

**DETERMINANTS OF PROVIDER-INITIATED HIV TESTING AND
COUNSELLING UPTAKE IN JARAMOGI OGINGA ODINGA TEACHING
AND REFERRAL HOSPITAL, KISUMU, KENYA.**

BY

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DECLARATION

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

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ABSTRACT

The burden of HIV/AIDS persists in sub-Saharan Africa, in which Kenya is part, despite the preventive efforts. The national prevalence of HIV/AIDS in Kenya is 5.6%, and Nyanza Province is (15.1%) which is more than double. Subsequently, the prevalence in Kisumu is at 18.5%. Universal access to HIV Testing and Counselling (HTC) is recognized as the cornerstone for HIV prevention. Furthermore, it has been evidenced that Provider-Initiated Testing and Counselling (PITC) is considered as the best strategy for HIV prevention. In the PITC model, individuals presenting to health facility are encouraged to be tested for HIV as part of routine medical investigation. While PITC has been introduced in most healthcare facilities in Kenya, the uptake and determinants have not been established. Moreover, there is limited literature addressing the determinants of PITC services uptake. Thus, there was an urgent need to find out the determinants to PITC uptake. The main objective of the study was to establish the determinants of PITC uptake by patients seeking health care services at the Jaramogi Oginga Teaching and Referral Hospital (JOOTRH). There were three specific objectives, that is, to determine social factors that influence the uptake of PITC HIV testing in JOOTRH, to establish the health service factors that determine the uptake of PITC HIV testing in JOOTRH, and to determine whether knowledge and information about HIV influence uptake of PITC services in JOOTRH. This was a cross-sectional study involving a systematic random sampling of patients/clients seeking services at the hospital. Data was collected using a structured questionnaire and keyed into an electronic database. Socio demographic variables were presented by use of frequencies and percentages. Bivariate logistic regression was used to determine factors associated with PITC uptake. Association was reported by use of odds ratios and their 95% confidence intervals. Statistical significance was considered at alpha-level of 5%. The study interviewed 291 participants of whom 53% were females, 70% were aged between 18 to 35 years, 45% were single, 88% were Christians and 55% were involved in an income generating activity. Age was found to be associated with PITC uptake ($p=0.034$). In addition, those aged between 36-45 years were less likely to uptake PITC services compared to those 18-25 years ($OR=0.28$, 95% CI [0.14-0.59], $p=0.0008$). Similarly, employment status was found to be associated with PITC uptake ($OR=1.81$, 95% CI [1.09-3.01], $p=0.0219$). Moreover, participants who had a friendly relationship with the provider were 3.35 times more likely to uptake PITC services than those who were not ($OR=3.35$, 95% CI [1.41-7.92], $p=0.006$). This study recommends that the government needs to set up a PITC campaign targeting the younger age group to increase their uptake. Moreover, public health facilities need to improve on the staff-patient relationship to address and increase the uptake of PITC.

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ABBREVIATIONS

AIDS	:	Acquired Immunodeficiency Syndrome
ART	:	Antiretroviral Therapy
ARV	:	Antiretroviral
CD4	:	Cell Differential Four
CDC	:	Centres for Disease Control and Prevention
CITC	:	Client Initiated Testing and Counselling
CT	:	Counselling and Testing
ENT	:	Ear Nose and Throat
HCW	:	Health Care Worker
HIV	:	Human Immunodeficiency Virus
HTC	:	HIV Testing and Counselling
KAIS	:	Kenya AIDS Indicator Survey
KDHS	:	Kenya Demographic and Health Surveys
KNBS	:	Kenya National Bureau of Statistics
NASCOP	:	National AIDS and STD Control Programme
JOOTRH	:	Jaramogi Oginga Odinga Teaching and Referral Hospital
PITC	:	Provider Initiated Testing and Counselling
PLWHA	:	People Living with HIV/AIDS
PMTCT	:	Prevention of Mother-to-Child Transmission of HIV/AIDS
SAS	:	Statistical Analysis Software
STI	:	Sexually Transmitted Infection

TB : Tuberculosis
UN : United Nations
VCT : Voluntary Testing and Counselling
WHO : World Health Organization

DEFINITION OF TERMS

Acquired Immune Deficiency Syndrome: Progressive immune deficiency caused by infection of CD4⁺-T Cells with the human immunodeficiency virus (HIV) (UNAIDS, 2007).

Counselling: The confidential interaction between a HTC provider and a client or a patient.

Provider-Initiated Testing and Counselling: A situation whereby a health care provider specifically recommends HIV tests to patients attending a health care facility.

Client-Initiated Testing and Counselling: Voluntarily testing and counselling a client's takes the initiative of taking a HIV tests also known as VCT.

CD4: The T helper cells that recognises antigen bound in Class II MHC protein.

Confidentiality: Privacy of interaction between a client and HTC provider.

Disclosure: The process of informing clients/patients about their HIV test results.

Sensitivity: Ability of a test method to detect correctly sera that contain HIV antibody expressed as percentage. Also, probability of a positive test in people suspected to be infected with HIV, expressed as a percentage.

Specificity: Ability of a test method to detect correctly sera that do not contain antibody to HIV, expressed as percentage. Also, probability of a negative test in people not infected with HIV, expressed as a percentage.

Universal Access: The global commitment to ensure that every individual gets access to HIV testing and counselling.

Non-patients/Client: A person who is either accompanying a patient to a hospital or is given an accommodation on hospital premise consisting of board and lodging only as a companion to a hospital in-patient.

Patients: A person being treated for a medical problem or condition.

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CHAPTER ONE

INTRODUCTION

According to the joint United Nations Programme on HIV/AIDS (UNAIDS)/World Health Organization (WHO), 2007, Provider-Initiated HIV Testing and Counselling (PITC) is where a health care provider or worker specifically recommends an HIV test to patients attending health facilities as a standard component of routine medical care (WHO & UNAIDS, 2007). The major purpose of such testing and counselling (CT) is to enable clinical decision to be made or specific medical services to be offered that could be impossible without the knowledge of a person's HIV status. PITC also was aimed at identifying unrecognised or unsuspected HIV infection in all persons attending health facility including relatives and friends (NASCO, 2008). HIV Testing and Counselling (HTC) is recommended to all whether manifesting HIV signs and symptoms or not. The focus of this study was to find out the motivators and de-motivators of its uptake.

1.1 Background of the Study

An estimated 33.3 million (31.4 million–35.0 million) people worldwide were living with HIV/AIDS at the end of 2009 (WHO & UNAIDS, 2009). Sub-Saharan Africa remains the most affected region in the world with an estimated 22.5 Million people living with HIV (Charles *et al.*, 2009). HIV/AIDS has posed a great threat in sub-Saharan Africa from the time it was diagnosed (Otwombe *et al.*, 2007). An estimated 1.8 million (1.6 million–2.0 million) people became infected in 2009, considerably lower than the estimated 2.2 million (1.9 million–2.4 million) people newly infected with HIV/AIDS in 2001

(UNAIDS, 2010). In Kenya, like many sub-Saharan countries, HIV/AIDS is a challenge, according to the Kenya AIDS Indicator Survey (KAIS) 2007 & 2012 reports and the Kenya Health Demographic Survey (KDHS) reports of 2008/2009 (KAIS, 2007; KAIS, 2012; KDHS, 2009). According to KAIS 2012, The HIV prevalence in the country is at approximately 5.6% among adults aged 16 to 64 years (approximately 1,192,000 persons living with HIV in 2012) (KAIS, 2012) as compared to KAIS 2007 (estimated HIV prevalence of 7.2%) (KAIS, 2007). There was substantial regional variation placing Nyanza Province at 15.1%, which is more than double the national estimate. Kisumu has approximately a prevalence of 18.5% with a steady rise in the number of new infections at approximately 25,195, which is highest compared to all other provinces in Kenya (Council, 2009). These reports also highlight the uptake of HTC which still remains low 53.6% (NASCOPTC, 2011).

HIV/AIDS is in its third decade and many more new infections continue to occur (WHO & UNAIDS, 2009). Transmission of HIV in sub-Saharan Africa is mainly via heterosexual means, thus a lot of prevention efforts are geared towards behaviour change, for this to happen, it is important that people know their HIV status so that they can make well-informed and appropriate actions (Potts *et al.*, 2008). In settings experiencing generalized epidemics like Kenya, HIV/AIDS prevalence has been shown to be high across both in-patient and out-patient settings in major health facilities (Wanyenze *et al.*, 2008).

Most sub-Saharan countries have adopted different approaches in an attempt to slow the spread of HIV infection and minimize its impact on the individual, family and society as

a whole. Among these strategies is HTC (Charles *et al.*, 2009). Nevertheless, global coverage of HTC programmes still remains low (53.6%). There has been an on-going debate to increase testing rates, prompting the urgent need for more efforts to increase the provision of HTC through a wide range of effective and safe options (WHO and UNAIDS, 2007).

Kenya is among countries in sub-Saharan Africa with relatively high coverage of HTC approximately. Over half (72%) of adults aged 15-64 years reported to having been tested for HIV (KAIS, 2012) compared to 37% in 2007 (KAIS, 2007). A likely explanation of the poor uptake of HTC in Kenya in the previous years is related to the high levels of stigma associated with HIV/AIDS (Meiberg *et al.*, 2008). A number of strategies have been employed to improve HTC. These include Voluntary testing and counselling (VCT), PITC, and the Home-Based Counselling and Testing (HBCT).

It has been observed by health practitioners and policy makers globally, that many people who present with symptoms of HIV infection, and those who might otherwise benefit from knowing their HIV/AIDS status through contact with health care facilities are often not offered a HIV/AIDS test (UNAIDS, 2007). Many people continue to die unaware of their status and without accessing HIV/AIDS treatment care and support. A majority of discordant couples are not aware of their partners HIV Status (Were *et al.*, 2006). Pregnant women infected by HIV continue giving birth minus using PMTCT services (Druce and Nolan, 2007). Individuals seeking counselling and testing (CT) tend to do it late when they are already symptomatic or perceived themselves to be at high risk of HIV infection. With effective interventions such as PMTCT and Antiretroviral Therapy

(ART), PITC is being promoted as a way of increasing testing coverage (WHO and UNAIDS, 2007). PITC has been identified as an intervention to increase access to treatment, care, support and prevention for HIV-infected persons. This is because late diagnosis and delayed initiation of ART remain the prime reasons for high mortality in resource-limited settings (Weigel *et al.*, 2009).

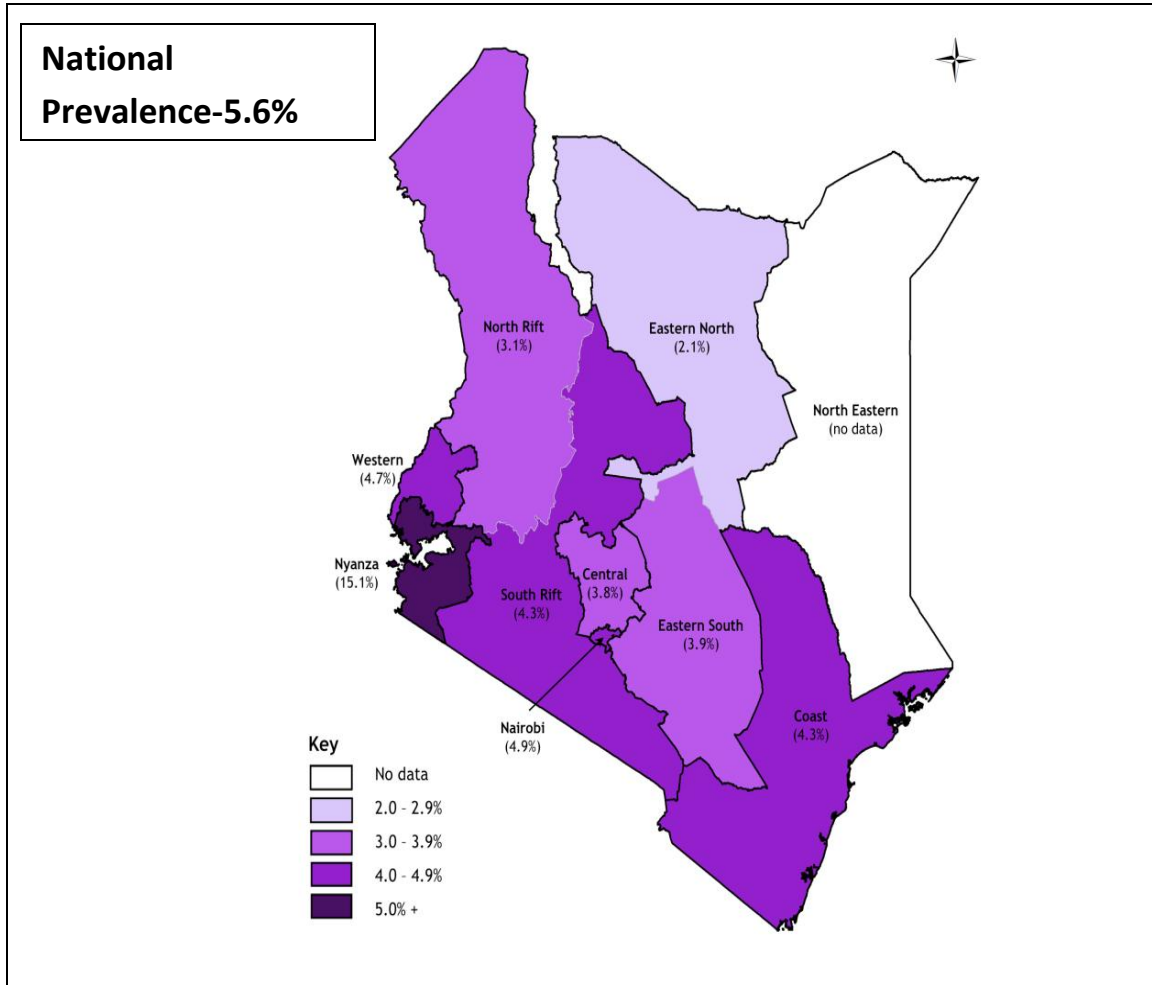
PITC was introduced in JOOTRH in 2008 yet its uptake and determinants have not been determined. This study seeks to establish the determinants of PITC uptake by patients seeking health care services and non-patients at the JOOTRH.

1.2 Problem Statement

According to KAIS 2007, only 20% of an estimated 1.3 million people infected with HIV know their status. There was an increase in the number of HIV positive people who knew their status (47%), (KAIS, 2012). Therefore, the need for accelerated access to universal knowledge of HIV status is compelling (NASCOP, 2007). Several years into the epidemic, uptake of HTC has remained low (KNBS, 2009). Surveys by both KAIS and KDHS had reported low HTC uptake with nearly two-thirds of the population not getting HIV test (KNBS, 2009; KAIS, 2012). The reports further clearly stated that 4 out of 5 infected persons were unaware of their HIV/AIDS status (NASCOP, 2007). To improve HTC uptake, various approaches have been employed. One such approach is the PITC targeting patients and clients. Since its inception and subsequent roll-out in this region, the uptake has generally remained low in JOOTRH. This is according to hospital records by the year 2010. Out of 22,462 patients who seek health care services in a month, an average of 2,500 patients are tested for HIV of whom averagely 300 do test positive. The

high prevalence and low-level knowledge of HIV status required more innovative approaches to curb new infection and re-infections as well as for planning, treatment, and intervention and for helping individuals change behaviour. To date there were no published data examining the determinants of PITC at JOOTRH. As such, there was an urgent need to establish the determinants of PITC uptake. This knowledge will enable find ways to improve HTC uptake at the JOOTRH. Implementation of these research findings may contribute towards improving the uptake of PITC services.

Figure 1 : HIV Prevalence among people 15-64 years in Kenya by province



Source (KAIS, 2012)

1.3 General Objective

The study's main objective was to establish the determinants of PITC service uptake by patients seeking health care services at JOOTRH in Kisumu County.

1.3.1 Specifics Objectives

1. To determine social factors that influences the uptake of HIV PITC services in JOOTRH.
2. To determine the health service factors that influences the uptake of HIV PITC services in JOOTRH.
3. To determine whether knowledge about HIV among clients influence the uptake of HIV PITC services in JOOTRH.

1.3.2 Research Questions

1. What are the social factors that influence uptake of HIV PITC services in JOOTRH?
2. What are the health service factors that influence uptake HIV PITC services in JOOTRH?
3. Does knowledge about HIV among clients influence uptake of HIV PITC services in JOOTRH?

1.4 Justification

A major strategy of HIV prevention has been the introduction of PITC. HIV tends to spread more among those who are not aware of their HIV/AIDS status (Marks *et al.*, 2005).The KAIS report stated that 56% of the Kenya population have never tested for HIV, while 84% of infected adults did not know their status (NAS COP, 2007).There was

an urgent need to identify as many persons infected as possible through innovative HTC approaches. As the PITC services are being rolled out to improve the HTC uptake, there was limited literature on the determinants of its uptake. This study was to help find out the determinants of PITC and enable find possible ways to improve its uptake at the JOOTRH. It is believed that implementation of the research findings may contribute towards improving the uptake on PITC services by patients and clients therefore helps in identifying candidates for care and treatment as well as influencing behaviour change after testing and counselling. Many studies on testing behaviours fail to capture views and characteristic of those who do not test. Previous studies had not discerned the predictors of PITC. This study used data from both patients and clients to examine prior HIV testing status, identifying unmet needs for testing and predictors of HIV testing using the PITC model.

The choice of JOOTRH as study site was guided by the fact that Kisumu County, which is the catchment area of the hospital has the highest prevalence of HIV/AIDS in the country. The hospital is a regional referral and teaching facility in western region and therefore offers a wide range of clinical and preventive services thereby attracting many patients and clients seeking services from the facility, hence another reason for the choice of the facility as study site. The hospital also offers specialized services having a wide variety of professional/consultants and well equipped state of the art equipment that aid in diagnosis and treatment of various diseases. The hospital charges are affordable and treatment for children less than 5 years is free, hence attracting many patients seeking medical services from the facility.

CHAPTER TWO

LITERATURE REVIEW

2.1 Global Overview on HIV Counseling and Testing

The fight against HIV/AIDS has had a multi-pronged approach targeting both prevention as well as care and treatment activities. Upon realization of the benefits of PITC, WHO and UNAIDS convened a two-day consultation in July 2006 to review a draft guidance document for countries on “Provider-Initiated Testing and Counselling in Health Facilities” (WHO and UNAIDS, 2007). It was agreed that increasing the proportions of people who know their status is an important objective through HTC, many participants underlined that this in itself was insufficient. HTC has to be linked to prevention, treatment, care and support more broadly. Accompanied by intensified action to address social issues, such as stigma, discrimination, violence and other serious negative consequences related to disclosing one’s status to others (UNAIDS, 2007). This was followed by the development of a policy guideline on PITC by UNAIDS and WHO in 2007(WHO and UNAIDS, 2007).

A study by Becker et al (2009), confirmed the view that HTC is one critical entry-point for engagement into treatment and care as well as for primary and secondary prevention efforts (Becker *et al.*, 2009). For over 20 years, client-initiated HTC, also known as Voluntary Counselling and Testing (VCT), has helped millions of people learn their HIV status.

Nevertheless, global coverage of HTC programmes remains low (53.6%) (Becker *et al.*, 2009; NASCOP, 2007). Despite steps to increase the level of HTC globally, particularly

in resource-limited settings where many people were unaware of their HIV status and uptake was relatively limited.

The low coverage was associated with many factors including fear of stigmatization and discrimination and also perception by many people, that they were not at risk even in high prevalence areas (WHO and UNAIDS, 2007). To improve this low uptake besides VCT, it was pointed out that a different approach had to be proposed namely Provider-Initiated HIV Testing and Counselling (Girma and Enquesselassie, 2009). It was imperative that people recognize their HIV status so that they can make an informed and appropriate action (Potts et al., 2008).

2.2 Traditional Voluntary HIV Testing and Counselling

Traditional VCT (also called client-initiated VCT) involved individuals actively seeking HIV testing and counselling at a facility that offered these services. In Kenya, HIV/AIDS testing were premised on the Client-Initiated Testing and Counselling (CITC) model, which involves a client taking the initiative to be tested for HIV/AIDS. The process involves provision of pre-testing counselling, testing and post-testing counselling with a lot of emphasis on maintaining client confidentiality. However, several years into the epidemic, the uptake of counselling and testing has remained generally low (KNBS, 2009). Client-initiated VCT was conducted in a wide variety of settings, including health facilities, stand-alone facilities outside health institutions, through mobile services, in community-based settings, and even in people's homes (UNAIDS, 2007).

2.3 HIV Provider -Initiated Testing and Counselling uptake

An average of 12% of men and 10% of women have been tested for HIV and received their results, and this is low as what is expected of above 90% (UNAIDS and WHO, 2007). Approximately, 80%, of people living with HIV/AIDS in low- and middle-income countries did not know that they are HIV positive(UNAIDS, 2008). In Kenya for instance, the KAIS places the uptake at 72% of individuals aged 15-64 years having tested for HIV (KAIS, 2012) which was a marked increase as compared to the KAIS report of 2007 (34%). Knowing of one's HIV status was critical to expanding access to HIV/AIDS treatment, care and support in a timely manner, and offers people living with HIV/AIDS an opportunity to receive information and tools to prevent HIV transmission to others. Increased access to HTC is essential in working towards universal access to HIV/AIDS prevention, treatment, care and support as endorsed by G8 leaders in 2005 and the UN General Assembly in 2006 (WHO and UNAIDS, 2007).

Currently many people are still unaware of their HIV/AIDS status. HTC services need to be expanded to antenatal care, STI and TB clinics, other clinical settings as well as through outreach for most at risk populations, home-based HTC, testing campaigns and client-initiated testing centres (WHO and UNAIDS, 2007). The low uptake of HTC has been a major challenge in the response to the epidemic that needs to be urgently addressed (WHO and UNAIDS, 2007). Other appropriate counselling approaches have been explored to improve HTC including PITC. The WHO and UNAIDS developed a PITC guidelines in light of increasing evidence that PITC can increase uptake of

HIV/AIDS testing and thus improve access to health services for people living with HIV/AIDS (WHO and UNAIDS, 2007).

The guideline stated that, ‘the decisions on how best to implement PITC will depend upon an assessment of the situation in a particular country, including local epidemiology, available infrastructure, financial and human resources, available standards of HIV/AIDS prevention, treatment, care and support and the existing social, policy and legal frameworks for protection against adverse consequences of HIV/AIDS testing, such as HIV/AIDS-related discrimination (WHO and UNAIDS, 2007). ‘Where there are high levels of stigma and discrimination and or low capacity of health care providers to implement PITC under the conditions of informed consent, confidentiality and counselling, adequate resources should be devoted to addressing these issues prior to implementation. Decisions around implementation should be made in consultation with all relevant stakeholders, including civil society groups and people living with HIV and AIDS’ adds the guideline (WHO and UNAIDS, 2007).

2.3.1 Provider Initiated Testing and Counseling (PITC) Services

PITC had been introduced to compliment the traditional client-initiated testing and counselling (CITC) model that had been central to HTC (UNAIDS, 2007). With the increasing accessibility of effective interventions such as prevention of mother-to-child transmission (PMTCT) and antiretroviral therapy (ART), as incentives, PITC was being promoted as a way of increasing testing coverage globally, including Kenya which published the first guidelines in 2008 (NASCO, 2008). PITC can be initiated at any service delivery point in the hospital setting. In this model, individuals presenting to a

health facility were encouraged to be tested for HIV as part of the routine medical investigation, but were free to opt-out of the testing if they wished (WHO and UNAIDS, 2007).

With this approach,

1. ‘A HIV test was recommended to all patients, whose clinical presentation might result from underlying HIV/AIDS infection’.
2. ‘As a standard part of medical care for all patients attending health care facilities’.
3. ‘More selectively in concentrated and low-level epidemics’.

‘Individuals must specifically decline the HIV/AIDS test if they do not want it to be performed’. There was need of an informed Consent(WHO and UNAIDS, 2007).

Guidelines by both CDC (2011) and WHO (2007) highlight, that PITC was designed to integrate routine offering of HTC services into clinical services such as TB, STI and family planning clinics as well as outpatient clinics (CDC, 2011). It can be an "opt-out" opt-in” service whereby, opt-in is when each patient must specifically consent to a HIV/AIDS test, usually in writing, whereas opt-out is when each patient is notified that a HIV test is routinely offered and recommended, and that he/she may refuse test. The intervention is brief 10 minutes of provider time for a HIV negative patient and less than 15 minutes for an HIV positive patient.

2.3.2 Challenges to PITC

The roll-out of PITC has experienced certain challenges right from the point of inception, especially from human rights groups who have concerns that the PITC approach could lead to *de facto* mandatory or imposed testing in settings where healthcare workers either

do not understand that patients should be able to opt out or do not supply sufficient information or opportunity for patients to decline (UNAIDS, 2007). There were also concerns that patients were subjected to HIV testing without consent and this was going to discourage people, particularly those most vulnerable to HIV from seeking care and treatment to other conditions also (UNAIDS, 2007).

According to a study by *Kennedy et al., (2010)* which sought to understand the challenges Ugandan providers faced in implementing antenatal PITC programs, the identified challenges include counselling discordant couples, incomplete follow-up of HIV-infected clients, low rates of both male involvement and HIV sero status discourse, and inadequate training and support to carry out counselling duties. Health system challenges included lack of adequate space for counselling, frequent "stock-outs" of supplies, shortages of both counsellors and laboratory personnel, as well as inadequate referral services (*Kennedy et al., 2010*). A similar study in Kenya, established that there were issues of staff shortage of all cadres, long client waiting time, increased work load and burn out, lack of space and privacy as some of the challenges faced by the PITC providers (*Kathambani et al., 2008*).

Early detection of HIV among adolescents is a significant challenge for policymakers, service providers, and communities. To meet this challenge, they suggest implementing new HIV technologies, identifying different procedures and settings for conducting tests and mounting community-level social marketing programs (*Rotheram-Borus and Futterman, 2000*).

2.3.3 Future of PITC

Available literature from previous studies point out to the fact that the uptake of HTC services is low(Helleringer *et al.*, 2009).Increasing the level of HTC is therefore a priority and PITC is heralded as a good approach enabling care givers to offer HIV/AIDS testing to patients seeking health care.

The available literature is however inadequate in bringing' out client/patient related challenges and factors that determine whether they choose to utilize the services or not. This study addressed those gaps by assessing the challenges as well as seeking to establish the motivators and demotivators to HIV/AIDS testing from the patients and non-patients point of view. Such knowledge would be important in scaling up PITC services.

2.4 Factors Influencing HIV Testing and Counseling

HTC has many benefits including entry in to care, treatment and prevention. When these are explained in a right way to people most of them accept HIV/AIDS tests. Though the benefits of knowing one HIV/AIDS status are many, HIV is still a stigmatized condition in many countries and this has had a far-reaching implication regarding the results of an HIV test. Especially in cases where a client or patient results turns out to be positive (UNAIDS, 2008).Below is a discussion of various categories of the socio-factors, knowledge and information and health service factors influencing HTC some of the social factors that based are on various categories.

2.4.1 Socio-Demographic Factors Influencing HIV Testing and Counseling

Women are more likely to be tested than men (41% ,25% respectively) NASCOP, 2007&2009) This is due to the PMTCT services and also due to the fact that women tend to visit medical facility more than men. Young people and children may also have a higher frequency to test since their parents give consent.

2.4.2 Socio –Economic Factors

Socio-economic factors are a big determinant of uptake of HIV/AIDS services. People in higher socio-economic class may fail to get tested because of the perception that they know more than people of lower socio-economic class on matters HIV/AIDS. Individuals working places with high discrimination of people with HIV/AIDS like work places, insurance firms, educational institutions, acceptance for HIV/AIDS testing is low (WHO and UNAIDS, 2007; KAIS, 2012).

2.4.3 Socio-Cultural Factors

HIV/AIDS is a life-threatening disease thus people are afraid of contracting it. The disease is associated with the following behaviours: prostitution, drug abuse and men-who-have-sex-with-men (MSM) (WHO and UNAIDS, 2007, KAIS 2012). These behaviours are stigmatized in the society. People living with HIV/AIDS (PLWHA) are often seen as being irresponsible for becoming infected. In low-prevalence places/countries HIV/AIDS is seen as the problem for the marginalized groups (WHO and UNAIDS, 2007). Rejection by families or communities may be common and all this is due to stigma.

2.4.4 Religious Teachings and Beliefs

Religious and moral practices lead some individuals to believe that having HIV/AIDS is a result of moral deviant behaviours that deserves punishment but this may not be always true (Reece *et al*, 2010; Ditekemena *et al*, 2011). Muslims see those infected with HIV as being reminded by GOD to return back to him. Quran says ‘Evil (Disobedience to Allah) has appeared on the land and sea because of what the hand of man has earned, (evil deeds) that he Allah may make them tests, a part of that which they have done in order they may return (by repenting) (Quran). This is a religious stigma that may deter people from HTC.

2.5 Health Services Influencing HTC Uptake

2.5.1 Accessibility to Health Facility/Service Delivery Point

HTC may necessarily be initiated at any service delivery point in health facility/hospital and all health care workers may be given authority to tests all patients except those who opt out. This will help to enlarge the option at hand; therefore, clients can select the approach that suits their conveniences. Children presenting to medical facility with unknown HIV/AIDS status may be offered HIV/AIDS tests regardless of what brings them into the facility (NASCOP, 2009).

2.5.2 Procedure that may Encourage/Discourage Clients

VCT uses longer HIV/AIDS testing protocols creating unnecessary delays since only ten clients can be served in a day, this discourages clients from accessing testing services

(NASCOP, 2007). PITC on the other hand uses shorter HIV/AIDS testing protocols and can be offered at any service delivery point at a medical facility/hospital.

2.5.3 Availability of Testing Services

If the service is available twenty-four hours at any service delivery point and offered by all health care workers, then the services can be convenient to the clients and thus more utilizable. When HTC is offered twenty-four hours a day seven days a week then it becomes more accessible to users.

2.5.4 Routine versus Voluntary Testing

When HTC is offered as a standard routine of medical care it becomes more available to clients and gets rid of stigma related to HIV unlike when it on a voluntary basis.

2.5.5 Attitude of Service Providers

The attitude of the service provider in HTC may be key in encouraging or discouraging clients from taking HIV tests. If the service provider is friendly and has taken HIV tests before it becomes easier for the person to initiate it to other people.

2.5.6 Supply of Commodities

Availability of HIV testing devices is necessary to ensure continuity of the services.

2.6 Knowledge and information on HIV testing and prevention

2.6.1 Message on prevention

Acceptance of HIV testing among individuals is key to success in HIV prevention. Knowledge of one's HIV status is important because it's a factor in behaviour change. It

has been observed that individuals tend to change their behaviour after the first HIV testing since they are taken through the process of counselling highlighting on the process of risk reduction plan with the service provider. The process of pre-testing counselling empowers clients with the information on behaviour change. Lack of proper information or awareness about HIV transmission is a likely barrier to testing and prevention. HIV prevention mainly targets sexual transmission using the 'ABC' approach. The 'ABC' approach stands for abstaining from sexual intercourse, being faithful to one sexual partner and correct and consistent use of condoms. This has a meaning that HIV transmission can be totally avoided sexually by abstaining from sexual intercourse. The risk can further be reduced for those who cannot avoid sexual intercourse like the married by sticking to one uninfected sexual partner and correct and consistence use of condoms can further reduce the transmission of HIV.

2.6.2 Benefits of HIV testing

In Kenya, 76.1% of people who are aware of their HIV status are on cotrimoxazole daily and 91.6% of ARV-eligible adults are taking ARVs (NASCOP, 2007). Early diagnosis and treatment reduces HIV/AIDS mortality significantly. HIV attacks the human immune system making the person vulnerable to many diseases. These are also additional benefit of testing:

1. Helps people make a choice about contraception or pregnancy,
2. Serves as an opportunity for more people to know their HIV status,

3. Further prevents HIV transmission through counselling and behaviour change, and
4. Those who test positive can decide to protect their uninfected partners by practicing safe sex.

These benefits can always act as serious motivation for testing

2.6.3 Perception of risk

Majority of people think that they are not at risk of acquiring HIV because they are either married and have no other sexual partners. Others believe that because of their religion they are safe, while others think that HIV is not theirs. KAIS (2007) statistics shows that 47% of Kenyans have not sought testing because their self-perceived low risk for HIV(NASCOP, 2007). This is a big hindrance to HIV testing.

2.6.4 Fate of known people who died of HIV

HIV/AIDS is an incurable life threatening disease. It is clear that everyone is either infected or affected by HIV/AIDS in one way or another. People have seen their parents, children, relatives and friends dying of the deadly diseases, thus many will therefore be afraid to have an HIV test because of the stigma associated with the HIV infection.

2.6.5 Perception about Being HIV Positive

HIV infection has psychological effects of fear, depression and denial to those infected. This will instil fear in other people intending to do HIV tests by remotely perceiving themselves in the situation they saw their friends/family members who may have died of

HIV/AIDS. This can be a discouragement towards testing. However, with availability of ARV's this has been improving.

2.6.6 Other Available Intervention

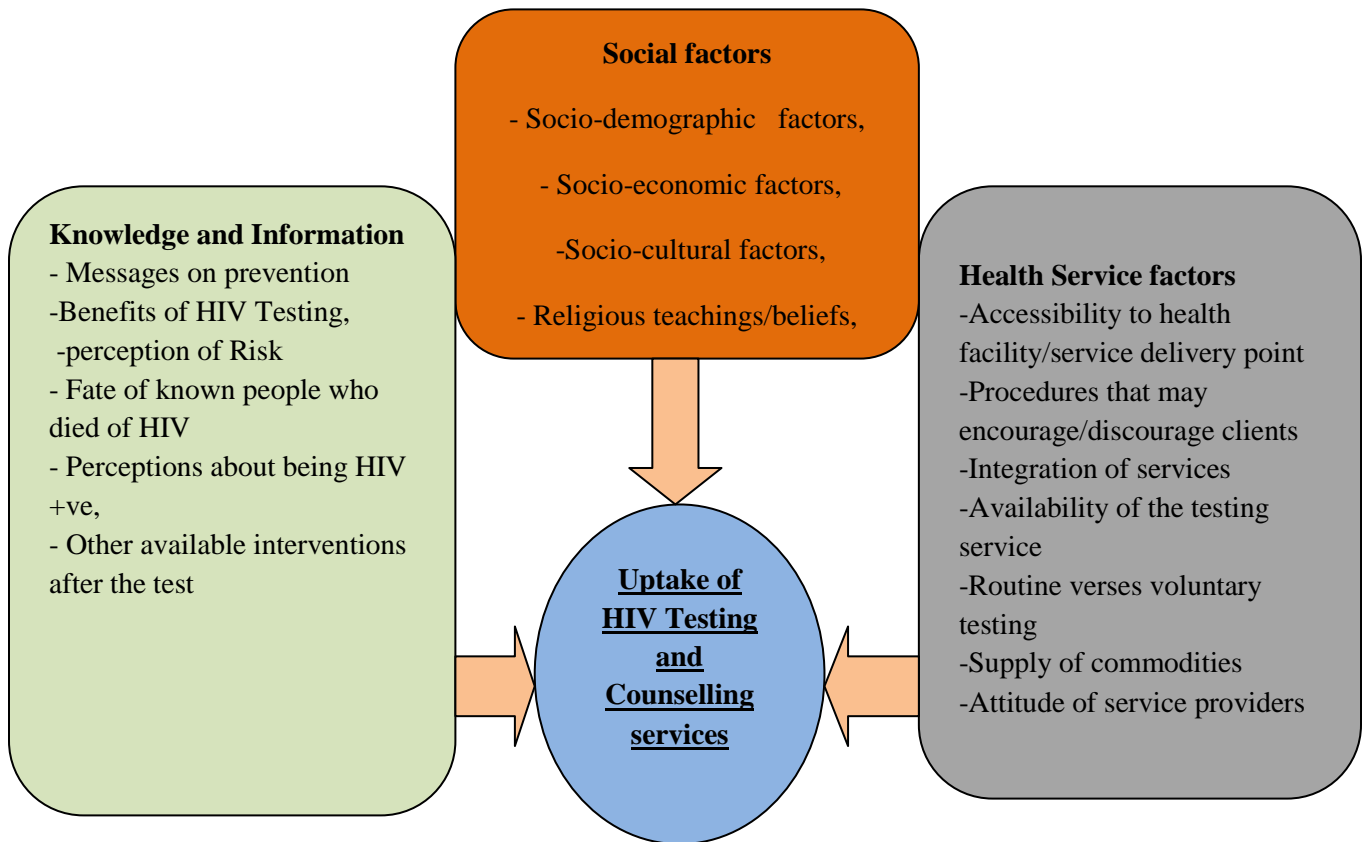
Acceptance of an HIV tests can be reinforced by availability of possible intervention after tests. The PMCTC programme usually has a higher acceptance rate potential because of the pregnant women see a need to test so as to protect their unborn/infants from the HIV infection now that there is a possibility of protecting the unborn baby. Availability of both curative and preventive intervention after testing is a motivator towards testing.

2.7 Conceptual Framework

In this study, the uptake of HTC is a dependant variable. The independent variables on the study are assumed to be socio-economic factors, health service factors and Knowledge and information factors. The framework acted as a guide on how to answer the study objectives by collecting the required variables under the three factors that were analysed.

The socio-economic factors that will be assessed include the participants gender, age, education level, marital status, religion and cultural practices and occupation. Under the health service factors, the variables of interest were accessibility to health facilities, staff attitude, availability of testing services, procedures involved, routine versus voluntary testing, supply of commodities. Lastly, knowledge and information was assessed using variables that asked on messages on prevention, benefits of HIV testing, perception of risk, other available intervention methods and perception about being HIV positive.

Figure 2 : Conceptual Framework



○ Dependent Variable

□ Independent Variable

NB: Concept developed by the researcher

CHAPTER THREE

METHODOLOGY

3.1. Study Site

Kisumu district is comprised of 4 administrative divisions (Kombewa, Winam, Maseno and Kadibo) and covers 918.5 km² with an estimated population for 2003 of 507,865 on 1999 census data – Kenya 1999 Population and Housing. According to the Central Bureau of Statistics, the 2006 projected population of Kisumu District was 578,865. The district headquarters is located in Kisumu city. Winam division which has the highest population density (887 persons per km²). A considerable proportion of the population lives in the urban area while the remainder lives in the peri-urban and rural areas. The predominant ethnic group in these communities is Luo and the main languages spoken are Dholuo, English and Swahili.

This study was conducted at the JOOTRH in Kisumu. The hospital is a Referral facility in Nyanza and accessible to Western Province and part of Rift valley province in Kenya. It serves a population in excess of 5 million people. It has a bed capacity of 467 with occupancy of approximately 95%. The highest bed occupancy being in surgical and gynaecology wards (MoH, 2010). Nyanza province Carries 30% of Kenya's HIV and TB Burden, (KNBS, 2009).

Outpatient visits annually average at 250,511 while in-patient admission average about 21,000. The hospital offers specialized services in the following areas: Internal Medicine, Paediatrics, Surgery, Obstetrics and Gynaecology, Radiology, Ear Nose and Throat Surgery, Ophthalmology, Intensive Care Medicine, Radiotherapy, Dental Services, Renal

Unit, Cancer Palliative Care, Pharmacy, and Laboratory. The Hospital is located in the southwest of the country bordering Lake Victoria with latitude of 00°03'S and a longitude of 34°45'E. Nyanza REGION has 12% of the total Kenyan population (KNBS, 2009).

It serves an area with one of the worst health indicators in the country, including the high prevalence of HIV infection of 13.9% which is greater than twice that of the national prevalence 6.3% (KNBS, 2009).

The hospital has a well-established HIV/AIDS treatment centre which has enrolled over 21,364 patients, 9,514 on ART with a potential 5182 that may need ARV's anytime. The Hospital has a total of 503 staff, 21 consultants in different specialities including paediatrician, Surgeon paediatrician, Anaesthetists, Gynaecologists, Radiologist, Paedodontist, Dentists, Pharmacist, ENT Surgeon, Oral Surgeon, 14 Medical officers, 19 Clinical Officers, and 147 Nursing Officers. The facility has PITC counsellors offering HTC services to patients seeking health care services.

3.2 Study Design

This was a cross-sectional study to establish the uptake of PITC services by patients and clients in JOOTRH in Kisumu.

3.2.1 Study Participants

The study participants were patients and clients seeking health care services at the JOOTRH. The hospital serves approximately a population of about 5 million people and it is located in Kisumu East district which has a catchment of 968,909 people (KNBS, 2009).

3.2.2 Accessible Population

The patients seeking health care services at the JOOTRH and the clients who either for one reason or another accessed the hospital during the time of the study.

3.2.3 Study Population

The study population included patients seeking health care services at the JOOTRH and clients. The respondents were individuals who consented to be interviewed when exiting the hospital.

3.3. Eligibility Criteria

To be eligible to participate in the study, participant had to meet the following inclusion criteria.

3.3.1. Inclusion criteria

1. Age between 18-64 years of age since this study was going to only consent adults.
2. Male and female seeking service at the JOOTRH facility as the study was not restricted to gender.
3. Either patients or clients as the study was all inclusive to either of the individuals presenting themselves.
4. Able and willing to provide informed consent.

3.3.2. Exclusion criteria

1. Patients and clients who were unable and unwilling to provide informed consent.
2. Below 18 years and above 65 years of age.

3.4. Sampling

3.4.1. Sample Frame

All the patients and clients visiting the facility during the study period formed the sample frame for the study.

3.4.2. Sampling Procedures

A systematic random sampling technique was used to recruit participants from the source population at JOOTRH as they exit the facility. The facility has an average of 686 patients visiting per day and the study had a time frame of 30 days for data collection. The study required a sample size of 290 patients for a period of 30 days which translates to approximately 10 participants being interviewed per day. Therefore, the average of 686 patients visiting the facility per day was divided by 10 giving an approximate interval of 69 individuals. This informed the use of systematic sampling where we interviewed the every 69th patient exiting the facility.

3.5. Sample Size Determination

Sample size for the survey was calculated using the Fisher's formula (Fisher, 1998):

$n = Z^2 pq / d^2$, Where

n = desired sample size

Z = standard normal deviate set at 1.96 corresponding to 95% confidence interval

p = Estimated Kisumu Population prevalence (18.5%) (KAIS, 2012)

$q = 1 - p$

d = Precision (0.05 to obtain a confidence interval width of 10%)

Therefore $n = z^2 pq / d^2$

$$= \frac{1.96^2 * 0.185 * (1 - 0.185)}{0.05^2}$$

$$= \frac{1.96^2 * 0.185 * (1 - 0.185)}{0.05^2}$$

= Sample size **232**

An additionally (30% of the samples size) participants was added to the sample size thereby making the final sample size to be **290**

3.6. Data Collection

Structured questionnaires were used to get data by trained research assistants. The data to be collected included demographic characteristics (e.g., gender, age, marital status, religion, employment status, and education status), awareness of PITC, patients and non-patients, gender of service provider, tested for HIV today, plan to test before today, reason for HIV, service provider discuss reason for HIV testing, ever tested, motivation for testing, reason for not testing. The data was collected for a period of 30 days.

3.6.1. Research Instruments

Data was collected by using Teleform. The Teleform were designed using Cardiff Teleform 8.0. A Teleform utilizes Optical Character Recognition (OCR) software to interpret hand printed, machine printed, mark sense fields and bar codes from completed forms, reducing the need for direct data entry of the forms. All forms were visually scanned after character recognition to identify any discrepant results between hard-copy form and the character-recognized fields. These instruments are presented in the Appendix 5.1. Scanned responses from the interviews were to be automatically stored into Ms Access. The data was imported and analysed using SAS for Windows version 9.2(SAS, Cary, North Carolina, USA).

3.6.2. Data Collection Procedures

Quantitative data was collected from participants aged 18-64 years, using questionnaires programmed within Teleforms. The data was collected by the researcher with the assistance of research assistants who were trained in interviewing methods and research ethics. The data collection was conducted over a one month period until the required sample size had been attained. All the participants consented before being interviewed.

Participants who agreed to participate during the study period were interviewed. If they did decline they were thanked for their time. The survey took place at designated places within JOOTRH. TELE forms were programmed or designed with the final questions and used to administer the survey.

3.6.3. Reliability and Validity of the Instruments

To control quality, the study endeavoured to attain validity and reliability. Validity is the extent to which the research results can be accurately interpreted and generalized to other populations. It is the extent to which research instruments measure what they are intended to measure.

To ensure quality of data to be collected, the questionnaires developed were pre-tested using 10% of the sample size before the main study was conducted. The research assistants were trained health care workers. Their involvement had an advantage of enhancing the quality of this study because the participants are familiar with these individuals and are very likely to volunteer truthful information to them based on established trusting relationships with them. The health workers also have knowledge of both spoken and written English and the local language. The principal investigator checked completed questionnaires for errors and corrections made before entry onto computer software program for analysis. The principal investigator entered data twice in the computer and compared the data entered to ensure accuracy. Where the data did not match, the appropriate questionnaires IDs were checked in order to identify and rectify the error.

Reliability is the consistency of measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. To ensure data quality, internal checks for consistency and validity were included in the questionnaire design.

3.6.4. Data Management and Statistical Analysis

The completed questionnaires were reviewed for any typo and logic errors before analysis was done. Participant characteristics were described using percentages and frequencies for categorical data. Missing data was assumed to be missing completely at random thus pairwise deletion was performed in the analysis. Bivariate logistic regression was used to assess the potential factors influencing the uptake of PITC service. Multivariable logistic regression was used to assess the potential factors influencing the uptake of PITC service. Unadjusted odds ratios were computed using bivariate analysis while adjusted odds ratios were computed using multiple regression analysis. Multivariable logistic regression model included all variables with $p < 0.25$. The odds ratios with their 95% CI were reported. The data was presented in tables and graphs. Data analysis was done using SAS for Windows version 9.2.

3.7 Ethical Considerations

Ethical approval was sought and obtained from the Research Ethics Committee of the JOOTRH. Written informed consent was obtained from all study participants. Participants who declined to be in the study received all the services that they deserved. Study forms were anonymized and stored in a lockable cabinet. Only the study investigator had access be privy to the link log. The data was stored in a password-protected computer and the records subject to destruction after 2 years.

Confidentiality in the context of PITC refers to the private privy of interaction between a counsellor/health care worker and a client. Client's/patient's information will not be

shared. The finding will be used to improve the uptake of PITC services in the hospital and to inform policy decision about HTC.

3.7.1 Informed Consent

All participants were required to undergo a standard informed consent procedure consistent with International Recommendations (Council for International Organizations of Medical Sciences (CIOMS) in collaboration with the World Health Organization (WHO, 2000). Informed consent was obtained on a one-to-one basis. At recruitment, each potential participant who could read was asked to study the informed consent form and ask any questions or express any concerns that he/she may have. After all questions or concerns had been addressed and the investigator was sure that the participant understood the purpose of the study and his/her involvement, the participant was asked to sign the consent form, signifying his/her voluntary acceptance to participate. If a participant was not literate, the consent form was read to him/her and he/she was asked to give a thumb-print signifying his/her consent to participate. Prospective participants were told that refusal to participate in the study would not result in the loss of any health or other benefits from JOOTRH. They were also told of their rights to stop answering questions at any point of the interview. The informed consent was translated into Swahili, describing the purpose of the study, the procedures to be followed, and the possible benefits and risks of participation.

3.7.2 Confidentiality

The importance of maintaining confidentiality was emphasized to the research assistants involved in the study. There was limited access to participant information within the study and the appropriate designee.

3.7.3. Risk/Benefit Information

While the study did not have direct control over information disclosed by participants outside of the group setting, all attempts were made to protect each person's privacy. The participants may have been uncomfortable while answering questions about HIV testing.

CHAPTER FOUR

RESULTS

4.1 Participant characteristics

A total of 291 respondents participated in the study, of which 53.26% comprised of females and 46.74% as males. Moreover, 35.79% of the respondents were in the age group of 18-25 years, followed by age group 26-35 (33.58%). In addition, majority of the participants were Christians (88.62%). Of note, close to half of the respondents (45.02%) were single, followed by married (42.27%). Furthermore, 31.82% of the participants were in formal employment, 27.97% were unemployed and 23.08% were self-employed. Categories for participants who refused to answer were coded as missing and were omitted in the descriptive statistics for the participant characteristics. This is as shown in table 1.

Table 1: Socio-demographic characteristics of participants

Characteristic	n	%
Gender (n=291)		
Male	136	46.74
Female	155	53.26
Age in Years (n=271)		
18-25 years	97	35.79
26-35 years	91	33.58
36-45 years	51	18.82
46-55 years	16	5.9
56 and above years	16	5.9
Marital Status (n=291)		
Single	131	45.02
Married	123	42.27
Widowed	24	8.25
Divorce/Separated	13	4.47
Religion (n=290)		
Christian	257	88.62
Muslim	29	10.00
Other	4	1.38
Level of Education (n=276)		
None	42	15.22
Primary	110	39.86
Secondary and Post-Secondary	124	44.93
Occupation(n=286)		
Small Business/Self Employed	66	23.08
Formal employment	91	31.82
Unemployed	80	27.97
Student	43	15.03
Other	6	2.1
Visit Type (n=283)		
Patient	132	46.64
Client	151	53.36

4.2 Participant uptake of PITC

The study found that 169(58.08%) of the participants were tested. In addition, the study found that 97(65.09%) of females and 82(63.57%) of males had an uptake of PITC. Moreover, the study found that 67(71.28%), 68(71.59%) and 11(78.57%) of participants aged 18-25 years, 26-35 years and 46-55 years reported an uptake of ITC services respectively. Close to two-thirds of the participants who were single 86(68.25%) and 76(65.52%) reported an uptake of PITC services. More results of PITC uptake are as shown in table 2.

The study found that participants who were told on the benefits of PITC uptake, reported a higher uptake of PITC 75(80.65%). Participants who were served in less than 25 minutes also had a higher PITC uptake 75(81.52%). Lastly, participants who reported being satisfied with the care given also reported a higher uptake 156(75.36%). The results are as shown in table 3.

4.3 Socio-demographic correlates PITC uptake

The study found that males were 1.11 more times likely to uptake PITC services than females (uOR=1.11, 95%CI [0.68-1.82], p=0.6744). Moreover, those who had secondary and below level of education were more likely to uptake PITC services than those who had post-secondary education (uOR = 1.38, 95%CI [0.80-2.40], p=0.2477) for secondary education and (uOR = 1.39, 95%CI [0.69-2.79], p=0.3586) for primary and below level of education. In addition, those who were employed were 1.81 times likely to uptake PITC services compared to those not employed. Of note, those of the ages between 46-55

and 26-35 were 1.48 and 1.02 times likely to uptake PITC services than those between 18-25 years respectively.

Participants who were married were more likely to uptake PITC services compared to those who were single (uOR=3.63, 95%CI [0.64-4.98], p=0.6138). Subsequently, those who were divorced or separated or widowed were more likely to uptake PITC services than single participants (uOR = 10.91, 95%CI [5.29-22.50], p=0.0051). The study also found that Christians and Muslims were less likely to uptake PITC than participants in only other denominations (uOR = 0.60, 95%CI [0.065-8.84], p = 0.6586) and (uOR = 0.741, 95%CI [0.068-8.134], p = 0.8063) respectively.

The variables that were fit in the final model were age, occupation and marital status. However, these variables were not statistically significant predictors for PITC uptake as they had $p > 0.05$. This is as shown in table 2.

Table 2: Correlates of Socio-demographic factors and PITC uptake

Variable	Tested n (%)	Bivariate		Multivariable Regression	
		uOR [95% CI]	p- value	aOR [95% CI]	p-value
Gender			0.6744		
Females	97 (65.99)	1.11 [0.68 - 1.824]			
Males	82 (63.57)	<i>ref.</i>			
Age			0.0034		0.2545
18 - 25 years	67 (71.28)	<i>ref.</i>			
26 - 35 years	63 (71.59)	1.02 [0.53 - 1.93]	0.9626	0.72 [0.28 - 1.87]	
36 - 45 years	19 (41.3)	0.28 [0.14 - 0.59]	0.0008	0.35 [0.10 - 1.21]	
46 - 55 years	11 (78.57)	1.48 [0.38 - 5.71]	0.5715	2.39 [0.24- 23.70]	
56 + years	8(53.33)	0.46 [0.15 - 1.40]	0.1704	1.27 [0.19- 8.55]	
Education level			0.4417		
Primary and below	34 (68.00)	1.39 [0.69 - 2.79]	0.3586		
Secondary	72 (67.92)	1.38 [0.80 - 2.40]	0.2477		
Post-Secondary	72(60.50)	<i>ref.</i>			
Currently employed			0.0219		0.851
Yes	88 (58.67)	1.81 [1.09 - 3.01]		0.93 [0.42- 2.05]	
No	90 (72.00)	<i>ref.</i>			
Marital Status			0.1459		0.4096
Single	86 (68.25)	<i>ref.</i>			
Married	76 (65.52)	3.63 [0.64 - 4.98]	0.6138	1.12 [0.45 - 2.77]	
Divorced/separated/widowed	17(50.00)	10.91 [5.29 - 22.50]	0.0051	0.53 [0.15 -1.90]	

4.4 Correlates of facility factors and PITC uptake

This study found that participants who were told about the benefits of PITC were 1.71 times more likely to uptake PITC in comparison who were not told about the benefits (uOR =1.71, 95%CI [0.91 - 3.23], p =0.0978). Furthermore, participants who were in the private waiting room were 2.98 times more likely to uptake PITC services than those in the public room (uOR=2.98, 95%CI [0.67-13.32], p =0.153). Of note, participants who had a friendly relationship with the provider were 3.35 times more likely to uptake PITC services and this was statistically significant (uOR=3.35, 95%CI [1.41-7.92], p =0.006). Participants who were satisfied with the facility service were 1.99 times more likely to uptake PITC services than those who were not satisfied (OR=1.99, 95%CI [0.92-4.28], p =0.0789).

Waiting room and patient-client relationship were the variables that were fit in the final model. However, they were not statistically significant as shown in table 3.

Table 3: Association of facility factors and PITC uptake

Variable	Tested	Bivariate		Multivariable Regression	
	N (%)	uOR [95% CI]	p-value	aOR [95% CI]	p-value
Discussed benefits of PITC			0.0978		
No	95 (70.90)	<i>ref.</i>			
Yes	75 (80.65)	1.71 [0.91 - 3.23]			
Waiting Room			0.153		0.2241
Public room	17(89.47)	<i>ref.</i>			
Private room	154(74.04)	2.98 [0.67 - 13.32]		2.68 [0.55 - 13.12]	
Time to Get Served			0.2085		
0 - 25 Minutes	75(81.52)	<i>ref.</i>			
26 - 45 Minutes	63(71.59)	0.57 [0.28 - 1.15]	0.1176		
46 and above Minutes	15(68.18)	0.49 [0.17 - 1.37]	0.1736		
Patient/Client Relationship			0.006		0.0056
Friendly	164(77.00)	3.35 [1.41 - 7.92]		4.75 [1.58 - 14.31]	
Not Friendly	12(50.00)	<i>ref.</i>			
Satisfied by service			0.0789		
Satisfied	156(75.36)	1.99 [0.92 - 4.28]			
Not Satisfied	20(60.61)	<i>ref.</i>			

4.5 Association between PITC awareness and its uptake

This study found that participants who were aware of PITC services offered at JOOTRH were 1.22 times more likely to uptake the PITC services compared to those who did not (OR=1.22, 95% CI [0.70-2.15], p=0.4871).

Table 4: Association between PITC uptake and awareness

Characteristic	n (%)	OR (95% CI)	p-value
Aware of PITC			0.4871
Yes	127(63.50)	1.22(0.70 - 2.15)	
No	51(28.65)	<i>ref.</i>	

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Uptake of PITC

The high HIV burden in Nyanza and Kisumu (KAIS, 2012), necessitated the need to determine the uptake levels of PITC. The study found that more than half of the participants reported PITC uptake. HIV testing in facilities is usually common as symptomatic people are more likely to visit health facilities and health care workers are more likely to offer HTC services.

A study conducted in Kibera, Nairobi Kenya found that 63% of PITC uptake in hospitals were from repeat testers while 31.7% were from new cases (Muhula, *et al.*, 2016). Though the current study did not classify on whether the clients and patients seeking service from JOOTRH as repeat testers or new testers, the study had comparable findings. The low findings of uptake have been reported by several studies (Mweteni, 2014; Muhula *et al.*, 2016) though on the contrary studies done in South Africa reported high PITC uptake (Kharsany *et al.*, 2010; Dalal *et al.*, 2011). The low numbers are way below the UNAIDS ambitious target of 90-90-90 (UNAIDS, 2014). To achieve this, intervention methods needs to be put in place. Studies have shown that an increase in mass media campaigns on HTC vastly improves PITC uptake (Marum, *et al.*, 2008; Odhiambo, *et al.*, 2008). Thus, more focus needs to be put on mass media campaigns to increase the uptake of PITC.

5.2 Social Demographic Factors influencing HIV Testing JOOTRH

The current study had a higher proportion of female participants than the males. This could be attributed to the fact that women are basically the most common users of health facilities in that they are the ones who commonly take sick children for treatment, staying with children, spouses or other relatives when admitted wards and take children for immunization. A study done in Kibera, Nairobi also found that females were more likely to be tested at health facilities than males (Muhula, *et al.*, 2010). In addition, women do have a lot of reproductive health issues to attend at health facilities for instance maternal and child health clinic, routine cervical and breasts cancer screening and many others. Moreover, the PITC uptake was also higher in females compared to males. This corroborates several studies done in Africa (Matovu & Makumbi 2007; Bwambale *et al.* 2008).

This study found that those aged between 36 to 45 and those above 56 years of age were less likely to uptake PITC services than individuals between the ages 18 to 25 years. In the contrary, a study done in Kibera, Nairobi found that adults were more likely to test for HIV than younger clients (Muhula, *et al.*, 2010). The pattern was also similar to what was observed in the Kenya AIDS survey (KAIS, 2012).

In contrast to findings from rural Zimbabwe (Sherr *et al.* 2007), but broadly consistent with those from rural Uganda (Matovu *et al.* 2005), we found that PITC uptake decreased with increasing levels of education. The study findings can be attributed to conducting the study when post-primary school was ongoing. Moreover, education today has become an essential part of the society.

The study findings on marital status and PITC uptake was similar to what was found in other studies (Were *et al.* 2006). Participants who were married were more likely to uptake PITC services compared to those who were single due to the fact that marriage in sub Saharan Africa is a known risk factor for HIV infection (Gregson *et al.* 2002). Similarly, those who were divorced, separated or widowed were more likely to uptake PITC services. This can be attributed to couple involvement to those married and need to seek treatment to those who were divorced, widowed or separated.

5.3 Health Service Factors Influencing HIV Testing and Counseling at JOORTH

Majority of the health care facilities in sub-Saharan Africa are delivered through vertical systems (Lawn *et al.*, 2008; Doherty *et al.*, 2010). This fragmentation of service delivery has been heightened in countries that have recently experienced rapid scale-up of ART programs (Ferradini *et al.*, 2006; Rosen *et al.*, 2007). This was in turn to help in the improving of the care level infrastructure and logistical support that will in turn improve service delivery within the health facilities.

The study found that those who served in a lesser time were more likely to uptake PITC services than those who took longer. These findings are in line with several studies that show that longer waiting time adversely affected patients' health seeking behavior (Colebunders *et al.*, 2007; Wagner *et al.*, 2007). Hence, increased waiting time was perceived to be a barrier of PITC uptake.

The patient/client relationship to the staff also played a factor as those who viewed they had a friendly relationship were more likely to uptake PITC services. Evidence from both low and high income countries indicates that the direct offer of HIV testing by health

providers can result in significant improvements in test uptake and that the intervention is acceptable to patients and providers (Hensen *et al.*, 2012; Obermeyer *et al.*, 2007). This needs to be stressed on since it's the service provider who initiates and suggests this to the client /patient so uptake to PITC.

5.4 Knowledge and information on HIV and AIDS as an Influence on Testing

The current study found that participants who were aware of PITC were more likely to uptake PITC. Similarly, it has been evidenced that the more aware one is of PITC services the higher the chances of uptake (Tracy *et al.*, 2015). This can be attributed to the fact that prior information about modes of transmission of HIV, prevention, availability of treatment and care services was also important in making an informed decision in undertaking an HIV test. Despite the lack of awareness on PITC, the participants had positive opinions on the acceptability and benefits of the services offered.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

This chapter will give conclusions based on the findings of this study as compared to previous findings and recommendations of previous researches.

The study found that females were more likely to uptake PITC services compared to men. Participants aged 36-45 years were less likely to uptake PITC services compared to those aged 18-25 years.

Participants aged 46-55 were more likely to uptake PITC services compared to those aged 18-25 years.

Participants having post-secondary education were less likely to uptake PITC services compared to those with lesser education level.

Those who were currently employed were more likely to uptake PITC compared to those who were not employed.

Participants who were either married or previously married were more likely to uptake PITC compared to participants who were never married(single).

Participants who reported a friendly relationship with the staff were more likely to uptake PITC compared to those who reported an unfriendly relationship

Participants who were informed and discussed on the benefits of PITC were more likely to uptake PITC compared to those who were not informed about it.

6.1 Recommendations

The study findings recommend the following to be undertaken to increase uptake of PITC.

1. There is need to have other ways on how to motivate men to uptake PITC. A possible solution might be through encouraging testing as couples. Scaling up more testing stations within the ante-natal clinics will encourage men who bring their wives for the appointments in accessing the HTC services as a couple
2. Staff in the health facility should have a proper attitude towards the patients/clients accessing the health facility as this will significantly increase the uptake of PITC services.

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APPENDICES

Appendix 1: Map of study area



Appendix 2: Introductory Letter

From: Edwin M Kambaga

To: Medical Superintendent, Nyanza Provincial General Hospital

Dear Sir/Madam,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT NYANZA
PROVINCIAL GENERAL HOSPITAL

My name is Edwin Kambaga, a final year student at Maseno University. As part of the requirements for my master's degree course IN Public Health (MPH), I am supposed to conduct a research study. The topic of my study is, "Determinants of Provider Initiated Testing and Counselling (PITC) uptake at Jaramogi Oginga Odinga teaching and referral Hospital Kisumu Kenya"

The study seeks to answer questions that will meet the objectives of the study and will also look into the factors associated to the uptake of PITC. The information required in this study is solemnly for academic purposes strictly.

In your position as the in charge of the facility, I do request for the permission to conduct the study, Ethical consent has already been sort through Maseno ethical committee and attached herein is a copy of the letter.

Thanks for your support

Sincerely Yours,

Edwin M. Kambaga.

Appendix 3: Consent Form

Fomu ya Idhini

Waamuzi wa utoaji huduma za HIV na ushauri katika Hospitali kuu ya Jaramogi Oginga Odinga Teaching and referral Hospital mjini Kisumu

Idhini ya kutekeleza nafasi kwenye zoezi la utafiti wa mafunzo kwa watu wazima

Kwa :

- Watu wazima (\geq miaka 18 hadi 64)

kuanza ; SAA24

Kukamilisha SAA 24

Utangulizi :

Unaulizwa kushiriki zoezi la utafiti wa kimatibabu. Uchunguzi pia unaitwa somo. Utafiti wa kimatibabu unaweza kuchunguza sababu zinazosababisha ugonjwa. Pia unaweza kuangazia njia za kuzuia au kuthibiti ugonjwa.

Utafiti huu unafanywa na **Bw. Edwin Michira Kambaga** ambaye ni mwanafunzi anayechukua cheti cha uzamili kuhusu Afya ya Umma katika chuo Kikuu cha Maseno (Epidemiology and Human population Health). Utaangazia kuamua upimaji na utoaji ushauri kwa wagonjwa na wateja katika hospitali kuu ya Jaramogi Oginga Odinga inayotoa huduma za magonjwa na mafunzo mjini Kisumu. Takriban watu 433 wataulizwa kushiriki zoezi hili.

Kabla ya wewe kuamua endapo utashiriki zoezi hili, tungependa kukufahamisha zaidi kuhusu zoezi hili. Tutakufahamisha kuhusu:

- Yale utakayohitaji ili kushiriki
- Athari za ushiriki wako
- Jinsi utafiti huu unavyoweza kukusaidia
- Jinsi tutakavyohifadhi maelezo yako
- Yale unayoweza kufanya endapo hutashiriki zoezi hili
- Yule utakayemwendea endapo una maswali au matatizo

Madhumuni ya somo utafiti huu.

Utafiti huu unatekelezwa kubaini mahitaji ya upimaji na utoaji ushauri kwa wagonjwa na wateja katika hospitali ya Jaramogi Oginga Odinga inayotoa huduma za matibabu na mafunzo mjini Kisumu

Watakaoshiriki:

Ili uwe mshiriki kwenye zoezi, ni lazima

- Uwe umetimiza umri wa miaka 18 hadi 64
- Uwe mgonjwa au mteja unayetafuta huduma kupitia vifaa vya JOOTRH
- Uwe na hiari ya kukubali kutoa maelezo
- Ushiriki ni kwa hiari yako

Ni muhimu kufahamu mambo yafuatayo:

- Hakuna mtu anayeweza kukulazimisha kushiriki endapo hutaki
- Fahamu maswala yote kabla ya kushiriki zoezi

Tungependa wewe kutuuliza maswali yoyote ambayo ungekuwa nayo. Pia, tungependa wewe kutujulisha endapo hufahamu jambo lolote. Unaweza kuchukua muda wowote ili kufanya

Ni muhimu kufahamu kwamba, hata kama utachukua uamuzi wa kushiriki zoezi,:

- Unaweza kuondoka Wakati wowote
- Unaweza kuchukua uamuzi wa kutojibu baadhi ya maswali

Muda ambao utakuwa kwenye utafiti :

Endapo utachukua uamuzi wa kushiriki utafiti, utafanyiwa mahojiano na msaidizi wa utafiti baada ya kutafuta huduma kutoka JOOTRH. Endapo utakataa kushiriki utafiti, hautaulizwa kushiriki zoezi hili

Endapo utaamua kushiriki zoezi:

Endapo utaamua kushiriki zoezi hili la utafiti, hautakuwa na athari yoyote.

Athari / kukosa umakini:

- Unaweza kutohisi makini (You may feel uncomfortable :)
- Unaweza kuhisi kwamba utafiti huu haukusaidii moja kwa moja (You may not feel that this study is directly helpful to you)
- Unaweza kuona ugumu kujibu maswali . Wengine watakuafanya uhisi taharuki au kutohisi makini

Manufaa:

- Utafiti huu utakusaidia kuvumbua waamuzi wa utoaji huduma za upimaji na ushauri wa wagonjwa katika JOOTRH
- Wewe na jamii yako mnaweza kujifunza mengi kuhusu HIV kwa sababu mmeshiriki zoezi hili
- Wewe na jamii mtapokea ushauri na upimaji wa bure wa HIV
- Utapokea huduma za ulezi na matibabu

Siri

Maelezo yote utakayotoa yatahifadhiwa kwa siri na maafisa wa utafiti. Hakuna mtu mwingine atakayeambiwa kuhusu majibu ya maswali yako. Matokeo ya utafiti huu utatumia maelezo yaliyotolewa na watu walioshiriki. Hautaangazia maswali yako tu. Matokeo ya jumla ya utafiti huu yatatumiwa kwa pamoja na jamii na Hospitali (JOOTRH) . Hakuna jambo lolote mahsusi kutoka kwako litakalohusishwa na matokeo haya.

Haki yaki kukataa kushiriki utafiti huu au kuachana nao

Unaweza kuamua kushiriki utafiti huu au kuamua kuachana nao.

Unaweza kuachana nao Wakati wowote.

Gharama kwako:

Hakuna gharama kwako

Matatizo au maswali:

Endapo una maswali kuhusiana na utafiti huu au kuhisis kuathiriwa na utafiti, tafadhali wasiliana na

Edwin Michira Kambaga,

SLP 1578, Kisumu

Simu phone +254720178544.

Au

Kamati - Maseno University Ethical review committee

SLP 333

Maseno

Appendix 4: Participants Questionnaire

I am a student at Maseno University conducting a study on Determinants of Provider-Initiated HIV Testing and Counselling (PITC) by Patients and clients at the Jaramogi Oginga Odinga Referral Hospital Kisumu. I would like to interview you and assure you that the information you give shall remain confidential. Your responses and feedback will be valuable to this study. Thank you for taking your time to talk to us.

Please: Answer all questions appropriately, i.e. tick and or fill where necessary

Section A: Demographic Information

Q 1. Gender?

Female

Male

Q 2. What is your age? ___ ___ ___

Q 3. Marital Status?

Single

Married

Widowed

Divorced/Separated

Q 4. What is your religion?

Christian

Muslim

Any Other (Specify).....

Q 5. What is your highest level of education?

- None
- Primary
- Secondary
- Post-secondary

Q 6. What is your occupation/source of livelihood?

- Small bussiness/Self employment
- Formal employment
- Unemployed
- Student
- Any other (Specify).....

Q 7. Are you a patient or a client?

- Patient
- Visitor/Client

Q 8. What brought you to the facility today

- I am sick
- Came to get drugs from the hospital pharmacy
- Had a medical appointment
- Brought partner who was sick
- Brought a family member who is sick
- Visited a sick friend
- Any other (specify)

Section B: HIV Testing

Q 9. Before you came to the hospital, were you aware of HIV testing (PITC) being offered to patients and clients at the JOOTRH hospital?

- Yes
- No

a. If yes who provided the information?

Q 10. Were you tested for HIV today?

- Yes
- No

a. If Yes in Qn 10 above, were you ready/had you planned to get tested today?

- Yes
- No

b. What was the main reason for being tested?

- To learn about my status
- To make a decision on my sexual practice
- In order to protect my partner if am HIV positive
- Any other (specify).....

c. Did the service provider discuss with you the benefit of HIV testing?

- Yes
- No

Q 11. Had you been tested for HIV before

- Yes
- No

- a. If Yes, in *Qn12* above, how long ago was the test ____ (Months)
- b. How many times have you been tested before ____ (times)

Q 12. If you got tested today, what motivated you to get tested?

- To know my HIV status
- To receive treatment (ARV) for me and my unborn child
- To protect my unborn child if am HIV positive
- To make a decision on my sexual practice
- In order to protect myself if am HIV positive
- In order to protect my partner if am HIV positive and he/she is not
- In order to protect others/partners
- Any other (preparing for marriage, unfaithful spouses seeking medical advice, blood donation, to encourage others to tests, job recruitment).....

Q 13. If you decline HIV test, what hindered you from getting tested?

- Partner has to consent
- Fear of positive results
- No guaranteed confidentiality from HCW's
- Fear of divorce if results are positive
- Fear of stigma in society if results are positive

I trust my partner

Any other reason (specify)

Q 14. What do you think needs to be done to encourage more people visiting the facility to test for HIV?

- Increasing more testing sites within the hospital
- change In staff attitude i.e. should be more friendly
- Increase in the number of staff doing testing and counselling
- Reduction client waiting time
- Reduction stock-outs of supplies
- Have space and privacy while doing the counselling
- Trainings for the counselling to equip them with more skills for counselling
- Others.....

Section C: Health Services

Q.15.How long does one take before being attended to by staff?(Minutes)

Appendix 5: Ethics Review Letter



MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622 Ext: 3050
Fax: +254 057 351 221

Private Bag – 40105, Maseno, Kenya
Email: muerc-secretariate@maseno.ac.ke

FROM: Secretary - MUERC

DATE: 25th November, 2014

TO: Edwin Michira Kambaga
PG/MPH/00047/2011
Department of Public Health
School of Public Health and Community Development
Maseno University, Maseno, Kenya

REF: MSU/DRPC/MUERC/00114/14

**RE: Determinants of Provider-initiated HIV Testing and Counseling Uptake in Jaramogi Oginga Odinga Teaching and referral Hospital, Kisumu, Kenya.
Proposal Reference Number: MSU/DRPC/MUERC/00114/14**

This is to inform you that the Maseno University Ethics Review Committee (MUERC) determined that the ethics issues raised at the initial review were adequately addressed in the revised proposal. Consequently, the study is granted approval for implementation effective this 25th day of November, 2014 for a period of one (1) year.

Please note that authorization to conduct this study will automatically expire on 24th November, 2015. If you plan to continue with the study beyond this date, please submit an application for continuation approval to MUERC Secretariat by 20th October, 2015.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach MUERC Secretariat by 20th October, 2015.

Please note that any unanticipated problems resulting from the conduct of this study must be reported to MUERC. You are required to submit any proposed changes to this study to MUERC for review and approval prior to initiation. Please advise MUERC when the study is completed or discontinued.

Thank you.

Yours faithfully,


Dr. Bonuke Anyona,
Secretary,
Maseno University Ethics Review Committee.



Cc: Chairman,
Maseno University Ethics Review Committee.

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED

