



## Awareness, willingness and use of Voluntary HIV testing and counseling services by students of a university in south-south Nigeria

Ogaji D.S<sup>1</sup>, Oyeyemi A.S<sup>2</sup>, Ibrahim I<sup>3</sup>

<sup>1</sup>Department of Preventive and Social Medicine, University of Port Harcourt, Choba,

<sup>2</sup>Department of Community Medicine, Niger Delta University, Wilberforce Island, Bayelsa State

<sup>3</sup>Department of Obstetrics and Gynaecology, Niger Delta University, Wilberforce Island, Bayelsa State.

### KEYWORDS

HIV/AIDS,  
Voluntary HIV  
testing and  
counselling,  
HTC,  
undergraduate  
students, Niger  
Delta  
University,  
Bayelsa State

### ABSTRACT

#### Background

HIV testing and counseling (HTC) is the entry point to HIV prevention, treatment, care, and support services. HTC can be voluntary or mandatory. This study aimed to determine the awareness, willingness, and use of voluntary HTC (VHTC) services by students of the Niger Delta University, Bayelsa State Nigeria.

#### Method

A cross sectional descriptive study was conducted in June 2012 using multi-stage random sampling to select 423 students who were administered a pre-tested, structured self-administered questionnaire adapted from the UNAIDS knowledge indicator questionnaire. Information about awareness, willingness and use of VHTC services were elicited from the respondents. Epi-Info 3.5.3 was used for data entry and analysis.

#### Result

There was almost universal awareness of HIV (99%) by respondents but a lower proportion (78.4%) were aware of VHTC services and a much lower proportion (14.8%) knew the services were available on the university campus. Furthermore, just about a half (53.8%) had ever undergone HIV testing (Female/male: OR=1.02, 95%CI: 0.68-1.55) and only 26.5% had voluntary HTC (Female/male: OR=1.34, 95%CI: 0.75-2.40). Majority (73.8%) of all respondents expressed willingness to undergo VHTC (significantly more females than males, OR=1.67, 95%CI: 1.04-2.68). Fear of positive result (39.1%) and stigma (25.7%) were the leading demotivators for those unwilling to have VHTC.

#### Conclusion

Despite high awareness of HIV and voluntary HTC, actual use of VHTC services was low. There is a strong need for more education of the students and indeed the community at large as this would engender a more positive attitude and increased use of available VHTC services on campus.

Correspondence to:

Dr Daprim Ogaji,

Department of Preventive and Social Medicine

University of Port Harcourt, Choba

+2348037092225

e-mail: dst\_ogaji@yahoo.co.uk, daprim.ogaji@uniport.edu.ng

### INTRODUCTION

HIV/AIDS is a global emergency with far reaching effects. It affects all countries socially, economically and culturally and is a threat to global development and human security.<sup>1</sup> Sub-Saharan Africa remains by far the region worst affected by the HIV/AIDS epidemic in the world,

with an estimated 23.5 million people accounting for 69% of people living with HIV worldwide.<sup>2</sup> While the 2012 UNAIDS global report on HIV presented a 25% decline in the incidence rate of HIV infection in Sub-Saharan Africa over the last 10 years (2001 – 2011). Nigeria, one of the countries in the region with a high burden of the disease was captured in the 2012 UNAIDS report

to present a stable trend over this period<sup>2</sup>. However, National trend analysis of HIV prevalence among youths 15-24 years showed a consistent decline from 2001 to 2010 (ie from 6.0% (2001), 4.3% (2005), 4.2 % (2008) to 4.1% (2010)<sup>3</sup> and as at 2010, Nigeria had an estimated 3.1million people living with HIV/AIDS. The country's 2010 National HIV sero-prevalence sentinel survey among pregnant women attending antenatal clinics in Nigeria revealed a prevalence of 4.1% with a range of 1% in Kebbi State to 12.7% in Benue State. The three states with the highest rates were Benue (12.7%), Akwa-Ibom (10.9%) and Bayelsa (9.1%).The reported 2010 national prevalence showed a higher rates in urban than in rural areas and among singles compared with married people.<sup>4</sup> Prevention still remains the main thrust of management, and is largely dependent on following a self-protective behavioural code, which also protects others.<sup>5</sup>

HIV testing and counseling (HTC) is the entry point to HIV prevention, treatment, care, and support services. The 2007 National HIV/AIDS and Reproductive Health Survey (NARHS) reported that 72% of Nigerians desired to have an HIV test; an increase from 43% observed in 2005.<sup>6</sup> It was however reported that uptake of HTC was slow as only 14.4% and 14.7% of females and males respectively had undergone a test.<sup>6</sup>

Bayelsa state has the third highest prevalence of HIV in the country (9.1%), and the 2010 survey showed a prevalence of 8.1% among the age group 15-24 years showing that the rate of infection with HIV is still very high among youths in the state.<sup>4</sup> and most of the university undergraduate students fall within this age group.

One of the priorities of national HTC programmes is to ensure that at least 80% of

sexually active adults have access to HTC services in an equitable and sustainable way by 2015.<sup>3</sup> In the light of the low uptake of voluntary HTC reported in a previous survey, it is pertinent to know the awareness, willingness and utilization of available HTC services by students of the Niger Delta University, an institution in the state with the third highest prevalence of HIV in the country. As no such study in this area has been reported previously, findings of this study will form the baseline on which progress in this area can be evaluated and can inform the development of a behavioral change communication (BCC) strategy for students of the institution.

## METHODOLOGY

### Study setting/population

The study was conducted among students of Niger Delta University. The university was established by law in the year 2000, with pioneering admission quota of 1039 students. Full academic activities commenced in 2001/2002 academic session and as at February 2012, there were 10,683 students of which 6,683 (62.6%) were males and 4,000 (37.4%) were females in 12 faculties and 54 academic departments. The university is located in Amassoma, a town in Southern Ijaw local government area of Bayelsa state, which is about 40km from Yenagoa (the state capital). The university has an HIV testing and counseling centre located close to the lecture theatres. The centre, manned by counseling psychologists, was established in November 2010 and provides other services such as vocational, personal, social and educational counseling in addition to the HIV testing and counseling.

### Study design

The study was a descriptive cross sectional survey to determine the awareness, willingness and use of Voluntary HIV testing and counseling services by students of Niger Delta University.

## Sample size estimation

A recent study done in a similar setting in Jos, Nigeria reported 50.7% as the proportion of respondents that underwent voluntary counseling and testing.<sup>7</sup> Using the formula for estimating sample size for cross sectional study<sup>8</sup>, at an alpha of 5%, an error margin of 5% and allowing for 10% non-response and incomplete/inappropriately filled questionnaires, a sample size of 423 was calculated.

## Eligibility criteria

Undergraduates from year one (100Level) to final year (400L/500L) in the four selected departments who consented to participate in the study after detailed explanation of the purpose of the research and assurance of confidentiality.

## Sampling methodology

Multi-stage random sampling was adopted. A list of all the faculties in the university constituted the sampling frame for stage one and four faculties (Agriculture, Education, Law and Nursing) were selected by simple random sampling using the balloting procedure. In stage two, the departments in the four selected faculties made up the sampling frame and one department was selected by balloting to represent each faculty. Finally, a list of all students in the various years of study was obtained for the participating departments and individual respondents were selected by simple random sampling from the various level. Subjects who were absent during the study period or those that declined participation were replaced.

## Study instrument and technique of data collection

### A pre-tested structured self-administered

questionnaire adapted from the UNAIDS knowledge indicator questionnaire<sup>9, 10</sup> was used for data collection. Bio data and information about awareness, attitude and use of HTC were elicited from the respondents by trained field assistants.

## Data analysis

Data analysis was done using the Epi Info version 3.5.3 software. Checks and validation tools of the software were employed to validate and edit the various data entries that were made. Univariate analysis was done and is presented in tables and graphs. Bivariate analysis was carried out using Chi-square (Pearson's or likelihood ratio as required)/Fisher's exact test where appropriate. The level of significance was set at p-values <0.05.

## Ethical consideration

Ethical approval to conduct the study was obtained from the Ethics and Research Committee of the College of Health Sciences and individual verbal informed consent was obtained from each participant. Although the questionnaires were anonymous, additional assurance of confidentiality was given to the participants.

## RESULTS

Four hundred and twenty-three (423) questionnaires were administered, out of which 400 were returned and adequately filled for analysis. The mean age of the respondents was  $22.9 \pm 4.9$  years with the females being  $22.3 \pm 4.0$  years and the males  $22.3 \pm 5.6$  years. As seen in Tables I, there were more females (224/56.0%), more singles (243/60.8%), more Ijaws (226/56.5%) and more respondents of the protestant Christian religious faith (152/38%). Majority (270/67.5%) of the students lived outside the campus. Parents were the commonest sponsors of these students (309/77.3%), although a few (29/7.3%) were self-sponsored. Figure 1 shows the awareness of HTC, awareness of

**Table I: Some Socio-demographic characteristics of Respondents.**

Characteristics	Frequency	Percent (%)
N = 400		
Sex		
Female	224	56.0
Male	176	44.0
Marital status		
In a relationship	118	29.5
Married	39	9.8
Single	243	60.8
Ethnic group		
Hausa	3	0.8
Ijaw	226	56.5
Ndigbo	54	13.5
Urhobo	42	10.5
Yoruba	12	3.0
Other ethnic group	63	15.8
Religion		
Catholic	94	23.5
Muslim	4	1.0
Protestant	152	38.0
Traditional	7	1.8
Other religious groups	143	35.8
Study level of respondent		
First year	116	29.0
Second year	87	21.8
Third year	97	24.3
Fourth year	60	15.0
Fifth year	40	10.0
Department of respondents		
Fishery	100	25.0
Law	100	25.0
Nursing	100	25.0
Pharmacy	100	25.0
Residence during school session		
Outside campus	270	67.5
On campus	130	32.5
Main Educational sponsors		
Friend(s)	2	0.5
Parents	309	77.3
Relative	38	9.5
Scholarship	4	1.0
Self	29	7.3
Other sponsors	18	4.5

HTC services on campus and willingness of the students to utilize the services. There were no significant differences between the two genders in these variables except for willingness where more females than males were willing to go for HTC (OR=1.67, 95%CI: 1.04-2.68). Reasons

given by those that would not want to patronize HTC services are stated in Table II (n=105) with fear of testing positive (41/39.0%) and stigma associated with HIV infection (27/25.7%) being the most prevalent.

From Table III, it is seen that generally, the

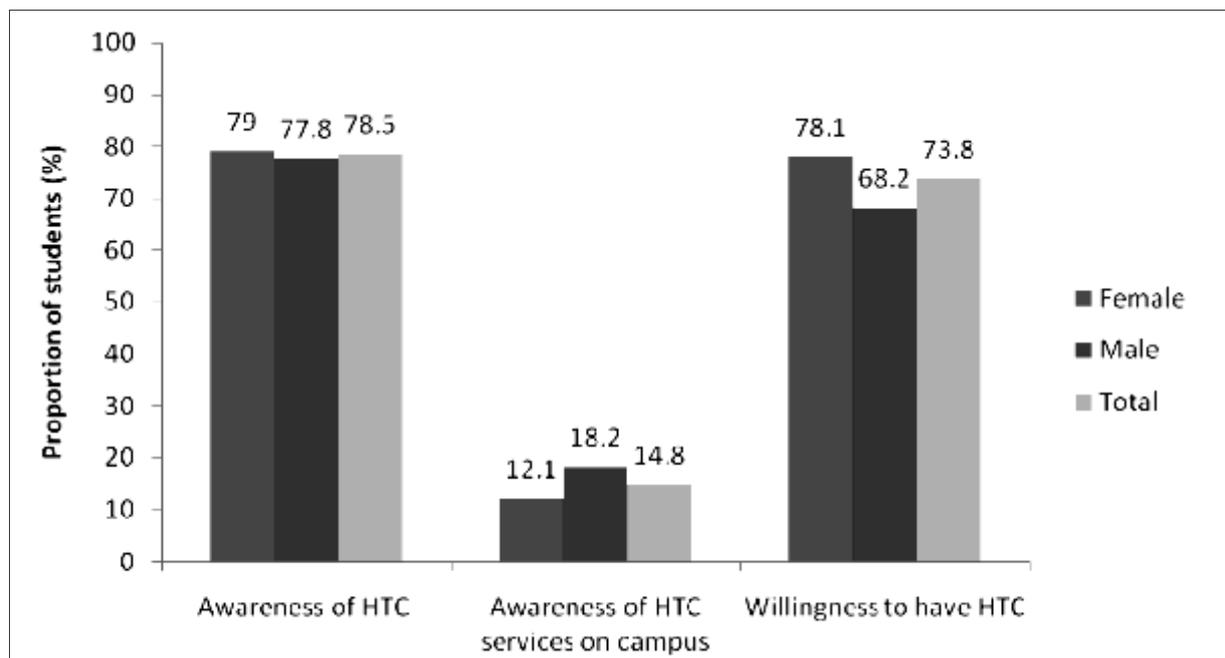


Figure 1: Awareness and willingness to have HTC

Table II: Reasons for not wanting to have HTC

Reason	Female n (%)	Male n (%)	Total (%)	OR	95%CI of OR
Fear of a positive result	19 (38.8)	22 (39.3)	41 (39.0)	0.98	0.45-2.15
Fear of stigma	9 (18.4)	18 (32.1)	27 (25.7)	0.48	0.19-1.87
Fear of break-up in relationship	4 (8.2)	9 (16.1)	13 (12.4)	0.46	0.13-1.61
Incurable nature of the disease	9 (18.4)	12 (21.4)	21 (20.0)	0.83	0.31-2.16
Lack of confidentiality	8 (16.3)	8 (14.3)	16 (15.2)	1.17	0.40-3.40
It is not convenient	10 (20.4)	15 (26.8)	25 (23.8)	0.70	0.28-1.75
Religious reason	6 (12.2)	6 (10.7)	12 (11.4)	1.16	0.35-3.87

students had positive attitude towards some operational issues regarding HTC. While they strongly agree that HTC for student should be free (280/70.0%), they less likely would advocate periodic HTC for sexually active young adults (176/44.0%) and simultaneous HTC for partners (122/30.5)

Table IV shows about half of these students (215/53.8%) had ever undergone HIV testing in their lifetime (Female/male: OR=1.02, 95%CI: 0.68-1.55). Also that there was significant association between awareness and department of study ( $\chi^2=10.01$ ,  $p=0.018$ ), as those in health related departments like nursing (87.0%) and pharmacy (82.0%) demonstrated a higher level of awareness of HTC than those in fishery (70.0%) and law (75.0%) departments. Willingness to use HTC had significant association with gender ( $\chi^2=5.03$ ,  $p=0.025$ ) and ethnic group ( $\chi^2=12.72$ ,

$p=0.026$ ) and the actual use of HTC revealed significant association with the religious background of the students ( $\chi^2=10.08$ ,  $p=0.03$ ).

## DISCUSSION

This study aimed to determine the awareness, willingness and utilization of voluntary HIV testing and counselling (VHTC) services by undergraduate students of Niger Delta University. Most (78.5%) of the students were aware of VHTC, and most of them (73.8%) were willing to utilize VHTC services but only a small proportion (14.8%) knew that an HTC centre existed on the campus. A similar study done among medical students in Northern Nigeria reported a lower figure of 55% for awareness of HTC and a higher figure of 26% for awareness of a centre.<sup>7</sup> The higher figure for awareness in this study could be attributed to increased publicity about HIV/AIDS and associated control measures over

**Table III: Respondents attitude toward operationalization of HTC services**

Attitude	Free HTC for students		Periodic HTC for sexually active young adults		Simultaneous HTC for partners	
	Female	Male	Female	Male	Female	Male
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Strongly disagree	18 (8.0)	3 (1.7)	16 (17.1)	4 (2.3)	17 (7.6)	13 (7.4)
Disagree	3 (1.3)	0 (0)	8 (3.6)	9 (5.1)	25 (11.2)	27 (15.3)
Indifferent	11 (4.9)	13 (7.4)	28 (12.5)	27 (15.3)	50 (22.3)	47 (26.7)
Agree	30 (13.4)	42 (23.9)	70 (31.3)	62 (35.2)	58 (25.9)	41 (23.3)
Strongly agree	162 (72.3)	118 (67.0)	102 (45.5)	74 (42.0)	74 (33.0)	48 (27.3)
	Fisher's $p=0.001$		$\chi^2=6.55$ , $p=0.162$		$\chi^2=3.45$ , $p=0.485$	

**Table IV: Association between socio-demographic variables and awareness, acceptance and use of HTC**

Variable	Awareness of HTC n (%)	Willingness to use HTC n (%)	Actual use of HTC n (%)	Total (n=400)
<b>Gender</b>				
Female	177 (79.0)	175 (78.1)	121 (54.0)	224 (56.0)
Male	137 (77.8)	120 (68.2)	94 (53.4)	176 (44.0)
2, p-value	0.08, 0.776	5.03, 0.025	0.01, 0.904	
<b>Marital status</b>				
Single	191 (78.6)	186 (76.1)	127 (52.3)	243 (60.8)
In a relationship	92 (78.0)	85 (72.0)	62 (52.5)	118 (29.5)
Married	31 (79.5)	24 (61.5)	26 (66.7)	39 (9.8)
2, p-value	0.04, 0.978	4.16, 0.125	2.90, 0.234	
<b>Department</b>				
Fishery	70 (70.0)	71 (71.0)	50 (50.0)	100 (25.0)
Law	75 (75.0)	70 (70.0)	52 (52.0)	100 (25.0)
Nursing	87 (87.0)	77 (77.0)	56 (56.0)	100 (25.0)
Pharmacy	82 (82.0)	77 (77.0)	57 (57.0)	100 (25.0)
2, p-value	10.01, 0.018	2.21, 0.530	1.32, 0.725	
<b>Ethnic group</b>				
Hausa	3 (100.0)	3 (100.0)	3 (100.0)	3 (0.8)
Ijaw	184 (81.4)	166 (73.5)	126 (55.8)	226 (56.5)
Ndigbo	44 (81.5)	44 (81.5)	30 (55.6)	54 (13.5)
Urhobo	33 (78.6)	23 (54.8)	18 (42.9)	42 (10.5)
Yoruba	7 (58.3)	8 (66.7)	5 (41.7)	12 (3.0)
Others	43 (68.3)	51 (81.0)	33 (52.4)	63 (15.8)
2, p-value	8.95, 0.111	12.72, 0.026	10.08, 0.073	
<b>Religion</b>				
Catholic	75 (79.8)	67 (71.3)	56 (59.6)	94 (23.5)
Protestant	117 (77.0)	117 (77.0)	92 (60.5)	152 (38.0)
Muslim	3 (75.0)	2 (50.0)	2 (50.0)	4 (1.0)
Traditional	5 (71.4)	4 (57.1)	3 (42.9)	7 (1.8)
Other religion	114 (79.7)	105 (73.4)	62 (43.4)	143 (35.8)
2, p-value	0.65, 0.957	3.06, 0.548	10.68, 0.03	

the years. It is however disturbing that most of the students did not know that a VHTC centre was located in the school. The poor awareness among the students of the existence of the centre suggests that the centre may not have been active enough to make the needed impact among the students' population in the university.

Majority of the students were willing to have an HIV test and gender was seen as a predictor for willingness to have the HIV test done as female students were generally more willing to use HTC than their male counterparts. A previous study conducted in a community setting in Northern Nigeria suggest possible reasons for the higher female willingness to have a HIV test to be their interest in using the knowledge of their status to prevent HIV transmission to their future children and the greater fear among the sexually more-adventurous male could dissuade them from undertaking an HIV test.<sup>11</sup> The study carried out among undergraduate medical students also in the Northern part of Nigeria also reported that majority of the students were willing to have a HIV test but unlike this study, gender had no influence on their attitude.<sup>7</sup> The willingness of these students to have a HIV test done should be exploited to rapidly increase the proportion of students who knew their HIV status, which stood at barely 50%. They also demonstrated a positive attitude by either agreeing or strongly agreeing that there should be periodic HTC for sexually active young adults and that partners should be simultaneously tested and counseled inter alia.

In consonance with previous studies, 11-16 the topmost disincentives to HTC remained fear of testing positive and stigmatization that follows the knowledge of one's status by others. That being infected with HIV is no longer a death sentence, and that careful living with treatment with ARVs and support, and years of campaign against stigmatization shows that these efforts and other interventions need to be intensified to increase uptake of HTC.

About half (53.8%) of these students reported they

had undergone the HIV test in their lifetime. This proportion is higher than the 34.6% reported among health care professional students in Tanzania.<sup>12</sup> This difference may be due to the increased awareness and need for testing over the period and the different zones these studies were conducted and should be exploited as a means of reinforcing a positive attitude towards preventing the spread of HIV.

#### Conclusion and recommendations

Awareness of HTC is quite high but many who were willing to utilize the services did not know that an HTC centre was located on the main campus within their reach. Despite the high level of awareness, about half the students had never had an HIV test. Fear of testing positive and stigmatization remain major hindrances to uptake of HTC.

We hereby recommend strong awareness creation campaigns by the relevant school authority using bill boards, signposts etc and by incorporating HTC messages into matriculation, convocation and students' week programmes. Behavioural change interventions by government and organizations working in HIV/AIDS should focus more on addressing the issue of stigmatization and positive living.

#### REFERENCES

1. Kuti AO, Folaranmi TA , Olarenwaju O, Ogunwale O. Promoting uptake of HIV Voluntary Counselling and Testing among Nigerian undergraduates. Campus Health and Rights Initiative (*CHRI*), Obafemi Awolowo University, Ile-Ife, Nigeria, *presented* at global health conference 2008.
2. UNAIDS. Report on the global AIDS epidemic 2012. [Cited December 12, 2012] Available from: URL:[http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120\\_UNAIDS\\_Global\\_Report\\_2012\\_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_UNAIDS_Global_Report_2012_en.pdf)
3. National Agency for the control of AIDS. Factsheet 2011: Update on the HIV/AIDS

- Epidemic and Response in Nigeria. [cited February 11, 2013] Available from: URL: <http://naca.gov.ng/content/view/423/lan/en/>
4. Federal Ministry of Health. Technical Report 2010: National HIV Seroprevalence Sentinel Survey Among Pregnant Women Attending Antenatal Clinics in Nigeria
  5. Boswell D, Baggaley R. Voluntary counseling and testing (VCT) and young people, a summary overview. Family Health International; 2002. [cited April 12, 2013] Available from: URL: [http://pdf.usaid.gov/pdf\\_docs/PNACQ537.pdf](http://pdf.usaid.gov/pdf_docs/PNACQ537.pdf)
  6. Federal Ministry of Health. National HIV/AIDS and Reproductive Health Survey. 2007
  7. Daniyam CA, Agaba PA, Agaba EI. Acceptability of Voluntary Counselling and testing among medical students in Jos, Nigeria. *J Infect Dev Ctries.* 2010; 4(6): 357-361.
  8. Kirkwood BR, Sterne JAC eds. Calculation of required sample size in Essential Medical Statistics. Blackwell Science Ltd. 2<sup>nd</sup> edition 2003. Massachusetts USA.
  9. UNAIDS. Monitoring the Declaration of Commitment on HIV/AIDS. Guidelines on Construction of core indicators 2005. [cited August 12, 2012] Available from: URL: [http://data.unaids.org/publications/irc-pub06/jc1126-constrcoreindic-ungass\\_en.pdf](http://data.unaids.org/publications/irc-pub06/jc1126-constrcoreindic-ungass_en.pdf)
  10. UNAIDS. Looking deeper into the HIV epidemic. A questionnaire for tracing sexual networks. UNAIDS/98.27. [cited August 16, 2012] Available from: URL: [http://www.unaids.org/en/media/unaids/contentassets/dataimport/publications/irc-pub01/jc103-lookingdeeper\\_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/dataimport/publications/irc-pub01/jc103-lookingdeeper_en.pdf).
  11. Iliyasu Z, Abubakar IS, Kabir M, Aliyu MH. Knowledge of HIV/AIDS and attitude towards voluntary counselling and testing among adults. *Journal of the National Medical Association.* 2006; 98(12): 1917 – 1922.
  12. Mgosha PC, Eliningaya JK, Aneth MM, Longin RB, Seif S, Hassan MN, Asanterabi L, Michael J M. Evaluation of uptake and attitude to voluntary counseling and testing among health care professional students in Kilimanjaro region, Tanzania. *BMC Public Health* 2009; 9:128-136
  13. Horizon Program. HIV Voluntary counseling and testing Among Youth aged 14 to 21 years. Results from an exploratory study in Nairobi, Kenya, and Kampala and Masaka. Uganda Horizons Program International Center for Research on Women, *Washington, DC: Population Council* 2001, 31.
  14. Yahaya LA. Factors hindering acceptance of HIV/AIDS Voluntary Counselling and Testing (VCT) among youths in Kwara State, Nigeria. *Journal of AIDS and HIV research.* 2010; 2(7):138-43.
  15. Wang Y, Li B, Zheng J et al. Factors related to female sex workers' willingness to utilize VCT service: a qualitative study in Jinan City, Northern China. *AIDS Behav.* 2009; 13(5):866 – 872.
  16. Oboh VU, Ekpebu ID, Odeh AV. Knowledge and acceptability of voluntary counselling and testing (VCT) for HIV/AIDS by rural farmers in Benue State, Nigeria. *Research Journal of Social Sciences* 2010; 1(5):81-86.