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Assessment of Voluntary HIV Counseling and Testing Service utilization and VCT/HIV related knowledge and attitude towards VCT Among out of school youth in rural Nakuru County, Kenya: A cross sectional survey

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Abstract
Background: 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 VCT/HIV related knowledge and attitude towards VCT 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 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 VCT/HIV related knowledge and attitude towards VCT among out of school youth. Data were entered and analyzed using SPSS version 11.5.**T**he 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. Poor utilization of VCT services was found to be significantly associated with HIV/VCT related knowledge and negative attitude towards VCT. VCT utilization among out-of- school youth in Nakuru County was low. The major factors identified for increased VCT service utilization were high VCT/HIV related knowledge and positive attitude towards VCT. HIV/AIDS prevention and control programs in Nakuru County should focus on the above areas.
Key words: HIV testing, VCT utilization, Knowledge, Out of school youth, Nakuru Kenya

1. Background

HIV continues to be a major global public health issue. In 2015, an estimated 36.7 million people were living with HIV (including 1.8 million children) a global HIV prevalence of 0.8% (UNAIDS Fact Sheet HIV Statistics, 2016). An estimated 25.5 million people living with HIV live in Sub-Sahara Africa .Kenya has the joint fourth-largest HIV epidemic in the world (alongside Mozambique and Uganda), in terms of the number of people living with HIV, which was 1.6 million people in 2013. Roughly 58,000 people died from AIDS-related illnesses in Kenya in the same year although this dropped by 32% between 2009 and 2013(UN Joint Programme on

HIV/AIDS Gap Report Kenya, 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. 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)(UN Joint Programme on HIV/AIDS Global Report Kenya, 2013).Kenya's HIV epidemic is often referred to as generalized – affecting all sections of sectors including children, young people, adults, women and men. The Government of Kenya, with other stakeholders, developed a national HIV/AIDS strategic plan that identified strategies to alleviate the spread of HIV/AIDS (Kenya National AIDS Control Response Progress Report, 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 (UNAIDS Fact Sheet HIV Statistics, 2016).

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. (UNAIDS Fact Sheet HIV Statistics,2016).This has been partly attributed to an increase in number of counseling and testing sites from 3 in the year 2000 to close to 1000 in 2007(Kenya National AIDS Control Response Progress Report, 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 (National AIDS and STI Control Programme Kenya Final Report, 2007).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 (National AIDS and STI Control Programme Kenya, 2007).

Despite the array of delivery approaches and the advantages of VCT services, the uptake of these services in sub-Saharan Africa has been disappointingly low with reports of 12% to 56% among the couples or the general population (Akhiwu, 2016). In Kenya only 72% of adults aged 15-64 years reported having ever been tested for HIV in 2012, a marked increase from 34% in an earlier Kenya Aids Indicator Survey (National AIDS and STI Control Programme Kenya Final Report, 2007). Most VCT clients have certain shortcomings *i.e.* transport difficulties and fear of being sighted at the heath facility may limit the number of people being tested (Sukari, 2007). In addition, there are factors such as inadequate skilled service providers and inadequate resources which might hinder the utilization of VCT services among the youth (Kenya National AIDS Control Response Progress Report, 2014).

A survey conducted in other parts of Rift Valley in Kenya indicated factors such as shortage of counselors, long queues, lack of privacy, level of training of counselors and lack of follow up support, following diagnosis influenced VCT service utilization among the youths. 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 (Sukari, 2007).Hence, 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 (Museve, Gongera and Labongo,2013).

It is against this back ground that this study sought to assess Voluntary HIV Counseling and Testing Service utilization and VCT/HIV related knowledge and attitude towards VCT among out of school youth in Nakuru County.

2. Methods

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 6 voluntary counseling and testing centers out of which 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 (Fisher, 1973). The confidence level was set at 95% and 0.05 level of significance. According to UNICEF (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 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 and other important variables that included: HIV/VCT related knowledge and the perception of VCT importance in the fight against HIV/AIDS.

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 HIV related knowledge and attitude towards VCT.

HIV/VCT related knowledge was measured using a scoring method adopted from Karki (Karki, 2004).Six questions were asked both for HIV and VCT knowledge. A score of 1 was awarded for each correct response while an incorrect response was awarded a score of 0. A summary indicator for knowledge was calculated as follows; <3 correct response (<50%) poor knowledge, 3-4 correct response (50%-79%) average knowledge, 5-6 correct response (80%-100%) Good knowledge.

A five-item attitude indicator responded as either “Yes” or “No”, towards VCT test was used to assess the level of attitude towards VCT among the youth. A score serving as a proxy variable was calculated by adding each of the attitudinal scores after giving a value of “1” and “0” for positive and negative responses respectively. Youth respondents who scored greater than or equal the proxy variable were considered as having positive attitude and those scored less than the proxy variable were considered as having negative attitude .

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

4.1HIV 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.

4.2 HIV/VCT related knowledge

Two hundred and sixty seven (72.3%) had good knowledge of HIV while 69(18.7%) had average knowledge. Two hundred and forty nine (60%) of the youth had good score on VCT knowledge and 107 (28.9%) had average knowledge and 41(11.1%) had poor knowledge. 32.9% of those with good HIV related knowledge, had utilized VCT services while 67.1% had not. Of those with poor HIV related knowledge, 45.5% had utilized VCT services compared to 54.5% who had not. 39.4% of those with good VCT related knowledge had utilized VCT services while 60.6% had not. Of those with poor VCT related knowledge only 31.7% utilized VCT services compared to 68.3% who did not.

4.3 Attitude to VCT

54% of the youth who had positive attitude of VCT had utilized the services while only 20.7% of the youth with negative attitude to VCT had utilized VCT services. Positive attitude to VCT was found to be significantly associated with increased VCT utilization.

5. 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 (Tesfaye, Ingvild and Knut Fylkesnes,2012). Though various studies have shown low utilization of VCT service particularly in developing countries (Tesfaye, Ingvild and Knut Fylkesnes, 2012), this study assessed the level of VCT utilization and HIV/VCT related knowledge and attitude to VCT among out of school youth in three rural divisions in Nakuru Kenya. This study found that the majority of the out-of- school youth had not utilized VCT. In our study, having a good HIV/ VCT related knowledge did not translate to testing for HIV. Poor utilization of VCT services was also found to be associated with negative attitude to VCT.

5.1 HIV testing history

In this study, utilization of VCT services was slightly higher (38.9%) among females compared (36.2%) for males. This is similar to a Tanzania study which found that females were more likely to uptake Voluntary HIV Counseling and testing services than males (Sukari ,2007). 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 elsewhere has indicated that gender powerfully shapes attitudes toward testing and also that men tend to underestimate their risk for HIV infection more than do women, despite reporting more high-risk behaviors (Carla and Michelle 2007, Sahlu et al.1999).

5.2 HIV/VCT related knowledge

Knowledge is an important component of self-care and many studies and literature advocate for increasing awareness of HIV and VCT as a means of increasing VCT uptake (UNAIDS AIDS Update, 2009). In this study, though high VCT/HIV related knowledge was not associated with VCT service utilization, positive attitude towards VCT was. In an Ethiopian study (Girmay, Melkie and Solomon 2013), knowledge about HIV/AIDS and VCT utilization had positive association. Students who had knowledge about HIV were 3.69 times more likely to utilize VCT service as compared to those who did not have knowledge about HIV.This could have been because the VCT users may have had more exposure/information/knowledge regarding HIV/AIDS before they came to VCT centers (Girmay, Melkie and Solomon 2013). In our study having a good HIV/ VCT related knowledge did not translate to testing for HIV. Our findings are also in contrast with those of Sherr and colleagues who found that in rural Zimbabwe, motivation for VCT was driven by knowledge on VCT (Sherr et al. 2007).The majority of the youths in our study had heard of VCT but possibly may still lack information on the availability and importance of VCT especially those in very far end of the County. According to a member of our FGDs, *"the youth in rural areas like Ndungiri do not have information on the availability and importance of VCTs, to them VCT is a big term ''*

5.3 Attitude to VCT

In this study positive attitude to VCT was found to be significantly associated with increased VCT utilization. This finding is similar to an Ethiopian study in which the majority of the respondents believed that VCT is necessary for different reasons; including knowing self-status caring for the future, preventing partners and others from HIV and to choosing partners for the future (Zelalem Addis et al. 2013). A Tanzania study among health care professional students also found that the majority of the respondents (93.9%) indicated that VCT was important as it enables a person knowing his/her sero-status (Mgosha et al.2009). In a Cameroon study among high school students the majority of the respondents (86.9%) reported that VCT was necessary as it made them know their HIV status (80%). In the Cameroon study, the majority of the students ((83.1%) also indicated that everybody should go for VCT and that they would also recommend VCT to a family member (Eposi Christiana et al. 2012). Our findings are also consistent with another Kenya study among university students who perceived VCT to be important in the fight against HIV [8]. In the Kenyan study, the majority of the students also had a positive attitude toward VCT with over 80% of them willing to go for the service.

6. Conclusions and Recommendations

VCT use among out-of- school youth in Nakuru County was low. Factors found to be significant with VCT utilization were: perception of importance of VCT in the fight against HIV/AIDS, competence of VCT counselors ,youth friendliness of the services ,condom use , ,income ,HIV related stigma ,and willingness to utilize VCT services with sexual partner .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.

What is already known on this topic

- Voluntary Counseling and Testing (VCT) is an important component in HIV/AIDS prevention strategies.
- VCT service utilization among the youth in Kenya is low

What this study adds

- High VCT/HIV related knowledge is not necessarily associated with increased VCT service utilization
- Strategies for increasing VCT service utilization among out of school youth should include issues of negative attitudes towards VCT among the out of school youth.

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Competing Interests

'The author(s) declare that they have no competing interests'.

Authors' contributions

AO made significant contribution to the conception, initial 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 interpretation of research findings, revision of the manuscript and intellectual input. All authors read, edited and approved the final manuscript.

Tables and Figures

Table 1: proportion of youth respondents in relation to HIV/VCT related knowledge and attitude (n=369)
Table 2: proportion of youth who have utilized VCT in relation to HIV/ VCT knowledge and attitude (n=369)

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Tables

Table 1: Proportion of youth respondents in relation to HIV/VCT related knowledge and Attitude (n=369)

Variables		**N (%)**
Knowledge of HIV	Good	267(72.3%)
	Average	69(18.7%)
	Poor	33(9%)
Knowledge of VCT	Good	221(60%)
	Average	107(28.9%)
	Poor	41(11.1%)
Attitude towards VCT	Positive	185(50.1%)
	Negative	184(49.9)

Table 2: Proportion of youth who have utilized VCT in relation to HIV/ VCT knowledge and attitude (n=369)

Variable		Utilized n(%)	Not utilized n(%)	
Knowledge of HIV	Good	88(32.9%)	179(67.1%)	x^2==9.992 df=2 p=0.017
	Average	35(50.7%)	34(49.3%)	
	Poor	15(45.5%)	18(54.5%)	
Knowledge of VCT	Good	87(39.4%)	134(60.6%)	x^2=19.477 df=2 p=0.0001
	Average	38(35.5%)	69(64.5%)	
	Poor	13(31.7%)	28(68.3%)	
Attitude to VCT	Positive	100(54%)	85(46%)	x^2=46.279 df=2 p=0.0001
	Negative	33(20.7%)	146(79.3%)	