FACTORS INFLUENCING UPTAKE OF AMPATH'S HOME-BASED COUNSELING AND TESTING SERVICES AMONG RESIDENTS OF TURBO DIVISION, UASIN-GISHU COUNTY, KENYA

A research thesis submitted in partial fulfillment of requirements for the degree of Master of Public Health, Moi University

SPH/PGH/01/09
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DECLARATION

This is my original work and to the best of my knowledge has not been submitted for the award of any academic credit in any institution or university.

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This thesis has been submitted with our approval as University Supervisors.

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LIST OF ABBREVIATIONS

AIDS- Acquired Immuno-deficiency Syndrome

ARVs- Anti-retro Viral Drugs

AMPATH- Academic Model Providing Access to Health care

AOR- Adjusted odd Ratio

APHIA II- AIDS Population and Health Integrated Assistance II

CCC- Comprehensive Care Centre

CD4- Cluster of Differentiation 4

CI- Confidence Interval

CT- Counseling and Testing

Div- Divorced

Fig.- Figure

HCT- Home based Counseling and Testing

HTC – HIV Testing and Counseling

HIV- Human Immunodeficiency Virus

IREC- Institutional Research and Ethics Committee

NASCOP- National Aids and STI Control Program

PVF- Purpleville Foundation

KAIS-Kenya AIDS Indicator Survey

MoH- Ministry of Health

MTRH- Moi Teaching and Referral Hospital

Sep- Separated

SPSS- Statistical Package for the Social Sciences

SSA- Sub Saharan Africa

TB- Tuberculosis

VCT – Voluntary Counseling and Testing

TABLE OF CONTENT

Abstract

Background: Voluntary HIV counseling and testing (VCT) is one of the key strategies for the prevention and control of HIV/AIDS. The introduction of home based HIV counseling and testing (HCT) could improve the uptake of VCT services. The study was conducted to explore uptake of home based counseling and testing services in Turbo Division.

Methods: This was a population based cross sectional study employing both qualitative and quantitative techniques of data collection. It was conducted in May 2013, using interviewer administered semi-structured questionnaire. Using multi stage sampling, 362 household heads were sampled from 41 randomly selected villages. Data was collected on uptake of HCT and on other factors including socio-demographic, knowledge of HCT and perception of HCT exercise at home as independent variables. The odds ratios and their 95% confidence intervals (CI) of uptake of HCT by the independent variables were estimated. The chi-square, t-test and multivariate logistic regression model were employed in the analysis. $P<0.05$ was considered significant. All the analysis was done in Statistical Package for Social Sciences V.17

Results: Overall, the uptake of HCT was 83% with about 85.4% reporting to have ever been tested for HIV earlier. Factors associated with higher odds of HCT uptake were Age (AOR; 95% CI: 1.047; 1.002-1.0904) and knowledge and awareness regarding HCT (AOR; 95%CI: 13.788; 4.628-41.077).

Recommendation: More innovative ways such as poster presentations and leaflets should be used to provide education and knowledge on HCT. There is need for the general population, especially the youth, to embrace a culture of periodical uptake of voluntary HIV testing.

Conclusion: Overall, over three quarters of the study participants utilized AMPATH home based counseling and testing. Age and knowledge regarding HCT continue to be major factors to uptake of HIV counseling and testing through the home based model.

CHAPTER ONE: INTRODUCTION

1.1 Background

The HIV and AIDS epidemic remains a significant global health problem, with the brunt of the epidemic borne by developing countries. By the end of 2011, 33.4 million people were estimated to be living with HIV, up slightly from 33.2 million in 2009. This may be attributed to more people living longer as access to antiretroviral (anti-HIV) therapy increases. **(1)**

Sub-Saharan Africa's epidemics vary significantly from country to country—with most appearing to have stabilized, although often at very high levels, particularly in Southern Africa.**(2)** According to UNAIDS 2010 report, only 10% of HIV-infected individuals worldwide are aware of their HIV status with many challenges of HIV testing including the difficulty and cost of obtaining an HIV test.**(1)**

An estimated 2.7 million people became newly infected with HIV in 2011, nearly 20% fewer than the 3.1 million people infected in 1999. An estimated 23.5 million people were living with HIV in sub-Saharan Africa at the end of 2011. More than 25million people have died of AIDS worldwide since the first cases were reported in 1981. Almost all those living with HIV (97%) reside in low- and middle-income countries, particularly Sub Saharan Africa. **(1)**

In the absence of massively expanded prevention, treatment and care efforts, it is expected that the AIDS death toll in sub-Saharan Africa will continue to rise. This means that the impact of the AIDS epidemic on different societies will be felt most strongly in the course of the next ten years and beyond **(3)**. Its social and economic consequences are already widely felt, not only in the health sector but also in education, industry, agriculture, transport, human resource and the economy in general. The AIDS epidemic in sub-Saharan Africa threatens to devastate whole communities, rolling back decades of development progress **(2)**.

Diagnosis and control of the infection depends on affected individuals seeking and knowing their HIV status and changing their behavior to remain uninfected or, if already HIV-infected, to seek to change their behavior in order to avoid infecting others **(3)**. The uptake of Home-based Counseling and Testing (HCT) remains low, particularly in developing countries, and

some of the challenges include ease of getting an HIV test. Researchers theorized that providing HIV testing and or results in homes would lead to wider acceptance of HIV testing [(4)].

Kenya is home to one of the world's harshest HIV and AIDS epidemics. An estimated 1.7 million people are living with HIV; and in 2011 about 49,126 people died from AIDS related illnesses. [(5)]

Many people in Kenya are still not being reached with HIV prevention and treatment services. Only 1 in 3 children needing treatment are receiving it [(7)]. This demonstrates that Kenya still has a long way to go in providing universal access to HIV prevention treatment, and care. Therefore, the HCT program can provide HIV counseling and testing services jointly with TB screening, distribution of mosquito nets for malaria prevention and de-worming to general population [(8)].

The Academic Model Providing Access to Healthcare (AMPATH) is Kenya's most comprehensive initiative to combat HIV. AMPATH is a working model of urban and rural HIV preventive and treatment services in the public sector. AMPATH cares for 140,677 (as at end of September, 2011) HIV-infected adults and children, with nearly one-half of all patients on anti-retroviral drugs, and enrollment into the program rising by 2,000 patients per month. AMPATH demonstrates the power of US and African academic medical centers united by common vision. During the period June to November 2007, AMPATH piloted a Home-based Counseling and Testing (HCT) program in Kosirai Division, Nandi North District of Kenya.[(8)].

The project showed a high acceptance rate of counseling and testing with 95% of all those eligible accepting to be counseled and 91% accepting to take the HIV test [(8)]. This level of acceptance served to show that the people were willing to utilize the services offered, which they might not have otherwise accessed. [(8)]

The program concluded that HCT is feasible and that with proper planning and community involvement, it can provide a positive step towards reaching out to more individuals in the community [(9)]. Following the Kosirai HCT experience, house to house testing was viewed as a

positive step towards reaching out to more individuals in the community and AMPATH plans to sequentially roll out this approach to all its other sites.

As one of the first sites where AMPATH established a clinic, Turbo was identified as the next site to benefit from HCT. Other considerations in favor of rolling out HCT in Turbo include its proximity to Moi Teaching and Referral Hospital (MTRH) and Kosirai division and the cultural similarities among the populations in Kosirai and Turbo divisions **(10)**.

1.2 Problem Statement

More than 80% of the people infected with HIV in low-income countries of sub-Saharan Africa do not know their HIV serostatus. According to KAIS 2003/07, the prevalence of HIV in Rift valley range from 5.3% in 2003 to 6.7% in 2007, with Turbo's approximated HIV prevalence of 3%. Based on marital status, the prevalence is highest among the polygamous marriages, separated/divorced and the widowed. Turbo division is located within Uasin Gishu County and was formerly in North Rift valley province. The linkage to care is partly dependent on testing and diagnosis of HIV infection. Poor uptake of home based counselling and testing pose a serious challenge in increasing enrolment to care and thus could contribute to poor health outcomes. The increasing prevalence of HIV is due to poor uptake of HCT services, among other risk factors.

1.3 Research Question

What are the factors that determine the uptake of HCT services in Turbo Division?

1.4 Justification

To combat the spread and deaths due to HIV/AIDS, there is a need to design programs that will increase HIV and AIDS awareness within groups and populations. It is for this reasons that AMPATH launched Home Based Counselling and Testing (HCT) program in Western Kenya. HCT has been conceived as one cost effective method of increasing awareness of HIV and AIDS status among local communities, including residents of Turbo Division. HTC services are often the primary entry point for infected individuals into treatment and care programs **(6)**. HCT encourages routine testing and can encourage open discussion within families (12). HCT will also

overcome known barriers to utilization of HIV/AIDS testing and counseling services such as cost, logistics and fear, among others. It will increase access and acceptability to health care among individuals affected or infected with HIV/AIDS. Home-based HTC programs are most suitable model in which trained counselors offer HTC to people in their own homes [13]. Such home-based programs have been extremely successful, with upwards of 95% of individuals accepting HTC in some studies. [15]

1.5 Objectives

1.5.1 Broad Objective

To determine the proportion and factors influencing uptake of home based counseling and testing services among residents of Turbo Division, Uasin Gishu County.

1.5.2 Specific Objectives

1. To determine the proportion of people who utilized HCT services in Turbo Division.
2. To determine the factors influencing uptake of HCT services among residents of Turbo Division.
3. To describe the perception of people towards HCT services in Turbo Division

CHAPTER TWO: LITERATURE REVIEW

2.1 Home-Based Counseling and Testing

Home-Based Counseling and Testing (HCT) is door-to-door home-based, provider-initiated strategy. Counselors led by counselor supervisors offer HCT to clients at home, and community mobilizers ensure all households in a community are offered services [12].

Home-based CT addresses the needs of the entire family at once and discussion on prevention and behavior change may be more effective in the context of the family and the home [12]. Other advantages include reduced perceived stigma, cost-effectiveness (especially if lay community counselors are utilized), and the possibility that couples counseling and disclosure may be made easier, especially among discordant couples [12].

2.2 The need for Home-based Counseling and Testing

Many of Africa's voluntary counseling and testing (HTC) programs are urban-based and do not reach all of the people who would like to be tested. Home-based HTC programs are a growing model in which trained counselors offer HTC to people in their own homes [13]. Such home-based programs have been extremely successful, with upwards of 95% of individuals accepting HTC in some studies. [15]

As community- and home-based services grow, so has the interest in expanding HCT, raising concerns over the quality and standardization of this service and its harmonization with other health programs [16]. Furthermore, as some countries particularly those with generalized epidemics seek to implement this model to increase access to HCT, care, and treatment, there exist no international guidelines on HCT [16]. While HCT can be an effective component of a national HIV strategy, increased elaboration on strategies and guidance will provide criteria and factors relevant for deciding when and how best to implement HCT[14].

2.3 The African Experience

Kalpana et al., carried out a systematic review and random-effects meta-analysis of studies published between 1 January 2000 and 24 September 2012 that reported on uptake of home base counseling and testing in sub-Saharan Africa. They found that the proportion of people who

accepted HBT (*n* = 474,377) ranged from 58.1% to 99.8% with an average uptake of 83.3%. Furthermore, 16 studies reported on the number of people who received the result of HBT (*n* = 432,835). The proportion of individuals receiving their results out of all those offered testing ranged from 24.9% to 99.7%, with a pooled proportion of 76.7%. Moreover, the HIV prevalence ranged from 2.9% to 36.5% and the new diagnosis of HIV following HBT ranged from 40% to 79% of those testing positive. Forty-eight percent of the individuals offered testing were men, and they were just as likely to accept HBT as women (pooled odds ratio = 0.84; 95% CI: 0.56–1.26). The proportion of individuals previously tested for HIV among those offered a test ranged from 5% to 66%. The study found that in studies with less than 30% of individuals previously tested, local HIV prevalence was low (less than 10%) and incentives were provided, or HBT was offered to household members of HIV-positive individuals showed higher uptake of testing[36].

In 2004, a program was implemented over a period of two years to deliver home-based HTC to 250,000 residents of Uganda's rural Bushenyi District, a region in southwest Uganda with a population of approximately 800,000 people and just under 143,000 households **(15)**. Twenty-nine outreach teams, each including a counselor and a laboratory assistant, moved from home to home through this area **(15)**. Rapid HIV testing with pre- and post-test counseling was available for all residents 15 years of age or over, and basic care, including ART eligibility assessment, available for those who tested positive. A total of 296,431 individuals were eligible for testing, of whom 264,966 (89%) were tested and all but 13 received their results **(15)**. The program concluded that universal, home-based HTC had extremely high uptake, and was very successful at identifying HIV-positive individuals and couples with mixed HIV status in this rural area of Uganda **(15)**.

In another study, a population-based survey was conducted in rural Uganda to assess whether receipt of HIV test results would be improved if HTC was provided in participants' homes. Participants were interviewed in their homes and after giving informed consent, a venous blood sample was drawn to test for several infections, including HIV **(16)**. Participants were given the option of receiving HIV HTC results at home, at the nearby study office or not at all. The findings showed that a HTC model concentrating on home-based provision of counseling at the time people received HIV test results was highly acceptable in the community surveyed and greatly increased the proportion of those who received their test results compared to other

studies. Furthermore, participants preferred to receive test results within the privacy of their own home [16].

Findings from the two Ugandan studies suggest that home-based HIV counseling and testing may augment traditional HIV counseling and testing services both by increasing acceptance and uptake of HIV testing, but also by impacting attitudes towards HIV at a population level. Many of Africa's voluntary counseling and testing (HTC) programs are urban-based and do not reach all of the people who would like to be tested. Home-based HTC programs are a growing model in which trained counselors offer HTC services to people in their own homes. [12, 15, 16]

Lesotho, Botswana and Swaziland, with some of the highest HIV infection rates in the world, are scaling up HIV prevention and treatment. Lesotho used the same models employed by their immunization programmes: extensive community mobilization and education, followed by door-to-door visits offering HIV testing and counseling. Local committees were responsible for deciding how and when people were to be offered testing and counseling and for ensuring that testing is voluntary and confidential and that post-test services including treatment are provided [17].

Lesotho's 'Know Your Status' campaign, the first of its kind worldwide, offered confidential and voluntary HIV testing and counseling with the aim of reaching all households by the end of 2007. The funds were used to employ counseling and testing personnel, print educational material and purchase vehicles for the campaign. With an adult prevalence rate of 23.2 percent in a population of 1.8 million, it is estimated that 265,000 people in Lesotho are living with HIV/AIDS, and 49,400 are already in need of life-prolonging antiretroviral (ARV) treatment [18].

The number could be higher, as national statistics indicate that only 72,000 people have been tested to date, with less than 10,000 receiving ARVs. Communities will decide how and when their members will be offered HIV/AIDS testing and counseling, and independent people's committees will be established at local, district and national level to ensure that testing is always voluntary, confidentiality is maintained and post-testing services, including treatment, are provided [19].

At least one program in Malawi includes a component where community health workers actually immediately accompany the newly identified HIV-infected persons to a care and treatment program [(20)]. This practice reduces the number of tests that can be done but helps ensure linkage to care and services [(21)].

Home-based testing is most effective and a wise use of resources in countries with high HIV prevalence, generalized epidemics, high density urban or rural areas, and sizeable populations on ART. Uganda, Kenya, Malawi, Zambia, Swaziland, and Lesotho all have robust HCT programs. Uganda and Zambia have data showing that people are much more likely to be tested in a home context than a facility based context [(21)].

2.4 Kenyan Experience

Home testing is done with a rapid diagnostic test, with results given in the same visit. Couples counseling and referral to treatment services are part of these programs. In many cases, there is also a follow-up visit to ensure enrollment in HIV care. In Kenya, more than 85 percent of persons living with HIV had previously undiagnosed HIV infection, thanks to VCT. [(22)] Moreover, the average CD4 count of those identified was 411, showing that this strategy helps to identify people earlier in HIV infection. But linkage to care has been a challenge, with only 30 percent of those identified as positive in a Kenyan program actually presenting for care. [(22)]

A joint effort between the Ministry of Medical Services in Western Kenya and APHIA II Western is changing the face by spearheading a new mode of counseling and testing [(26)]. The two organizations have taken the fight against HIV/AIDS in the region a notch higher with the approach of door-to-door testing and counseling services. By realizing that not as many people are consuming their counseling services, the HIV workers have chosen to take the services to the people. This tactic has ensured that more Kenyans are tested [(28)].

According to statistics of APHIA II the number of people reached tune to more than 68,000. The success of this arrangement is made possible by a group of 20 counselors who are divided into two teams that visit two villages a day. All counselors in the team are initially HTC counselors thus have National AIDS/STD Control Programme (NASCOP) Certification. [(26)]

There are a lot of benefits accrued from the exercise as those who test positive are referred to the nearest facilities that have Comprehensive Care Centers (CCC') **(23)**. Here, they are advised on their nutrition, lifestyle and provided with medication plus counseling services. Follow up services are also offered to ensure the client is well catered for. The stigma associated with visiting a HTC Centre is eliminated since it is the other way round; the counselors visit clients in their homes **(25)**.

The Kenyan governments enhanced focus on testing has been reflected by the percentage of adults aged 15-49 years who report ever being tested for HIV. In 2003 only 15 percent had taken a test compared to 37 percent in 2007. **(24)** Action to improve access to testing facilities and a high-profile media campaign that ran between 2002 and 2005 is thought to have contributed to the increase in HIV testing uptake. **(27)**

Increased testing rates have meant that record numbers of Kenyans have been tested in recent years. In the year 2009, it is estimated that more than 4.4 million Kenyans aged 15 years and over (approximately 1 in 4 of the adult population) received HIV testing and counseling. According to the 2009 Demographic and Health Survey, 73.5% of women and 58.6 % of men have been tested at least once. **(27)**

2.5 Factors affecting uptake of HCT

There are quite a number of factors affecting HCT programs including finding people at home, especially young men. There are also a number of unanswered research questions. How often should HCT be repeated in a given community? Does it make more sense to have this as a stand-alone service or in the context of a package of services? What level of population coverage is necessary to make testing normative? (29)

However, HCT can be time-consuming, as the provider must move from home-to-home, and family disclosure, especially of parents to children, may be difficult, as the parent(s) have to deal with knowledge of their status first. Testing everyone at the same time may mean premature disclosure, which can lead to adverse social outcomes. (28)

Other factors negatively affecting uptake of HCT include the counselling environment in complex polygamous households, meeting the specific needs of young clients, and compassion fatigue associated with testing entire families leading to burnout reported in some instances. [26]

CHAPTER THREE: METHODOLOGY

3.1 Study setting

The study was undertaken in Turbo Division, which is one of the seven administrative Divisions of Eldoret West District. It has a population of 133,342 people (projected population 2006); it has six locations. The AMPATH Turbo clinic serves the entire populations of Turbo Division. The clinic was established in January 2004 and by the end of February 2008, it had enrolled 3,398 clients; 789 males, 2,022 females and 587 children. By the end of July 2011, it had 6,578 clients; - 1736 males, 3,657 females and children - 589 males, 596 females. [30]. The general catchment area has an estimated HIV prevalence rate of about 3.0% and is basically agricultural and thus much of the residents' income is derived from agriculture and livestock activities [30].

3.2 Study Population

The study population comprised of all adults' residents of Turbo Division, Uasin Gishu County.

3.3 Study Design

This was a cross-sectional study design that incorporated both quantitative and qualitative research methods to establish the uptake of HCT services in Turbo Division of Eldoret West District. The participants were studied only once at a particular point in time to assess their HCT uptake.

3.4 Sample size Determination

The study sampling method was multistage that involved stratified and systematic sampling designs. The target population was selected from eight sub-locations which were treated as the strata. The primary sampling units in the study are the households from villages within selected sub-locations. Therefore we had two stratifying variables.

The sample size was estimated using the (Fisher et al.1998) formula[33]. The margin of error for this study was assumed to be 5%. It was also assumed that the proportion of uptake of HCT in the entire Turbo Division was 50%. This value was assumed because it was conservative in that it gives the largest minimum sample size for the study.

The sample size formula used to estimate the sample size for this study (Fisher et al. 1998) is given below[33].

$$n = \frac{z^2_{\alpha/2} P(1-P)}{\delta^2}$$

Where $z_{\alpha/2}$ is the quartile of the standard normal distribution corresponding to $100(1-\alpha/2)$, δ is the margin of error, and P is the proportion of HCT uptake.

The value obtained was 384. However, due to rounding off in Table 1 below, we arrived at a sample of 388.

3.5 Sampling Method

Sampling of households was done using the systematic sampling method. The selection of the first household was done via simple random sampling method. The next household was decided on by taking the K^{th} household thereafter. K was determined by using the mobilizer register and counting every 20^{th} household. The number of households sampled from each stratum was decided using the proportionate allocation method, one of the stratified sampling methods[35].

Sampling of the villages was done via stratified simple random sampling without replacement approach using a computer. The villages in each sub-location were numbered and the data fed into a computer that has R 2.13.2 statistical package (2011) for sampling to be done. The study sampled 25% of the villages in each sub-location.

The results of the sample size and the sampling plan are provided in Table 1. The required sample size will be 388 households within 41 villages in 8 sub-locations.

Table 1: Location of Turbo Division, Uasin Gishu District

Locations	Population. Statistics	Sub-locations	Villages	Households	Villages Sampled	Household Sampled
Kamagut	33,923	Leseru	34	4,421	9	99
Ngenyilel	45,652	Chepsaita	27	2,129	7	48
		Osorongai	23	3,548	6	80
Sugoi	18,666	Sugoi	27	2,524	7	57
Sosiani	10,090	Sosiani	14	1,293	4	29
Tapsagoi	12,686	Tapsagoi	6	888	2	20
		Turbo	6	813	2	19
Kaptebee	12,325	Kaptebee	15	1,605	4	36
TOTAL	**133,342**		**152**	**17,221**	**41**	**388**

3.6 Eligibility Criteria:

The inclusion criteria was persons above 17 years and have enrolled in 2008 HCT program. Participants were also required to be residents of the selected study area. Residents who did not reside in Turbo Division after the 2009 AMPATH HCT campaign were excluded.

3.7 Data Collection Method

Data was collected using interviewer administered questionnaire (Appendix I). The sampled individuals were interviewed after consenting. The questionnaire was filled carefully by the principal investigator or the research assistants. Data collected include demographic characteristics such as age, gender, marital status, education level. These constitute the independent variables. The proportion of uptake of HCT was also collected and this is the outcome/dependent variable.

3.8 Data Management and Analysis

Data was entered and analyzed using SPSS version 17 statistical package. Description of data (gender, marital status, age, education level, religion, occupation, etc) was performed using

percentages, proportions, frequencies and mean. Differences between groups were assessed with chi-square test for categorical variables and the t-test for scaled or continuous variables. Multiple logistic regressions was used to identify significant factors influencing uptake of HCT controlling for confounders. All the results were considered significant at 95% confidence level.

3.9 Ethical Considerations

Approval to conduct the research was sought from IREC - Institutional Research and Ethics Committee, Moi University. Individual written informed consent was sought before carrying out the study. No personal name appeared on research documents instead participants identification numbers were used for confidentiality of information. Data was not to be accessible to anybody apart from the principle investigator and it was also encoded with a password.

CHAPTER FOUR: RESULTS

Among the 362 respondents that participated in the study, some questionnaires got lost during the process of data collection, others got damaged due to the heavy rainfall experienced during the data collection process(June to July 2013).

Among the 362 respondents that participated in the study, 183(50.6%) were males and 229 (63.3%) were married. The mean age in years was 34.5±10.0. More than half 246 (68%) had attained secondary level of education and 218 (60.2%) were protestants. Majority 250 (69.1%) were unemployed as indicated in Table 4.1

Table 4.1: Demographic characteristics (N=362)

Characteristic	Frequency (%)
Gender	
Male	183 (50.6)
Female	17 9(49.4)
Marital status	
Single	98 (27.1)
Married	229 (63.3)
Divorced	18 (5.0)
Separated	8 (2.2)
Widowed	9 (2.5)
Highest level of education attained	
None	21 (5.8)
Primary	44 (12.2)
Secondary	246 (68.0)
University	51 (14.1)
Religion	
Catholic	117 (32.3)
Protestant	218 (60.2)
Muslim	27(7.5)

Occupation	
Formal employment	54 (14.9)
Informal employment	58 (16.0)
Unemployed	250 (69.1)

Majority of the respondents 328 (90.6%) reported to have ever heard of HIV/AIDS and 309 (85.4%) to have ever been tested for HIV. Among those that reported to have ever been tested for HIV, 170 (55%) reported to have been tested at home as indicated in Figure 4.1below.

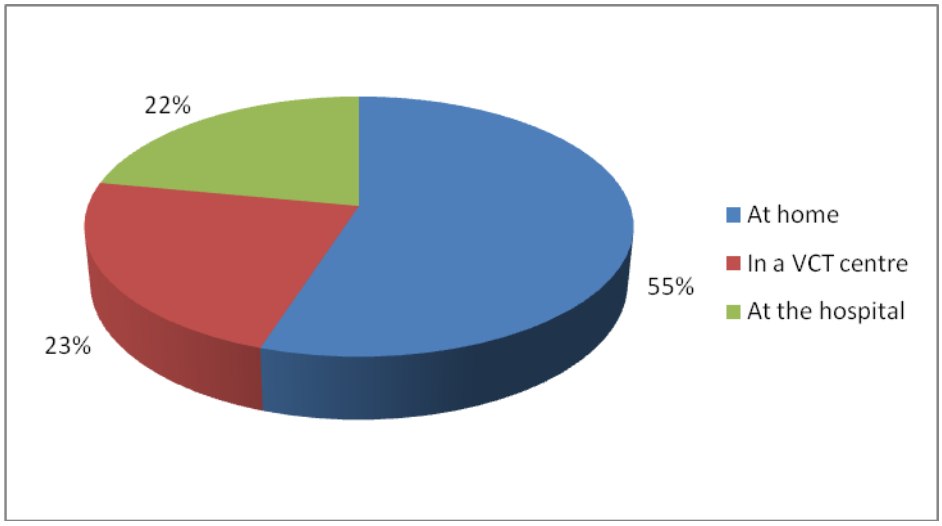


Fig 4.1: Where tested for HIV (N=309)

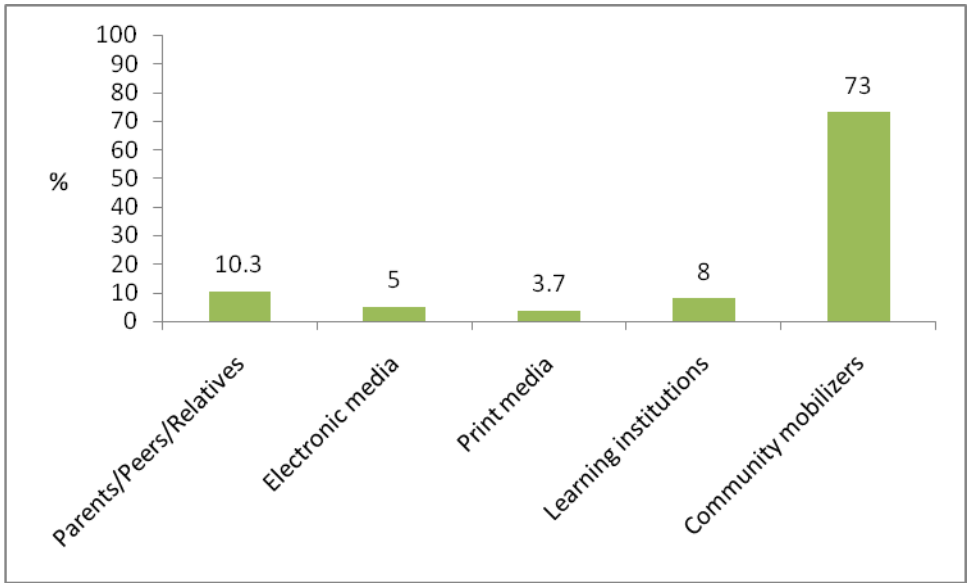


Fig 4.2: Source of information on HCT (N=347)

Over three quarters of the respondents 323 (89.2%) reported to know something about Home Based Counseling and Testing (HCT) of which 236 (73%) got the information on HCT from community mobilizers as shown in Figure 4.2 above.

Majority of the respondents 302 (83.4%) had utilized the AMPATH HCT services (Fig 4.3) of whom 256 (84.8%) utilized the counseling and testing services.

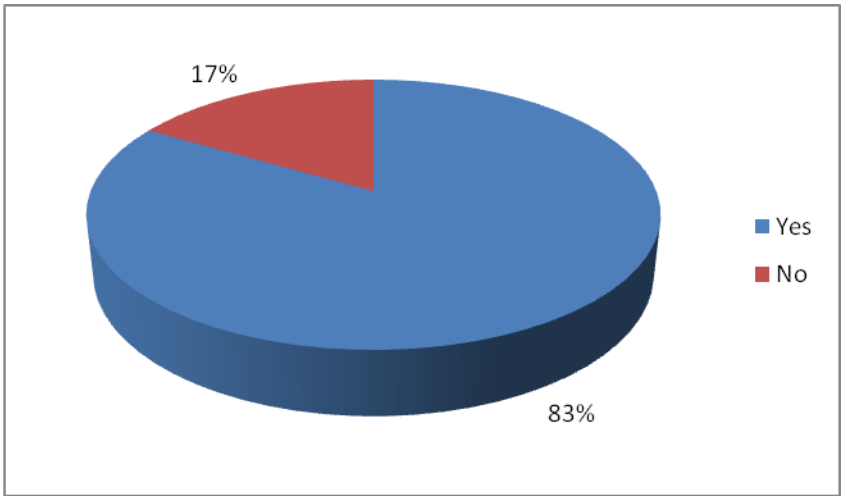


Fig 4.3: Utilized AMPATH HCT services (N=362)

Two hundred and seventy eight (92.1%) thought the counseling and testing process was effective to them while 165 (54.6%) felt that the services were exhaustive to them. Over half of the respondents 195 (64.5%) reported that the HCT services were highly convenient to them and their family (Fig 4.4) below.

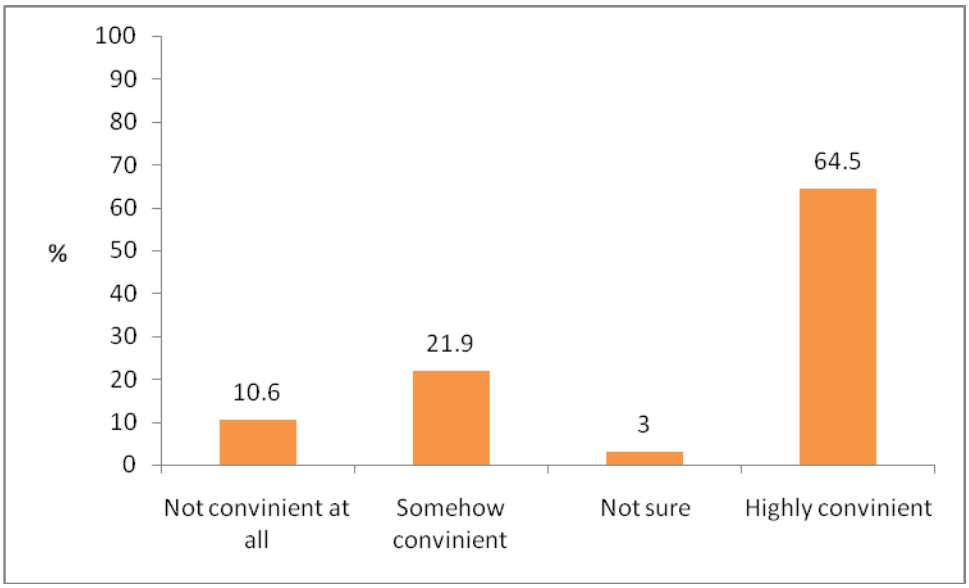
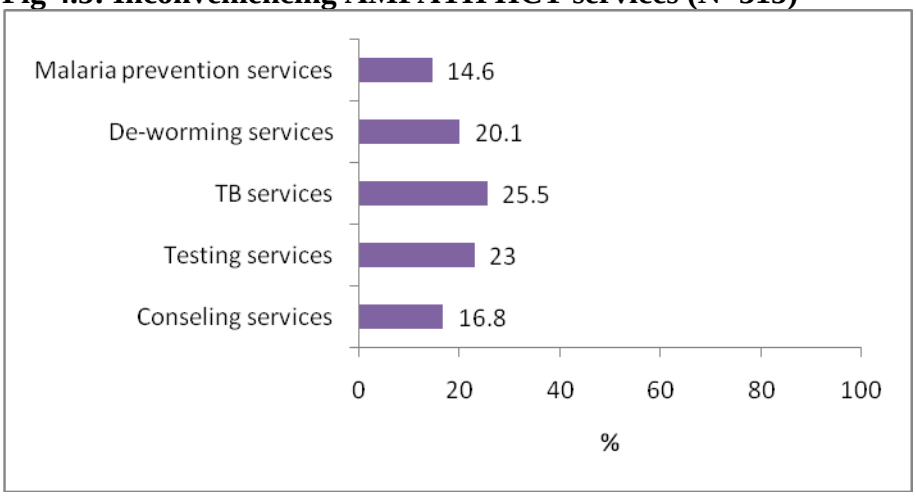


Fig 4.4: Convenience of HCT services (N=355)

A quarter of the respondents opined that AMPATH HCT TB services were inconvenient (Fig 4.5) below.

Fig 4.5: Inconveniencing AMPATH HCT services (N=315)



Over half of the respondents agreed that Testing at home is convenient than at hospital, Testing at home enhances disclosure, Couples always agree to test together, Testing at home brings HCT services closer to people, Difficult to test youth at home and that it is also difficult to test at home in front of family members. But still a third 114 (32.4%) of the respondents disagreed that it is difficult to test at home in front of family members as indicated in Table 4.2 below.

Table 4.2: Perception of HCT services at home

Perception	Agree	Neutral	Disagree
Testing at home is convenient than at hospital (N=354)	259 (73.1)	43 (12.1)	52 (14.5)
Difficult to test at home in front of family members (N=352)	206 (58.5)	32 (9.1)	114 (32.4)
Testing at home enhances disclosure (N=347)	212 (61.1)	52 (15)	83 (23.9)
Difficult to test youth at home (N=352)	204 (57.6)	53 (15)	97 (27.4)
Couples always agree to test together (N=352)	209 (59.4)	60 (17)	83 (23.6)
Testing at home brings HCT services closer to people(N=354)	293 (82.8)	25 (7.1)	36 (10.2)

As in Table 4.3 below, marital status, education level, religion, heard of HIV/AIDS, tested for HIV and knowledge on HCT were significantly associated with Utilization of HCT services ($p<0.05$)

Table 4.3: Factors associated with uptake of HCT services (N=362)

Factor	Utilized HCT services		chi-value	P-value
	Yes (%)	No (%)		
Gender				
Male	153 (83.6)	30 (16.4)	0.009	1.000
Female	149 (83.2)	30 (16.8)		
Marital status				
Single	76 (77.6)	22(22.4)	11.821	0.003
Married	202 (88.2)	27(11.8)		
Sep/Div/Widow	24 (68.6)	11(31.4)		
Education level				
None	12(57.1)	9(42.9)		
Primary	31(70.5)	13(29.5)	22.301	<0.001
Secondary	220(89.4)	26(10.6)		
University	39(76.5)	12(23.5)		
Religion				
Catholic	98(83.8)	19(16.2)		
Protestant	190(87.2)	28(12.8)	17.159	<0.001
Muslim	14(51.9)	13(48.1)		
Occupation				
Formal	40(74.1)	14(25.9)		
Informal	51(87.9)	7(12.1)	4.438	0.109
Unemployed	211(84.4)	39(15.6)		
Heard of HIV/AIDS	284(86.6)	44(13.4)	28.346	<0.001
Tested for HIV	271(87.7)	38(12.3)	27.919	<0.001
Knowledge on HCT	291(90.1)	32(9.9)	85.64	<0.001

Table 4.4: Age and uptake of HCT services

Factor	**Utilized HCT services**		**t-value**	**P-value**
	Yes (%)	No (%)		
Mean age (sd)	35.2 (sd 10.0)	31.3 (sd 9.6)	2.783	0.006

There was a significant difference in the mean age between those who utilized the HCT services and those who did not (t=2.783, p=0.006). Those who utilized the services were significantly older than those who did not as indicated in Table 4.4 above.

Table 4.5: Factors influencing uptake of HCT services

Factor	B	S.E.	AOR	95.0% C.I.for OR		P-value
				Lower	Upper	
Age (in years)	.046	.022	1.047	1.002	1.094	**.038**
Marital status (ref=sep/div)						.589
Single	.263	.686	1.301	.339	4.993	.701
Married	.575	.640	1.777	.507	6.230	.369
Education level (ref=University)						.235
None	.504	.815	1.655	.335	8.169	.536
Primary	-.131	.685	.877	.229	3.356	.848
Secondary	.759	.490	2.137	.818	5.582	.121
Religion (ref=Muslim)						.135
Catholic	1.004	.651	2.728	.762	9.771	.123
Protestant	1.233	.617	3.431	1.023	11.507	**.046**
Heard of HIV/AIDS	.551	.675	1.736	.462	6.518	.414
Ever been tested for HIV	.623	.498	1.864	.703	4.943	.211
Have knowledge on HCT	2.624	.557	13.788	4.628	41.077	**<.001**

As indicated in Table 4.5, controlling for marital status, education level, religion, having heard of HIV/AIDS, ever tested for HIV, Multiple binary logistic regression indicated that age and knowledge on HCT were the significant factors influencing the uptake of HCT services ($p=0.038$ and $p<0.001$) respectively. A one unit increase in age increases the chances of HCT utilization by 4.7% (AOR; 95%CI: 1.047; 1.002-1.0904). Those who knew anything about HCT were almost 14 times more likely to utilize HCT services compared to those who did not know anything (AOR; 95%CI: 13.788; 4.628-41.077).

CHAPTER FIVE: DISCUSSION

5.1: Introduction

Voluntary HIV counseling and testing (VCT) has strongly been promoted as essential in reaching universal access to HIV prevention, care, support and treatment, and the services have been scaled up in many low- and middle-income countries. Home-Based Counseling and Testing (HCT) is door-to-door provider-initiated strategy. It addresses the needs of the entire family at once and discussions on prevention and behavior change may be more effective in the context of the family and the home **(12)**.

5.2 Utilization of HCT services

The results in this study show that the level of uptake of HCT among respondents is high (83.4%). This means that high proportion of the community members is aware of HCT services, something that may positively influence their perception towards the uptake of HCT. The findings are similar to those of the Ugandan program which concluded that universal, home-based HTC had extremely high uptake, and was very successful at identifying HIV-positive individuals and discordant couples in this rural area of Uganda **(15)**. This is similar to the findings of Kalpana et al., systematic review that reported on uptake of home base counseling and testing in sub-Saharan Africa to be high ranging from 58.1% to 99.8% with an average uptake of 83.3% and the proportion of individuals who tested and received their results were 76.7%[36].

Our findings are also similar to Mutalel et al (2010), who reported that high acceptability was achieved when VCT was offered at home to all participants of a population-based survey

In addition, findings from the two Ugandan studies suggest that home-based HIV counseling and testing may augment traditional HIV counseling and testing services both by increasing acceptance and uptake of HIV testing, but also by impacting attitudes towards HIV at a

population level. Many of Africa's voluntary counseling and testing (HTC) programs are urban-based and do not reach all of the people who would like to be tested. Home-based HTC programs are a growing model in which trained counselors offer HTC services to people in their own homes [12, 15, 16]. Uganda and Zambia have data showing that people are much more likely to be tested in a home context than a facility-based context [21].

5.3 Factors affecting uptake of HCT services

The study revealed that age, religion, and knowledge of HIV were the main determinants of uptake of HTC programs. Our study found that one unit increase in age increases the chances of HCT utilization by 4.7%. This could be attributed to ease of access of information by the younger age groups and their tendency to access social media and other channels of communications compared to the older groups. Those who have good knowledge about HCT were almost 14 times more likely to utilize HCT services compared to those who did not know anything about HCT (OR; 13.8 95% CI). These findings are similar to Helleringer, et al [37] findings which found that the households with higher income, often have better access to information, are more likely to utilize HCT services. Furthermore, Helleringer argued that poor accessibility of health facilities; fatalism, HIV-related stigma, and confidentiality are the main barriers to use of HTC services in African countries. Although our study did not analyze the impact of HCT on testing and treatment, studies done by the health ministries in Uganda and Malawi has shown that routine testing in hospitals and other health care facilities could significantly increases uptake and case finding among the attendees of these facilities. Furthermore, these studies shows that the cost and convenience are the main issues that

often limit the use of health care facilities among the lower socioeconomic strata in sub-Saharan countries [38, 39].

Our findings also showed that religion is important in uptake with the protestants were more likely to utilize HCT than non-protestants (p=0.46). This could be a reflection of health seeking behavior among the faithful that are promoted by the church, more than the religion believes as an influence per se.

Other studies have concluded that there are serious issues affecting uptake of HCT which are related to the way services are offered, particularly indicated by the disappointingly low acceptability of facility-based testing [11]. It has also been shown that in many settings, uptake of VCT has been positively correlated with factors such as male gender, higher educational attainment, and urban residence [4]. The findings from the current study indicated that only age and having knowledge on HCT significantly influenced utilization of HCT. The differences in the factors could be attributed to the study design and setting.

Another population-based survey conducted in rural Uganda to assess whether recipients of HIV test results would be improved if HTC was provided in participants' homes, the findings showed that a HTC model concentrating on home-based provision of counseling at the time people received HIV test results was highly acceptable in the community surveyed and greatly increased the proportion of those who received their test results compared to other studies. Furthermore, participants preferred to receive test results within the privacy of their own home [16].

5.4 Perception of people towards HCT services

In this study, majority of the respondents reported that testing at home is convenient than at hospital and that it enhances disclosure. Testing at home was also reported to bring HCT services closer to people. The study also found out that it is difficult to test youth at home and that it is difficult to test at home in front of family members, even though still a third disagreed that it is difficult to test at home in front of family members. In a study by Kroeger et al 2011 in Botswana, Participants also perceived social risks and dangers associated with home-based testing including the potential for conflict, coercion, stigma, and psychological distress within households

This findings agrees with findings from other studies that HCT can be time-consuming, as the provider must move from home-to-home, and family disclosure, especially of parents to children, may be difficult, as the parent(s) have to deal with knowledge of their status first and that testing everyone at the same time may mean premature disclosure, which can lead to adverse social outcomes. **(28)** The challenges include the counseling environment in complex polygamous households, meeting the specific needs of young clients, and compassion fatigue associated with testing entire families leading to burnout reported in some instances. **(26)**

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Generally, the results of this study have shown that the level of HCT uptake in Turbo is high. The study found out that the older one is and having knowledge of HCT increases the chances of utilization HCT services.

6.2 RECOMMENDATIONS

Basing on the findings of this study, it is recommended that:

- The policy makers (NASCOP) and other stake holders should intensify more innovative ways of providing education and knowledge on HCT through means such as leaflets, posters etc.
- The policy makers should also find ways in which the youth could be reached at home and encouraged to test for HIV.

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Appendix I: Questionnaire

I am a graduate student at Moi University, School of Public Health, pursuing masters in Public Health. As part of the requirement of this course, I am carrying out a research on Uptake of home based Counseling and Testing (HCT) in Turbo Division, Eldoret West District, Kenya. For this reason I am requesting you to fill the questionnaire as accurately as possible. All information given will be treated with confidentiality. Your name will not appear along with your responses.

Your participation will be highly appreciated.

The Academic Model Providing Access to Healthcare (AMPATH) Program carried out home-based HIV counseling and testing (HCT) in Turbo Division, Eldoret West District. The project provided HIV counseling and testing services to persons >13 years and those < 13 years old whose mother or both parents are HIV positive or deceased. Tuberculosis screening was done and mosquito nets for malaria prevention were distributed as a means for AMPATH to extend beyond HIV and address other primary health care problems.

This questionnaire is addressed to only those who participated in the HCT exercise done 2008-2009.

SECTION A: Demographic Characteristics

1. Age of Respondent in years

   Date of Birth……/……/…….
2. Gender of respondent
   1. Male ☐ 2. Female ☐
3. Marital Status
   1. Single ☐
   2. Married ☐
   3. Divorced ☐
   4. Separated ☐
   5. Widowed ☐
   6. Others (please specify)_____
4. Highest Educational Level attained

1. None ☐
2. Primary ☐
3. Secondary ☐
4. University ☐
5. Others (please specify)_____

5. Religion
   1. Catholic ☐
   2. Protestant ☐
   3. Muslim ☐
   4. Others (specify)_____
6. Occupation
   1. Formal employment ☐
   2. Informal employment ☐
   3. Unemployed ☐

   Please Specify Occupation_____

SECTION B: Information on HCT

7. Have you ever heard of HIV/AIDS?
   1. Yes ☐ 2. No ☐

8. Have you ever been tested for HIV?
   1. Yes ☐ 2. No ☐

9. If yes to question 9 above, where were you tested for HIV?
   1. At home ☐
   2. In a VCT centre ☐
   3. At the hospital ☐
   4. Others (Please Specify)

10. Do you know anything about Home based Counseling and Testing (HCT)?

1. Yes ☐ 2. No ☐

11. (If yes to question 11) where did you get the information on HCT from?

1. Parents/Peers/Relatives ☐
2. Electronic Media ☐
3. Print Media ☐
4. Learning Institutions ☐
5. Community Mobilizers ☐
6. Others (Please Specify)_____

SECTION C: Information on uptake of HCT

12. Did you utilize the AMPATH HCT services

1. Yes ☐ 2. No ☐

13. Which services did you utilize

1. Counseling Service only ☐
2. Counseling and Testing services ☐

14. In your opinion, do you think that the counseling and testing process was effective to you?

1. Yes ☐ 2. No ☐

15. Did you feel that the counseling and testing services were exhaustive to you?

1. Yes ☐ 2. No ☐

16. Did you find the HCT services convenient to you and your family

1. Not convenient at all ☐
2. Somehow convenient ☐
3. Not sure ☐
4. Highly convenient ☐

17. In your opinion, what AMPATH HCT services did you find inconvenient?

1. Counseling services ☐
2. Testing services ☐
3. TB services ☐
4. De-worming services ☐
5. Malaria prevention services ☐

SECTION D: Information on perception of HCT exercise at home

SA- Strongly agree
A- Agree
N- Neutral
D- Disagree
SD- Strongly Disagree

	SA	A	N	D	SD
18. Testing at home is convenient than testing at the hospital	☐	☐	☐	☐	☐
19. It is difficult to test at home in front of family members	☐	☐	☐	☐	☐
20. Testing at home enhances disclosure	☐	☐	☐	☐	☐
21. It is difficult to test youths at home	☐	☐	☐	☐	☐
22. Couples always agree to test together	☐	☐	☐	☐	☐
23. Testing at home brings HCT services closer to the people	☐	☐	☐	☐	☐

Appendix II: Consent Form

Title: To determine the factors that affects the uptake of Home-based Counselling and Testing of HIV, Turbo Division Kenya.

Investigator
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Purpose and Background
The purpose of this study is to determine the factors that affect the uptake of Home-based Counselling and Testing of HIV. It is hoped that the results will be used to help improve the HCT services by AMAPTH.

Procedure
Individuals will be randomly selected and interviewed using a structured questionnaire.

Benefits and Risks
There will be no direct benefits for those participating in the study; neither will there be any risks involved.

Confidentiality
All information will be used only for the purpose of the study

Voluntary participation
The participation in the study is voluntary and participants are free to accept or not accept to take part in the study and to withdraw at anytime

Consent
I have read the above information/I have been explained to in details about the study. I have asked questions and received answers and I agree to participate in the study.

Signature_____ Date_____

Signature of interviewer_____ Date_____