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Assessment of Voluntary HIV Counseling and Testing Service Utilization and Associated Socio-demographic Factors Among Out of School Youth in Rural Nakuru County, Kenya: A Cross Sectional Survey

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Abstract
Voluntary HIV counseling and testing (VCT) is one of the key tools in the HIV/AIDS prevention and control programs in Kenya. But utilization of VCT services among out of school youth is low. The aim of this study was to assess Voluntary HIV Counseling and Testing Service utilization and associated socio-demographic factors among out of school youth, since though they are a risk group in Kenya; they are less likely than other groups to be offered this service. A cross sectional study design was done among 369 out of school youth, aged 18-35 years drawn from three rural divisions of Nakuru County, Kenya, using proportionate and purposive sampling technique. Self-administered questionnaire was used to estimate the prevalence of VCT service utilization and to assess associated socio-demographic factors among out of school youth. Data were entered and analyzed using SPSS version 11.5. The study sample consisted of 56.1% males and 43.9% females. The mean age for those who had utilized VCT was 24 for men and 23 for females. The majority of the out-of- school youth (62.6%) had not utilized VCT. It was shown that VCT utilization was significantly associated with the level of education, level of income and marital status. There was no significant association between VCT utilization and age or gender. VCT utilization among out-of- school youth in Nakuru County was low. HIV/AIDS prevention and control programs in Nakuru County should focus on the above areas.
Keywords: HIV testing, VCT utilization, Knowledge, Out of school youth, Nakuru Kenya

1. Introduction

Sub-Saharan Africa remains the most heavily affected region in the global HIV epidemic (UNAIDS 2012). In 2011 for example; an estimated 23.5 million (22.1–24.8 million) people living with HIV resided in Sub-Saharan Africa, representing 69% of the global HIV burden (UNAIDS 2014). Kenya is one of the Sub-Saharan Africa countries (SSA) that has been affected by a generalized and a concentrated HIV epidemic, where the epidemic is deeply rooted among the general population while there is also concentration of very high prevalence among key populations for example sex workers, their clients, and men who have sex with men (NACCK 2014). HIV/AIDS epidemic in Kenya had the joint fourth-largest HIV epidemic in the world (alongside Mozambique and Uganda) (UNAIDS 2013).

The first case of HIV in Kenya was detected in 1984, and by the mid-1990s it was one of the major causes of mortality in the country putting huge demands on the healthcare system as well as the economy (NACCK 2014). HIV prevalence peaked at 10.5% in 1996, and had fallen to 6% by 2013 mainly due to the rapid scaling up of antiretroviral treatment (ART) (Mugo *et al* 2010).

The Government of Kenya, with other stakeholders, developed a national HIV/AIDS strategic plan that identified strategies to alleviate the spread of HIV/AIDS (NACCK 2014). One of the key strategies since 2001 has been the establishment of Voluntary Counseling and Testing (VCT) services, which has spread rapidly throughout the country (NACCK 2014) HIV Counseling and Testing has been a major focus of the response in Kenya with the country adopting multiple strategies including provider initiated testing, outreach testing, home based Counseling and Testing, and integration of testing and counseling in ANC, STI and SRH services (NACCK 2014).

Voluntary counseling and testing is an effective strategy for preventive effects on HIV transmission and serves as a gateway to most HIV/AIDS related services (Tesfaye et al 2012). In addition, VCT is an important entry point to other HIV/AIDS prevention services, including emotional support, increasing motivation to avoid risky behaviors, access to HIV specific treatment, care and support (Fisher et al. 2007).The VCT approach is also highly recommended for the youth (Ayugi 2005) since VCT intervention promotes safer sexual behaviors by providing accurate reproductive health information and increases the use of care and support services.

VCT's role is critical in helping contain the HIV/AIDS epidemic and hence, finding ways to get these clinical services to the youth is a high priority (McCauley 2004).VCT counseling also aims to help adolescents evaluate their own behavior and its consequences; a negative test result offers one an opportunity to recognize vulnerabilities and develop risk-reduction plans to adopt safe behaviors (WHO 2002). Also young people who test HIV positive can receive referrals for care and have opportunities to discuss and understand what their HIV status means and what responsibilities they have to themselves and others as a result (Akhiwu 2012).

But the uptake of VCT services in Sub-Saharan Africa has been disappointingly low, with reports of 12% to 56% among couples or the general population (UNAIDS 2001). Other reports have supported the findings that despite the potential benefits of VCT, the uptake is often poor regardless of the availability of the services (WHO 2003, Matovu & Makumbi 2007, NASCOP 2007).In Kenya for instance, only 72% of adults aged 15-64 years reported having ever been tested for HIV in 2012, (Irungu et al. 2008). A study in 2004 in Nakuru district, found that only 35.9% of respondents had been tested for HIV (Ndwiga & Omwono 2014). Preliminary findings of the Kenya AIDS survey from 2007 indicated that only 43.3% of women aged 15 to 49 years had been tested for HIV (Irungu et al 2008).

Young people aged between 15 - 24 years account for more than 50 percent of all HIV infections worldwide (McCauley 2004) Among young people living with HIV, nearly 80% (4 million) live in sub-Saharan Africa (Moyer et al. 2007). Young people are especially vulnerable to HIV infection due to early sexual debut, emotional and developmental factors, low condom use, biological and social vulnerabilities, sexually transmitted infections, poor health seeking behavior, and alcohol and substance abuse (McCauley 2004). Providing HIV counseling and testing services to certain populations of young people can be especially challenging as they may be; mobile because work forces them to travel, members of the military, political refugees, street kids, or be displaced by civil conflict (Dirar 2010).

In addition, young people may lack sufficient support network, access to ongoing health care, or even basic nutrition and shelter and hence they may not be able to return for additional counseling and support (Dirar 2010).Also, many of the VCT services in Kenya are located in high income areas rather than rural areas and tend to attract middle class clientele rather than youth (Eposi et al. 2012). In the absence of treatment options; many youth respondents do not see the benefits of testing, while testing itself regardless of the outcome was seen by many as putting one at risk of loss of social status and discrimination in the society (McCauley 2004).

Yet research has shown that in many countries, young people actively seek VCT (WHO 2002). There could be several possible barriers contributing to poor VCT utilization by the youth including demographic characteristics (NASCOP 2007). It is against this back ground that this study sought to identify socio-demographic among out-of-school youth in a rural setting in Nakuru County which may affect their utilization of VCT services.

2. Research methodology

2.1 Study Area and Design

The study was carried out in a rural setting in the three divisions of the former Nakuru North District (now Nakuru County) in Kenya's Rift Valley. The study was carried out in the three divisions of Bahati, Subukia and Dundori during an eight period in 2012. It was estimated that the total population living in the area was 453,000 inhabitants in 2012, of which approximately 88,000 were youths. The area covers 593.3 km.$^{2.}$ This study area was identified for its typical rural setting, high population density and high unemployment among the youth. There were six voluntary counseling and testing centers out of which only one was youth friendly. The rest of the VCT centers were in public and private hospitals.

The VCT centers were scattered and majority of the out-of-school youth had to travel long distances (often more than 20 kms.) to access the services. A cross sectional survey was conducted in this study. The study population included out-of-school youth aged 18-35 years who consented to the study. Questionnaires were administered to this group in the three divisions during an 8 week period.

2.2 Study Population and Sampling Procedure

The study population consisted of out-of-school youth aged 18-35 years, who attended recruitment meetings and consented to the study. The sample size was determined by using the formula developed by Fisher (1973)**.** The confidence level was set at 95% and 0.05 level of significance. According to UNICEF (2003) the uptake of voluntary counseling and Testing (VCT) in real life situations resulted in figures generally less than 50%.The proportion of target population estimated to visit VCT Centers in Kenya was set at 40%.

The sample size required was worked out as 369.Proportionate sampling was used to determine the number of out-of-school youth to be interviewed from each division (table1). Youth were sampled purposively from each division for formal group discussions (FGDs). Several items were developed for each of the independent variables. Data was collected using a semi-structured questionnaire administered by the researcher and well trained research assistants. Pretesting of the questionnaire was performed on some out of school youth in the County, to verify clarity of the instrument used.

The questionnaire, originally prepared in English language was translated to Swahili and again retranslated to English by language experts for consistency. One FGD was conducted in each division. The FGDs consisted of ten out-of-school youth both male and female. Before the administration of the questionnaires, the researcher and a research assistant held discussions with youth on VCT services and their experiences of these services to minimize recall bias. The youth who consented to the study and met the inclusion criteria were included in the study. Out-of- school youth who did not attend recruitment meetings or who declined to give consent, or were below 18 years or above 35 years were not included in the study.

2.3 Data Collection

The researcher and research assistants visited out of school youth, during trainings organized by the Ministry of Youth Affairs and Sports, on agricultural field days and public barazas (informal meetings) over the eight weeks of the study. Data collection was done by pre-tested, pre-coded, and self- administered questionnaire with open and closed ended questions from the youth who gave informed consent. The questionnaires were self-administered to collect socio-demographic information.

2.4 Measurements

The dependent variable for this study was the utilization of VCT. It was measured by the number of out-of-school youth who had voluntarily tested for HIV in the VCT centers in the three divisions of the County. The independent variables were **socio-**demographic characteristics**.**

2.5 Socio-demographic characteristics

These included age, gender, occupation, religion, marital status, level of income and the level of education.

2.6 Data Analysis

Data were entered and analyzed using SPSS version 11.5. Descriptive statistics performed included determining the mean, median and mode. Utilization of VCT was dichotomized into; low utilization (<50%) and high utilization (>50%). The significance of association was tested using chi-square and an association was statistically significant when the p-value was less than 0.05 ($p< 0.05$). The variables with a p-value < 0.05 in the univariate analysis were included in the multiple logistic regression analysis. Logistic regression was used to assess the associations between the dependent and independent variables. In the regression models; information on individual related factors were included as independent variables.

3. Ethical Considerations:

The present study was approved by the Graduate School of Kenyatta University, the Ministry of Education and the District Commissioner Nakuru. Informed consent was obtained from each of the participants.

4. Results

4.1 Background characteristics of study respondents

Three hundred and sixty nine (369) of the study populations were interviewed in the three of Nakuru County (**Table 1)** Bahati division had the highest percentage of youth participating in the study (52.6%), followed by Subukia division (33.3%) then Dundori (14.1%). Of the study sample, approximately 56.1% were males and 43.9% females .The mean age of the participants was 24 years for men and 23 years for women. The majority of the study subjects (61.2%) were aged between 18-20 years, while 38.8% were aged between 31 and 35 years (**Table 2**). Two hundred and eighty eight (78%) of the respondents were single while seventy nine (21.4%) were married.

The majority of the respondents had secondary education (52.8%), while (30.6%) had primary education, and (15.2%) were college graduates (**Table 3**). The majority of the respondents (86.7%) were Christians (**Table 4**). One hundred and fifty nine (43.1%) of the study subjects earned an income of less than Kshs. 3000 (about 30 dollars) per month while 121 (32.85%) had no regular income (**Table 4**) Those who earned between Kshs. 3000 - 6000 were 60 (16.3%). One hundred and nineteen (32.2%) of the study respondents, engaged in casual jobs, while 110(29.8%) were jobless. Sixty six of the participants (17.0%) were peasant farmers while 37(10%) sold second hand goods (**Table 4)**

4.2 Socio-demographic factors influencing utilization of VCT

Age and gender

Majority of the respondents (61.5%) in the 18-24 age bracket had not utilized VCT services compared to (38.5%) in the same age group, who had utilized VCT services (**Table 5**)

Similarly (64.3%) of those aged 25-35 years had not utilized VCT services. There was a slight difference on the VCT utilization among males (36.2%) and that of the female (38.9%). No significant association was established between age and utilization of VCT services (p=0.818).Similarly the role of gender in utilization of VCT was not significant (p=0.665).

Marital status

The proportion of singles who had not utilized VCT was 65.3% compared 34.7% who had utilized VCT services (**Table 5**). Utilization of VCT among the married youth was (45.6%) compared to (54.4%) of the married youth, who had not utilized VCT services. The role of marital status in VCT utilization was found to be significant (p=0.039)

Income

For those who earned less than Kshs. 3000, (71.9%) of them, had not utilized VCT (**Table 5**). The results showed that utilization of VCT among those who earned more than Kshs. 9000 per month was 66.7%.

A significant association was found between income earned and VCT utilization (x^2 =24.798, DF=4, p=0.0001)

Education

Higher percentage (80%) of those with no formal education had not utilized VCT (**Table 6**).

Of those with primary school education, 72.6% had utilized VCT services. A significant association was found between level of education and VCT utilization (x^2 =13.248, p=0.004, DF=3).

5. HIV testing history

One hundred and thirty eight (37.4%) of the study subjects had tested for HIV compared to 231(62.6%) who had not tested. Though the majority of the males(56.1%) participated in this study, compared to 43.9% females, utilization of VCT services was slightly higher (38.9%) among females compared (36.2%) to males

6. Discussion

Voluntary Counseling and Testing (VCT) has proven to be one of the most powerful tools in halting the spread of HIV/AIDS, and it is known to be an important component in HIV/AIDS prevention strategies (Fischer et al. 2007). Though various studies have shown low utilization of VCT service particularly in developing countries (Fisher et al. 2007), this study assessed the level of VCT utilization and possible associated socio- demographic factors among out of school youth in three rural divisions in Nakuru County in Kenya. This study found that the majority of the out-of- school youth had not utilized VCT. It was also shown that VCT utilization was significantly associated with the level of education, income and marital status. There was no significant association between VCT utilization and age or gender.

In this study, utilization of VCT services was slightly higher (38.9%) among females compared (36.2%) for males. This is similar to an Ethiopian study which found that females were more likely to uptake Voluntary HIV Counseling and testing services than males (Sahlu et al.1999). They attributed this to the fact that females of 15–24 years old in Tanzania tend to start having sexual activity earlier as compared to males. Research in Cameroon also indicates that gender powerfully shapes attitudes toward testing (Eposi et al. 2012). Research elsewhere has also shown that men tend to underestimate their risk for HIV infection more than do women, despite reporting more high-risk behaviors (Girmay et al 2013).

It is important to measure the coverage of VCT uptake among young people, because of their vulnerability to HIV, and the various challenges they face in in accessing the VCT services not only in Kenya but also other countries (Matovu & Makumbi 2007). In this study, the majority of the study respondents were males with 56.1% participation, while that of females was 43.9%. This is in contrast to a study in Cameroon, where (49.5%) of students were boys and (50.5%) were girls (Eposi et al.2012), but similar to an Ethiopian study among University students where 73.3 % of the respondents were males and 26.7% were females (Girmay et al 2013).

In this study, the utilization of the VCT services by females was higher than that of males. This could be explained in terms of women being more likely to contact health services for family planning and/or pregnancy-related issues and hence access VCT services. Men also are often occupied with survival ventures of putting food on the table for their families; and when they do visit health centers, they lack the patience necessary to follow through with testing (Museve et al. 2013). The slight difference between the sexes in VCT utilization may also be attributed to early sexual encounter among out of school females (Tesfaye et al. 2012). This was found to be the case in one Tanzania study where females of 15–24 years, started having sexual activity earlier as compared to males (Sukari 2007). According to this Tanzania study, the low uptake of VCT by males may be because males do not fully involve themselves in HIV prevention programs, and hence they are less likely to recognize the

importance of knowing their HIV status than to females.

The mean age for VCT utilization in this study was 24 years for men and 23 years for the women. **I**n this study the majority of the youth who utilized VCT services were the younger groups (18-24). This is in keeping with another Kenyan study which showed that students above 21 years of age are more likely to attend VCT services than younger students (Museve et al. 2013) but very similar to the finding of a Tanzania , which indicated that VCT uptake decreased with age(Sukari et al. 2007). The authors of this study argued that as age increases, young people became more sexually active thus hesitating to undergo HIV testing due to fear of the test results.

Our study and this Tanzania study is consistent with a South African study by Hutchinson and colleagues in Eastern Cape, South Africa where older men (35 years or more) were less likely to use VCT than younger men (Hutchinson & Mahlalela 2006).

In this study, out of school youth with low levels of education had the highest percentage of not utilizing VCT. Similar studies have demonstrated an increase in VCT use with increasing level of education (Bwambale et al 2007; Getachew et al. 2010). A Uganda study found that less educated people, because of their lower education and stronger roots to tradition were more likely to hold fatalistic attitudes about HIV and to prefer to remain in a state of denial regarding their HIV status (Bwambale et al. 2007).

In An Ethiopian study among university students, respondents with second year and above years of studies were found more likely to utilize VCT than those who were in the first year (Dirar 2010).The researchers concluded that, this could have been due to more access to VCT information and increased sexual exposure and risk perception. Another Kenyan study also found that the uptake of VCT generally increased with progression in the year of study in the university, with 4th years being the highest up-takers of VCT services (Museve et al. 2013). In this Kenyan study, the discussants in the Focus Group Discussions 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. Said a male discussant; *"This is the time when one thinks of the future such as getting married and settling down; and students begin to take life more seriously"*.

In our study marital status was found to be significantly associated with VCT utilization. Kenyan study (investigating VCT utilization among women in a village in Kenya, found that marital status had also a slight but non-significant impact on utilization of VCT services (Mugo et al. 2007) .These researchers concluded that since social norms are more likely to accept sexual activity in marriage, making a visit to the VCT centers are less embarrassing; and hence VCT uptake likely to increase in marriage. An Ethiopian study found that respondents who had boy or girlfriend were 1.6 times more to utilize VCT services (Dirar 2010). A study in Kenya also showed that being involved with someone has a significantly higher probability of using VCT services than not being involved (Museve et al. 2013). In this study, the majority of the out-of-school youth (43.5%) earned an income of less than Kshs 3000 while 32.7% had no income. This could be due to the rampant unemployment facing out-of–school youth in Nakuru County in particular and the whole country in general. There was significant positive association observed between low income and low utilization of VCT; this could be because the youth with no income, were less likely to afford transport to the VCT centers and also to pay for VCT services. Some studies conducted in Ethiopia have also shown that having higher educational status, being employed and having better income were associated with ever being tested for HIV (Dirar 2010; Bayray 2010; Admassu & Fitaw 2006).

In our study, one hundred and fifty nine youth (43%) travelled more than twenty kilometers to reach the nearest VCT center. Of these, one hundred and forty of them (88.1%) had not utilized VCT services. Distance was found to be significantly associated with utilization of VCT services .In one study in Tanzania, distance to the VCT center was found to be among the factors that hindered the decision towards VCT uptake (Sukari 2007). In the Tanzania study, participants who reported to reside near the VCT center were more likely to undergo HIV testing than those who reported to reside far from the VCT center. A systematic review of published qualitative research in sub-Saharan Africa also found that, direct and indirect costs were associated with low uptake of VCT (Musheke et al. 2013).

Limitations of the study

(1)Findings from this study may not be generalized to the whole population of young people because the study involved only those young people who were out of school in one County in Kenya.

(2) As in any cross-sectional study, cause and effect relationship was not possible to establish for the factors dealt with in the study

(3)Since the study results depended on the responses of the participants and there is a high chance of recall bias.

(4) The questionnaires used in this study, contained some culturally sensitive inquiries for the respondents in some study areas, for example, about their sexual behavior .This might have influenced the students to provide biased information.

7. CONCLUSION

VCT use among out-of- school youth in Nakuru County was low. The major socio-demographic factors identified for increased VCT service utilization were: level of education, marital status and level of income. The low

utilization of VCT services among this group is a challenge to preventive strategies of HIV in Nakuru Country. This necessitates more innovative culturally appropriate preventive approaches acceptable to this vulnerable group as the fight against HIV/AIDS gathers momentum in Nakuru County in particular and Kenya in general.

8. RECOMMENDATIONS

The issues surrounding acceptance and use of VCT need to be addressed. On the basis of the results of this study, we recommend the following:

More VCT centers need to be established and be well distributed in Nakuru County to ensure accessibility to the out of school youth especially in the remote parts.

- Individuals who got tested at the various should be encouraged to broadcast more information about VCT to the other youth in the county and their friends.
- Youth who are involved with someone should be encouraged to nurture these relationships as they have significantly higher probability of using VCT services.

Competing interest

The authors declare that they have no competing interests

Authors' contributions

AO made significant contribution to the conception and final drafting and revision of the study.CI participated in conception and initial design, drafting, statistical analysis and interpretation of study findings .OP and 0A participated in revision of the manuscript and intellectual input. All authors read, edited and approved the final manuscript.

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References

Admassu, M., & Fitaw, Y. (2006), Factors affecting acceptance of VCT among different professional and community groups in North and South Gondar Administrative zones, North West Ethiopia. *Ethiopian Journal of Health Development. **20**(1) 9*

Akhiwu, P. (2012), Factors affecting the utilization of voluntary counseling and testing (VCT) services for HIV/AIDS in Sowa, Botswana. http//hdl.handle.net/10539/1099 (Accessed 4 June 2016)

Ayugi, M., E. (2005), Factors Determining the utilization of HIV Voluntary Counseling and Testing (VCT) services among the youth in Nakuru District: A case study of the Rift Valley Province General Hospital, Nakuru: University of Nairobi

Bayray, A. (2010), Knowledge attitude and practice of voluntary counseling and testing for HIV among university students, Tigray, Northern Ethiopia.DOI:10.4314/mejs.v2i1.49657

Bwambale, F., M. *et al*. (2008),Voluntary HIV counselling and testing among men in rural Western Uganda: Implications for HIV prevention. *BMC Public Health* .263. DOI: 10.1186/1471-2458-8-263

Dirar, A. (2010), Assessment of factors contributing to voluntary counseling and testing uptake among youth in the Colleges of Harar, Ethiopia. *Harar Bulletin of Health Sciences* 21(1) 19–28

Eposi, C., H. *et al*. (2012), Voluntary counseling and testing for HIV among high school students in the Tiko health district, Cameroon. *Pan Africa Medical Journal. 13, 18*

Fisher R., A. (1973, Statistical Methods and Scientific Inference. 3rd ed.London: Hafner Press

Fischer, S. ,Reynolds, H., Yocobso, I., Barnet B. & Schueller J. (2007),HIV Counseling and Testing for youth. A manual for providers. 2 ed.NC: USAID, FHI.

Getachew, F. , Melkamu, B.& Zelalem, A.(2010),Prevalence of Voluntary Counseling and Testing Utilization and Its Associated Factors among Bahirdar University Students. *Advances in Preventive Medicine Article ID 906107, 9 pages.*

Girmay, T., Melkie, E., & Maserati, S. (2013). Assessment of Voluntary Counseling and Testing service utilization and associated factors among Debre Markos University Students, North West Ethiopia. A cross-sectional survey. *BMC Public Health 13,24*

Hutchinson, P., L. & Mahlalela, X . (2006), Utilization of Voluntary Counseling and Testing services in the Eastern Cape, South Africa. *AIDS Care 18(5) 446-455.*

Irungu, T.,K. , Varkey, P., Cha, S. & Patterson, J.,M.(2008), HIV voluntary counseling and testing in Nakuru, Kenya. Findings from a community survey. *HIV Medicine 9 ,111-7.*

Matovu, J., K., & Makumbi, F., E. (2007), Expanding access to voluntary HIV counseling and testing in sub-Saharan Africa. Alternative approaches for improving uptake. *Tropical Medicine International Health* 12 (11) 1315–1322.

McCauley, A. P. (2004), Equitable access to HIV counseling and testing for youth in developing countries, A review of current practice. *Horizons Report*.

Moyer, M., Silvestre, A., Lombardi, E.,L. & Taylor, C.(2007), High risk behaviors among youth and their reasons for not getting tested for HIV. *Journal of HIV/AIDS prevention in children and youth. 8(1)59–73.*

Mugo, M., Kibachio, C. & Njuguna J. (2010), Utilization of Voluntary Counseling and Testing Services by women in a Kenyan village. *Journal of Rural and Tropical Public Health* 9, 36-39.

Museve, J., George C., L. & Labongo. (2013), Analysis of Uptake in HIV Voluntary Counseling and Testing Services. Case of Mount Kenya University Students, Kenya. *Public Policy and Administration Research.* 3 (4) 16-32.

Musheke *et al*. (2013), A systematic review of qualitative findings on factors enabling and deterring uptake of HIV testing in Sub-Saharan Africa. *BMC Public Health* 13:220 DO1:10.1186/1471-2458-13220

National AIDS and STI Control Programme, Ministry of Health, Kenya. (2007). *Kenya AIDS Indicator Survey 2007: Preliminary Report.* Nairobi

National AIDS and STI Control Programme, Ministry of Public Health and Sanitation, Kenya. (2008). *Guidelines for HIV Testing and Counselling in Kenya*. Nairobi

Ndwiga, T.& Omwono, M. (2014),A Study of Factors Influencing VCT Service Utilization among the Youths: A Case Study of Kapsabet Division, Nandi County, Kenya. *World Journal of AIDS 4 , 281-286.*

Sahlu, T. et al.(1999), Sexual behaviors, perception of risk of HIV infection, and factors associated with attending HIV post-test counseling in Ethiopia. *AIDS. 13, 1263–1272.*

Sukari, O. (2007), Barriers and attitudes towards HIV Voluntary Counseling and Testing among Secondary School Pupils of Sengerema in Mwanza. *Dar es Salaam Medical Students' Journal 15, 20–3.*

Tesfaye, H., L., Ingvild, F., S. & Knut F. (2012), Factors affecting voluntary HIV counseling and testing among men in Ethiopia: a cross sectional survey. *BMC Public Health,* 12,438. **DOI:** 10.1186/1471-2458-12-438.

The National AIDS Control Council of Kenya. (2012), *Kenya AIDS Response Progress Report 2014 Progress towards Zero*

UNAIDS. (2001), The impact of voluntary counseling and testing: A global review of the benefits and challenges. Geneva

UNAIDS. (2011), *World AIDS Day report*.

UNAIDS. (2012),Regional Fact Sheet.

UNAIDS. (2013), Report on the global AIDS epidemic.

UNICEF. (2003), Regional workshop on PMCT focal points, West and Central Africa. Dakar

World Health Organization. (2002), Increasing access to HIV Testing and Counseling. Report of a WHO Consultation. Geneva

World Health Organization. (2003), Increasing access to HIV Testing and Counseling. Report of a WHO consultation. Geneva

Table 1. Proportion of Study Respondents Interviewed in the three Divisions of Nakuru County (n=369)

Nakuru County Divisions	**Approximate no. of youth**	**Number interviewed**
Bahati	46,514	193
Nakuru	29,600	123
Dundori	12,686	53
Total	**88,800**	**369**

Table 2. Age distribution of Respondents

Age groups	**% of respondents**
18-20	**61.2**
21-25	**36.3**
26-30	**20.9**
31-35	**38.8**

Table 3. Socio-demographic characteristics of the study subjects (n=369)

Variables	Frequency	Percentage (%)
Division		
Bahati	193	52.3
Subukia	123	33.3
Dundori	53	14.4
Age		
18-20	226	61.2
25-35	143	38.8
Sex		
Male	207	56.1
Female	162	43.9
Level of education		
None	5	1.4
Primary	113	30.6
Secondary	195	52.8
College graduate	56	15.2
Marital status		
Single	288	78.0
Married	79	21.4
Widow/widower	2	5

Table 4. Socio-demographic characteristics of the study subjects (n=369)

Variables	Frequency	Percentage (%)
Religion		
Christian	320	86.7
Muslim	9	2.4
Traditional	22	6.0
Others	18	4.9
Income		
• No income	121	32.8
• Less than Kshs. 3000	160	43.4
• Kshs. 3000-Kshs. 6000	60	16.3
• Kshs. 6000-Kshs 9000	10	2.7
• More than Kshs. 9000	18	4.9
Business type		
Peasant farming	66	17.9
Selling second hand goods	37	10.0
Casual work	119	32.2
Others	37	10.0
None	110	29.8

Table 5. Proportion of youth utilizing VCT by socio-demographic factors.

Variables		VCT n (%)uptake	No VCT n (%) uptake	x^2 statistical test
Age	18-24	87(38.5%)	139(61.5%)	x^2=1.280 df=3 p=0.584
	25-35	51(35.7%)	92(64.3%)	
Gender	Male	75(36.2%)	132(63.8%)	x^2=0.274 p=0.601 df=1
	Female	63(38.9%)	99(61.1%)	
Marital status	Single	100(34.7%)	188(65.3%)	x^2 =6.482 df=2 p=0.039
	Married	38(45.6%)	43(54.4%)	
Income	No income	41(33.9%)	80(66.1%)	x^2 =24.798 df=4 p=0.0001
	Less than Kshs 3000	45(28.1%)	115(71.9%)	
	Kshs 3000-Kshs 6000	34(56.7%	26(43.3%	
	Kshs 6000-Kshs 9000	6(60.0%)	4(40.0%)	
	Above Kshs 9000	12(66.7%)	6(33.3%)	
Type of job	Farming	28(43.1%)	37(56.9%)	x^2 =18.637 df=9 p=0.027
	Selling second hand goods	12(32.4%)	25(67.6%)	
	Casual work	41(34.2&)	79(65.8%)	
	None	35(31.8%)	75(68.2%)	
	Others	22(59.5%)	15(40.5%)	

Table 6. Proportion of youth and VCT utilization by levels of education

Variables	Utilize VCT n %	Not utilize VCT %
Nil education	20%	80%
Primary education	72.6%	27.4%
Secondary education	38.5%	61.5%
College education	55.45%	44.6%