Prevalence of HIV Testing Status and Factors Associated With its Utilization Among Patients Attending the Casualty Clinic at Mbagathi District Hospital -Nairobi, Kenya.

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DECLARATION

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

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DEDICATION

To my parents Mr. and Mrs. James Nyangena for their love, friendship, support, and encouragement during this study and to all those individuals behind the scenes who made it possible for me to go through the study and still remain socially active.

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Writing a thesis is like gathering some raw materials and through an extensive refining process, shaping them into a finely tuned, high performance automobile - it takes a great team of skilled and dedicated people to see a concept, and then turn it into reality. Glory be to the Almighty God for making this achievable. This great work could not have been accomplished without the assistance of many people who in one way or another aided in this long and tiresome journey. A few of them need special mention for their support**.** My heartfelt appreciation to my supervisors Mr. J. N. Muttunga of KEMRI (CPHR), Professor Z. Ng'ang'a of JKUAT (Director ITROMID), Mrs. L. Ndunyu of Maseno University and Dr N. Budambula of JKUAT, who caught the vision of what to be, and then patiently and professionally supervised and oversaw it all. Mr. M. Mwangi of KEMRI (CPHR) and Mr. C. Onsongo my brother in-law and Director Research Path Associates for guiding me through the data collection, entry and analysis. I wish to thank Dr. A. J. Suleh, the medical superintendent Mbagathi District Hospital for his support and advice. This study would not have been possible without his cooperation and that of his staff at MDH. I sincerely thank the Mbagathi District Hospital respondents and casualty staff for their support and participation in the study. My heartfelt thanks to my Father and Mother, James and Elizabeth Nyangena, who love me, pray for me, and always encourage me. To my brothers Ben and Rob Nyangena, brother in-law V. Makini, sisters Evaline, Nancy and Ednah Nyangena, you were a great source of inspiration and a pillar of comfort throughout my study. My siblings, you were great. To them all who laid a hand and space limits your mention here by name, may God bless you!

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LIST OF ABBREVIATIONS AND ACRONYMNS

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
CDC	Centres for Disease Control and Prevention
DHS	Demographic and Health Survey
DTC	Diagnostic HIV testing and counselling
GOK	Government of Kenya
HBC	Home-Based Care
HIV	Human Immunodeficiency Virus
IEC	Information education and communication
KAB	Knowledge, Attitude and Behaviour
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya Medical Research Institute
MDH	Mbagathi District Hospital
MOH	Ministry Of Health
MOHSS	Ministry of Health and Social Services-Namibia
MTCT	Mother-To-Child Transmission of HIV
OIs	Opportunistic Infections
PICT	Provider Initiated Counseling and Testing
PLHA	People Living With HIV and AIDS
PMTCT	Prevention of Mother-To-Child Transmission of HIV

SPSS	Statistical Package for Social Scientists
STIs	Sexually Transmitted Infections
TB	Tuberculosis
UNAIDS	United Nations Programme on HIV and AIDS
UNICEF	United Nations Children's Fund
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

ABSTRACT

HIV and AIDS remain a major public health problem, affecting mainly people in the productive and reproductive age group (15 to 49 years). HIV counseling and testing is a key component of both HIV care and prevention; however, uptake is currently low in Kenya. Therefore, this study was to determine the prevalence of HIV testing status and factors associated with its utilization among patients attending the casualty clinic at Mbagathi District Hospital, Nairobi Kenya. A hospital-based cross-sectional study employing both quantitative and qualitative techniques was conducted. Using systematic sampling, 220 patients aged 18 years and above, attending the casualty clinic at Mbagathi District Hospital, were sampled. Using a questionnaire in combination with face-to-face interviews, data was collected on HIV test usage and socio-demographic characteristics. The overall prevalence of self-reported HIV testing was 66.8%. HIV testing status for females was 68.7% and that of males was 64.4%. Factors that were significantly associated with HIV testing included; age: (P = 0.001, Odds ratio (OR) 3.4, 95% confidence interval (CI) 1.8 – 6.4), necessity to invite partners for HIV counseling and testing (P=0.007, OR=5.3 95% CI 1.6-17.8), knowledge of someone who had taken the HIV test (P=0.001, OR=3.7 95% CI 1.7-7.6), knowledge of HIV and HIV testing services available near place of residence (P=0.050, OR 2.1, 95% CI 1.0-4.3), attitude towards HIV and HIV testing (P=0.016, OR 2.074, 95% CI 1.142-3.767) and knowledge on transmission and protection from HIV and AIDS (P=0.048). A majority (53.1%) of those who were tested for HIV did so due to medical, pregnancy, employment, college or marital requirements. Thirty four percent tested voluntarily. The rest (12.9%) did so to due to external influence. This study is part of

a growing body of research on factors associated with HIV testing and counseling. However, these results do not confirm the importance of some of the factors like religion, marital status and level of education's influence on HIV test uptake. Important factors that emerged as determining HIV test uptake were age, necessity to invite partners for HIV counseling and testing, knowledge of someone who had taken the HIV test and knowledge of HIV and HIV testing services available near place of residence. Understanding these factors could help interventions designed to promote uptake of HIV testing.

CHAPTER ONE: INTRODUCTION

1.1 Background information

No other disease has captured people's attention in recent times as much as HIV. In 1987, the World Health Organization (WHO) first recognized the seriousness of the emerging AIDS epidemic (Hubley, 1995) and since then HIV has become a global problem. HIV prevalence varies considerably across the African continent, ranging from less than 1% in Mauritania to almost 40% in Botswana and Swaziland (Namibia, 2004). Globally the total number of People living with HIV and AIDS in 2007 stood at 33.2 million. Worldwide over 25M people have died of HIV and AIDS since 1981 with 2.1M deaths in 2007 (WHO/UNAIDS/UNICEF, 2007).

Rapid scale-up of HIV care programs is ongoing in Africa, driven by ambitious targets set by the World Health Organization in 2003 and accompanied by the simultaneous need to intensify HIV prevention (Hogan and Salomon, 2005; WHO, 2005).

HIV counseling and testing is a key component of both care and prevention, but has so far reached only a minority of Africans (Global HIV Prevention Working Group, 2003; WHO, 2003a). A median of 9% of men and 7% of women reported ever having had an HIV test in surveys conducted in 25 African countries since 2000 (ORC Macro Measure DHS, 2006).

Over two decades since the first AIDS case was discovered in Kenya, HIV and AIDS remains a major public health problem, mainly affecting people in the productive and

reproductive age group of 15 to 49 years. The ministry of health in 2005 showed that Kenya experiences 140,000 AIDS deaths (adults) and 86,000 new infections each year. The HIV prevalence rate in Kenya for ages 15 – 49years was 6.1% in 2007 (UNAIDS, 2007). As per the Kenya Aids Indicator Survey preliminary report, (NASCOP, 2008), the prevalence rate among adults rose from 5 per cent in 2006 to 7.1 per cent in 2007. This indicates an increase in the number of Kenyans being infected amid scale-up of the fight against HIV and AIDS.

According to the Kenya Demographic and Health Survey, (2003) only 13% of women and 14% of men had tested for HIV. This means that most Kenyans do not know their HIV status or that of their spouse or sexual partner. This contributes to continued exposure to HIV unknowingly. Reducing the level of undiagnosed HIV infection through the promotion of HIV testing is an important component of primary and secondary HIV prevention strategies (Department of health, 2001).

As Kenya gears to consolidate gains in HIV prevention, it is important that everybody is fully involved in the HIV prevention and control strategies. It is against this background that the study was conducted to determine the prevalence of HIV testing status and factors associated with its utilization among patients of MDH casualty clinic.

1.2 Statement of the problem

Over the last six years, joint efforts by the Kenya government and its development partners have resulted in a rapid increase in the number of HIV testing centres (Kimani *et al.*, 2007). The number of VCTs has increased from 3 in 2000 to 856 by 2006. With 20% (114) of these sites situated in Nairobi (UNAIDS, 2006a) Despite this rapid scale up of HIV testing services countrywide, coupled with the subsequent services, the proportion of Kenyans in the age bracket 15-49 years who have ever tested for HIV remains dismally low. Only 14% of Kenyans have gone for HIV testing (MOH-Kenya, 2005).

1.3 Justification

HIV counseling and testing is a key component of both HIV care and HIV prevention, but uptake is currently low. The low uptake of HIV counseling and testing among the Kenyan population poses a challenge to the scale-up of the fight against HIV and AIDS. There is limited understanding about the factors that determine whether an individual will decide to have an HIV test. Yet, to reduce HIV spread, as many people at risk of infection must be tested as possible. There is need to determine the factors that influence utilization of the HIV testing service so as to gear the promotion services accordingly.

Mbagathi is a district public health hospital facility funded by the Kenyan government, and receives support from the international donor community, including the Clinton Foundation. As a health care provider involved in provision of services such as diagnostic HIV testing and counseling, comprehensive HIV and AIDS care and treatment, a recipient of public funding and a target for international funding, Mbagathi District Hospital is

critical for identifying HIV and AIDS testing prevalence and factors associated with HIV and AIDS test utilization. This formed the basis of this study.

1.4 Research questions

1.4.1 What is the prevalence of HIV testing among patients attending the casualty clinic at Mbagathi District Hospital, Nairobi Kenya?

1.4.2 What are the factors that influence the utilization of HIV testing by patients at Mbagathi District Hospital?

1.5 Objectives of the study

1.5.1 General objective

To determine the prevalence of HIV testing status and factors associated with its utilization among patients attending the casualty clinic at Mbagathi District Hospital, Nairobi Kenya.

1.5.2 Specific objectives

1.5.2.1 To determine the prevalence of HIV testing status among patients attending the casualty clinic at Mbagathi District Hospital.

1.5.2.2 To assess socio-demographic and cultural factors associated with HIV test service utilization among the patients attending the casualty at Mbagathi District Hospital.

1.5.2.3 To assess the knowledge, attitude and behaviour (KAB) of patients regarding HIV and AIDS and HIV test and its association to the patients testing status.

CHAPTER TWO: LITERATURE REVIEW

2.1 HIV and AIDS

In recent years, global commitment, action and resources to combat the HIV pandemic have increased markedly. In June 2006, the UN General Assembly endorsed the continued scale-up of HIV prevention, treatment, care and support with the goal of coming as close as possible to universal access by 2010.

Despite recent progress, at the end of 2006 an estimated 39.5 million people globally were living with HIV, and more than 4 million new HIV infections occurred in that year. Sub-Saharan-Africa remains the most affected region, with 24.7 million people living with HIV (nearly two-thirds of the global burden), while epidemics in Eastern Europe and Asia continue to grow (UNAIDS/WHO, 2006).

Surveys in twelve high-burden countries in sub-Saharan Africa showed that a median of just 12% of men and 10% of women in the general population had been tested for HIV and received the results (WHO/UNAIDS/UNICEF, 2007). The result of low coverage and uptake of HIV test and counseling and low levels of knowledge of HIV status is that, the majority of people living with HIV access HIV testing and Counseling only when they already have advanced clinical disease (Dabis *et al.*, 2006).

Where antiretroviral therapy is available, maximum benefit in terms of reduced morbidity and mortality is obtained when HIV is diagnosed before end-stage immunodeficiency. Even

in settings where antiretroviral therapy is not yet available, interventions such as co-trimoxazole prophylaxis and antiretroviral prophylaxis for the prevention of mother-to-child transmission offer significant potential health benefits to individuals and their children. Earlier diagnosis also presents an opportunity to provide people with HIV, with information and tools to prevent HIV transmission to others.

The revised Policy Statement on HIV Testing (UNAIDS/WHO, 2004b) emphasized the importance of increased knowledge of HIV status for expanding access to HIV prevention, treatment and care. The policy statement promoted both client-initiated HIV testing and counseling (also known as Voluntary Counseling and Testing, or VCT) and provider-initiated HIV testing and counseling (PICT).

Voluntary counseling and testing (VCT) for human immunodeficiency virus (HIV) has been carried out in many places with excellent results, it is cost-effective, and a gateway to most HIV related services including provision of antiretroviral drugs (The Voluntary HIV-1 Counseling and Testing Study Group, 2000; UNAIDS, 2002). However, in most sub-Saharan African countries, many people still do not know their HIV status (WHO, 2003b). Some treatment programmes have reported high early mortality in patients receiving antiretroviral therapy because of late presentation (Lawn *et al.,* 2005). Therefore, early detection of HIV infection is not only useful in preventing further infection but also part of the strategy to improve treatment outcomes.

This cannot be achieved through the traditional VCT alone and different alternatives have been proposed. One such approach is routine counseling and testing of patients, also called

provider-initiated counseling and testing (WHO, 2003b; UNAIDS/WHO, 2004c). In this approach, the basic conditions of confidentiality, consent and counseling apply and the standard pre-test counseling used in VCT is adapted to ensure informed consent. To be able to provide informed consent, patients need to know: (i) the clinical and prevention benefits of testing; (ii) the right to refuse; (iii) the follow-up services that will be offered; and (iv) the importance of sharing results with a partner in case of positive results (UNAIDS/WHO, 2004a).

HIV and AIDS testing and counselling enables people to learn whether they are infected, understand the implications of their serostatus and make choices that are more informed for the future. Studies have shown that once the public has accepted HIV testing services, more clients are likely to request HIV test for social reasons, such as premarital testing and life planning, rather than solely for medical reasons. Any attempt to prevent new infections and improve the quality of care for people living with HIV and AIDS (PLHA), must begin by enabling people to learn their HIV status voluntarily.

HIV testing is recognized as a critical entry point to prevention, care, and support services. It prevents new infections by helping clients assess their risk and change their behavior, and by linking clients with interventions to reduce mother-to-child transmission of HIV (MTCT). The HIV testing services contribute to improved care and support of PLHA through early and appropriate referral for screening and treatment in preventing active tuberculosis (TB), prompt treatment of sexually transmitted infections (STIs), and opportunistic infections (OIs), as well as referral for nutritional services, legal aid, spiritual

support, home-based care (HBC), and antiretroviral therapy for HIV (ART). Given the critical role of HIV testing in HIV prevention, care, and support, it is necessary that an assessment be conducted to evaluate why this effective HIV prevention strategy is still underutilized.

2.2 Counseling and HIV testing strategies

2.2.1 Voluntary counselling and HIV testing

When the HIV test was developed in the mid 1980s, testing was accompanied by HIV counseling. However, with the growing awareness of HIV infection, AIDS, and the recent availability of antiretroviral therapy (ART), the scope of and reasons for Voluntary Counseling and HIV Testing (VCT also known as Client-initiated HIV testing and counselling) have broadened. VCT is a process by which an individual undergoes counseling to enable her/him to make an informed decision about being tested for HIV, assess their personal risk for HIV and develop a risk reduction strategy. VCT services are essential components of HIV prevention and care programs. However, initially many people were reluctant to be tested if care and treatment were not offered (Stringer, 2003). Voluntary counseling and testing (VCT) programs have increased the adoption of safe sexual behavior and the use of care and support services among adults (Coates *et al.*, 1998).

Client-initiated HIV testing and counseling (VCT) involves individuals actively seeking HIV testing and counseling at a facility that offers these services. It emphasizes individual risk assessment and management by counselors, addressing issues such as the desirability and implications of taking an HIV test and the development of individual risk reduction

strategies. Client-initiated HIV testing and counseling is 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 (WHO, 2007a).

The programs provide the information and support necessary to change risky behaviors that could lead to HIV infection or transmission (Coates *et al.*, 1998; CDC, 2001b). Counseling, both before and after the test, and a risk reduction plan are the key features that distinguish VCT from the other HIV testing services. VCT has become a widely advocated HIV and AIDS prevention strategy among adults. Most clients of VCT services are in their mid- to late twenties (Allen *et al.*, 1992; Ladner *et al.*, 1996; Coates *et al.*, 1998). Sixty percent of all new HIV infections in sub-Saharan Africa, however, occur among young people between the ages of 10 to 24 (UNAIDS, 1998).

Over the past decade, the scope of VCT has evolved from a diagnostic tool for symptomatic patients to an essential component of HIV prevention efforts. With improved interventions to reduce MTCT, increased access to more affordable antiretroviral (ARV) drugs, and effective prophylactic treatment of opportunistic infections (OIs), providing VCT to the general public has become an urgent priority.

Client-initiated approaches have been the primary model for providing HIV testing and counseling. Coverage of client-initiated HIV testing and counseling services is inadequate in both high-income and resource-constrained settings. WHO and UNAIDS strongly support the continued scale up of client-initiated HIV testing and counseling (WHO, 2007a).

Uptake of client-initiated HIV testing and counseling has been hindered by many of the same factors that limit uptake of other HIV-related services, including stigma and discrimination, limited access to treatment, care and health services in general, as well as gender issues (Laver, 2001; Nuwaha *et al.*, 2002; Wolff *et al.*, 2005). A four-country survey in Asia showed that women were more likely to seek HIV testing and counseling because their partner was ill, representing failures of diagnosis, prevention, treatment and care (Paxton *et al.*, 2005). Underestimation of personal risk of HIV is also a frequent obstacle to uptake of client initiated HIV testing and counseling, especially for men (Sahlu *et al.*, 1999; Stein and Nyamathi, 2000; Obermeyer and Osborn, 2007).

Innovative approaches that reduce practical obstacles can increase access to and uptake of client-initiated HIV testing and counseling. The advent of rapid tests has reduced the time between testing and obtaining results. The location of HIV testing and counseling centers in settings that are convenient to clients– such as at workplaces, mobile clinics and during night hours – increases uptake markedly. Home-based HIV testing and counseling, often conducted as part of Demographic Household Surveys but increasingly as part of prevention and treatment interventions, is also emerging as a promising approach (Were *et al.*, 2003; Wolff *et al.*, 2005; Yoder *et al.*, 2006).

There is clearly a need to strengthen and expand VCT services in resource-poor countries, where 95 percent of new HIV infections occur. Though significant efforts are being made to expand the scope and scale of VCT programs worldwide, the vast majority of people are unaware of their HIV status. Knowledge of one's HIV status plays the most significant role

in modifying behavior either to remain uninfected or to prevent infecting current or future partner(s).

There is agreement that VCT still plays a critical role in prevention: studies demonstrate that VCT promotes and sustains behavior change. The current thinking around VCT is that it needs to be scaled up using innovative strategies so that more people can know their HIV status (WHO, 2007a).

2.2.2 Provider-initiated HIV testing and counselling

Health facilities represent a key point of contact with people with HIV who are in need of HIV prevention, treatment, care and support. However, evidence from both industrialized and resource-constrained settings suggests that many opportunities to diagnose and counsel individuals at health facilities are being missed. In Australia, a review of records at a Canberra sexual health center showed that more than half of HIV-positive patients with delayed diagnoses had earlier been in touch with health services, and almost all of those had at least one factor that should have prompted health care providers to consider the need for HIV testing and counseling (McDonald *et al.*, 2006). A study in Uganda showed that, among adults who were offered HIV testing at a hospital (about half of whom were subsequently found to be HIV-positive), 83% were unaware of their HIV status, Even though 88% had been to a health unit in the previous six months (Nakanjako *et al.*, 2007).

Provider-initiated HIV testing and counseling/ Diagnostic HIV testing and counselling (DTC) refers to HIV testing and counseling which is recommended by health care

providers to persons attending health care facilities as a standard component of medical care. The major purpose of such testing and counseling is to enable specific clinical decisions to be made and/or specific medical services to be offered that would not be possible without knowledge of the person's HIV status. In the case of persons presenting to health facilities with symptoms or signs of illness that could be attributable to HIV, it is a basic responsibility of heath care providers to recommend HIV testing and counseling as part of the patient's routine clinical management. This includes recommending HIV testing and counseling to tuberculosis patients and persons suspected of having tuberculosis (UNAIDS/WHO, 2006; WHO, 2007b). Provider-initiated HIV testing and counseling presents an opportunity to ensure that HIV is more systematically diagnosed in health care facilities in order to facilitate patient access to needed HIV prevention treatment care and support services.

Diagnostic HIV testing for children born to women who have participated in programmes for the prevention of mother-to-child transmission (PMTCT) and who were found to be HIV-positive is considered a routine component of the follow-up care for these children. Diagnostic HIV testing is also recommended for children with suboptimal growth and malnutrition in generalized epidemics, and may be considered for children under certain circumstances in other settings.

In the industrialized world, a number of European countries have introduced PICT in the context of prenatal care. Provider-initiated HIV testing and Counseling appears to have resulted in considerable increases in testing uptake in the United States United Kingdom,

Hong Kong, Singapore, Norway, and Canada, where the majority of clients (4/5. or more in most studies) agreed to be tested (Sahlu *et al.*, 1999). Concerned by persistent late diagnoses of HIV infection and a high proportion of people with HIV who are unaware of their HIV status, and in light of evidence that people who are aware of their HIV status reduce risk behaviors (Gray *et al.*, 2006), the United States CDC issued revised guidelines in September 2006 recommending "HIV screening" for all persons aged 13-64 years attending health facilities in the United States (Branson *et al.*, 2006).

Several low and middle-income countries have introduced provider-initiated HIV testing and counseling in a variety of settings, including Botswana, Kenya, Malawi, South Africa and Uganda (Weiser *et al*., 2006; Nuwaha *et al.*, 2002; Perez *et al.*, 2006; Zimba *et al*., 2006; Etiebet *et al*., 2004; Shankar *et al.*, 2003; Miller, 2006). While data are still relatively limited, studies in prenatal care settings in several low- and middle-income countries have shown that pregnant women were positively inclined to accept testing if they thought it could benefit their babies.

Comparisons of data collected before and after the introduction of provider-initiated HIV testing and counseling consistently showed significantly higher uptake. This is documented in post-partum wards in Botswana (Thior *et al.*, 2006); pediatric wards in Zambia; (Kankasa, 2006); tuberculosis clinics (Corneli *et al.*, 2005) and in Ugandan pediatric wards (Nawavvu, 2006); maternity ward (Homsy *et al.*, 2006) and STI clinics (Semafumu and Ngabirano, 2006). In Mbarara hospital in Uganda, increased uptake of HIV testing appeared to be associated with clinical benefits for patients. People diagnosed HIV-positive

after provider-initiated HIV testing and counseling was introduced were at an earlier clinical stage and had higher CD4 counts than those identified beforehand, and were therefore more likely to be referred to treatment at an appropriate time (Andia, 2006).

Concerns exist that provider-initiated HIV testing and counseling could deter clients from accessing health services. Although limited, the available evidence does not support these fears. The introduction of provider-initiated HIV testing and counseling in antenatal care clinics in Botswana appears to have caused neither reduction in the use of prenatal care nor decline in the proportion of people receiving test results (Steen *et al.*, 2007), and in Zimbabwe has had no negative effects on post-test counseling rates or the delivery of antiretroviral prophylaxis (Miller, 2006).

Studies have found patients to have generally positive attitudes about provider-initiated HIV testing and counseling. When hospitalized patients in the United States were asked how they would feel about an unsolicited HIV test, most had positive responses (Greenwald, 2006). A comparison of three Models of provider-initiated HIV testing and counseling in a tuberculosis clinic in Kinshasa, Democratic Republic of the Congo, found that more than two-thirds of clients preferred "opt-out" where the test would be performed unless they declined, notwithstanding common perceptions that it would be difficult to decline the test (Thior *et al.*, 2006).

The available evidence suggests that provider-initiated HIV testing and counseling can be an important addition to the range of approaches available for scaling up HIV testing and Counseling and facilitates access to HIV treatment, prevention, care and support services.

Provider-initiated testing and counselling in health facilities should always aim to do what is in the best interests of the patient. This requires giving individuals sufficient information to make an informed and voluntary decision to be tested, including an opportunity to decline the test. Post-test counselling and referrals to appropriate services are essential for all patients regardless of the test result, and patient confidentiality must always be maintained.

At the same time as provider-initiated testing is implemented, efforts must be made to put in place a supportive policy and legal framework to maximize positive outcomes and minimize potential risks to the patient. This includes an ethical process for obtaining informed consent, measures to maintain confidentiality and protect privacy and measures to prevent stigma and discrimination in health care settings. National plans to achieve universal access to HIV prevention, treatment, care and support for all who need it should also address beneficial disclosure and ethical partner notification as well as broad social measures to protect the human rights of people living with HIV and AIDS and at risk of exposure to HIV (UNAIDS/WHO, 2006).

Health facilities represent a key point of contact with people who are potentially infected with HIV, provider-initiated testing and counselling in health facilities should be seen as

one of several potential components in an overall strategy to increase uptake of HIV testing and counselling and knowledge of HIV status. (UNAIDS/WHO, 2006).

2.2.3 Routine HIV testing and counselling

Evidence from both resource-rich and resource-poor settings indicates that the uptake of testing increases when testing is routinely discussed and offered, and where it is well integrated into prenatal care (Simpson *et al.*, 1998; CDC, 2004; Etiebet *et al.*, 2004; Weiser *et al.*, 2006).

In 2004, as part of change in testing policy recommendations, UNAIDS and the WHO recommended the routine offer of HIV testing by healthcare providers in a wide range of clinical encounters based in part on the Botswana experience (UNAIDS, 2004; Heywood, 2005). The goal of routine testing is to increase the proportion of individuals aware of their status, and thereby reduce "HIV exceptionalism," lessen HIV-related stigma, and provide more people access to life-saving therapy (De Cock, 2005; UNAIDS, 2006b)

While this approach to testing is provider-initiated, all patients should receive essential information about HIV testing and be informed of their right to refuse. In addition, there is typically greater emphasis on post-test compared with pre-test counseling (De Cock, 2005). Studies in resource-rich settings have shown that routine HIV testing can be cost-effective and life-saving, both by increasing the life expectancy of individuals with HIV and by reducing the annual HIV transmission rate (Kelen *et al.*, 1999; CDC, 2001a; Paltiel *et al.*, 2005; Walensky *et al.*, 2005).

While provider-initiated approaches to testing are gaining popularity, there have been concerns that routine testing policies are potentially coercive, that counseling will no longer be practiced, that people may be dissuaded from visiting their doctors for fear of being tested, and that this policy may increase testing-related partner violence (Csete *et al.*, 2004; Gruskin *et al.*, 2004; Kenyon, 2005; The international community of women living with HIV and AIDS, 2005). The concerns further array fears that increased knowledge and disclosure of HIV status may be accompanied by increased stigma, discrimination, abandonment and violence. In a review of 17 studies, negative consequences of disclosure, including violence, were reported in 3% to 15% of cases, with other studies reporting lower or higher frequencies (Gielen *et al.*, 2000; Gaillard *et al.*, 2002; Maman *et al.*, 2003; Medley *et al.*, 2004; Semraua *et al.*, 2005) the latter in settings with high baseline domestic violence. A systematic review of partner notification in the United States found few negative consequences (Passin *et al.*, 2006), while a study in Tanzania found that about half of respondents reported receiving support from their partner (Thior *et al.*, 2006). Evidence from Kenya and Zambia shows that the majority of HIV-positive women reported positive outcomes with disclosure, including some who feared they would not receive support (USAID/Synergy, 2004).

However, concerns about the potential coercion of patients and adverse outcomes of disclosure underscore the importance of adequate training and supervision for health care providers, particularly in the processes of counseling, obtaining informed consent and maintaining confidentiality of HIV test results. Close monitoring and evaluation, especially in the implementation stages, will be needed to ensure that provider-initiated HIV testing

and counseling is implemented in a way that minimizes adverse outcomes and maximizes benefits for patients.

2.2.4 Mandatory HIV testing

Mandatory HIV testing is the most problematic of any testing strategy. Even when performed according to a high standard of professionalism, it still involves very significant limitations of individual autonomy and deep incursions into the domain of individual privacy. In pregnancy, unless the health of the pregnant woman is considered to be of equal importance to the goal of preventing transmission to future children, mandatory HIV testing threatens to create a situation where her moral value is secondary to that of her yet-to-be-born child (Russell, 2007).

The most serious objection to mandatory testing schemes is the denial of dignity. Some other overriding objective is substituted for that of an individual's freedom to exercise his or her autonomy in the pursuit of moral fulfilment. An individual becomes a means to some other end and is no longer respected or empowered as an end in his or herself. In the absence of the ability to freely consent to an HIV test, an individual loses full power to determine under what circumstances he or she chooses to learn this important life-altering fact. So too is lost a significant degree of control over future decisions regarding things like subsequent disclosure to others and choosing appropriate options for ongoing care treatment and support (Russell, 2007).

Mandatory testing is proposed in a situation where rates of uptake of other types of testing strategies such as voluntary or routine, remain low. The context for considering mandatory testing is one of last resort where other strategies have not shown significant reductions in the rate of mother-to-child transmission. The denial of the opportunity to consent to an HIV test, and to freely choose a course of action subsequent to the test that is in the best interest of the mother and child-to-be, is argued by many to have far-reaching negative consequences. These include the potential for psychological, social and even physical harms to newly diagnosed HIV-positive pregnant women, erosion of trust between pregnant women and health care providers that would jeopardize the development of effective caring relation-ships, and, most significantly, the possibility that the women who could most benefit from interventions aimed at preventing mother-to-child-transmission will avoid using healthcare services altogether (McGovern, 2002).

Whether exhaustive or not, this list does raise significant challenges to those who would seek to justify mandatory testing strategies as an element of care and support for HIV-positive pregnant women, and as a tool in the prevention of mother-to-child transmission. The magnitude of the objections to mandatory HIV testing notwithstanding, the fundamental ability of any individual to enjoy autonomy, bodily integrity and personal privacy is not unlimited. Compelling reasons must be put forward to impose limits. Overall, the benefit to be gained must be proportionate to the limitation imposed (Russell, 2007).

As was recently highlighted at the joint WHO/UNICEF/UUNAIDS Technical consultation on scaling up HIV Testing and Counseling in Asia and the Pacific

(WHO/UNICEF/UNAIDS., 2007) mandatory and compulsory HIV testing occurs in many countries and contexts, in violation of ethical principles and basic rights of consent, privacy, and bodily integrity. With the exception of HIV screening for blood, blood products, and before all procedures involving transfer of bodily fluids or body parts, compulsory or mandatory testing is ineffective for public health purposes and a violation of human rights.

The Health Belief Model summarises concepts related to HIV testing as follows:

a) Perceived susceptibility to HIV
b) Perceived severity of having HIV
c) Perceived benefits of being screened for HIV
d) Perceived barriers to being screened for HIV,
e) Cues to action to seek screening for HIV and
f) Self-efficacy or the confidence in one's ability to take action

(Rosenstock, 1974; Porter and Bonilla, 1992).

From the model, the likelihood that an individual will take action to prevent illness depends on:

a) The person's perception that they are personally vulnerable to the condition,
b) The consequences of the condition would be serious,
c) The precautionary behaviour effectively prevents the condition and
d) The benefits of reducing the threat of the condition exceed the costs of taking action (Redding *et al.*, 2000)

Modifying factors incorporated in the model include demographic variables and knowledge. Once an individual perceives a threat to his health and is cued to action and the perceived benefits outweigh the perceived barriers, the individual is likely to engage in the preventive health action

Conceptual framework of HIV testing service utilization

Possible predictor variables among the 220 study participants attending Mbagathi District Hospital, Nairobi, Kenya were as shown in Figure 1. Adopted from Voluntary HIV counseling and testing among men in rural western Uganda: Implications for HIV prevention (Bwambale *et al.*, 2008)

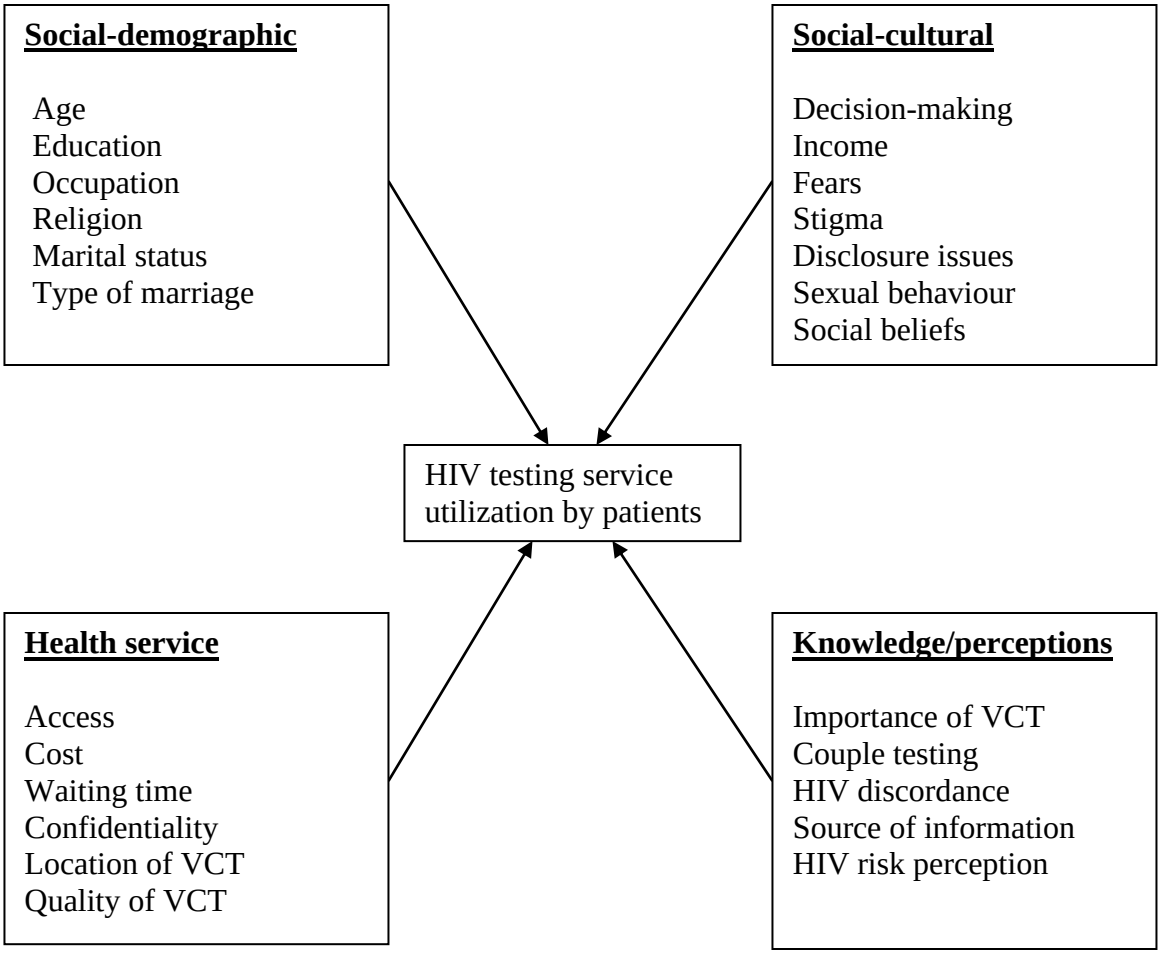

Figure 1: Conceptual framework of HIV testing service utilization

CHAPTER THREE: MATERIALS AND METHODS

3.1 Study site

Mbagathi Hospital is the only district public hospital in Nairobi Province. It is located on the edge of the Kibera slum (the biggest slum in Kenya) and attends to an annual average of 73,783 patients with about 150 consultations daily. Mbagathi District Hospital runs the most important diagnostic center for tuberculosis in Nairobi.

MDH has been in the heart of providing comprehensive HIV and AIDS care in the face of the unfolding epidemic in Kenya. It handles about 10,000 HIV patients, 1,000 of whom are children. The hospital also has about 5,000 adults and about 500 children on antiretroviral therapy, offers VCT, DTC, PICT, and PMTCT services, run HIV and AIDS clinic-CCC, counseling and social support services, as well as TB care and counseling, among other services.

Patients tested for HIV status come for medical examinations and they are tested after counseling but some patients come for HIV test due to suspected clinical tuberculosis (TB). The study was conducted at the casualty clinic among outpatients of MDH, Nairobi Kenya.

3.2 Study population

The study population was the outpatient population of Mbagathi District Hospital. Those in charge of patient registration assisted the researcher to identify the participants who were included in the study.

3.2.1 Inclusion criteria

The respondents included in the study were:

3.2.1.1 All adult Patients of age 18 to 64 years attending the casualty department of Mbagathi District Hospital.

3.2.1.2 Able to communicate with the researcher.

3.2.1.3 Able and willing to provide written informed consent.

3.2.2 Exclusion criteria

The respondents that were excluded from the study included:

3.2.2.1 All the patients below aged below 18 years

3.2.2.2 All who were unable to communicate

3.2.2.3 All patients who were seriously ill

3.2.2.4 All accident patients

3.2.2.5 Patients who did not consent

3.3 Study design

A descriptive cross- sectional study design using quantitative and qualitative methods was used to collect data from the patients attending Mbagathi District Hospital. Quantitative research relies upon measurement to analyze different variables and uses various scales

(Bless and Higson-Smith, 1993). This is a formal objective, systematic process, which aims to describe, compare and analyze different variables. The quantitative research approach was considered to be appropriate for this study because it allowed a formal and systematic approach to collect information on patient's knowledge, attitude and practices about HIV and HIV testing. It documented descriptions of the barriers that prevent patients from utilizing the HIV testing service.

Trained research assistants were used to administer the questionnaires that examined the knowledge, attitudes, access issues and utilization of HIV testing services among selected patients at MDH.

3.4 Sampling procedure

Systematic sampling was used in the selection of the respondents who were interviewed. A register of patients arranged in numerical order reflecting how the patients came hence whom to see the doctor before the other was used. A sampling interval of ten was used, k=10. The first subject for interview was whoever 10^{th} patient to be registered at the casualty clinic records on a particular day, because k was 10; every subsequent 10^{th} subject was interviewed. The sampling was applied to the men and women separately.

3.5 Sample size determination

The sample size was decided in a way that it was representative and could be generalized to the MDH out patient population. Use was made of the Fisher *et al* formula (Denise *et al*, 2001).

$n = z^2_{1-\alpha/2} P(1- P)/d^2$. (Fisher *et al.*, 1998)

Where

- Z = standard normal distribution curve value for 95% CI which is 1.96 (when α=0.05)
- P = prevalence of the usage of the HIV testing service as per KDHS 2003. Women -13% while men -14%, mean 13.5%
- d = absolute precision (0.05)
- Number of casualty patients incorporated =180
- Non-response rate of 20% of 180 = 36

Total sample size = 216

3.6 Research variables

Data on the following socio-demographic variables was collected; age, gender, marital status, education level, occupation and tribe of the respondents tribe (Appendix 1). Data on Knowledge, attitude and practice was too collected and assessed for any relationship to a respondents testing status. HIV status was used to mean ever tested for HIV and received test results and hence one knows whether he/she is HIV positive or negative.

To generate the knowledge scores, the questions on knowledge of the participants on transmission, prevention, care and treatment of HIV and AIDS taking into account the critical role played by testing were grouped and analyzed. The participant's score depended on the total correct mentions on each of the areas the aggregate score being 10. Depending on the various participants' total score, the scores were grouped into three levels; 0-3, 4-6

and 7-10 with 0-3 regarded as poor knowledge score, 4-6 as average and 7-10 was regarded as good knowledge score.

As for attitude, various questions on transmission, prevention, care and treatment of HIV and AIDS with regard to the critical role played by HIV testing were asked to get the opinion of the participants. The attitude that the participants had towards HIV and AIDS was divided into two paradigms; negative and positive. Negative responses were regarded as negative attitude while positive responses were regarded as positive attitude.

Practices on specific issues related to HIV/ AIDS services were examined to see if they influenced HIV testing. The practices that the participants had towards HIV and AIDS were divided into two paradigms: Bad and Good Practice.

3.7 Data collection

Data was collected between September and November 2008 at the casualty clinic of Mbagathi District Hospital. A face-to-face administration of the questionnaire was used in collecting the data.

Two trained research assistants (male and female) assisted the researcher in administration of the questionnaire. The assistants were public health Master students who discussed the questionnaire with the researcher and did trial administration amongst other students before administering the questionnaires to the MDH study patients. The content of the questionnaire was explained to the study subjects during questionnaire administration and informed consent obtained from the study subjects before collecting the specific data from a given study participant.

3.8 Data management and analysis

3.8.1 Data storage

Data collected was stored in the computer: flash disks, compact disks (CDs) and on the internet. The completed questionnaires were retained as hard copy back up.

3.8.2 Data entry and validation

Data was coded and double entry done in MS access. The data was then entered using the statistical package for the social sciences (SPSS) software for Windows (SPSS Version 11.5). Validation was carried out in SPSS by generating frequency outputs and by visual inspection of the questionnaires incase conspicuous anomalies were detected.

3.8.3 Data analysis and presentation

Data analysis involved descriptive statistics; the student T-test compared Continuous data. The chi-square test was carried out to determine any relationship between the quantitative variables and uptake of HIV test service. A P-value of <0.05 was considered significant. Regression analysis was carried out to determine the true predictive factors of HIV test uptake among the quantitative and binomial variables.

3.9 Ethical considerations

Written permission to conduct the study was granted by the KEMRI National Ethical clearance committee (ERC). The research protocol and consent form were approved also by Jomo Kenyatta University of Agriculture and Technology and from KEMRI Scientific Steering Committee. The researcher got permission from the superintendent of MDH to

carry out the study. The aim of the study was explained to all the potential participants and a written consent to participate in the study was obtained from the participants.

The participants were informed that their participation in the study was voluntary and they were free to withdraw at any time without giving reasons, and without affecting their access to normal health care and management. In addition, measures were taken to ensure the confidentiality of the data. In particular, the interviews were held in privacy, away from relatives and friends; information on HIV status was not collected; codes rather than names of participants were used; and the data was kept under lock and key by the principal investigator.

3.10 Limitations of the study

The results of this study should be interpreted cautiously. First, the study was conducted in a hospital setting. This setting may overestimate the disclosure rate and therefore, may not necessarily be generalized to the entire population.

The study was hospital-based and heavily relied on the self-report by the respondents. This may have led to reporting bias because of the reluctance to disclose sensitive behaviors such as sexual activity. The lack of an association between sexual behavior and HIV test use in this study reflected the problem of measuring sexual behavior. It is also possible that some respondents reported HIV testing behaviors, which they thought were socially desirable but that were not necessarily factual. In addition, recall bias may have occurred particularly with frequently occurring activities.

There may have been a possibility of social acceptability bias in response because the researcher may have been looked at as one of the health workers. Patients may not have felt free to answer no for fear of being victimized and hence not being attended to in order to get the care and treatment expected.

Mbagathi HIV testing centre is an integrated one; hence, data collected from such a facility may not be representative of all the other types of HIV testing centers, e.g. the stand-alone type of HIV testing centers.

CHAPTER FOUR: RESULTS

4.1 Socio-demographic characteristics of participants

Between September and November 2008, 220 patients seeking treatment at Mbagathi District Hospital were systematically selected for the study. Information about the selected patients was collected and analyzed.

4.1.1 Gender of participants

The proportion of males to females of the study participants was 46% to 54% respectively as shown in Figure 2

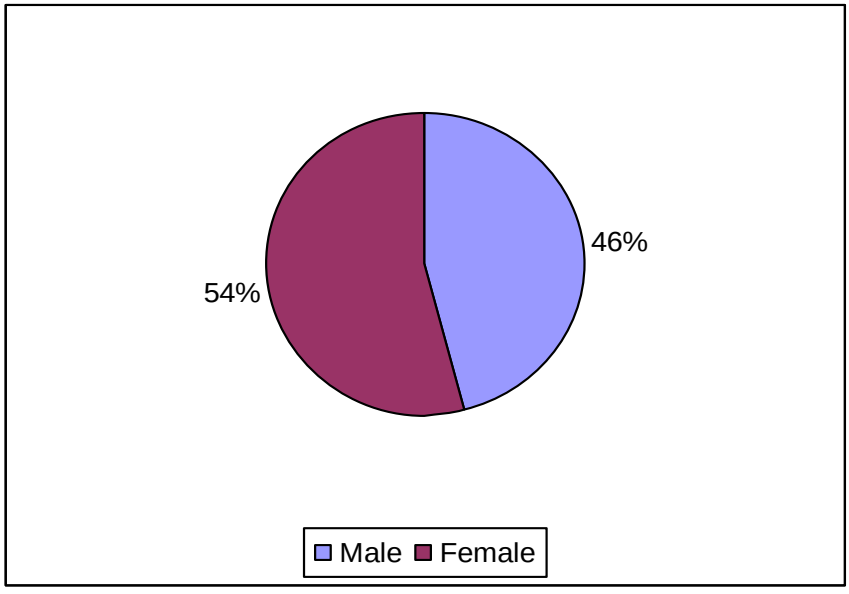

Figure 2: Gender distribution among study participants

4.1.2 Age of participants

Among the study participants, 70.9% were aged between 20 to 39 years; whereas those aged 40 years and above were 24.1% while the remaining 5% were below 20 years. This indicated that majority of the people who visited the hospital were in the age group 20-39 years. A contingency Table of age groups and gender showed that, a higher percentage of females were in the 20-29 age group, while a higher percentage of males were in the 30-39 age group (Figure 3). A One-way ANOVA tabulation of gender and age groups showed that there was no significant difference in terms of gender and age distribution.

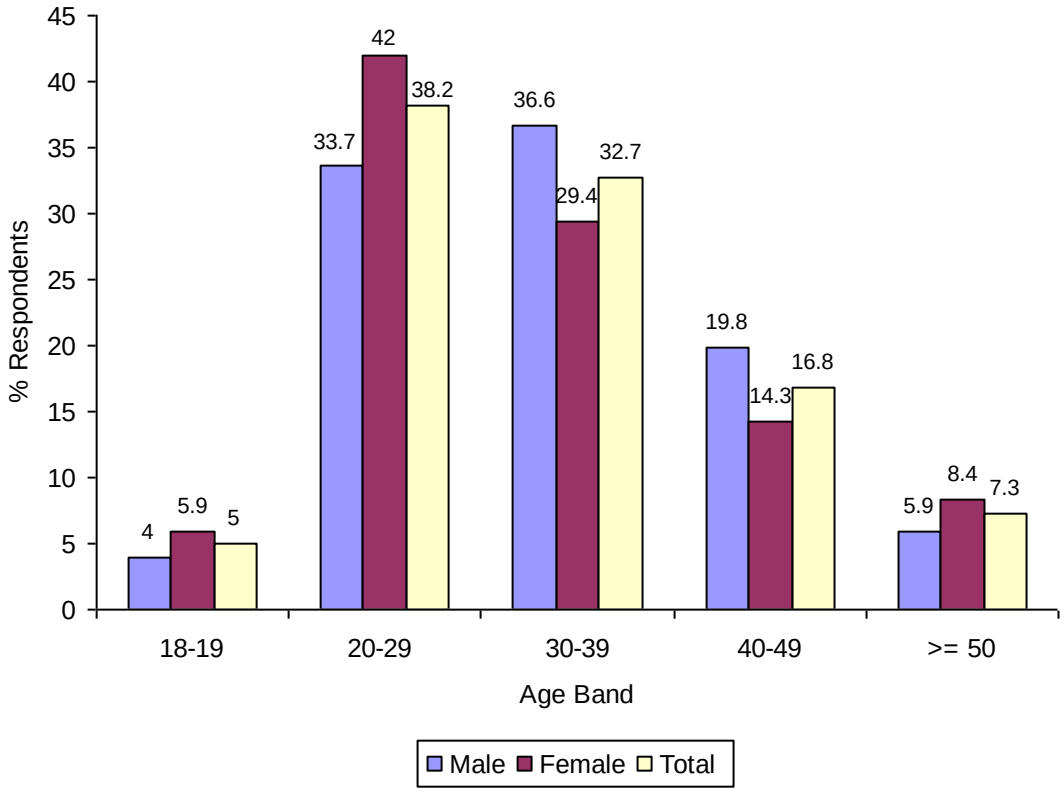

Figure 3: Distribution of respondents according to age

4.1.3 Marital status of participants

Majority of the study participants were married (60.5%) while 34.1% were single, 5.5% were either widowed or divorced as shown in Figure 4.

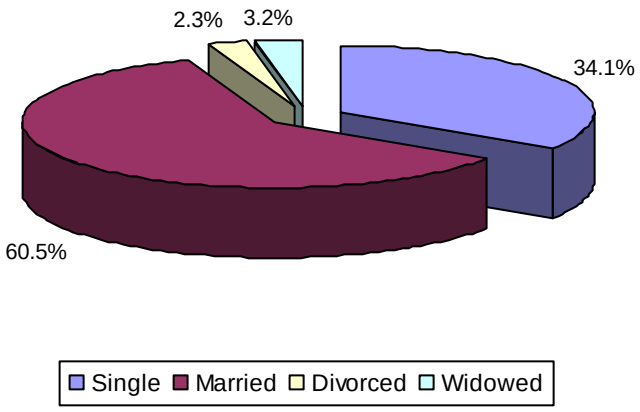

Figure 4: Distribution of participants according to marital status

From these results, it was intuitive to say that 66% of participants were married at some point in their lives while 34% were still single at the time of the study.

4.1.4 Education of participants

About the level of highest education attained by the participants, 40% had primary education, 31% secondary education while 18% had college education. The remaining, 9% and 2% had university education and no formal education respectively. This is shown in Figure 5.

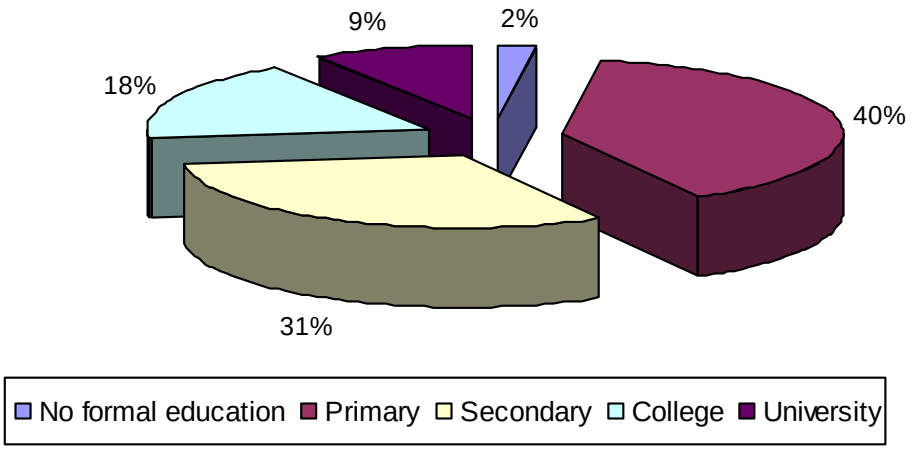

Figure 5: Level of education of study participants

A contingency Table of education level and gender showed that 45% of the females had primary education compared to 33% of males. University education between males and females was 14% and 5% respectively. College education is comparable across the gender with males at 19% and females at 18%. Secondary education attainment showed a marginal difference with males at 34% and females at 29%. Overall 77% of the females had secondary education and below as opposed to 67% of the males. This is shown in Figure 6.

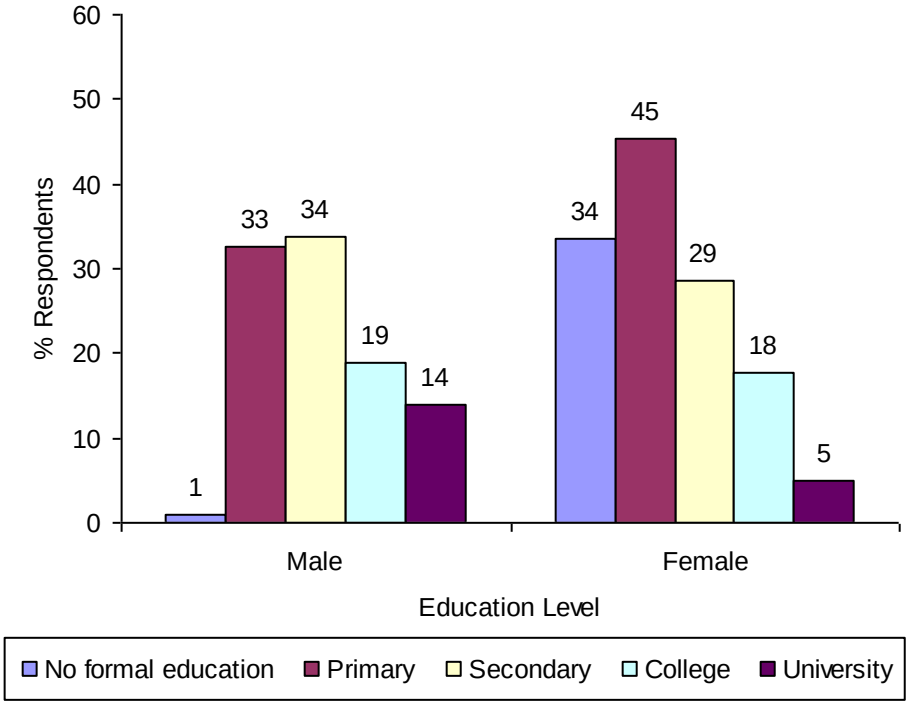

Figure 6: Level of education of study participants by gender

4.1.5 Religion of participants

Majority of the participants were Protestants constituting 67.7%, with Catholics at 25.5% and 5.5% Muslims, 1.4% were traditionalists or were not willing to disclose their religious affiliation as is shown in Figure 7.

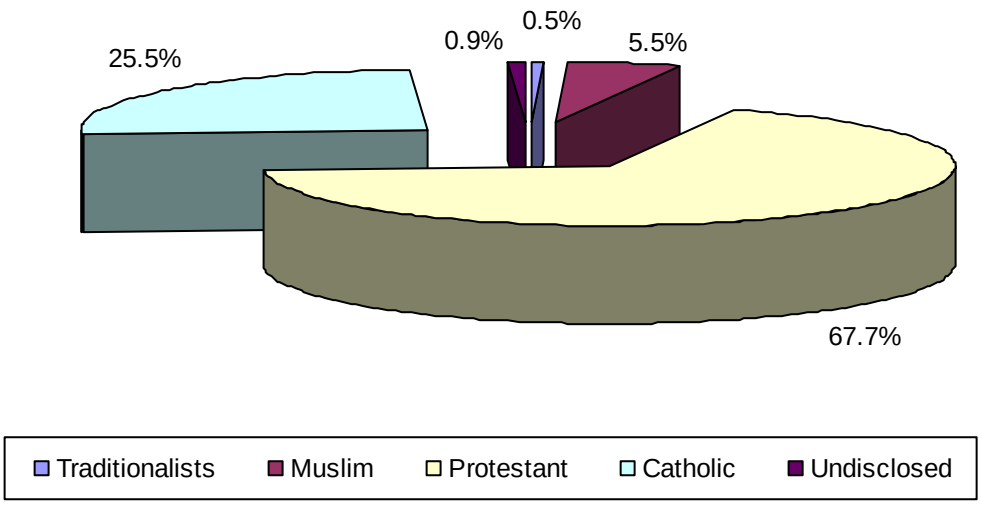

Figure 7: Religious affiliation of study participants

4.1.6 Employment status of participants

Employment status of the participants revealed that 37% were in formal employment, 27% were self-employed, 26% were not working while 9% were students and 1% had retired as shown in Figure 8 below.

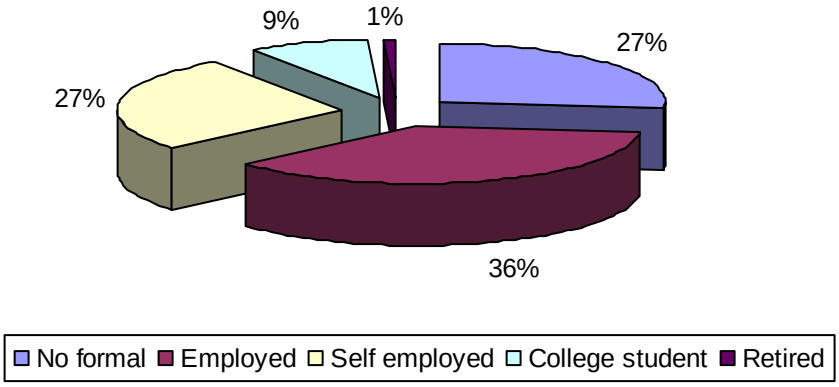

Figure 8: Employment status of study participants

A cross tabulation of gender and employment status showed that more males were in formal employment (53%) as compared to 23% of females. Female participants who were unemployed constituted 47% as opposed to 24% of the males, while 30% of females were self-employed as opposed to 23% of the males as shown in Figure 9

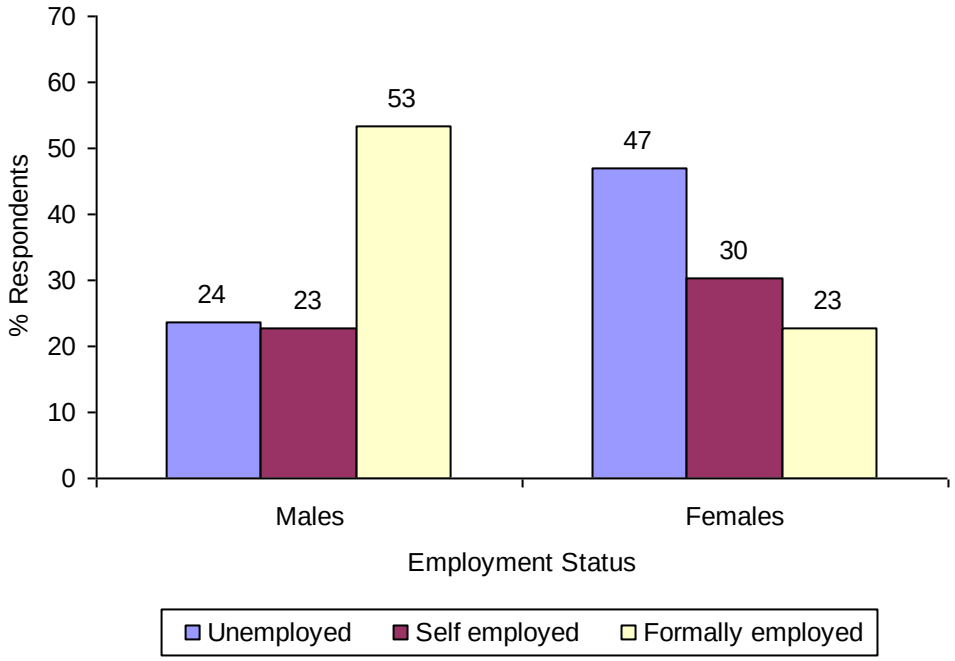

Figure 9: Employment status of participants by gender

4.1.7 Tribe of participants

This was the composition of the respondents in terms of their tribe: The Kikuyu study participants constituted 39% of the participants, Luo 16%, 10% each for Kamba and Luhya and 8% each for Kisii, other tribes and those who did not want to specify their tribe. Among the female gender, 48% were Kikuyu, 12 % Luos, 11% Kamba, 8% Kisii and 7% Luhya. While among males, Kikuyu constitute 29%, which is almost half their female counterparts. Luo males are almost double their female counterparts at 22% compared to females at 12%. The same scenario happend among Luhya men who doubled their females

at 15% and 7% respectively. The Kamba had a slightly higher percentage of females than males; 11% and 9% respectively while Kisii had males and females at par. Other tribes had three times more males compared to females attending the hospital within the study period as shown in Figure 10 below.

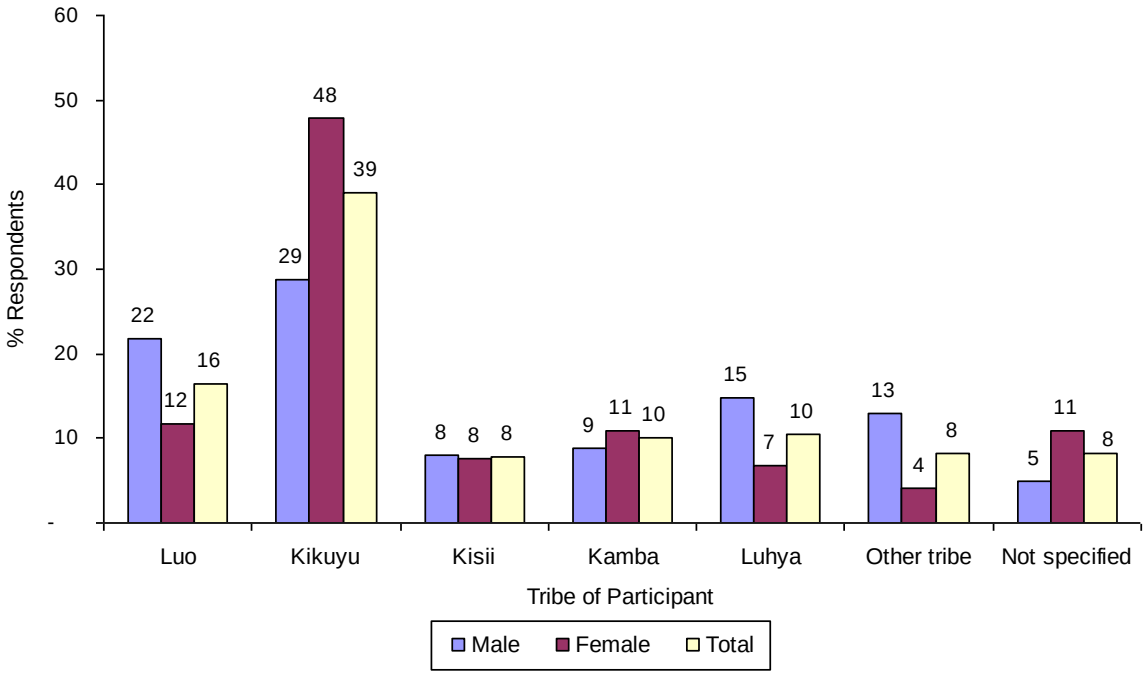

Figure 10: Distribution of respondents according to tribe by gender

4.2 HIV testing within the various socio-demographic groups

4.2.1 Reasons for HIV testing

A slight majority (53.1%) of those who tested did so due to medical, pregnancy, job, college or marital requirements while 34% tested voluntarily wanting to know their status. The rest of the respondents did so to prove their status or due to external influence as shown in Table 1.

Table 1: Reasons for HIV testing

Reasons for testing	n	%
Own wish	50	34
Requirement	78	53.1
External influence	6	4.1
Prove status	13	8.8
Total	**147**	**100**

4.2.2 Testing status of participants by gender

HIV testing status for female was 68.7% and that of males was 64.4%. There was no significant association between gender and HIV testing status (Odds ratio 0.8 (0.5 – 1.4), P=0.566)

4.2.3 Testing status of participants by marital status

HIV testing status for those who were married at some point was 67.6% and that of singles 65.3%. There was no significant association between marital status and HIV testing status (Odds ratio 1.1 (0.6 – 2), P=0.764,). The percentage of males who knew their status and had ever married was 42.6% while that of females was 46.2%. Singles who knew their status for males and females was 21.8% and 22.7% respectively. However, there was no association between testing status with marital status while accounting for gender: males (Odds ratio 1.0 (0.4 – 2.3), P=1.000), females (Odds ratio 1.2 (0.6 – 2.8), P=0.678).

4.2.4 Testing status of participants by age

Overall HIV testing status among the study participants was 66.8%. HIV testing status for those aged <40 years was 73.7%. Participants who were aged below 40 years constituted 75.9% of the study population. The HIV testing status for participants who were over 40

year was 45.3% while that of participants who were less than 40 years was 73.7% as shown in Figure 11. There was a significant association between age and HIV testing status (Odds ratio 3.4 (1.8 – 6.4), P < 0.001). This implied that when a person was less than 40 years, he/she was 3.4 times more likely to have gone for an HIV-test compared to those who were 40 years and above. When those aged 40 years and below were compared on gender and testing status, males had a higher odds compared to females: Males (Odds ratio 3.5 (1.4 – 8.9), P=0.009), Females (Odds ratio 3.2 (1.3 – 7.9), P=0.017).

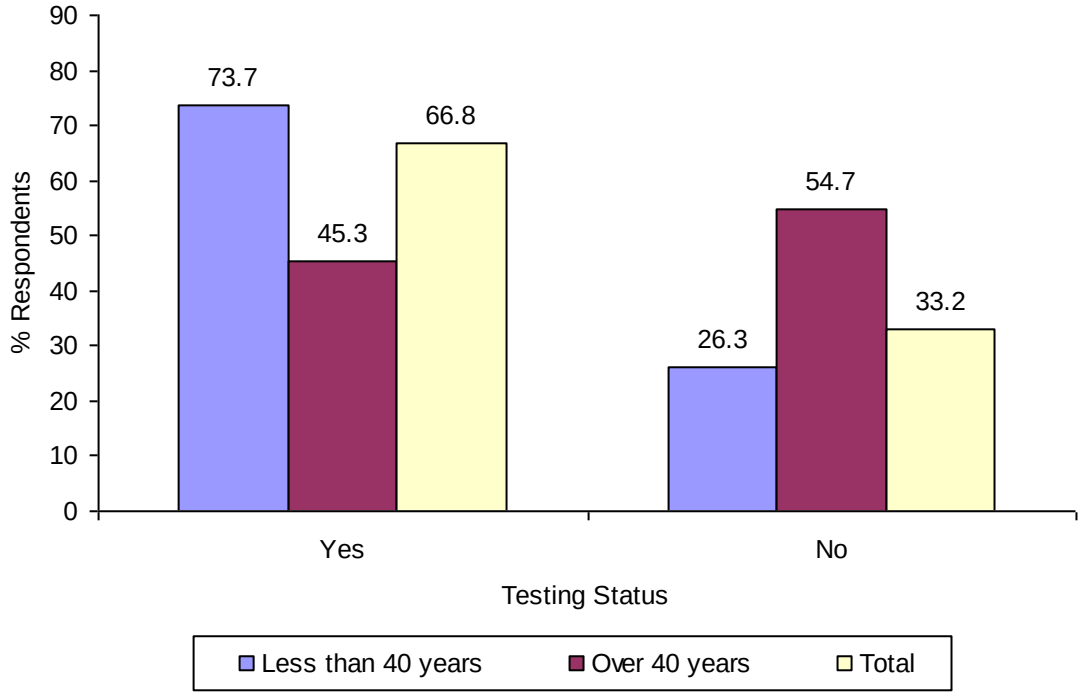

Figure 11: Relationship between HIV testing status and age of participants

4.2.5 Testing status of participants by religion

Among the Protestants 67.1% knew their HIV status, 66.7% among Muslims and 66.1% among Catholics knew their HIV status respectively. There was no significant association between religion and HIV testing status (P=0.412).

4.2.6 Testing status of participants by education

Majority of the participants (72.7%) had secondary education and below while only 27.3% attained college / university education. HIV testing status for those that had primary education was 62% and those that had attained at least secondary education was 70.3%. There was no significant association between Level of education attained and HIV testing status (Odds ratio 0.7 (0.4 – 1.3), P=0.194) as portrayed in Figure 12.

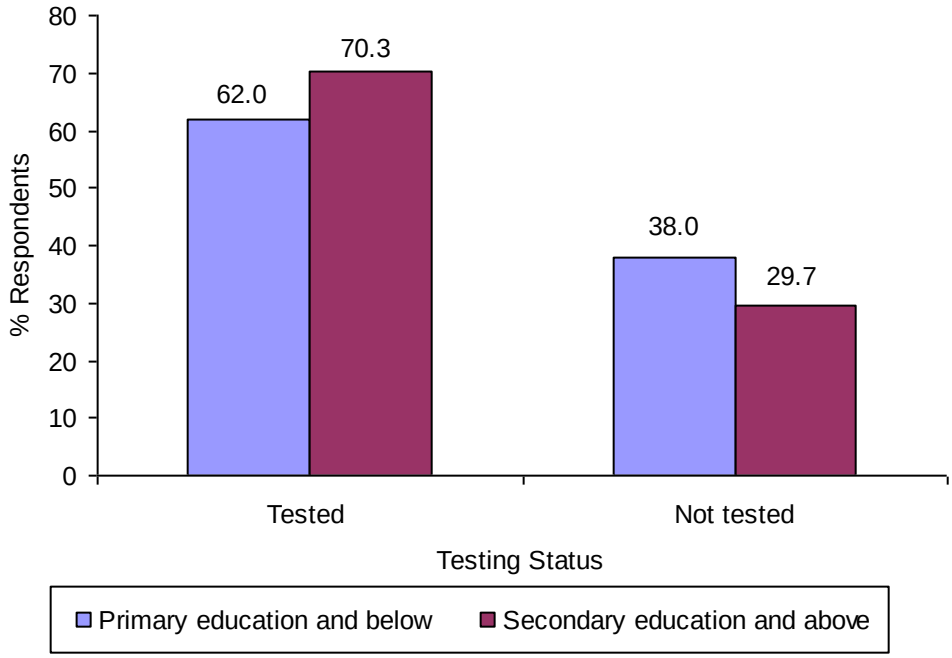

Figure 12: Relationship between HIV testing status and level of education of participants

4.2.7 Relationship between testing status of participants and employment

Those who knew their HIV status by employment status showed that 61.3% were unemployed, 71.2% were self-employed and 69.1% were in formal employment. However, there was no significant association between employment status and HIV testing status (p= 0.402) as shown in Figure 13.

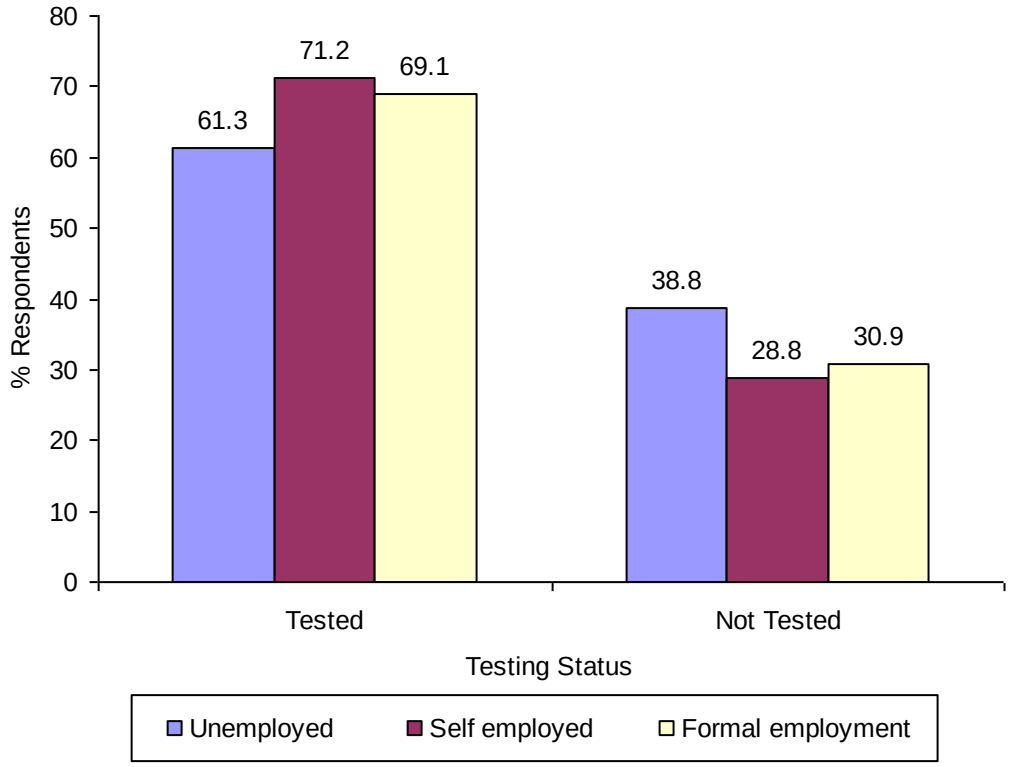

Figure 13: Relationship between HIV testing status and employment status of participants

4.2.8 Relationship between HIV testing status of participants and tribe

The HIV testing status by tribe showed that majority of the Luo participants (75%) had known their HIV status. Kikuyu, Kisii and Luhya had 65.1%, 64.7% and 65.2% respectively. Only the Kamba had less than 60% having known their status within the study period.

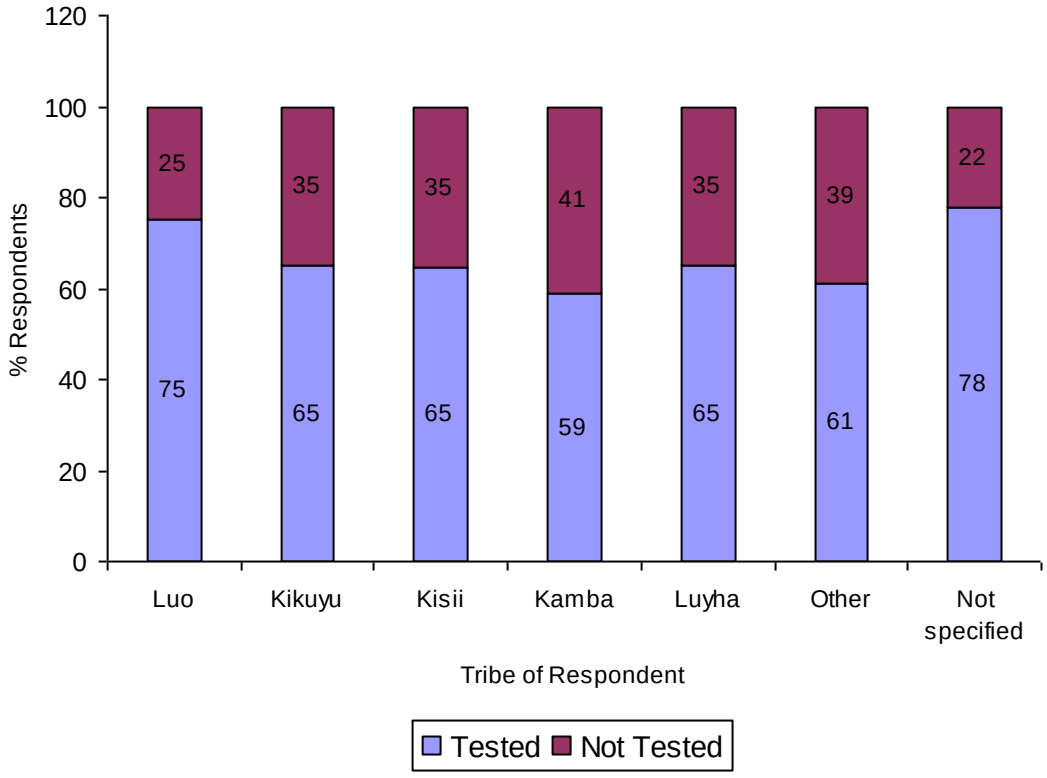

Figure 14: Distribution of participants by testing status and tribe

Those who wished not to mention their tribes had 78% testing status. Other tribes that formed the study subjects included; Kalenjin, Meru, Rabai, Pokomo, Embu, Nubian, Diji and Wasoga.

A closer look at the distribution of testing status and tribe factoring for gender showed differences in testing status within gender among the various tribes. Luo men have 81.8% having tested for HIV prior to the study as opposed to a pantry 37.5% among Kisii men. Females in all the tribes had a testing status of more than 60% and an average of 68.9% as opposed to 64.4% among males as shown in Table 2 below

Table 2: Distribution of testing status by participants' tribe and gender

Gender			Males		Females	
Testing Status			No	Yes	No	Yes
Tribe	Luo	n	4	18	5	9
		%	18.2	81.8	35.7	64.3
	Kikuyu	n	12	17	18	39
		%	41.4	58.6	31.6	68.4
	Kisii	n	5	3	1	8
		%	62.5	37.5	11.1	88.9
	Kamba	n	4	5	5	8
		%	44.4	55.6	38.5	61.5
	Luhya	n	5	10	3	5
		%	33.3	66.7	37.5	62.5
	Other tribe	n	5	8	2	3
		%	38.5	61.5	40.0	60.0
	Not specified	n	1	4	3	10
		%	20.0	80.0	23.1	76.9
Total		**n**	**36**	**65**	**37**	**82**
		%	**35.6**	**64.4**	**31.1**	**68.9**

4.3 Relationship between testing status and participants' knowledge on HIV and AIDS

There was a significant association (p=0.048) between knowledge on transmission and protection from HIV and AIDS and HIV testing status of the study participants. Those with a higher knowledge score on the mode of transmission and ways of protection had a higher propensity of having gone for the HIV test as opposed to those with a lower knowledge score. 88.9% of those with good knowledge had tested for their HIV compared to 67.9 with average knowledge and 58.5% with poor knowledge as portrayed in Figure 15.

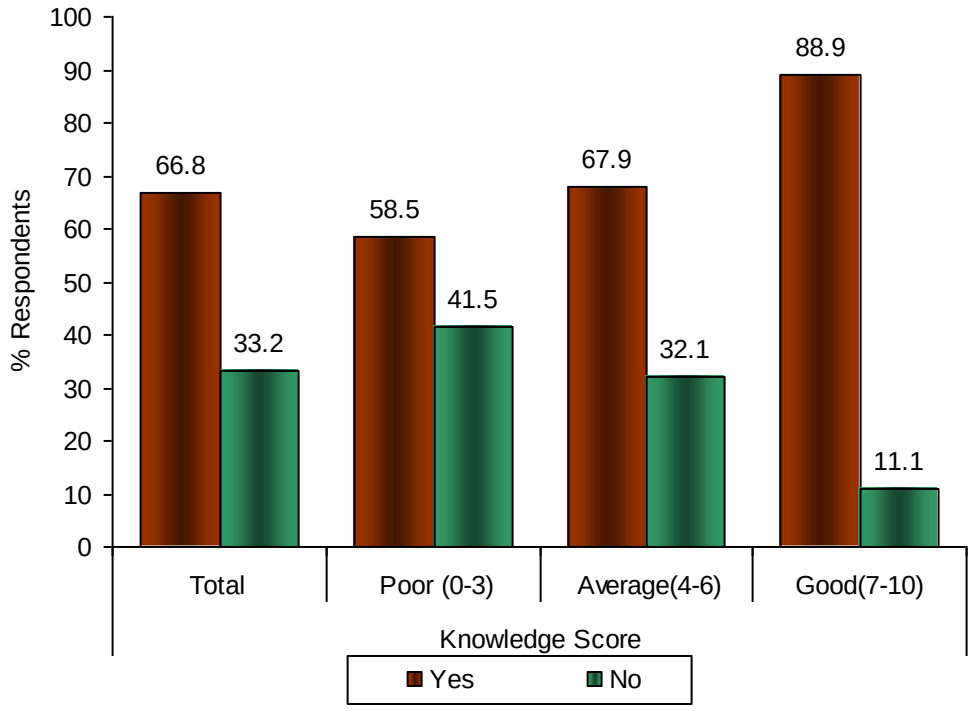

Figure 15: HIV testing status of the study participants and their knowledge score

When the knowledge score of the participants and testing status was factored for, while accounting for the other demographic covariates, only age and gender were significantly

associated to testing status while the other demographic covariates; employment status, marital status, religion and education level were insignificantly associated.

While factoring for age of the participants, there was a significant association (p=0.050) between knowledge score and testing status for those aged below 40 years. For those aged 40 years and above the association was insignificant. Table 3 shows the knowledge score and testing status of the participants while accounting for their age. Overall, those aged below 40 years had 73.7% of them having tested for HIV prior to the study as opposed to 45.3% of those aged 40 years and above.

Among the below 40 years age group, their knowledge score differed significantly with their testing status increasing in tandem with their knowledge score. Those with good knowledge score had 94.1% testing status while those with average and poor knowledge score had 74.5% and 63.6% respectively. The researcher found it imperative to note that, of the over 40years age group; a majority had not done the HIV test prior to the commencement of the study.

Table 3: Testing status and knowledge of HIV and AIDS by age of participants

Age Group			< 40		≥ 40	
Testing Status			No	Yes	No	Yes
Knowledge Score	Poor (0-3)	n	16	28	11	10
		%	36.4	63.6	52.4	47.6
	Average (4-6)	n	27	79	17	14
		%	25.5	74.5	54.8	45.2
	Good (7-10)	n	1	16	1	0
		%	5.9	94.1	100.0	-
Total		**n**	**44**	**123**	**29**	**24**
		%	**26.3**	**73.7**	**54.7**	**45.3**
P-Value			**0.05**		**0.646**	

While factoring for gender of the participants, there was a significant association between knowledge score and testing status for females (0.038) while the association was insignificant for males (0.184). Table 4 shows the knowledge score and testing status of the participants while accounting for their gender. Overall females had 68.9% of them having tested for HIV prior to the study as opposed to 64.4% of males. Females had a better knowledge score (68.9%) than males (64.4%) and the higher the score the higher their testing status; this is attested by the 100% testing status for those with good knowledge score among females as opposed to 80% among males.

Table 4: Testing status and knowledge of HIV and AIDS by gender of participants

Gender			Males		Females	
Testing Status			No	Yes	No	Yes
Knowledge Score	Poor (0-3)	n	11	14	16	24
		%	44.0	56.0	40.0	60.0
	Average (4-6)	n	23	43	21	50
		%	34.8	65.2	29.6	70.4
	Good (7-10)	n	2	8	0	8
		%	20.0	80.0	-	100.0
Total		**n**	**36**	**65**	**37**	**82**
		%	**35.6**	**64.4**	**31.1**	**68.9**
P-Value			**0.184**		**0.038**	

4.4 Participants' knowledge of someone who had been tested

Investigation on whether the participants had heard about HIV testing revealed that 79.5% knew of someone who had gone for testing while 20.5% did not know of anyone who had taken the test. HIV testing status for those who knew someone who had tested before them was 74.3% and that of those who did not know of someone was 37.8%. There was a significant association between knowledge of someone who had gone for testing and HIV testing status (Odds ratio 4.8 (2.4 – 9.5), $P < 0.001$). Failure to know of someone who had gone for testing places a person at 4.8 fold risk of not testing for HIV status. The same trend was seen in both genders; Males (Odds ratio 4.1 (1.5 – 11.8), P=0.008), more pronounced in females (Odds ratio 5.5 (2.2 – 13.9), P=0.001). This is show in Figure 16.

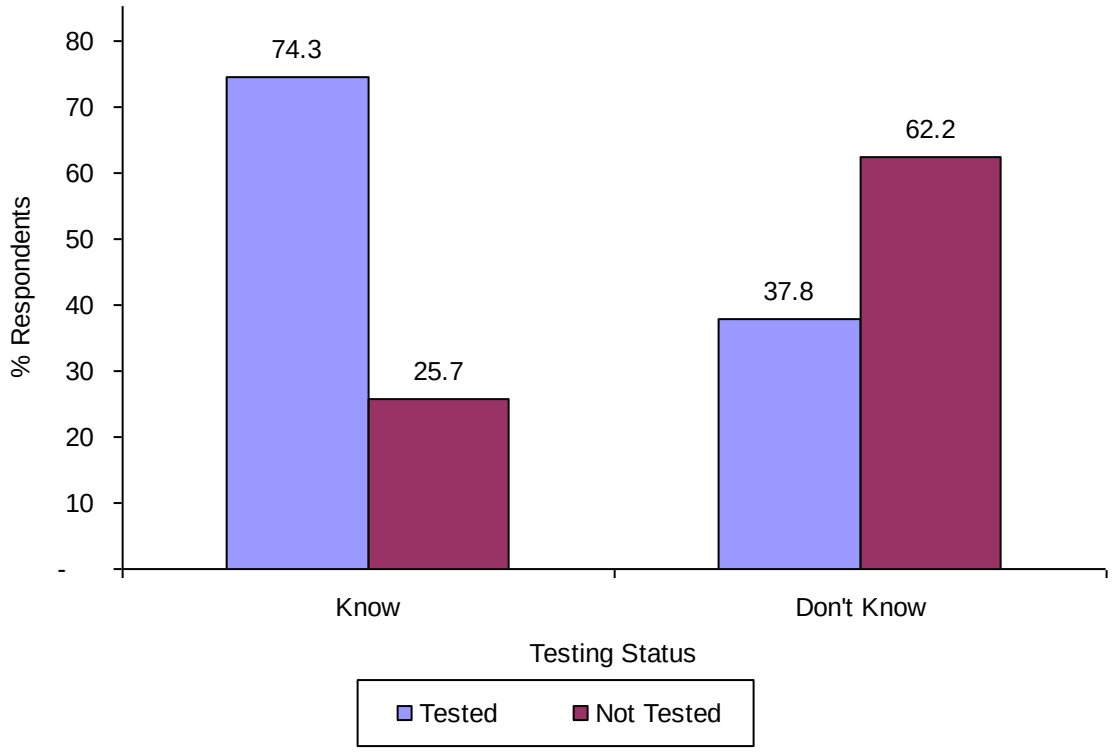

Figure 16: Knowledge of someone tested

4.5 Sources of information on HIV and AIDS

The main sources of information on HIV and AIDS for the study participants were radio (21.0%), hospitals/ clinics/ testing centers (20.2%) and television (15.5%). Newspapers, seminars, institutions of learning, accounted for 7.6%, 5.9% and 5.5% respectively. Posters and health magazines cumulatively constituted 9.1% while family members and churches accounted for 7.9%. Other sources of information (infected persons, internet, HIV and AIDS awareness campaigns, HIV and AIDS groups, NGOs, friends, workplaces, books on HIV and AIDS, social gatherings, sports clubs, social workers, labeled clothing for campaigns, bill boards) accounted for 7.4% as shown in Table 5

Table 5: Participants' sources of information on HIV and AIDS

Sources of information about HIV and HIV services	n	%
Radio	161	21.0
Hospital/ clinic/ testing center	155	20.2
Television	119	15.5
Newspapers	58	7.6
Seminar	45	5.9
School/ college/ university	42	5.5
Health magazines	36	4.7
Family members	35	4.6
Posters	34	4.4
Churches	25	3.3
Others Sources	57	7.4
Total	**767**	**100**

4.6 The effect of participants' attitude towards HIV and AIDS on HIV testing

Attitude towards HIV and AIDS was hypothesized to influence HIV testing. The attitude that the participants had towards HIV and AIDS was divided into two paradigms; negative and positive. This attitude level inevitably affects the testing of HIV among the study participants. The Pearson Chi-Square revealed a significant association between attitude and HIV testing. Those with a positive attitude had 71.9% of them having done the HIV test prior to the commencement of the study as opposed to 55.2% of those with negative attitude who had gone for the test. Indeed, participants with a negative attitude had a two fold chance of not having gone for the test as opposed with those with a positive attitude (Odd ratio 2.074 (1.142-3.767), P=0.016) as portrayed in Figure 17.

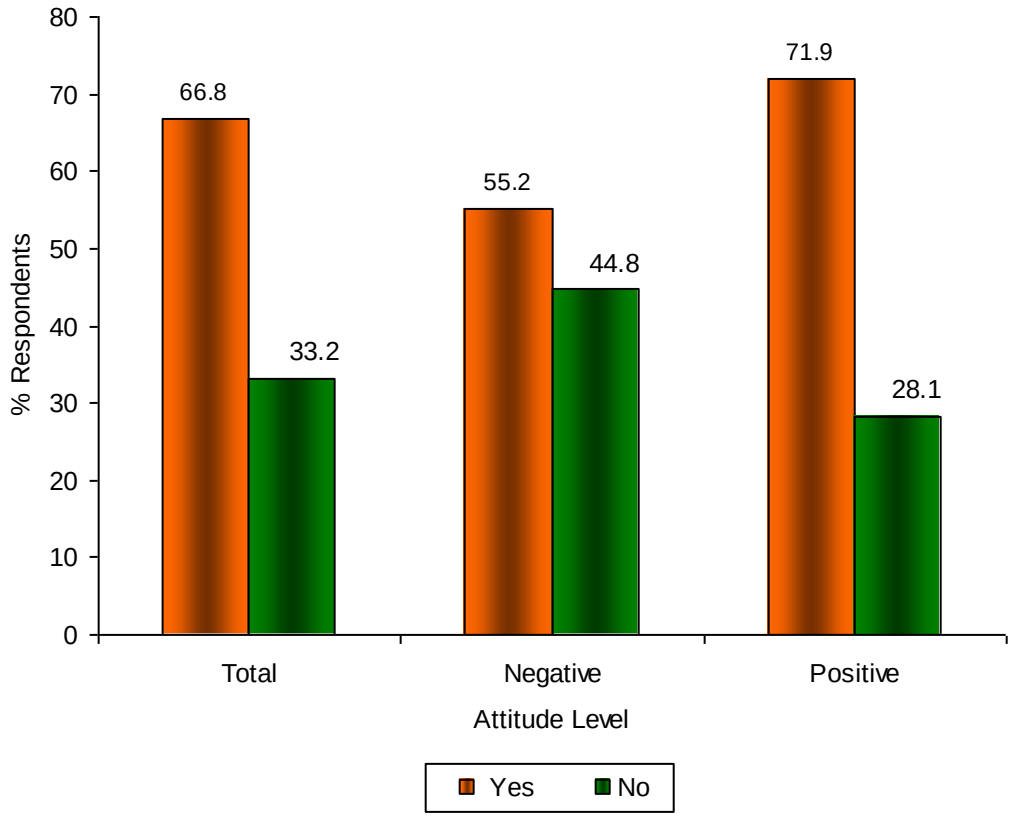

Figure 17: Testing status and attitude of participants towards HIV and AIDS

When other demographic covariates are studied with attitude and testing status, there was a significant association between attitude and testing status and age, marital status, education and gender. Only religion, tribe and employment covariates were there an insignificant association with testing status and attitude

While factoring for age, there was Pearson Chi-Square significant association between those aged 40 years and below. For those in the 40 years and above age group the association between attitude and testing status was not significant. Overall the under 40 years had 73.7% having tested for HIV as opposed to 54.7% for the over 40 years age

group who had not tested prior to the study. Those in the under 40 years age group, had 62.3% with negative attitude having tested for HIV as opposed to a whooping 71.4% among the over 40 years age group with negative attitude who had not tested. The positive attitude of the under 40 years age group had 78.9% having tested as opposed to the 48.7% of the over 40 years age group with positive attitude who had not (Table 6). The likelihood of a participant in the under 40 years with negative attitude having not done the test was twice that of one with a positive attitude (odds ratio =2.273 (1.112-4.646), P=0.023)

Table 6: Testing status and attitude towards HIV and AIDS by age of participants

Age		< 40		≥ 40	
Testing Status		No	Yes	No	Yes
Attitude					
Negative	n	20	33	10	4
	%	37.7	62.3	71.4	28.6
Positive	n	24	90	19	20
	%	21.1	78.9	48.7	51.3
Total	n	44	123	29	24
	%	26.3	73.7	54.7	45.3
OR		**2.273(1.112-4.646)**		**2.632(0.704-9.398)**	
P-Value		**0.023**		**0.143**	

While factoring for marital status, there was significant association with those who were ever married (p=0.008) and was not significant with the singles. Overall, the ever married had 67.6% having tested as opposed to 65.3% for singles who had tested for HIV prior to the study. As of the ever married, 51.2% with negative attitude were reported to have tested as opposed to 61.5% among the singles with negative attitude who had tested. The positive

attitude of the ever married had 74.0% having tested as opposed to the 67.3% of the singles with positive attitude who had tested as shown in Table 7.

Table 7: Testing status and attitude towards HIV and AIDS by marital status of participants

Marital Status		Ever Married		Single	
Testing Status		No	Yes	No	Yes
Attitude: Negative	n	20	21	10	16
	%	48.8	51.2	38.5	61.5
Positive	n	27	77	16	33
	%	26.0	74.0	32.7	67.3
Total	n	47	98	26	49
	%	32.4	67.6	34.7	65.3
OR		**2.716(1.279-5.768)**		**1.289(0.479-3.470)**	
P-Value		**0.008**		**0.615**	

The likelihood of a participant who had ever married and with negative attitude having not done the test was almost thrice that of one with a positive attitude who had ever married. (Odds ratio =2.716 (1.279-5.768, P=0.008)

While factoring for the level of education, there was significant association between attitude, education and testing status for those with at least secondary education (P=0.003) and was not significant for those with more than secondary education. Overall, those with at least secondary education had 64.4% among them who had tested as opposed to 73.3% for those with higher than secondary education that had tested for HIV prior to the study. For those with at least secondary education, 46.8% with negative attitude are reported to have tested as opposed to 75.0% among those who had attained more than secondary education with negative attitude who had tested. Those with positive attitude and with at

least secondary education had 71.7% having tested as opposed to the 72.5% with positive attitude and with more than secondary education who had tested (Table 8). The odds of a participant who had at least secondary education with negative attitude having not done the test was almost thrice that of one with a positive attitude who had higher than secondary education (Odds ratio =2.876 (1.423-5.816), P=0.003).

Table 8: Testing status and attitude towards HIV and AIDS by education level of participants

Educational Level		≤ Secondary		> Secondary	
Testing Status		No	Yes	No	Yes
Attitude					
Negative	n	25	22	5	15
	%	53.2	46.8	25.0	75.0
Positive	n	32	81	11	29
	%	28.3	71.7	27.5	72.5
Total	n	57	103	16	44
	%	35.6	64.4	26.7	73.3
OR		**2.876(1.423-5.816)**		**0.879(0.258-2.998)**	
P-Value		**0.003**		**0.836**	

While factoring for the gender, there was significant association between attitude and testing status for the females (P=0.033) and was not significant for the males. Overall, the females had 68.9% having been tested as opposed to 64.43% for the males who had tested for HIV prior to the study. For the males, 56.8% with negative attitude were reported to have tested as opposed to 53.3% among the females with negative attitude who had tested. On the positive attitude level, males had 68.8% having been tested as opposed to the 74.2% of the females as shown by Table 9.

The likelihood of a participant who was a female with negative attitude having not done the test is two and half times that of a female with a positive attitude (Odds ratio =2.511 (1.062-5.934), P=0.033)

Table 9: Testing status and attitude towards HIV and AIDS by gender of participants

Gender		Male		Female	
Testing Status		No	Yes	No	Yes
Attitude: Negative	n	16	21	14	16
	%	43.2	56.8	46.7	53.3
Positive	n	20	44	23	66
	%	31.3	68.8	25.8	74.2
Total	n	36	65	37	82
	%	35.6	64.4	31.1	68.9
OR		**1.676(0.725-3.875)**		**2.511(1.062-5.934)**	
P-Value		**0.225**		**0.033**	

4.7 Fears associated with HIV testing

The study participants mentioned a number fears why many people could not take the HIV test. Knowing ones status could lead to faster death was cited by 32.8% of the participants. Fear of one getting a positive result accounted for 23.1%, discrimination and stigma (18.3%), fear of past risk behavior (12.4%) while being sick or suffering for a long time accounted for (2.4%). Other fears which accounted for 10.9% included; fear of what people were to say, lack of proper information, separation from family and friends, job loss, fear of quitting lifestyle that one was used to, fear of committing suicide and fearing that the instruments used could infect, as shown in Table 10.

Table 10: Distribution of fears associated with HIV testing

Fears associated with HIV testing	n	%
If one knew status s/he will die faster	95	32.8
Fear of knowing you are positive	67	23.1
Stigma/discrimination	53	18.3
Fear of past risk behavior	36	12.4
Being sick for a long time/long suffering	7	2.4
Other fears	32	10.9
Total	**290**	**100**

4.8 Influence of participants' practices related to HIV and AIDS on testing status

Practices on specific issues related to HIV and AIDS services were examined to see if they influenced HIV testing. Test of association revealed no significant relationship between practice and HIV testing status ($p = 0.883$). However, the trend shows that 67.4% of those with good practice tested for their HIV status compared to 65.9% of those with bad practice, as shown in Table 11 below.

Table 11: Distribution of practice by testing status

		Practice					
		Good		Bad		Total	
		n	%	n	%	n	%
Testing Status	Tested	93	67.4	54	65.9	147	66.8
	Not tested	45	32.6	28	34.1	73	33.2
	Total	**138**	**100**	**82**	**100**	**220**	**100**

4.9 Multivariate analysis

Independent variables that significantly associated with HIV testing status were fitted into a regression model to establish true predictor of HIV testing. Ten factors were considered namely;

- Age in years
- Need for routine HIV testing for everybody
- Necessity to invite partners for HIV counseling and testing
- Knowledge of someone who has taken the HIV test
- Knowledge of HIV testing services available at the clinic
- Knowledge of HIV testing services available near place of residence
- Knowledge on HIV and HIV testing services
- Attitude on HIV and HIV testing services
- Practice on HIV and HIV testing services were fitted into the model.

After six successive iterations, four potential predictors were eliminated and the resulting parsimonious model (best model) was as shown in Table 12.

Table 12: Binary logistic regression outcome of true predictors of uptake of HIV test

Variables	β	S.E.	t	df	95.0% CI for EXP(β) Lower	95.0% CI for EXP(β) Upper	P-value
Q1_RR(1) ≤40=1 >40 =2	-1.085	0.364	2.98	1	0.165	0.69	0.003
Q18_R Not necessary=1 Necessary =2	1.67	0.618	2.7	1	1.581	17.834	0.007
Q23_r Do not know=1 Know=2	1.296	0.376	3.44	1	1.75	7.64	0.001
Resd_r Don't know service=1 Know service=2	0.735	0.375	1.96	1	0.999	4.349	0.05

Key:

Q1_RR = Age of the respondent

Q18_R = Necessity to invite partner to HIV and AIDS counseling and testing

Q23_r = Respondent knew somebody who had been tested

Resd_r = Respondent knew HIV and AIDS Testing services available near respondent's residence

Binary logistic regression was performed on multiple variables to establish the true predictors of uptake of HIV test. Table 12 above shows regression coefficient values for each of the factors associated with HIV testing status. Knowledge of someone who had taken the HIV test, knowledge of HIV testing services available near place of respondents' residence and necessity to invite partners for HIV counseling and testing were found to be positively related to increase in HIV test uptake while age (years) was found to be

negatively related to HIV test uptake. This implied that with increasing age, there is a decrease in uptake of HIV test. All the other true predictor factors had a positive relationship with the up take of the HIV test. This implied with increase in knowledge of people who had taken the HIV test there was a corresponding increase in the uptake of HIV test. This was true for increase in knowledge on HIV testing services available near place of respondents' residence. In the same token, with the increased necessity to invite a partner for HIV counseling and testing there was an increased HIV test uptake.

CHAPTER FIVE: DISCUSSION

The analyses undertaken for this study examined prevalence of HIV testing, the socio-demographic characteristics of patients at Mbagathi District Hospital and identified the factors associated with the uptake of HIV test

Uptake of HIV test represents one of the most important steps leading to prevention opportunities and the curbing of HIV transmission. The uptake differed according to age, gender, educational status, marital status and tribe of the study participants as demonstrated by the result. In developed countries like United States of America, uptake rates varied widely depending on the settings. It was in general higher among STDs patients and individuals at high risk for acquiring or transmitting HIV infection than among other populations like women attending family planning clinics (Schuman *et al*., 2004; Samet *et al*., 1997; Irwin *et al*., 1996). This could partly explain the uptake in Mbagathi as the study was among patients and most likely tuberculosis patients as it is a referral hospital for TB patients. It underscores the fact that understanding the site, socio-demographic and cultural characteristics for the acceptance of HIV test could assist in the successful implementation of HIV intervention programs. These interventions should account for differences such as age, marital status, education and partner involvement to maximize HIV test uptake

The socio-demographic profile of the study patients at MDH showed that over half of the patients were females, With a higher percentage of females in the 20-29 age group while a higher percentage of males was in the 30-39 age group. Over 70% of the

participants were aged between 20 to 39 years; this indicated that majority of the people who visited the hospital were in the productive and reproductive age group that is mainly affected by HIV and AIDS. This patient profile appeared to be more or less similar to that of VCT clients of other health care institutions (Demissie, 2003; Mulugeta, 2003).

There was a relatively high prevalence of self-reported HIV testing in Mbagathi District Hospital, compared with other such similar studies in sub-Saharan Africa. While 66.8% of the participants reported having been ever tested for HIV, results from NASCOP, (2008) Kenya AIDS Indicator Survey Preliminary result 2007, which is a population-based study, about one in three (35.6%) adults age 15- 64 had ever tested for HIV and received the test results. Other surveys in twelve high-burden countries in sub-Saharan Africa showed that a median of 12% of men and 10% of women in the general population had been tested for HIV and received the test results (WHO/UNAIDS/UNICEF, 2007)

The disparity in prevalence between results from other studies and this study may be explained by the fact that the study was conducted within a hospital set up. A hospital that applies a combination of HIV testing strategies, it is hence likely, that the patients may have had fear that answering no could mean being tested. Further, Mbagathi District Hospital is a referral center for TB, a disease that is greatly associated with HIV and AIDS, hence likely to receive TB patient who end up being diagnostically tested for HIV as a requirement for treatment. People living with HIV are at much greater risk of developing tuberculosis than people who are HIV-negative (Selwyn *et al.*, 1989; Antonucci *et al.*, 1995). Furthermore, HIV is responsible for the high tuberculosis incidence in many parts of

Africa and some parts of Asia (WHO, 2007b). From the MOH-Kenya (2005), the HIV epidemic has resulted in a more than 10-fold increase in tuberculosis cases in Kenya. More than half of the TB patients in Kenya are also infected with HIV, and presence of TB is one of the eligibility criteria for beginning ART.

Though the findings differ as above, they do agree with those of Gray *et al.*, (2006) from Toronto's East African Communities. In 2004-06, Gray *et al.*, conducted interviews with 456 men and women recruited from venues and community lists. They examined associations between ever having been tested for HIV and socio-demographics, risk behavior, knowledge, and attitudes. Multiple logistic regression was used to identify independent correlates of testing. Seventy five percent (340/456) of participants reported ever testing for HIV; of those, 66% (223) had tested because of immigration policy. In multivariate analysis, those who were more likely to have tested: were aged 25-39 years (OR 2.9 compared to <25 years). This agrees with the results from this study in that the prevalence was high and that those aged less than 40 years were too more likely to have been tested for HIV prior to commencement of the study with the odds 3.4 (1.8 – 6.4) compared to 40+ years. This is consistent with the study by Hutchinson and colleagues in Eastern Cape, South Africa, (2006), where older men (40 years or more) were less likely to use VCT as compared to the younger men.

The study revealed that uptake of HIV test decreased significantly with increasing age. This could be explained by the fact that older people were more likely to be married, with less risky sexual behavior, and thus with a lower perception of HIV risk. Others could have perceived themselves to be more likely to be HIV infected, due to previous unsafe sexual

practices or fear of an HIV-positive result after having lost relatives or friends with AIDS. Further, others could be of lower education with stronger roots to tradition, hence were more likely to hold fatalistic attitudes about HIV and preferred to remain in a state of denial regarding their HIV status.

While factoring for age of the participants, there was relationship between knowledge score and HIV testing for those aged below 40 years. Among the below 40 years age group, the knowledge score differs significantly with their testing status increasing in proportion with their knowledge score. It is imperative to note that of the over 40 year's age group, a majority had not done the HIV test prior to the commencement of the study. In Burkina Faso, where the acceptance rate for HIV testing was high, age (younger group), education level, and religion were the factors associated with attitude toward HIV testing (Whitaker *et al.*, 1999).

This study showed that the number of females who had tested to know their status was higher than that of males. This was in agreement with the KAIS report (NASCOP, 2008) which asserts that 90% of women who had a recent birth (within last 4 years) attended ANC and 57% of those attending ANC tested for HIV. However, this contrasts with the Kenya Demographic and Health Survey of 2003, where 13% of women and 14% of men said they had been tested for HIV and with Otwombe *et al.*, (2007) who concluded that male uptake remained higher than females, but HIV infection rates were higher for females than males. The contrast could be explained by the fact that there was clear and dramatic

increase in coverage of HIV testing among ANC clinic attendees over the last 4 years (NASCOP, 2008).

The study showed that attached requirements (medical, pregnancy, job, college or marital) seem to take an upper hand in achieving increased uptake of HIV test. This concurs with a study by Gray *et al.*, (2006), from Toronto's East African Communities where 66% (223/456) of the participants had tested because of immigration policy. It is imperative to note that even in the face of the requirements that lead the patients to test, they did report that the decision to test was reached at on their own. The study findings are in agreement with those from Botswana in a study carried out by (Weiser *et al.*, 2006). In the study, 93% of the respondents who had been tested reported that they made the decision on their own to be tested.

The study found out that, participants who had knowledge on HIV transmission and protection from HIV and AIDS had a higher uptake of HIV testing. This was consistent with other studies where knowledge of HIV and educational level were reported to be related positively with uptake of the HIV test (Iliyasu *et al.*, 2005; Lee *et al.*, 2005). Those with a higher knowledge score on the mode of transmission and ways of protection had a higher propensity of having gone for the test as opposed to those who had a lower knowledge score. While factoring for gender of the participants, there was significant association between knowledge score and testing status for females while the association was insignificant for males. Females had a better knowledge score than males and the higher the score the higher their testing status; this is attested by the 100% testing status for

those with good knowledge score among females as opposed to 80% among males. For Sherr and colleagues (2007), in a rural Zimbabwe cohort, motivation for VCT was driven by knowledge on VCT. However, this was inconsistent with previous reports (Duffy *et al.*, 1998; Baiden *et al.*, 2003; Hesketh *et al.*, 2005; Mahmoud *et al.*, 2007), where knowledge about HIV and AIDS was not related to uptake of testing. Majority of the tested patients knew of at least somebody who had taken the HIV test before them. Hence knowing someone who had tested strongly motivated others to seek the testing service. The results supports a study in Uganda by Were *et al.*, (2006) who concluded that disclosure of HIV results can be used as a springboard for strategies that target men so as to increase their utilization of VCT. Furthermore, the VCT programme should make couple testing more attractive, for example, by improving confidentiality and using the home based VCT approach.

A Positive attitude was found to influence the uptake of HIV test. Those with a positive attitude had 71.9% of them having tested for HIV prior to the commencement of the study as opposed to 55.2% of those with negative attitude who had tested. When the demographic covariates were studied to establish existence of relationship with attitude towards testing, there was a significant association between attitude toward testing and testing status for age, marital status, education and gender of the participants. From other studies, age (younger group), education level, and religion were the factors associated with attitude toward HIV testing (Whitaker *et al.*, 1999). Hence, the association of age and level of education with attitude toward testing is in agreement with other past studies.

The radio (21.0%), hospitals/ clinics/ testing centers (20.2%) and television (15.5%), were found to be the major sources of information for the study participants. Except the radio and TV as a dominant source of information about HIV and AIDS, the role played by the remaining sources (HIV and AIDS awareness campaigns, institutions of learning, churches, work place, infected persons, social gatherings, sports clubs, social workers, billboards, friends and relatives) was not satisfactory. Clearly, hospitals/ clinics/ testing centers need to do much more in the provision of information. Therefore, there is a lot to be done in the information, education and communication (IEC) program design in general.

From the study, the participants cited a number of fears why many people could not take the HIV test. These findings are consistent with research in sub-Saharan Africa, which shows AIDS related fears are important barriers to VCT utilization, (Kalichman and Simbayi, 2003; Wolff *et al.*, 2005; Hutchinson and Mahlalela, 2006; Morin *et al.*, 2006; Sherr *et al.*, 2007). HIV and AIDS related fears create barriers to seeking VCT among people. From these studies, more than half of the people feared to test for HIV because of stigma while other people were worried of being labeled HIV-infected because they would lose their social privileges. In order to address these fears interventions including public health laws; social marketing; anti stigma campaigns; community mobilization; social activism; and use of mass media are needed to change societal beliefs about people living with AIDS (Kalichman and Simbayi, 2003). Newer approaches including use of routine VCT integrated in health services, same-day mobile VCT services, and home-based VCT seem to offer promising results. In addition, availability of ART including use of home-

based ART may also increase VCT use among patients especially for the slum dwellers (Wolff *et al.*, 2005; Morin *et al.*, 2006; Matovu and Makumbi, 2007).

When a backward

stepwise multivariate regression analysis with all the predictor variables included in the equation was carried out, age, necessity to invite partners for HIV counseling and testing, knowledge of someone who had taken the HIV test, knowledge of HIV and HIV testing services available near place of residence appeared to be extremely important variables in determining HIV test uptake. Knowledge of someone who has taken the HIV test and knowledge of HIV and HIV testing services available near place of respondents residence and necessity to invite partners for HIV counseling and testing were found to be positive related to HIV test uptake while age was found to be negatively related to HIV test uptake.

In such case, the coefficients were higher in magnitude, suggesting that if somebody was aged less than 40 years, found it necessary to invite their partner for HIV counseling and testing, had knowledge of someone who had taken the HIV test and had knowledge of HIV and HIV testing services available near place of their residence then, they were found to have higher likelihood of having taken the HIV test than others.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The study showed that HIV test use among the patients of Mbagathi District Hospital was 66%. HIV testing status for females was 68.7% and that of males was 64.4%. Therefore, the number females who had tested to know their HIV status was higher than that of males.

The major sources of information for the study participants were; the radio, hospitals/ clinics/ testing centers and the television. The study identified fears that hindered HIV uptake to include; knowing ones status could lead to faster death, fear of getting a positive result, discrimination and stigma, fear of past risk behavior and being sick or suffering for a long time.

The study showed that, participants who had knowledge on HIV transmission and protection from HIV and AIDS had a higher uptake of HIV testing. Among the below 40 years age group, the knowledge score differed significantly with their testing status increasing in proportion with their knowledge score It was imperative to note that of the over 40 years age group, a majority had not taken the HIV test prior to the commencement of the study.

Although attached requirements (physician recommendation, pregnancy, job, college or marital) resulted in many patients being tested for HIV, other factors that affected HIV test seeking behavior included age, knowledge and attitude. The greatest challenge and the most promising path to achieve increased uptake is that of information, education and

communication campaigns to bring about knowledge, attitudes and behaviour (KAB) change among people at risk

From the regression model if a study participant was:

- Aged less than 40 years,
- Found it Necessary to invite their partner for HIV counseling and testing,
- Had knowledge of someone who had taken the HIV test,
- Had knowledge of HIV and HIV testing services available near place of their residence,

Then the participant had a higher likelihood of having taken the HIV test.

6.2 Recommendations

HIV test uptake at Mbagathi District Hospital is double that of the general public as given out by the KAIS report 2007 but work still remains to be done as 80% of HIV- infected Kenyan adults do not know their status. Combined application of HIV testing strategies need to be adopted if continued scale up of HIV testing and counseling is to be achieved. Concerted efforts to scale up HIV testing, however, must also be accompanied by appropriate monitoring of testing practices to ensure that they are implemented in accordance with international guidelines on human rights and HIV and AIDS

A lot is needed to be done in the information, education and communication (IEC) program design in general. The programmes will need to balance targeting of the population in-terms of gender to achieve equaled HIV test scale up, however, more vigorous campaigns should target the over 40 years age as they seem to have sufficient knowledge but not the drive to seek to be tested for the HIV. Close monitoring and evaluation, especially in the implementation stages of given HIV testing strategy, will be needed to ensure that HIV testing and counseling is implemented in a way that minimizes adverse outcomes and maximizes benefits for clients

Understanding the socio-demographic and cultural characteristics for the acceptance of HIV test could assist in the successful implementation of HIV intervention programs. Therefore, further research is required to understand differences in testing patterns between the different age groups, gender and communities. These findings can be used to inform

testing campaigns and prevention programs. They also indicate the need to further deal with issues of HIV-related stigma within the communities.

Existing avenues of communication need to do much more in passing information on HIV uptake. Intensive and systematic IEC program must be carried out to target especially the over 40 year's age group and all the population in the reproductive age group. Open-air drama or songs, installation of radios around working places, peer group education, and the like can be used as instruments to reach them. These can also be effective in addressing the fears hindering uptake like; knowing ones status could lead to faster death, fear of getting a positive result, discrimination and stigma, fear of past risk behavior and being sick or suffering for a long time.

To avoid missing opportunities to diagnose and counsel individuals at health facilities, innovative approaches that reduce practical obstacles to HIV testing may result in increased uptake of both client and provider-initiated HIV testing and counseling. In these approaches, the basic human rights concerns of confidentiality, consent and counseling should apply and the standard pre-test counseling should be adapted to ensure informed consent.

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APPENDICES

Appendix 1: Consent form

TITLE OF STUDY: PREVALENCE OF HIV TESTING AND FACTORS ASSOCIATED WITH ITS UTILIZATION AMONG PATIENTS ATTENDING THE CASUALTY CLINIC AT MBAGATHI DISTRICT HOSPITAL -NAIROBI, KENYA.

Part A

You are invited to participate in a study on patient's knowledge, attitude, behaviour and experiences on the use of HIV testing services. The objective of this study is to examine the factors that influence HIV testing services uptake in order to help improve its up take. You have been selected as a possible participant in this study. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Umealikwa kushiriki katika utafiti wa ujuzi, mtazamo, tabia na mazoe ya wagonjwa kwa matumizi ya huduma za kupima virusi vya ukimwi. Madumini ya utafiti huu ni kupima sababu ambazo zinaathiri utumizi wake. Umechaguliwa kama mmoja wa washiriki katika utafiti huu. Tunakusihi usome fomu hii na ulize maswali yoyote uliyonayo kabla hujakubali kushiriki katika utafiti huu.

This study is being conducted by Nyangena Okioma Cliff from the Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University of Agriculture and Technology.

Utafiti huu unafanywa Na Nyangena Okioma Cliff kutoka idara ya utafiti ya madawa na magonjwa ya kuambukiza katika chuo kikuu cha kilimo Na technologia cha Jomo Kenyatta.

Purpose of the study

To determine the prevalence of HIV testing and factors associated with its utilization among patients attending the casualty clinic at Mbagathi District Hospital -Nairobi,

Kusudi la utafiti

Kujua/ kuhakiki uweko wa kupimwa Kwa virusi vya ukimwi na sababu zinazohusishwa na matumizi yake katika magonjwa wanazuru Hospitali ya Wilaya ya Mbagathi- Nairobi.

Study procedures

If you agree to take part in this study:

We shall ask you a detailed questions regarding yourself and on your knowledge, attitude, behaviour and experiences on the use of HIV testing services, whose answers we shall note on paper.

Utaratibu wa utafiti

Kama utakubali kushiriki katika utafiti huu kutakuliza maswali kukuhusu Na ujuzi, mtazamo, tabia Na mazoea yako kuhusu matumizi ya huduma za kupima, virusi vya ukimwi. Majibu yako yatanakiliwa kwa karatasi.

The information that you will provide during the study will be kept confidential. Only the interviewer and the researcher will have access to the questionnaires. The information will be destroyed after the study.

Habari zote utakazopeana zitabanwa. Ni mhoji wa mtafiti tu ambao watakuwa na ami ya kuona karatasi hizo za majibu baada ya utafiti habari zot zitaaribiwa.

Risks of study participation

This study has no known risks. Although we shall write your details on paper, no other person will be allowed to read this information except the ones directly involved in this study.

Madara ya kushiriki kwa utafiti

Utafiti huu hauna madara yanayofahamika. Hata kama kutanakili jina lako kwa karatasi, hakuna mwingine yeyote atakayepata ruhusa kuyaona ila wale wanaohusika kwa utafiti huu.

Benefits

By participating in this study and answering to our questions, you will help to increase our understanding of the needs of the community in terms of HIV testing services.

Your participation in this study is voluntary and you have the right to refuse to participate or to answer to any question that you feel uncomforTable with. If you change your mind, you have the right to withdraw at any time. If anything is not clear or if you need further information, we shall provide it to you.

Manufaa

Kwa kushiriki Kwa utafiti huu Na kujibu maswali yetu, utatusaidia kufahamu mahitaji ya jamii kuhusu huduma za kupima virusi vya ukimwi.

Kusihiriki kwako katika utafiti huu ni kwa hiari na unahaki ya kukataa kushiriki au kujibu swali lolote. Kama utabidili fikira zako, unaweza, unahaki kuacha wakati wowote kama kuna jambo halieleweki au unataka habari zaidi, kutakupa.

Study costs/ Gharama ya utafiti

Taking part in this study will not involve any payment for those procedures we perform.

Kushiriki katika utafiti huu hautakugarimu malipo yeyote kwa taratibu zote utakazo fanyiwa.

Research related injury / Majerui kutokana nautafiti

There are almost no chances of you getting an injury in the course of our study.

Hakuna uwezekano kuwa utapata majeraha yeyote katika wakati wa utafiti huu.

Confidentiality

The records of this study will be kept private. The privacy will be enhanced by use of a lockable cabinet. Any publications or presentations arising from this study will not include any information that will make it possible to identify you as a subject. However, your record for the study may, may be reviewed by officials from the Institute of Tropical Medicine and Infectious Diseases (ITROMID, KEMRI) or Jomo Kenyatta University of

Agriculture and Technology. If the records are reviewed, the officials will protect your privacy.

Kubanwa kwa utafiti

Majibu yote ya utafiti huu yatawekwa Sivi. Sivi itahakikishwa kwa kutumia kifuli na funguo kwa mahali zitawekwa. Vitabu na makala yatakayotokana utafiti huu yatajumuisha habariambayo itafanya mhojiwa ajulikane. Hata hivyo, nambari yako ya usajili, katika utafiti huu inaweza kuajiliwa na maafisa kutoka Idara ya madawa na magonjwa ya kusambaa(ITROMID, KEMRI) au wale kutoka chuo kikuu cha kilimo na technologia cha Jomo Kenyatta. Hata hivyo, maafisa hao watahakikisha kuwa jina lako limebanwa.

Voluntary nature of the study

Participation in this study is voluntary. Your decision whether or not to participate in this study will not affect your current or future relations with this hospital or the other institutions involved. If you decide to participate, you are free to withdraw at any time without affecting those relationships.

Utafiti ni wa hiari

Kushiriki katika utafiti huu ni wa hiari. Uamuzi wako kushiriki au kutoshiriki katika utafiti huu hautaathiri huusiano wako sasa au katika nyakati zijazo na hospitali hii au vitengo vingine vinavyohusika ikiwa utakubali kushiriki, unahaki kuacha kushiriki wakati wowote bila kuhujumu husiano wako.

Contacts and questions /Maswali na watao ya jibu

The researcher conducting this study is Nyangena Okioma Cliff. You may ask any questions you have now, or if you have questions later, you are encouraged to contact him through telephone number: 0721-221 636, E-mail cnyangena2002@yahoo.com

Mtafiti anayefanya utafiti huu ni NYANGENA OKIOMA CLIFF. Unaweza kuuliza maswali yeyote uliyonayo sasa ama ikiwa utakuwa nayo baadaye, unahimiza umjulishe kwa nambai ya simu: 0721-221 636 au barua pepe cnyangena@yahoo.com

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you are encouraged to contact the following:
Ikiwa unamaswali yeyote kuhusu utafiti huu na ungependa kuuliza swali kwa mtu mwingine isipokuwa mtafiti, unahimizwa ujulishe.

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You will be given a copy of this form to keep for your records/Utapewa nakala ya formu hii kuweka kama kumbukmbu.

Part B: Consent form / Fomu ya kupeana hiari

Please read the information sheet (PART A) or have the information read to you carefully before completing and signing this consent form. If there are any questions you have about the study, please feel free to ask them to the investigator prior to signing your consent form.

Tafadhali soma fomu A ama hakikisha kwamba umesomewa na kuelewa kabla ya kitia sahihi fomu hii ya kupeana ruhusa. Kama una maswali yeyote kuhusu utafiti huu, tafadhali uliza mtafiti maswali hayo kabla ya kutia sahii fomu hii ya kupeana ruhusa.

Declaration of the volunteer /Arifa ya mhojiwa wa hiari

I Mr, Miss, Mrs……here by give consent to Mr. Okioma to include me in the proposed study entitled Prevalence of HIV testing and factors associated with its utilization among patients attending the casualty clinic at Mbagathi District Hospital - Nairobi, Kenya. I have read the information sheet concerning this study, I understand the aim of the study and what will be required of me if I take part in the study. The risks and benefits if any have been explained to me. Any questions I have concerning the study have been adequately answered.

I understand that at any time that I may wish to withdraw from this study I can do so without giving any reason and without affecting my access to normal health care and management.

I realize that I will be interviewed once. I consent voluntarily to participate in this study.

Mimi Bw/Bi……napeana ruhusa kwa Bw. Okioma anijumuishe kwa utafiti "Uweko wa kupimwa kwa virusi vya UKIMWI na sababu zinazohusishwa na matumiza yake katika wagonjwa wanotembelea Hosipitali ya Wilaya ya Mbagathi Nairobi, Kenya". Nimesoma habari zote kuhusu utafiti huu, nimeelewa lengo la utafiti huu na yanayohitajika kwangu kama nitashiriki katika utafiti huu. Madhara na manufaa ya utafiti huu yameelezwa kinaga ubaga kwangu. Maswali yote niliokuwa nayo yamejibiwa vilivyo.

Nimeelezwa/nimeelewa kwamba wakati wowote naweza kuacha kushiriki na sitasindikizwa kutua sababu yoyote au haitahujumu kupata kwangu kwa matibabu kwa kawaida.

Najua kwamba nitahojiwa mara moja. Ninapeana ruhusa kwa hiari nishiriki katika utafiti huu.

Subject's Name, Jina la mhujiwa ……
Signature or left thumb print _____ Date /Tarehe _____
Sahihi/alama ya kidole gumba (kushoto)

Name of person taking consent……
Jina la anayepewa ruhusa
Signature/Sahihi …… Date /Tarehe …….

Name of Investigator /Jina la mtafiti ……
Signature of Investigator / Sahihi ya mtafiti _____Date/Tarehe_____

Appendix 2: Questionnaire

PREVALENCE OF HIV TESTING AND FACTORS ASSOCIATED WITH ITS UTILIZATION AMONG PATIENTS ATTENDING THE CASUALTY CLINIC AT MBAGATHI DISTRICT HOSPITAL -NAIROBI, KENYA

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UENEAJI WA KUPIMWA WA UKIMWI NA MAMBO YANAYOHUSIKANA NA UTUMIAJI WAKE KATIKA WAGOJWA WANAO HUDHURIA KLINIKI YA WAGONJWA WA KUTIBIWA NA KWENDA NYUMBANI KATIKA HOSIPITALI YA WILAYA YA MBAGATHI- NIROBI, KENYA

Questionnaire serial number/ Nambari ya questionnaire			
Research assistant's name Jina ya msimamizi			
Date of interview / Tarehe ya mahojiano	Day/ Siku	Month/ mwezi	Year/ Mwaka
Respondent name(optional)/ Jina la mhojiwa			
Respondent's place of residence(estate)			
Gender of respondent/ Jinsia ya mhojiwa	1 Male/ Mume	2 Female / Mke	
Tribe of respondent(optional) / Kabila la mhojiwa(hiari)			

DEMOGRAPHIC DATA / TAKRIMU YA MHOJIWA

1). How old are you? Je una miaka ngapi?

18 - 20 years	21 – 29 years	31 – 39 Years	40- 49 Years	50+
1	2	3	4	5

2). What is your marital status? / Hali yako ya ndoa ni gani?

Single/ Hajaoa/Hajaolewa	Married / Ameoa/Ameolewa	Divorced / Ametalaki	Widowed /widower Amefiwa na bwana/mke
1	2	3	4

3). What is your highest level of completed education? / . Je kiwango cha juu cha elimu ulichokihitimu ni kipi?

No formal education/ Haja soma	Primary/ Elimu ya msingi	Secondary/ Shule ya upili	College/ Chuo cha kadri	University/ Chuo kikuu
1	2	3	4	5

4). What is your religion? / Dini yako ni gani?

Atheist/ Aamini kuwepo kwa mungu	Muslim/ Muisilamu	Protestant/ Protestanti	Catholic/ Katoliki	Buddhist/ Budha	Traditional religion/ Dini ya kiasili	Other specify/ Nyingine eleza
1	2	3	4	5	6	97

5). What is your employment status?/ Hali ya yako ya ajira ni gani?

Not working/ Sifanyi kazi	Employed/ Nimeajiriwa	Self employed/ Kazi yangu binafsi	College student/ Mwanafunzi wa chuo	Other Specify/ Nyingine eleza
1	2	3	4	97

DISTANCE BETWEEN FACILITY AND RESPONDENT RESIDENCE/ UMBALI KUTOKA HOSPITALI KWENDA KWA MHOJIWA ANAKOISHI

6a). On average how long do you take to get to this clinic?/ Kwa wastani inakuchukua mda gani kufika katika hii hospitali?

1	Less than 10 minutes/ Chini ya dakika 10
2	10-20 minutes/ Dakika 10-20
3	20-30 minutes/ Dakika 20 - 30
4	30 minutes-1 hour Dakika 30 hadi saa moja
5	More than one hour/ Zaidi ya saa moja

7a). What means do you use to get to this clinic? / Je unatumia njia gani ya usafiri kufika hapa hospitalini?

By foot / Kutembea kwa miguu	By bicycle/ Baisikeli	by motor cycle/ pikipki	By matatu / matatu	By personal car/ Hutumia gari langu binafsi	Other(specify)/ Nyingine (weleza)
1	2	3	4	5	6

7b). If response in Q7a = 4, how much do you usually pay for a round trip between home and this clinic?/ Kama jibu katika Q6a = 4 unalipa pesa ngapi kutoka nyumbani kufika hospitalini na kurudi

1	Less than Sh20 /Chini ya sh. 20
2	More than Sh20 /Kupita sh. 20
3	Not applicable /Hainihusu/Sihusiku

Knowledge about HIV and HIV testing/ Ufahamu kuhusu virusi vinavyosababisha UKIMWI na kupimwa kwa virusi vinavyosababisha UKIMWI

INTERVIEWER READ (Now am going to ask you a few questions about HIV and AIDS testing services)

8). How is a person infected by the HIV virus? (Tick all mentions) **MULTIPLE RESPONSES /** Mtu huambukizwaje na virusi vya ukimwi? (Nakili zote zilizotajwa) **MAJIBU MENGI**

1	Sexual transmission / Kuambukizwa kupitia ngono
2	Infected mother to child / Mtoto kuambukizwa kupitia mama
3	Transmission through blood /

Any other ways? Please specify / Njia zingine zezote? Tafadhali eleza

_____

_____

9). How can one be protected against getting HIV? (Tick all applicable)

MULTIPLE RESPONSES / Mtu anawezaje kujizuia kutokana/ ili asipate virusi vinavyosababisha Ukimwi? (Nakili yote yanayohusika) MAJIBU MENGI

1	Abstinence / Kutoshiriki ngono
2	Be faithful to one uninfected partner/ Kuwa mwaminifu kwa mpezi mmoja ambaye hajaambukizwa
3	Use of Condoms / Kutumia mipira vya kondom

Any other ways? Please specify / Njia zingine zezote? Tafadhali eleza

_____

_____

10). In what way can an infected person transmit HIV to another person? (Tick all mentions). **MULTIPLE RESPONSES /** Ni kwa njia gani ndiyo mtu aliyeambukizwa anavyoweza kumwambukiza mtu mwingine viusri vya UKIMWI? (Nakili zote zilizotajwa) **MAJIBU MENGI.**

1	Having unprotected sex / Kushiriki ngono bila kutumia kinga
2	During child birth/ Wakati mtoto anapozaliwa
3	Sharing of sharp objects / Kutumia vyombo venya makali Kwa ujumla

Others, Specify/ Njia zingine zezote? Tafadhali eleza

_____

_____

11a). What are the sources of your information about HIV and AIDS. Any other … (Tick all mentions) **MULTIPLE RESPONSES ALLOWED/** Njia zako za ufahamu kuhusu virusi vinavyosababisha ukimwi ni yapi? Zingine Zozote? (Nakili zote zizlizotajwa) MAJIBU MENGI yanakubalika

1	Hospital/ clinic/testing centre/. Hospitali/ kliniki/ kituo cha kupimwa
2	Radio / Redio
3	Television/ Runinga
4	Newspapers/ Magazeti
5	Family members/. Jamaa
6	School/college/university/ Shuleni/ chuoni/ chuo kikuu
7	Health magazines/ Magazeti za kiafya
8	Seminar/ Semina/ mikutano
9	Other (specify)/ Nyingine (eleza)

11b). How about your source of information about HIV testing services. Any other … (Tick all mentions) **MULTIPLE RESPONSES ALLOWED/** Je,na kuhusu ufahamu wako kuhusu huduma za kupimwa kwa virusi vya ukimwi. Nyingine yeyote? (Nakili zote zilizotajwa) Majibu mengi yanakubalika.

1	Hospital/ clinic/testing centre/ Hospitali/ kliniki/ kituo cha kupimwa
2	Radio / Redio
3	Television / Runinga
4	Newspapers / Magazeti
5	Family members / Jamaa
6	School/college/university/ Shuleni/ chuoni/ chuo kikuu
7	Health magazines/ Magazeti za kiafya
8	Seminar/ Semina/ mikutano
9	Other (specify)/ Nyingine (eleza)

12). What HIV and HIV testing services are available at this clinic? (Tick all applicable)

MULTIPLE RESPONSES ALLOWED/ Ni huduma yapi ya virusi vya ukimwi na kupimwa kwa virusi hivi kwenye kliniki hii? (Nakili yote yanayohusika) Majibu mengi yanakubalika.

1	Pre-test counselling / Ushauri kabla ya kupimwa
2	HIV testing / Kupimwa kwa ukimwi
3	Post-test counselling / Ushauri baada ya kupimwa
4	Ongoing counselling / Ushauri wa mara kwa mara
5	ART / ARV provision (madawa yanayozuia ueneaji wa ukimwi).
6	Referral other (CCC) services
99	Don’t know

Any other services/ Huduma zingine zozote _____

13). What HIV and HIV testing services are available near your place of residence? (Tick all applicable) **MULTIPLE RESPONSES ALLOWED/** Ni huduma yapi ya virusi vya ukimwi na kupimwa kwa virusi hivi yanapatikana pahala hapa? (nakili yote yanayohusika) Majibu mengi yanakubalika

1	Pre-test counselling / Ushauri kabla ya kupimwa
2	HIV testing / Kupimwa kwa ukimwi
3	Post-test counselling / Ushauri baada ya kupimwa
4	Ongoing counselling / Ushauri wa mara kwa mara
5	ART / ARV provision (madawa yanayozuia ueneaji wa ukimwi).
6	Comprehensive Care Clinic
7	Home based care/huduma ya nyumbani

Others specify_____

<u>Attitude and Practice to HIV and HIV Testing Services/</u> Mtazamo na kushiriki kwa huduma za virusi vya ukimwi na kupimwa kwa virusi hivyo.

14). In general, what do you think are main benefits of having an HIV test? / Kwa jumla unafikiri ni manufaa gain ndiyo ya muhimu zaidi kwa kupimwa kwa virusi vya ukimwi?

_____

_____

15. In general, what do you think are the main fears of having an HIV test?/ kwa jumla, unafikirini uoga gani ndiyo ya juu zaidi kwa kupimwa kwa virusi vya ukimwi?

_____

_____

16). Do you think that HIV testing should be part of routine testing services for everybody?/ Unafikiri kuwa kupimwa virusi vya UKIMWI inapangwa kuwa huduma ya kawaida kwa kila mtu?

1	Yes/ Ndio
2	No / La
98	Refused/ Amekataa
99	Don't Know/ Sijui

17a) Is it necessary to go for a HIV test check-up? Kuna umuhimu gain kupimimwa virusi vya ukimwi mara kwa mara

1	Yes/ Ndio
2	No / La
98	Refused/ Amekataa
99	Don't Know/ Sijui

17b). What are the benefits of going for a HIV test check-up? / Ni manufaa yapi ndiyo ya kwenda kupimwa baada ya kupimwa virusi vya UKIMWI?

_____

_____

18). Is it necessary to invite partners for HIV counselling and testing? / Je,ni muhimu kuwaalika wapenzi kwa mashauri?

1	Yes/ Ndio
2	No / La
98	Refused/ Amakataa
99	Don't Know/ Sijui

19). What are the benefits of counselling? /Manufaa ya mashauri ni yapi?_____

_____

20). What is the general attitude of your community towards HIV and AIDS testing services?/ Mtazamo wa kawaida wa jamii yako kuhusu virusi vya UKIMWI/huduma za kupimwa kwa UKIMWI ni upi?

_____

_____

21). What is the general attitude of your community towards people living with HIV and AIDS?/ Mtazamo wa kawaida wa jamii yako kuhusu watu wanaoishi na virusi vya UKIMWI/UKIMWI ni upi?

_____

_____

22a). Have you ever taken a HIV test?/ Umewahi kupimwa virusi vya UKIMWI?

1	Yes/ Ndio
2	No / La
98	Refused to answer/ Amekataa kujibu
99	Don't Know/ Sijui

22b). If yes, what made you decide to have the test? / Kama jibu ni ndio,ni nini kulikufanya uamue kupimwa?

22c). If yes in Q22a, did you share the information of your status with someone else/ Kama jibu ni ndio kwenye Q22a, ulijadili habari ya matokeo yako na yeyote ?

1	Yes/ Ndio
2	No/ La
98	Refused/ Amekataa

22d). If yes in Q22c, who did you share the information of your status with? **MULTIPLE RESPONSES ALLOWED**/ Kama jibu ni ndio kwenye Q22c, ulijadili habari ya matokeo yako na nani? **MAJIBU MENGI YANAKUBALIKA**

1	Spouse/ Mke/Mme
2	Sexual partner/boyfriend/ girlfriend/ Mpenzi wa ngono/ Rafiki wa kiume/ Rafiki wa kike
3	Family member/ Msiriki wa jami
4	Friend / Rafiki
5	Pastor/priest/religious leader/ Mhubiri/ Kasisi/ Mkuuu wa kidini
97	Other (specify)/ Nynginezo Eleza……)_____

23). Do you know of someone who has taken the HIV test? / Unajua mtu yeyote ambaye amepimwa virusi vya UKIMWI?

1	Yes/ Ndio
2	No/ La
98	Refused/ Amekataa

24). How satisfied were you with the privacy and counselling you received? (Tick one) **(Ask ONLY those who have taken the HIV test)/** Uliridhika kiasi kipi na mashauri ya siri uliyo pokea kwenye kliniki leo? (Nakili moja) (Uliza tu wale wamepimwa virusi vya ukimwi)

1	Very satisfied / Niliridhika kabisa
2	Satisfied / Niliridhika
3	Neither satisfied nor dissatisfied / Sikuridhika wala kuridhika
4	Dissatisfied / Sikuridhika
5	Very dissatisfied/ Sikuridhika kabisa

25). **(ASK ONLY those who have NOT taken the HIV test i.e. those who say NO in Q22a)** Are you planning to be tested for HIV soon? /(Uliza tu wale ambao hawajapimwa virusi vya UKIMWI yaani wanaosema LA kwenye Q22a) Je, unapanga kupimwa virusi vya UKIMWI hivi karibuni?

1	Yes/ Ndio
2	No/ La
98	Refused/ Amekataa

26a). If you had a choice, who would you prefer to attend to you at a HIV testing centre? / Kama Unachaguo, ungependa uhudumiwa na nani kwenye kituo cha kupimwa virusi vya UKIMWI

1	Female / Mwanamke
2	Male / Mwanmme

26b). If you had a choice, taking age into account, who would you prefer to attend to you at a HIV testing centre? / Kama Unachaguo, ukisingatia umri, ungependa uhudumiwa na nani kwenye kituo cha kupimwa virusi vya UKIMWI

1	Somebody younger than you / Mtu mwenye umri mdogo kukushinda
2	Somebody older than you / Mtu mwenye umri mkubwa kukushinda
3	Somebody of your age / Mtu mwenye umri sawa na yako
4	Anybody/ Mtu yeyote

27**.** Please tell me to what extent you agree with the following statements. For each statement state whether you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree./ Tafadhali niambie ni kiwango kipi unachokubaliana na maelezo yafuatayo.Kwa kila maelezo eleza kama unakubaliana kabisa, unakubaliana, sikubaliani wala kukubaliana, sikubaliani au sikubaliani kabisa.

	Strongly Disagree/ Sikubaliani kabisa	Disagree/ Sikubaliani	Neither agree nor Disagree/ Sikubaliani wala kukubaliana	Agree/ Nakubaliana	Strongly Agree/ Nakubaliana kabisa
a) Would prefer being tested by someone familiar to you/ Ningependa kupimwa na mtu ambaye ninaye mjua	1	2	3	4	5
b) Would prefer tested by someone from the community where you come from/ Ningependa kupimwa na mtu kutoka jamii ninayotoka	1	2	3	4	5
c) Would prefer being tested within a hospital	1	2	3	4	5

set-up/ Ningependa kupimwa katika mazingira ya hospitali					
d) Would prefer taking the test away from where you live/ Ningependa kupimwa mbali na ninamoishi	1	2	3	4	5
e) HIV and AIDS poses a great health threat to society/ Virusi vya UKIMWI/UKIMWI husababisha hatari kubwa kwa kiafya kwa jamii	1	2	3	4	5
f) Many people you have interacted with are aware of HIV testing services/ Watu wengi ambao nimetangamana nao wanafahamu kuhusu hudumu za kupimwa kwa virusi vya UKIMWI	1	2	3	4	5

28) In your view, what are the possible interventions and strategies to succeed in managing HIV and AIDS in your area? / Kwa maoni yako, ni mikakati gani yanayoweza kutumika ili kuzuia virusi vya UKIMWI/UKIMWI kwenye eneo lako?

---

29) How can you support these interventions?/ Unawezaje kuunga mkono mikakati hizi?

30) As a last question, what are your views with regard to HIV testing?/ Kama swali la mwisho, maoni yako ni yapi kuhusu kupimwa kwa virusi vya UKIMWI?

Thank you for participating in this study/
Ahsante kwa kushiriki katika utafiti huu.

Appendix 3 Ethical clearance

KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840 - 00200 NAIROBI, Kenya
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E-mail: kemri-hq@nairobi.mimcom.net; director@kemri.org; Website: www.kemri.org

KEMRI/RES/7/3/1 JULY 29, 2008

FROM: SECRETARY, KEMRI/National Ethical Review Committee

THRO': Dr. Yeri Kombe,
CENTRE DIRECTOR, CPHR,
NAIROBI

forwarded 13/08/08

TO: Nyangena Okioma Cliff (Principal Investigator)

RE: **SSC No. 1416 (Rev):** Prevalence of HIV testing and factors associated with its utilization among patients attending the casualty clinic at Mbagathi District Hospital-Nairobi, Kenya

Dear Sir,

Make reference to your letter dated 11 August 2008

We acknowledge receipt of the following documents:

1. The study protocol
2. Appendix 1: The Kiswahili translation of the Informed Consent Document (ICD)
3. Appendix 2: The Kiswahili translation of the Questionnaire

Due consideration has been given to ethical issues and the study is hereby granted approval for implementation effective today, the 13th day of August 2008 to 12th August 2009.

Please note that you are responsible for reporting any changes to the research study to the Scientific Steering Committee and to the Ethical Review Committee prior to implementation. This includes changes to research design, personnel and funding and procedures that could introduce new or more than minimum risk to research participants. You may embark on the study.

Respectfully,

R.C. Kithinji

R. C. Kithinji,
For: Secretary,
KEMRI/NATIONAL ETHICAL REVIEW COMMITTEE