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An Analysis of Uptake in HIV Voluntary Counselling and Testing Services: Case of Mount Kenya University Students, Kenya

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Abstract

Early testing for HIV/AIDS offers many benefits for young people but in many countries it is still rare. Where services are still fairly low as in Kenya, people may feel that the risks of knowing and disclosing their sero-status outweigh the benefits; hence one important challenge in addressing the needs of young people lies in understanding the extent to which the young people know about and use protective measures against the risks. VCT is a key intervention in HIV prevention. Being a prevention program VCT seeks to initiate behaviour change yet its uptake is still wanting.

Data from the Mount Kenya University HIV/AIDS open day carried out at the main campus in 2010 by LVCT showed that only 18.4% of the students had VCT. Currently, despite 90% of HIV prevention programs targeting the youth, VCT is not taken by all. The rate of HIV VCT among the youth is persistently low with studies showing that only a small proportion of youth have undergone VCT in Kenya. Although there is high awareness among the youth with majority acknowledging the importance of VCT, there was need to investigate the low uptake of VCT amongst university students. From the Kenya National AIDS Strategic Plan 2005/6 - 2009/10, the national target of having 80% of the population being tested by the year 2010 is yet to be achieved. This makes it necessary to assess the uptake of VCT from time to time and explore ways of increasing its uptake.

The study employed a cross sectional survey that was conducted among Mount Kenya University students in Thika district. Multi-stage sampling was used to pick the respondents. Only schools and departments with students from year 1 to year 4 of study were considered. The number of participating students from schools and departments were predetermined by population proportionate allocation with individual study subjects being picked using a table of random numbers. A sample size of 283 respondents was used as determined by Fischer et al equation with the expected VCT uptake of 28%.

The data was collected using questionnaires and focus group discussions from October to November, 2011. Processing of data was carried out using the Statistical Package for Social Scientists (SPSS Version 16). Descriptive statistics and frequency tables were used to describe the characteristics of participants while chi-square test was used to test association between dependent variables (knowledge, perception, socio-economic, school-based and programmatic factors) and independent variable (Level of uptake). The data was summarized in tables; and presented using graphs and charts. Odds ratio with 95% confidence intervals was used to show associations and p-value <0.05 was considered a statistically significant level of precision. Qualitatitive data fom FGDs was recorded on note books and content analysis technique was used to summarize the findings . Uptake of VCT services was categorized into two: Uptake (at least one visit) and no uptake (no visit).

The uptake of VCT services among MKU students is 76% with the three leading reasons for uptake being “To satisfy curiosity”, “To seek early treatment” and “To determine a partner’s degree of faithfulness”. Leading reasons for non-uptake of VCT services are “Fear of a positive result”, “Fear of people finding out” and “Not feeling at risk”. Knowledge of VCT is quite high at 80% with the most common sources of first VCT information being radio, television and open forums. Mothers and Nutrition counseling are important in influencing the uptake of VCT by the students. Majority of the students perceive VCT to be important in the fight against HIV. Majority of the students have a positive attitude toward VCT with over 80% of them willing to go for the service. Age affected VCT uptake with older students being more likely to go for VCT. Religion was associated with VCT uptake with majority of the students who went for VCT being protestant or catholic.

School-based factors that influence VCT uptake among MKU students are type of course one is studying and year of study; with the final year students having the highest rate of uptake of VCT while pharmacy students have the lowest rate of VCT uptake. The key programmatic factors that influence VCT uptake are quality of services, location and appearance of VCT center. From the findings of this study, there is need to review the design and location of VCT centers targeting the youth to make them more youth friendly. Mount Kenya University can improve VCT service delivery by having the entire health unit staff trained in VCT. This will enable them to provide the service on demand.

Key Words: Voluntary counseling& Testing, Mount Kenya University students

1. Introduction

HIV/AIDS pandemic is a major public health issue globally. Early detection of HIV infection is not only useful in preventing further infection but also part of the strategy to improve treatment outcomes. Some treatment programs have reported high mortality in patients receiving anti-retroviral therapy because of late presentation (Jerene et al., 2006). WHO interventions for HIV prevention focused on key areas such as counselling and testing as the entry point to treatment, prevention and comprehensive programs to HIV/AIDS infection among infants, women and young people (WHO, 1994). However, in most Sub – Saharan African countries, many people still do not know their HIV status.

Worldwide, an estimated 11.8million young people aged 15 – 24 years are living with HIV/AIDS, yet only a fraction of them know that they are infected. Globally, AIDS is the 2nd most common cause of death among the youth aged 20 – 24 years (KDHS, 2003). In 2007, about 45% of new HIV infections worldwide were among the young people aged 15-24 years (UNAIDS, 2008). In Sub–Saharan Africa, 60% of all new HIV infections occur among young people between the ages of 10 – 24 years (UNAIDS 1998). Kenya is one of the Sub – Saharan countries highly affected by the HIV/AIDS pandemic. According to the KAIS report of 2007, the national HIV prevalence rate is 7.4%. The prevalence rate for Central province is 3.6% while that of Thika District is 3.8%. In the year 2011, the HIV prevalence rate of Thika rose to 6.4%. Kenyan youth (15 – 24 years) have a HIV prevalence of 3.8% (KAIS, 2007).

VCT has become a widely advocated HIV/AIDS prevention strategy among adults. Most clients of VCT services are adults in their mid –to late twenties (Coates et al., 1998; Ladner et al., 1996; Allen et al., 1992). By helping clients learn about their HIV sero-status and creating a personalized HIV risk reduction plan, VCT can provide the information necessary to change risky behaviours that can lead to HIV infection or transmission (CDC, 1994). It is cost effective, and a gateway to most HIV related services including provision of anti-retroviral drugs, preventing opportunist infections and preventing mother – to child – transmission of HIV(Coates set al., 1998).Whether VCT works for the youth is questionable.

In Kenya, 57% of the population has never been tested for HIV (KDHS, 2007). The national target of having 80% of the population being tested by 2010 is yet to be achieved. Currently the national HIV testing rate is 36.6% that of central province is 34.5% while that of the youth (20-24 years) is 53.1% (KAIS, 2007). VCT contributes 30- 45% of total HIV testing in Kenya. However, many young people do not seek VCT services until they develop symptoms of AIDS (Kiragu, 2001). A review of 4,625 VCT data records of clients' aged 15 – 24 years in Kenya for a period of 5 months from LVCT Home Based Counselling and Testing Program in 2007, only 29.5% were tested (LVCT, 2007). Data from the Mount Kenya University HIV/AIDS open Day carried out at the main campus in 2010 by LVCT showed that out of a student population of 5811, only 1500 students visited the VCT out of which 1070 were tested. That is only 18.4% had VCT.

In view of the above, VCT utilization among the youth is still quite a challenge and there is still a need to review the information, counseling and testing strategies so as to reach the youth who are vulnerable to HIV/AIDS.

Mount Kenya University is a privately funded university located in Thika, 45 kilometres northeast of Nairobi, the capital city of Kenya. Currently the University has 7 schools, 14 departments and 74 programs. It has 6 campuses namely Coast, Nairobi, Nkubu , Eldoret, Kitale and Nakuru. The total student enrollment is 19,177. The main campus has 6 schools with a total of 24 departments and 73 programs. It has a student population of 8,380 out of which there are 193 Postgraduates, 3,700 degree, 3,154 diploma and 1,333 certificate students. The degree student population of 3,700 distributed within the 6 schools, in a total of 9 departments and 14 programs.

Table 1: **Table showing the distribution of undergraduate students in various schools**

School	Student population
Health Sciences	216
Education	2394
Business and Public Management	682
Pharmacy	184
Pure and Applied Sciences	224
TOTAL	**3,700**

The peri-urban setting of Mount Kenya University main campus provides an atmosphere that is both beneficial and challenging; for intellectual activity and recreation. Thika is an industrial as well as an academic town. The university is in close proximity to the industries and health facilities which provide training opportunities for the students.

The University has incorporated HIV/AIDS education in its curricular in line with the CHE requirements. It is taught to all students as a compulsory common unit. There is a Sub-AIDS control unit which partners with CHE to highlight the importance of VCT with TOWA funding. Sub-ACU partners with relevant partners such as LVCT, WEHMIS and APHIA II to sensitize students on HIV/AIDS and carrying out VCT services in order to encourage VCT uptake. The unit does not provide ART for treatment or prophylaxis. In the event that a student needs treatment, the Thika District Hospital Comprehensive Care Clinic is used as a referral. The university general laboratory is used to carry out HIV tests. There is a University Counsellor who takes care of all the counseling needs of all the students including HIV/AIDS. However, there is no specialized VCT counselor.

Thika is the center of politics both in Kiambu and Muranga counties. Thika town experienced fast development due to resource allocation while the rural areas remained relatively undeveloped. Ordinary residents of Thika district have benefited a lot from infrastructural development. Health care services development lags behind the population growth. Thus the available health facilities cannot cope with the demand for such services and this imbalance coincided with the HIV/AIDS pandemic. This contributes to the district's fairly high HIV/AIDS prevalence rate.

1.0Problem Statement

The national target of having 80% of the population being tested by the year 2010 that was set in the Kenya National AIDS Strategic Plan (KNASP) 2005/6-2009/10) is yet to be achieved. According to the KAIS (2007), the national HIV prevalence rate is 7.4% while the youth (15-24 years) have a prevalence of 3.8%. In Thika District where Mount Kenya University main campus is located, the HIV prevalence rose from 3.6% in the year 2007 to 6.4% in year 2011(KAIS, 2007; KAIS, 2011). One of the strategies to reduce this prevalence is to focus on increasing uptake of VCT services.

However, data from the Mount Kenya University HIV/AIDS open day carried out at the main campus in 2010 by LVCT showed that out of a student population of 5811, 0nly 1500 students visited the VCT out of which 1070 were tested. That is, only 18.4% had VCT. Currently, despite 90% of HIV prevention programs targeting the youth, VCT is not taken by all (KDHS, 2003; Adam and Mutungi, 2007; Serrubide, 2009). The rate of HIV VCT among the youth is persistently low with studies showing that only a small proportion of youth have undergone VCT in Kenya (Adam and Mutungi,2007; LVCT, 2007). Although various studies have shown that there is

high level of awareness among the youth with majority acknowledging the importance of VCT, there was need to investigate the probable reasons for low uptake of VCT amongst university students.

MKU has not done any systematic assessment to determine the level of uptake and factors influencing the uptake of VCT services. This study aimed at determining the factors associated with the uptake of the service at MKU was paramount to informing ways of improving the reach and quality of VCT services among the University going students.

2. Literature review

2.0 Introduction

Limited research on the effectiveness of VCT program as it relates to college youth participation has been done in some countries in the world. To get an insight on the research done on the VCT program the knowledge, attitudes and practice of the youth towards VCT will be considered in this section.

2.1 Uptake of VCT by the youth

VCT is a key entry point in the fight against HIV/AIDS; but its usefulness depends on the uptake of the services by the people. According to the founding Executive Director of UNAIDS, Peter Piot, prevention of HIV infections is still a major challenge:

"What really concerns me is that while we have made measurable progress on access to treatment, we don't have the same impact when it comes to HIV prevention" (UNAIDS, 2008).

VCT has been widely advocated as a HIV/AIDS prevention strategy among adults. Most clients of VCT services are adults in their mid- to late twenties (Coates e al., 1998; Ladner et al., 1996; Allen et al., 1992). Whether VCT works for the youth is questionable. Since few young people use any health services, using VCT as a strategy to reduce risk behaviours among young people appears to be more challenging than it would be among adults. These sentiments are supported by a number of research studies that have shown persistently low uptake of VCT services by the youth. A baseline surveillance data obtained from a representative sample of 1917 students of Moi University in Eldoret, Kenya in 2007 showed that 89% of students reported thinking they were at risk of HIV infection. Out of these only 28% of the subjects had been tested for HIV through VCT (Adam and Mutungi, 2007). Data from the Mount Kenya University HIV/AIDS open Day carried out at the main campus in 2010 by LVCT showed that out of a student population of 5811, only 1500 students visited the VCT out of which 1070 were tested. That is only 18.4% had VCT.

In view of the above, VCT utilization among the youth is still quite a challenge and there is still a need to review the information, counseling and testing strategies so as to reach the youth who are vulnerable to HIV/AIDS.

2.2 Knowledge, Perceptions and Attitudes of youth towards VCT

There is a general assumption that young people have adequate knowledge which should influence positive values and attitudes. Uptake of VCT by youth is influenced by their perception of VCT. Studies have shown that about half of the youths do not have a strong positive attitude towards VCT. The willingness of many youths to go for VCT has been reported by a number of studies, however only a small proportion actually has done so.

In a study carried out by Horizons in 2001, findings show that majority of the youth believed that information about HIV/AIDS had changed their behaviour. Fifty percent (50%) of the youth interviewed reported abstinence while 20% practiced safe sex after exposure to HIV/AIDS information (Horizons, 2001). According to a study done in Ethiopia in 2006, majority of the students had high confidence in using VCT. 97% of the high school students had heard about VCT services but less than $^{1}/_{5}$th of them had undergone VCT.

2.3 Socio-demographic and economic factors

Surveys have shown that the youth have a strong interest in knowing their HIV status and think that undergoing VCT was important. However, majority of youth do not perceive themselves to be at risk of HIV infection despite their high sexual activity with inconsistent condom use (Fylkenes and Siziya, 2004). This is explained by

Refaat in his study on Egyptian University Students in which he says that the youth fail to personalize the risk of HIV and separate themselves from the problem. They feel invulnerable and have trouble seeing the long term consequences of their risky sexual behavior (Refaat, 2004). According to another study carried out in Ethiopia in 2006, willingness for VCT was affected by age, education and previous sexual experience. Majority of them had high confidence in using VCT but less than a fifth of them had undergone VCT (Abebe and Mitikie, 2006).

2.4 Programmatic factors

The location of the VCT centre seems to have an effect on the utilization of the services. Most youths fear going to VCT facilities where they are likely to meet with relatives or people who know them. The location of the VCT facility can lead to lack of privacy and issues of confidentiality.

In a study on the knowledge, attitudes and practice of secondary school students towards VCT, the barriers to youth uptake of VCT services were cited as lack of a clear link between VCT and treatment and care, lack of adequate information, perception of low risk, lack of privacy and confidentiality (Muganda and Otieno, 2003). Most youths are averse to stand alone VCT centers since they feel that it will expose them to rumours. They are also averse to VCT centers in Government Health facilities because they feel that they are likely to meet their parents or people they know at the facility (Horizon, 2003).

2.5 Summary of Literature Review

In summary, there is high awareness of VCT services among the youth. There is still fear of being seen going for VCT among the youth. Knowledge of VCT services is high although the accuracy of the knowledge is in doubt in some cases. However, the knowledge does not translate to uptake of VCT services; hence uptake of VCT services is low. Some studies show that knowledge of VCT services increases behaviour change and uptake of the services while other studies show that knowledge does not always increase the uptake of the services, but rather, it is repeated VCT discussions that encourage the youth to take up the services. The fact that behaviour change is happening at such low pace raises doubts about the quality, appropriateness and presentation of information to the youth. Some studies show that high perceived susceptibility increases uptake of VCT services while others show that it does not. The youth have high group risk perception but low perception of self risk yet they engage in risky sexual behaviour that exposes them to HIV. In view of the above, VCT utilization by the youth is still quite a challenge and there is need to review the information, counselling and testing strategies so as to reach the youth who are vulnerable to HIV/AIDS.

3. Methodology

3.0 Study Design

A cross sectional study was conducted to assess the level and factors affecting the utilization of VCT services among students of Mount Kenya University. This design accommodates both descriptive and analytical components. Both qualitative and quantitative data was collected. Study Population was degree students at the main campus of Mount Kenya University. The population of degree students was 3,700 with 2243 males and 1457 females. This represents 44 % of the total population of MKU. Sample Size determining the population proportion was obtained using Fisher et al, 1998 formula:

$no = \frac{Z^2 \sigma/_2 p(1-p)}{e^2}$ .....equation 1

Where:

Z = 1.96 (if the population is approximately normal when 95% bounds on the values in the population)

p = proportion of students expected to uptake VCT, 28% (Adam and Mutungi, 2007)

1- p = proportion of students not expected to uptake VCT

e = 0.05 (degree of accuracy at 95% confidence level)

Hence $no = \frac{1.96^2 * 0.28(1-0.28)}{0.05^2}$ = 309.78

= 310

$$n = \frac{no}{1 + \frac{(no - 1)}{N}}$$

……equation 2

In determining the sample size for this research, a sample size of 310 was needed (rounded from 309.78). Using the finite correction factor in above equation (equation 2), with N = 1021, e = 0.05 and Z = 1.96 (95% confidence), leads to

$$n = \frac{310}{1+\frac{(310-1)}{1021}} = 238$$

A 20% attrition rate was added, bringing the total sample size to 386.

The data was analyzed using frequencies, percentages and cross tabulation was done using chi-square test. Statistical Package for Social Scientists (SPSS version 16) was used for the data analysis. Association between different genders and VCT uptake, course type and VCT uptake and year of study and VCT uptake were determined. A contingence table for testing dependence through chi-squire test was developed. Level of uptake was defined as those who attended VCT centers for services at least once while those who did not were considered 'No uptake'. The analysis sought to measure the associations between variables, and odds ratio was used to show the strength of the associations. An OR<1 was taken to be significant.

4. FINDINGS

4.1 Association between knowledge of VCT services and uptake of VCT

Table 2 below indicates the frequencies and association between knowledge of VCT services and uptake of VCT. From the results there was a varied knowledge of VCT services among the students. About 80% of the students had knowledge of most of the services provided at the VCT. Generally, uptake of VCT was higher among the students who had knowledge of VCT services compared to those without. More than three-quarters of the students who thought there was pre-testing counselling, post-test counselling and actual testing services at the VCT attended VCT. Existence of nutritional counseling was significantly associated with uptake of VCT services (p=0.011, OR=2.2). Students who knew of the existence of nutrition counseling at the VCT services were almost twice as likely to undergo VCT compared to those who did not know. Slightly over ½ of the students who said there existed nutrition counseling attended VCT compared to about $^{1}/_{3}^{rd}$ who did not. A significant number (26.6%) of students did not think that actual testing took place at the VCT. This is supported by the FGD discussants who said that most students are anxious about what goes on during VCT. As one discussant put it*," students don't know the procedure of what takes place during VCT, they only try to guess what happens and this keeps them off".*

***Table 2**: Knowledge of services offered at VCT and VCT uptake*

Service	**Uptake of VCT % (n/N)**	**No Uptake % (n/N)**	**Odds ratio (95% CI)**	**P Value**
Pre- Test counseling	93.1(190/204)	91.8(56/61)	1.2[0.4-3.5]	0.723
Post- Test counseling	80.6(162/201)	77.0(47/61)	1.2[0.6-2.4]	0.546
Nutrition Counselling	51.7(92/178)	32.8(20/61)	**2.2[1.2-4.0]**	**0.011***
Actual Testing	87.2(163/187)	62(50/81)	1.6[0.8-3.5]	0.206
Referral	18.9(25/132)	23.4(11/47)	0.8[0.3-1.7]	0.512

*The odds ratios and P values are comparing the odds for services offered at VCT between those who uptake and those who don't. The comparison is between those who said "yes" to services offered at VCT. Significant at P<0.05.

4.2 Perception of university students toward VCT

Of the 283 students interviewed, majority 148 (53.6%) were of the view that it's not easy at all to undergo VCT as shown in Table 3 below. This concurs with the views of the discussants in all the FGDs, who said that it was not easy to undergo VCT. Majority (84.5%) of the students agreed they were willing to undergo VCT. About a

quarter of students were totally unwilling to undergo VCT. The students who agreed that VCT was important in the fight against HIV were 79% more likely to go for VCT compared to those who disagreed (55.6%). Perceptions of the importance of VCT in the fight against AIDS and willingness to undergo VCT were significantly associated with VCT uptake with values of p= 0.006 and p=0.003 respectively. Over ¾ of the students agreed that VCT is important. Perception of self risk to HIV infection was not significantly associated with VCT uptake with about ½ of the students perceiving themselves to be at high risk of getting HIV.

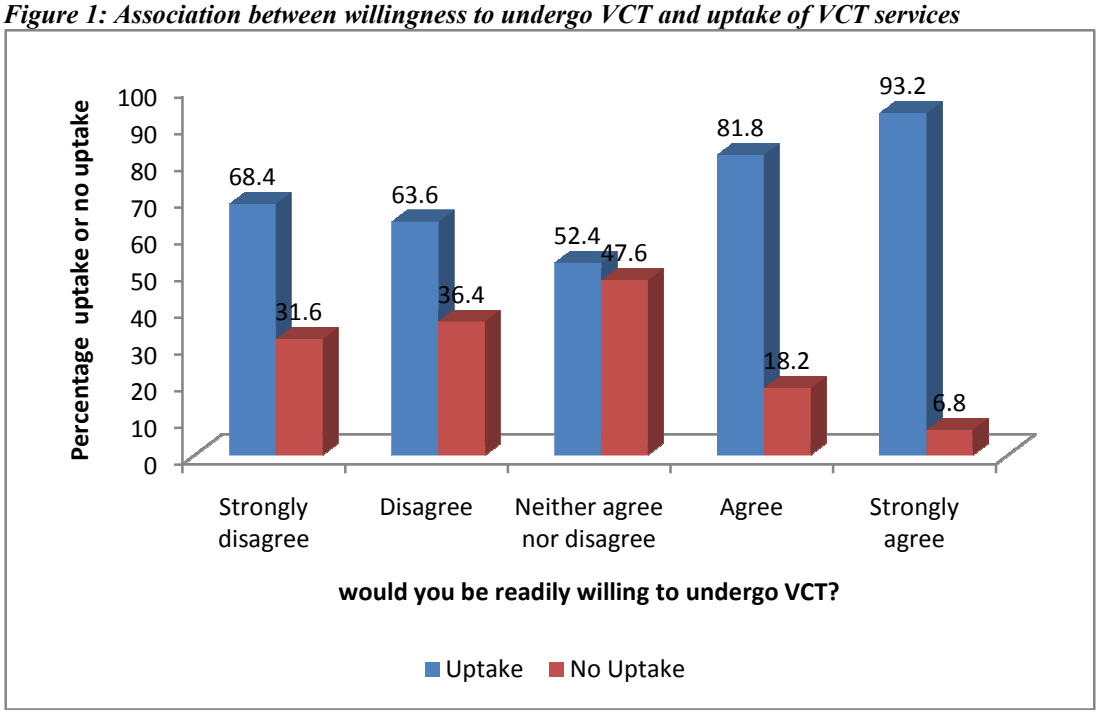
***Table 3*: Perception of students on uptake of VCT at MKU University**

Perception factors	**Uptake of VCT n(%)**	**No Uptake of VCT, n(%)**	**P value**
How easy is it to undergo VCT?			
Not easy at all	112(75.7)	36(24.3)	
Very easy	37(75.5)	12(24.5)	0.359
Somewhat easy	66(83.5)	13(16.5)	
Would you be readily willing to undergo VCT			
Strongly disagree/Disagree	40 (66.7)	20 (33.3)	0.003
Agree/Strongly agree	153 (84.5)	28 (15.5)	
Is VCT important in the fight against HIV/AIDS			
Strongly disagree/Disagree	15 (55.6)	12(44.4)	
Agree/Strongly agree	188 (79.0)	50 (21.0)	0.006
In your opinion, are the youth in college at high risk of getting HIV			
Strongly disagree/Disagree	35(76.1)	11(23.9)	
Agree/Strongly agree	175 (76.8)	53(23.2)	0.922
Are you at high risk of getting HIV			
Strongly disagree/Disagree	93(75.0)	31(25.0)	
Agree/Strongly agree	92(83.6)	18(16.4)	0.105

***The P values are comparing the perception of VCT between those who uptake and those who don't. Significant at p<0.05**

Figure 1 below indicates the association between the willingness to undergo VCT and VCT uptake. Over ½ of the students were willing to go for VCT. The results show that VCT uptake was higher (above 81%) among the students who were willing to undergo VCT compared to those who were not readily willing to undergo VCT (below 69 %.) Indecisiveness had influence on VCT uptake with slightly less than ½ (47.6%) of the undecided students not going for VCT.

Figure 1: Association between willingness to undergo VCT and uptake of VCT services



4.3. Attitude of university students towards VCT

Table 4 below shows the students attitude towards VCT. The results show that over three-quarters of the students would be comfortable using VCT services irrespective of their friends' opinion. Factors that were significantly associated with uptake of VCT included willingness to undergo VCT by one's own choice (P-value=0.000, OR=3.6), being comfortable to use VCT services (P value =0.001) and the role of one's partner (P value=0.010, OR=2.3). The most likely person the students would share a positive HIV result with is their partner. Generally, most of the students have a positive attitude towards VCT.

Table4: Attitude towards VCT and uptake of VCT among MKU students

Attitude factors	**Uptake of VCT n(%)**	**No Uptake n(%)**	**Odds Ratio [95% CI]**	**P Value**
Would you undergo VCT by your own choice irrespective of outstanding factors? Yes No	 197(79.4) 18(51.4)	 51(20.6) 17(48.6)	 3.6[1.8-7.6]	 0.000
Would you be comfortable using VCT services? yes no Don't know	 136(78.6) 14(60.9) 65(74.7)	 37(21.4) 9(39.1) 22(25.3)	 -	 0.001
Would the opinion of your friends change your decision to go for VCT? Certainly Yes Certainly Not	 37(77.1) 167(76.3)	 11(22.9) 52(23.7)	 1.05[0.5-2.4]	 0.907

if you tested and found Positive, whom do you think you can tell ?					
Both Parents :	Yes	53(75.7)	17(24.3)	1.0[0.5-2.0]	0.910
	No	105(75.0)	35(25.0)		
Father:	Yes	35(72.9)	13(27.1)	0.9[0.4-1.9]	0.826
	No	114(74.5)	39(25.5)		
Partner:	Yes	91(82.0)	20(18.0)	2.3[1.2-4.3]	0.010
	No	70(66.70	35(33.3)		
Friend	Yes	34(79.1)	9(20.9)	1.4[0.6-3.1]	0.430
	No	120(73.2)	44(26.8)		

*The odds ratios and P values are comparing the odds for attitude factors towards VCT between those who uptake and those who don't. Significant at P<0.05.

4.4 Socio-demographic and economic factors influencing uptake of VCT services among MKU students

Table 5 below indicates the association between socio-demographic and economic factors; and VCT uptake. Age and religion were significantly associated with VCT uptake at p=0.045 and p=0.003 respectively. Students who are Catholics, Protestants and Muslims are 80% more likely to go for VCT compared to those with no religious affiliation. The results show that students above 21 years of age are more likely to attend VCT services than younger students.

Level of financing amongst the students did not have any association with uptake of VCT.

Table5: Association between socio-demographic and economic factors and uptake of VCT

Socio-demographic and economic factor	**Overall** N=283	**Uptake of VCT** N (%) 215 (76.0%)	**No Uptake** N (%) 68(28%)	P value
Gender				
Female	142	109(76.8)	33(23.2)	
Male	141	106(75.2)	35(24.8)	0.755
Age Category				
16-20	85	54 (63.5)	31(36.5)	
21-25	183	146(79.7%)	37(20.2%)	0.045
26 and above	15	10(66.7)	5(33.3)	
Religion				
None	7	2(28.6)	5(71.4)	
Protestant	161	118(73.3)	43(26.7)	0.005
Catholic	88	74(84.1)	14(15.9)	
Muslim	20	17(85.0)	3(15.0)	
others	6	4(66.7)	1(33.3)	
Level of financing				
excess	7	5(71.4)	2(28.6)	
sufficient	192	140(72.9)	52(27.1)	0.218
Not sufficient	81	67(82.7)	14(17.3)	

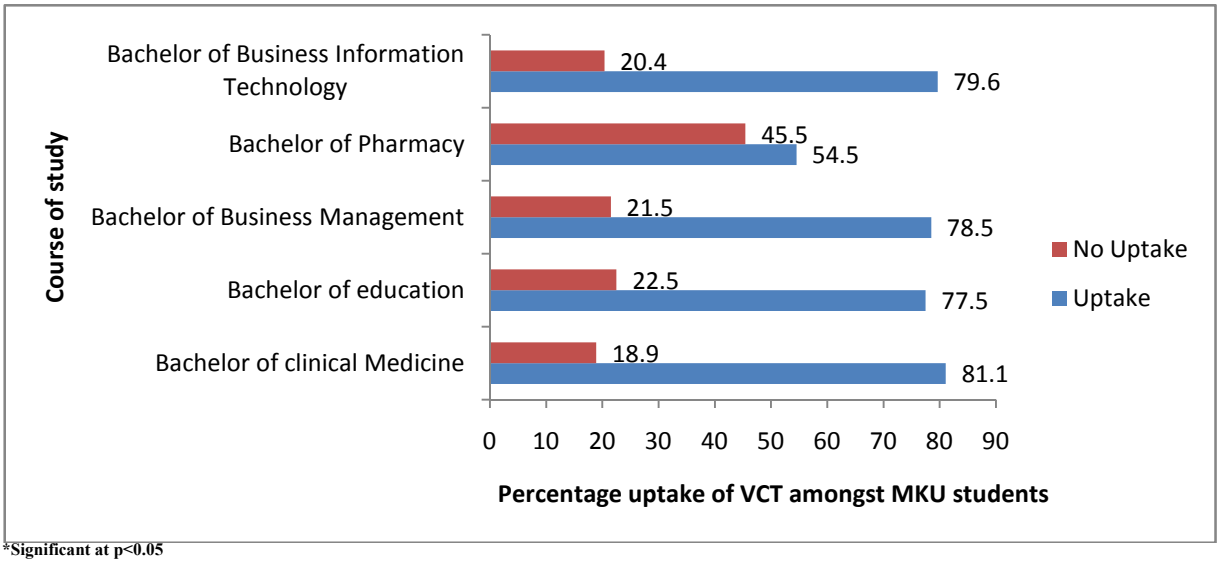
*The P values are comparing the odds for socio-demographic and economic factors between those who uptake VCT and those who don't. Significant at p<0.05

4.5 School- based factors influencing VCT uptake

From Figure 2 below, the results show that there is some association between the course of study and VCT uptake. Students in majority of the courses had quite a high VCT uptake of above 77% and only the students undertaking Pharmacy course had a lower VCT uptake of below 55%.

This resonates with the views of the discussants in Focus Group Discussion 3 comprising of Pharmacy students. Their general view was that HIV testing should be done by the individual in private. Also they highly doubted the accuracy of the reagents used in the test hence were reluctant to go for the test. In the words of one of the discussants, *"There are test errors which give a false positive result. The reagent for rapid HIV testing gives a positive result when it is used in excess irrespective of the HIV status of the person, therefore results are not reliable".*

***Figure 2**: Association between Course of study and VCT uptake*

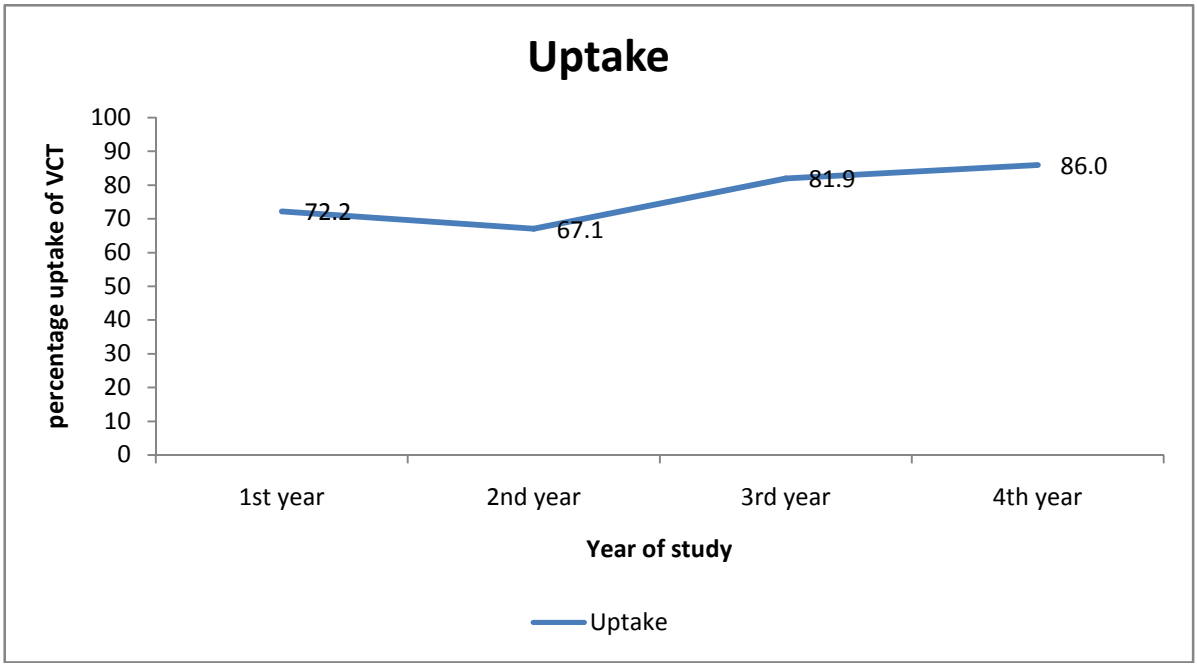


***Significant at p<0.05**

Figure 3 below indicates the association between year of study and VCT uptake. The results show the year of study is a significant predictor of uptake of VCT. The uptake of VCT generally increases with period of stay at the university with the highest uptake being among the 4th year students. However, there is a dip in this trend at the 2nd year of study; with students in their 2nd year of study having the lowest VCT uptake rate.

This was supported by all discussants in the Focus Group Discussion who unanimously agreed that students opt to undergo VCT in their later years of study because that is when they are about to finish college hence time for decision making. "*This is the time when one thinks of their future such as getting married and settling down; and they begin to take life more seriously".*

Figure 3 *Trends of VCT uptake and No uptake by year of study amongst MKU students*



4.6 Programmatic factors influencing uptake of VCT service among MKU students

Table 6 below indicates the influence of programmatic factors on VCT uptake. The results show that majority of the students felt that location and appearance of the VCT center influence utilization of VCT services. However, the two were not significantly associated with VCT uptake. Students who felt that location does not influence VCT utilization were more likely to attend VCT than those who felt that location influenced VCT utilization. While students who felt that appearance of the VCT center does influence VCT uptake were more likely to uptake VCT service compared to those who felt that appearance of the VCT center did not affect utilization. Students who were satisfied with the VCT services were more likely to undertake VCT compared to those who were not satisfied, with those who were satisfied being higher up-takers of VCT service. Satisfaction with the services offered at the VCT was significantly associated with VCT uptake (p=0.000). The results were contradicted by the views of the discussants in all FGDs except those in FGD 3. The discussants unanimously agreed that an exposed location of the VCT center discourages utilization of the service.

As per one of the discussant's words, "*everyone who sees you going for the test concludes that you must doubt yourself because of your behaviour. They wait to determine your HIV status by trying to read your facial expression. It's discouraging."* All discussants except one preferred a VCT center that was integrated in a hospital set up such that one could not be identified to have gone for VCT. Majority of the discussants did not agree with the colour of the VCT center and the posters placed in them. They felt that the commonly used white colour is too judgmental. As one of the discussants put it, *"When you enter that white tent you feel like you have entered a judgment room. I guess that is what it will be like in heaven. It's frightening and most students walk away at this point."*

Table6. Programmatic Factors and uptake of VCT

Programmatic factors	**Uptake of VCT** N (%)	**No Uptake** N (%)	**P value**
Does the location of the VCT center influence utilization of the VCT service?			
certainly yes	143(77.7)	41(22.3)	0.108
certainly not	58(82.9)	12(17.1)	
don't know	14(66.7)	7(33.3)	
Were you satisfied with the services that you received at the VCT center?			
strongly disagree/disagree	28(84.8%)	5(15.2)	
neither agree nor disagree	7(46.7)	8(53.3)	0.001
agree/strongly agree	178(96.2%)	7(3.8%)	
Did like information provided? at the VCT?			
Yes	123(96.1)	5(3.9)	0.240
No	58(92.1)	5(7.9)	
Did you like -actual testing			
Yes	119(95.2)	6(4.8)	
No	64(95.5)	3(4.5)	0.920
Did you like -information on how to live after			
Yes	134(95.7)	6(4.3)	0.065
No	46(88.5)	6(11.5)	
Did you like -service provider attitude			
Yes	86(97.7)	2(2.3)	0.090
No	82(92.1)	7(7.9)	
Does the appearance of the VCT center influence utilization of VCT services?			
certainly yes	126(82.9)	26(17.1)	0.143
certainly not	71(74.7)	24(25.3)	
don't know	18(69.2)	8(30.8)	

*The P values are comparing the programmatic factors between those who uptake VCT and those who don't. Significant at $p<0.05$.

5. Discussion

5.0 Introduction

The Ministry of Health is determined to combat the HIV/AIDS pandemic. Early detection of HIV infection is not only useful in preventing further infection but also part of the strategy to improve treatment outcomes. VCT has become widely advocated as a HIV/AIDS prevention strategy among adults. The national target of having 80% of the population being tested by 2010 is yet to be achieved.

The study focused on factors associated with VCT uptake among the students in Mount Kenya University. The purpose of this chapter was to broadly discuss the analyzed data collected using the various data collection methods. The discussion is as per the specific objectives set out in section 1.4 in chapter one of the study.

5.1 General characteristics of respondents

A sample of 286 students was selected for the study but 283 responded. A total of 99% of the sample size responded while 1% declined. This response is quite satisfactory hence gives the findings credence. The study found that majority of the participants were youth below the age of 25 years. Of the 283 respondents who participated in the study, the males (50.2%) and females (49.8%) were evenly distributed. This agrees with the ratio of males to females in the University which was 1.5:1. The number of males was slightly higher in all the courses of study except in Clinical Medicine and Education. Education and Business Management had the highest number of students followed by Pharmacy. This is in agreement with the university records that indicate that the school of Education is the largest followed by the school of Business and Public Management. Majority (72.1%) of the students were single with a fairly even distribution of males (50.5%) and females (49.5%). A significant proportion of students were cohabiting (20.5%). Most of the students are Protestants or Catholics.

5.2 Level of VCT service uptake

The study showed that VCT uptake among the students was 76%. Though the VCT uptake is high, it is yet to reach the national target of having 80% of the population being tested by the year 2010(KNASP 2005/6-2009/10). This result differs from that of the work done by Adam and Mutungi (2007) at Moi University in which only 28% of university students had been tested for HIV through VCT. However, the study at Moi University was mainly on sexual risk behavior hence its definition of VCT uptake may not be in the same context as applied in this study. It also varies with the records of LVCT (2007) which showed that only 29.5% of youth aged 15-24 years had been tested. Likewise it is in disagreement with work done by Meshesha (2007) in Ethiopia in which out of 41% of youth who were aware of VCT services only 10% had VCT done. It also disagrees with the findings of Abebe and Mitkie (2006) which showed that out of 97% of students who had heard of VCT services, less than 20% of them had undergone VCT. It can be hypothesized that reception of VCT by the youth has increased. Since the level of VCT uptake at MKU is fairly high, it can be hypothesized that the vigorous campaigns with varied testing strategies have impacted positively on the youth. This has been the trend since the First HIV/AIDS open day held in 2010, coupled with the regular termly campaigns by the Counselling department.

However, the number of students undertaking repeat VCT is still low and the number generally decreases with increase in number of visits. It can be hypothesized that students are still apprehensive to undergo VCT. Majority of students muster enough courage to go for just the first VCT visit. Those who turn positive may go for repeat test due to denial. Those who test negative are unlikely candidates for repeat VCT visit. Such students prefer to live by the "negative" result for their own convenience and peace of mind. Majority of the students are convinced that being HIV positive is stressful to the youth and a good number of them would rather not know their status. This is compounded by the fact that there is no cure for HIV. From the FGD discussants, it was evident that the youth dislike routine things hence not good up-takers of ARVs, Family planning preparations and so forth. They like spontaneity. Thus the thought of being on ARVs in the event that one tested positive to HIV is a major challenge to them which compounds VCT uptake by the youth. A significant number (24%) of students have never gone for VCT. More males than females have not undergone VCT.

Majority of the students attended VCT "to satisfy curiosity", followed by "to seek early treatment" and "to determine a partners degree of faithfulness". The least number of students undertook VCT " on suspicion after infection by a STI". This is in agreement with the observation made by Horizon (2001) that most youth seek VCT "to know their status in general; which differed with the view of service providers who thought that youth seek VCT services because of exposure to HIV risk. However, there is an increase in the proportion of youth seeking VCT because of exposure to HIV (69%) compared to the 21% cited by Horizons (2001). Also, more of the youths who cited the reason for VCT as "to seek early treatment" were more likely to undergo VCT. This can be attributed to the increased availability of ARVs to manage HIV. Likewise, there is an increased proportion of youth seeking VCT to determine the partner's degree of faithfulness (55.3%) compared to the 30% cited by Horizon (2001). This can be due to the youths' acknowledgement that they have risky sexual behavior.

The most cited reason for not attending VCT was fear of a positive result followed by fear of people finding out, stigma, lack of youth friendly services, location of VCT and "Not feeling at risk". Students who cited "service provider attitude" as a reason for not attending VCT were the least likely to uptake VCT. This is in line with the observation of Horizon (2001) in which service providers were judgmental towards the youth. Confidentiality is a major concern to the youth. According to the students, lack of confidentiality was a major barrier to VCT uptake. The discussants in the FGDs were convinced that young and female VCT counsellors are the worst service providers since they cannot maintain confidentiality. *"These counsellors discuss their clients profile with other people",* said one of the discussants. The students prefer older females or male counsellors who are more likely to keep confidentiality. The effect of the fear of a positive result and stigma was echoed by all the

discussants. Almost all the FGD discussants believed that once a person tests positive for HIV, the rest of the students treat them differently. The individual is isolated to a large extent and a good number of them respond by rampantly spreading the infection. Spreading the infection is a defense mechanism such that in case one's status was disclosed then they respond by publicizing the list of possible casualties of the same. Although the Kenya National HIV and AIDS Strategic Plan (2005/6-2009/10) advocates for reduction of stigma against HIV positive people, results from this study indicate that there is still much to be achieved in the effort towards stigma eradication.

Effort was made to get secondary data from the MKU dispensary and laboratory. However, there were no records on VCT services at both entities. No records are kept for the very few students who have ever been tested. The university has made some effort to develop a HIV/AIDS policy but it is yet to be established.

5.3 Knowledge, Attitude and Perception of VCT

This study indicated that all the students had heard of VCT, hence knowledge of HIV and VCT has increased over the years. The study showed that majority of the students first heard about VCT from the radio, followed by television then open forums. Few students first heard about VCT from their lecturers or youth centers. This is in agreement with the findings made by Muganda and Otieno (2003) that the most common source of VCT information was the electronic media (TV and Radio). A large majority of VCT up-takers are those who first heard of VCT from their mothers followed by those who heard about it from youth and health centers. Generally, mothers are better in sharing information with their children and are more supportive of them in all circumstances.

A significant number (26.6%) of students did not think that actual testing took place at the VCT. This is in line with the work of Muganda and Otieno(2003) in which most of the young people still did not believe that they have enough information about VCT. This can be explained by the youths' curiosity coupled with anxiety as to what actually happens inside the VCT room. From the FGD discussants, it was evident that the youth were keen to know the procedure of what takes place in the VCT room in order to boost their confidence to attend VCT. Nutrition counseling was an important factor in VCT uptake; hence awareness of nutrition counseling is key in enhancing utilization of VCT by the youth. As indicated by some discussants, "*Some students go for VCT just to get nutrition information in order to help HIV positive people that they know".*

In regard to perception, majority (84.5%) of the students indicated that they were willing to undergo VCT although they felt that it is not easy at all to undergo VCT. VCT uptake was high (above 81%) among the students who were willing to undergo VCT. This is in contradiction to the findings of Abebe and Mitkie (2006) which showed that of the majority students who had high confidence in using VCT, less than a fifth of them had undergone VCT.

Most (88.3%) of the students who responded to the specific question on the importance of VCT agreed that VCT is important in the fight against HIV/AIDS. There is an increase in the perception of VCT being viewed as important in the fight against HIV as compared to the findings of Horizon (2001) which showed that half (50%) of the youth thought that undergoing VCT was very important; and those of Abebe and Mitkie (2006) which showed that only 25% of the youth agreed that VCT is an effective way to prevent HIV/AIDS. This can be attributed to increased awareness and knowledge on HIV management. Of the Students who responded to the question of self risk to HIV, there were about equal proportions of students who thought that they were at risk of getting HIV (47%) and those who thought they were not at risk (53%). This is a variation from the work done by Fylkenes and Siziya (2004) which reported that majority of youth do not perceive themselves to be at risk of HIV infection despite their high sexual activity with inconsistent condom use. The findings of this study are in disagreement with the work of Refaat (2004) in which he says that the youth fail to personalize the risk of HIV and separate themselves from the problem. There is an increase in the proportion of youth who have personalized risk to HIV.

Majority (64%) of the students had a positive attitude towards VCT. This is a variation from the findings of Muganda and Otieno (2003) which showed that about 50% of the respondents did not have a strong positive attitude towards the use of VCT. From the discussants in the FGDs, majority of the students however suffered from fatigue of hearing about HIV inclusive of VCT.

5.4 Socio-demographic and economic factors influencing VCT uptake

Generally, VCT uptake is slightly higher among females than in males. The study revealed that VCT uptake among females is 1.6% higher than in males. These results are in agreement with the findings of KAIS (2007) report which found that more women (40.7%) had been tested for HIV compared to men (24.9%). According to

the report, Kenya is yet to achieve its national 2010 goal of having 80% of all adolescents and adults in the country to be tested at least once. More testing is needed. Generally students aged 21-25 years had the highest attendance of VCT services. This is in line with the university statistics which indicate that most of the students are 21 and 25 years old; hence VCT up-takers are likely to be in this particular age bracket. This finding is in agreement with the findings of KAIS (2007) report which found that HIV testing rate was highest among the people aged 20 -24 years.

Students with no religious affiliation were the lowest up-takers of VCT. There was no statistical significance between finances and VCT uptake. However, the FGD discussants were convinced that finances influence VCT uptake for students who are at the extreme levels of finances. Students with a lot of money were likely to have multiple sexual partners. For some, they will acquire many sexual partners using their money as bait while for some, they are actually followed by members of the opposite sex who are attracted to them due to their money. On the other hand, some female students with low finances resort to prostitution for survival. Both cases result to the students having multiple sexual partners which makes them less likely to go for VCT due fear of a positive result.

5.5 School based factors influencing VCT uptake

The results showed that the course of study affected VCT uptake with pharmacy students being the lowest up-takers of VCT services. These are students who are well versed with HIV/AIDS and ARV action such that they are over confident of being capable of managing themselves should the situation demand so. The discussants in this FGD were the most critical of the VCT testing methods and reagents used. This criticism evidently influenced their uptake of VCT. On the contrary, Business Management students who had gaping knowledge gaps, exhibited the greatest fear for HIV infection but incidentally were more sexually permissive compared to other students. Uptake of VCT generally increased with progression in the year of study with 4th years being the highest up-takers of VCT services. During their final year of study, students tend to be cautious as they plan for their future after college. However, the uptake of VCT by 2nd year students is lower than that of the 1st years. This is attributed to the fact that by 2nd year the students have been influenced by campus life and most likely have sexual experience because they tend to be more active in their 2nd year of study; hence tend to be aversive to VCT. This being one of the factors that influence VCT uptake, it reduces their attendance of VCT. These results are in agreement with the work of Abebe and Mitkie (2006) in which the students' willingness to attend VCT was affected by age, education and previous sexual experience.

5.6 Programmatic factors influencing VCT uptake

The study showed that majority of the respondents thought the location and appearance of the VCT center influenced utilization of VCT services. This was supported by the discussants in all the FGDs. However, the two factors did not seem to significantly affect VCT uptake by the respondents. Students often avoid stand alone VCT sites. Majority of the respondents' preferred VCT sites in hospital set ups and in youth centers. Generally, the youth prefer VCT sites that are integrated in other activities so that their visit to the VCT is not obvious. They prefer that VCT centers acquire a different colour other than the characteristic white which made them feel like they are entering a judgment room. The wall hangings and charts in the VCT centre should not be HIV/AIDS specific only. The youth prefer that there be a mixture of informational charts and diverse wall hangings. This concurs with the work of Horizon (2001) which showed that most youths are averse to stand alone VCT centers since they feel that it will expose them to rumours. This is in agreement with the work of Muganda and Otieno (2003) which cited lack of privacy and confidentiality as barriers to VCT uptake. However, these study results differed with the findings of Horizon (2003) which showed that youths are also averse to VCT centers in Government Health facilities because they feel that they are likely to meet their parents or people they know at the facility

6. Conclusions and Recommendations

6.1 Conclusions

6.1.1 Level of uptake of VCT

The uptake of VCT services among MKU students is 76% with the three leading reasons for uptake being "To satisfy curiosity", "To seek early treatment" and "To determine a partner's degree of faithfulness". Leading

reasons for non-uptake of VCT services are "Fear of a positive result", "Fear of people finding out" and "Not feeling at risk".

6.1.2 Knowledge, perception and attitude towards VCT

Knowledge of VCT is quite high at 80% with the most common sources of first VCT information being radio, television and open forums. Majority of the students perceive VCT to be important in the fight against HIV. Majority of the students have a positive attitude toward VCT with over 80% of them willing to go for the service.

6.1.3 Socio-demographic and economic factors

Age affects VCT uptake with older students being more likely to go for VCT. Religion is associated with VCT uptake with majority of the students who go for VCT being protestant or catholic. Finances are not associated with VCT uptake.

6.1.4 School-based factors

The type of course one is studying and year of study influence VCT uptake among MKU students with the final year students having the highest rate of uptake of VCT while pharmacy students have the lowest rate of VCT uptake.

6.1.5 Programmatic factors

The key programmatic factors that influence VCT uptake are quality of services, location and appearance of VCT center.

The researcher's personal opinion is that, there is an increase in the VCT uptake by the youth and uptake is fairly high. It is not low as indicated by earlier studies. A review of the location and design of VCT centers targeting the youth will greatly enhance uptake of the VCT services by the youth**.**

6.2 Recommendations

6.2.1 Practice:

i. There is need for the strategies used to enhance uptake of VCT services to target mothers and also highlight nutrition counseling services.
ii There is need to review the design and location of VCT centers targeting the youth to ensure they are user friendly.
iii. There is need for MKU to improve VCT service delivery systems by having a comprehensive learning environment for health care providers and ensure that they are trained in VCT with an aim of providing the service on demand without making referrals.

6.2.2 Further research

There is need for a cohort study to determine the trends in VCT uptake for given students from their 1st to 4th year of study.

REFERENCES

1. AIDS Alert, 1994, "College HIV rate holds steady, but exposure remains high". *AIDS Alert,* Nov.1994, Vol 9, No 11. Pg. 153-156
2. Abebe A and Mitikie G. ,2006, Perception of High School Students towards Voluntary HIV Counselling and Testing, using Health Belief Model in Butajira*, SNNPR. Ethiopia Journal of Health Development*, 2009;23(2): 148-153
3. Adams ,M.B. and Mutungi, M.,2007, Sexual risk behaviour among Kenyan Students. *Journal of the Arizona- Nevada. Academy of Science*, Vol 39, No. 2.
4. AIDS and Public policy Journal, 1989, An assessment of AIDS –related knowledge, attitudes and behaviours among selected college and university students. 1989. *AIDS and Public policy Journal*, 1989.
5. Asamoah-Odei, E, Garcia C.J.M., Boerma JT., 2004, *"HIV prevalence and Trends in Sub-Saharan Africa: No decline and Sub regional differences'*. Lancet,2004, 364:35-40

6. Chinyere C.P., 2006, *Prevalence and Correlates of HIV Voluntary Counselling and Testing: Analysis of University of Lagos Students, Nigeria*. Department of Sociology; University of Lagos, Nigeria.
7. Degu J. Aschalew E. and Bernt L., 2006, *Acceptability of HIV Counselling and Testing among Tuberculosis patients in South Ethiopia*. Centre for International Health, University of Bergen, Norway.
8. Fylkesnes K and Siziya S., 2004, *A randomized trial on acceptability of voluntary HIV counseling and testing*. Centre for International Health, University of Bergen, Armauer Hansen building 5021 Bergen. Norway.