voluntary Counseling and Testing Services among Kenyan Youth Aged 15 to 35 Years in Dagoretti South Constituency in Nairobi County, Kenya."

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 1262*** on 15th September, 2014. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 14th September, 2015. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

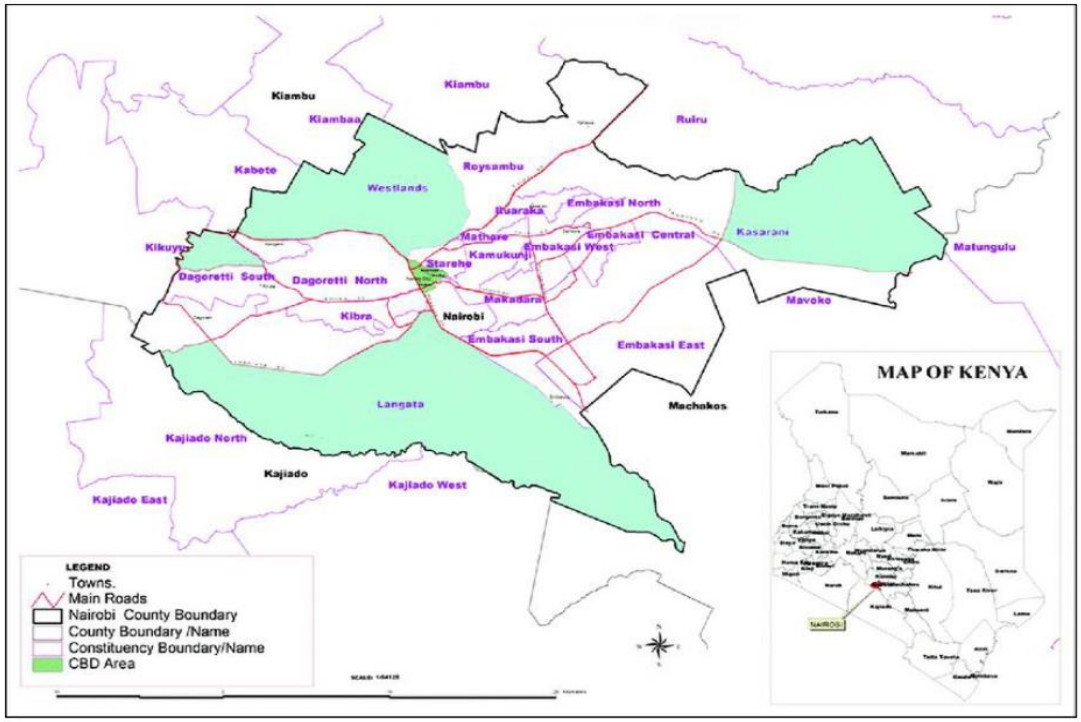
Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

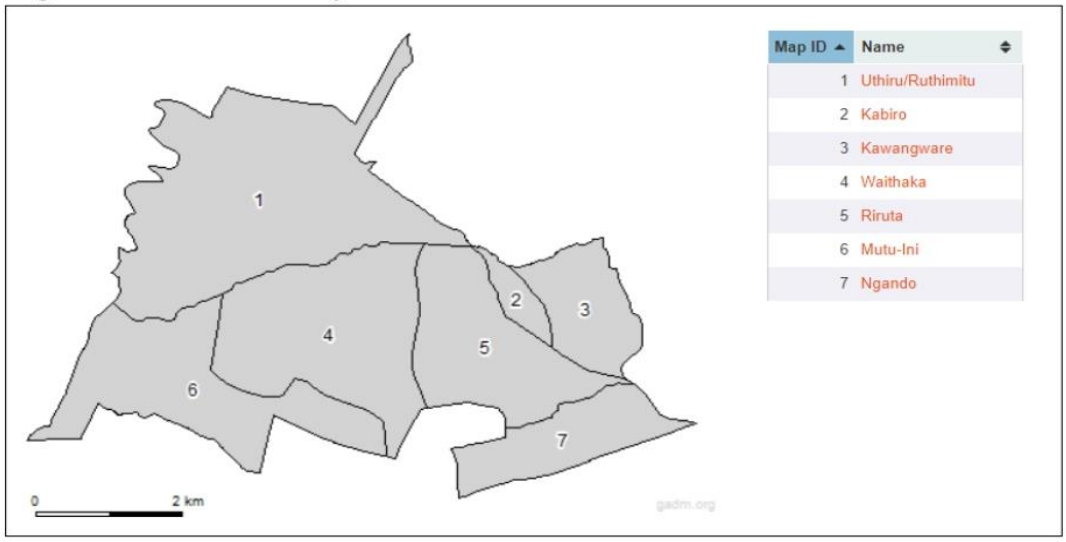
cc Director - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD

Appendix I: Map of Nairobi City County

Nairobi City County Map



Dagoretti South Constituency



Map ID	Name
1	Uthiru/Ruthimitu
2	Kabiro
3	Kawangware
4	Waithaka
5	Riruta
6	Mutu-Ini
7	Ngando

Source: https://gadm.org/maps/KEN/nairobi/dagorettisouth_3.html