

VCT uptake and associated factors among teachers from Harari Administrative Region

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Abstract

Background: Although HIV/AIDS is affecting most productive segments of the population, the basic education sector which is vital to the creation of human capital is also equally affected. The loss of skilled and experienced teachers due to the problem is increasingly compromising the provision of quality education in most African countries and thus, needs appropriate intervention measures that reverse the current trend.

Objectives: To assess the prevalence and determining factors of VCT uptake among teachers of Harari Administrative Region.

Methods: A cross sectional study design with analytic component was conducted among 566 teachers drawn from 20 randomly selected schools of Harari Administrative Region from March to April 2009. Self administered questionnaire, adapted from previous relevant studies was used to estimate the prevalence of VCT uptake and the various socio-demographic and psychological factors. Data were entered and analyzed using bi-variate and multivariate models.

Results: A total number of 497 teachers responded to the questionnaire adequately making the response rate of 87.8%. The mean age of the participants was 34.68 ranging from 18 – 61 years. There were more teachers from urban areas (72.0%) and most of them were males (62.2%). About half (54.1%) were married and few (5.2%) were divorced. The vast majority (98.6%) heard about the confidential VCT service and their major sources of information were mass media (85.3%) and health workers (56.2%). The prevalence of VCT uptake was 46.3%. The odds of utilizing VCT significantly increased with being younger age group, female and first and second cycle teachers' category.

Conclusions: The major factors identified for increased uptake of VCT are gender, age and salary category. Actions targeting the males, non-youth age group and low grade teachers' are necessary to follow their peer groups to utilize the VCT service in order to achieve the goal of education set for 2015. [*Ethiop. J. Health Dev.* 2009;23(3):199-205]

Introduction

HIV/AIDS is a major crisis that is increasingly affecting the most productive segments of the population across development sectors in sub-Saharan African countries including Ethiopia. On the basis of the 2007 report, the global number of people living with HIV/AIDS was 33.2 millions with adults above the age of 15 years being the most affected. Surprisingly, the sub Saharan African countries, which constitute only 10 % of the world population bear a huge global burden in that two out of three adults and nearly 90% of children infected with HIV live in this region, and more than three in four AIDS deaths occurred in the same region (1).

Although HIV/AIDS is affecting most productive segments of the population, the basic education sector which is vital to the creation of human capital is also equally affected. The loss of skilled and experienced teachers due to HIV/AIDS related deaths and the long-term HIV/AIDS related illnesses are increasingly compromising the provision of quality education in most African countries. Education empowers individuals with appropriate skills and action based on the attained knowledge; it is considered as a social vaccine against HIV/AIDS. Because of this feature, it was estimated that some 7 million HIV infections could have been prevented by the achievements of the education for all

(EFA) goals. Paradoxically, this was not the case as the problem hampered the education systems (2, 3).

In Ethiopia, the situation is even worse based on the evidence obtained in 1998-2003 among teachers in Addis Ababa which showed that HIV/AIDS related illnesses were the leading cause of death accounted for nearly half of all deaths (4). Cognizant of the alarming situation, the Federal Ministry of Health (FMOH) has undertaken various appropriate measures (5). The measures taken by the line ministry has created an enabling environment for HIV/AIDS prevention and control such as provision of extensive Voluntary HIV counseling and testing (VCT) service for the larger community (6,7). Voluntary HIV counseling and testing which allows teachers know their HIV sero-status and prepare for treatment or care may represent a plausible commitment towards HIV/AIDS prevention as the package has enormous enabling factors such as accessibility of ARV drugs and other related supports.

The 2005 behavioral surveillance surveys of Ethiopia revealed the magnitude of the HIV/AIDS and VCT coverage to be 2.1% and 7.4% respectively. The report also showed that almost all teachers had heard about HIV while more than 60% know the three programmatic prevention areas. However, teachers were less likely to

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accept VCT compared to other professionals for uncovered reasons (8, 9). Although some information on HIV/AIDS and factors affecting uptake of VCT on different target groups are available, there is still scarcity of information on teachers in this regard. Therefore this study was proposed to explore aspects that are important in promoting the uptake of VCT services among teachers in one specific area of the country.

Methods

A cross sectional study design with analytic component was conducted among 566 teachers drawn from 20 randomly selected schools of Harari Administrative Region from March to April 2009. The capital of the region is Harar which is found 525 KM East of Addis Ababa. It has a total of 24 government and private health facilities with only 9 of the facilities providing VCT services and about 4140 clients had accessed the facilities for VCT services (10). The total numbers of schools and teachers at the time of the study were 57 and 1,426 respectively. Of the 57 (31 urban 26 rural) available schools, 12 from urban and 8 from rural settings were selected randomly using lottery method. Each selected schools were taken as cluster and registration of all teachers in the selected schools was done.

A total of 566 teachers drawn from the sampled schools who agreed to participate in the study were recruited based on the predetermined sample size. The sample size was calculated from an estimated prevalence of VCT utilization among teacher of 77% with 5% margin of error, 95% confidence level, 5% non response and 1.5 design effect (11, 12).

Self administered structured questionnaire adapted from similar previous studies and sample of questionnaire that was modified to the study setting, were used to collect socio-demographic information and other important variables. Pretesting of the questionnaire was performed before administering it on few teachers of the same schools that were not included in the present study to verify clarity of the instruments used. The important variables of interest collected were VCT utilization, individual's knowledge and their sources of information.

Data collectors (1 nurse as supervisor and 6 teachers as facilitators) were recruited from the respective schools and trained for two days by the principal investigators. Each questionnaire filled was checked for completeness of the information jointly by the facilitators. To reduce the error arising from respondents, 5% of randomly selected questionnaire were rechecked for consistencies by the principal investigator.

An additional 10 key-informants selected purposively from the school communities which included 5 teachers each from rural and urban with different educational background, age, sex, religion, marital status and income

were interviewed by the principal investigators using close ended questions.

Data were edited initially manually and then entered into the computer and analyzed using the Statistical Package for the Social Sciences version 16. The background information on testing for HIV was analysed and presented as frequencies and percentages. Responses were dichotomized before performing the binary logistic regression analysis which was used to assess the association between testing for HIV and socio-demographic characteristics, psychological factors and other important variables related to testing for HIV. Odds ratio and 95% confidence intervals were also constructed.

Ethical Issues

The ethical review committee of the school of public health and Addis Ababa University Medical Faculty approved the study for its ethical and scientific merit. Harari Regional Educational Bureau was communicated and supported the undertakings of this study in writing to all the respective sampled schools. Informed verbal consent was also obtained from the respective teachers for their participation after the nature of the study was fully explained in their local languages. The right to withdraw from the study at any time was also communicated and respected. At the end of the interview all teachers were advised and encouraged to follow their peer groups to utilize the VCT service.

Results

From the total 556 teachers recruited, 497 completed the questionnaire adequately making the response rate of 87.8%. The socio-demographic information of the teachers is summarized in Table 1. The mean age of the participants was 34.6 ranging from 18 – 61 years. The sample included teachers from urban (72.0%) as well as rural areas (28.0%). Most of respondents were males (62.2%) and were married (54.1%). More than half of the respondents (51.7%) had diploma and most (59%) were Christian (51.3%). The commonly paid salary was in the range of 1001-2001 Birr.

Table 2 displays the knowledge, source of information and the uptake of voluntary HIV counseling and testing (VCT). As shown, the vast majority (98.6%) have heard about the confidential VCT service. Their major sources of information were from mass media (85.3%) and health professional (56.2%). Likewise the vast majority (98.4%) knew where they can get VCT service in their locality and most (39.7%) mentioned the existence of confidential VCT service in government hospital and family guidance association clinics (38.4%). Less than a quarter (16.7%) mentioned the existence of the service in health centers and few (5.3%) reported the presence of similar service in private clinics. The overall prevalence of VCT uptake was 46.3% with slightly higher utilization of VCT by males (52.8%) than females (38.4

%). About one-third (33.0%) stated to use the VCT service because they were curious to know their HIV status. The proportion of females (51.3%) concerned to know their HIV status was higher than males (48.7%). On the other hand the proportion of males (58.4%) using the service because it was accessible was higher than females (41.6%). The number of teachers who tested before one year and 2 years prior to the data collection was 142 and 89.

Table 3 illustrates the demographic factors associated with the uptake of VCT. As shown, VCT uptake was significantly higher among younger age groups ($p=0.002$), being female gender ($p=0.01$), being first and secondary cycles teacher ($p=0.02$) and those whose salary was below 1500 Birr ($p=0.01$) than their counterparts.

When the above significant associations were analyzed further, using logistic regression models to control for the confounding effect of other variables, only sex ($p=0.04$) age ($p=0.001$) and teachers from first and second cycles ($p=0.04$) retained their association with the uptake of VCT suggesting that three important variables were identified as factors associated with increased VCT uptake (Table 4). The odds of having used VCT significantly increased with being female (AOR = 1.5; 95%CI =1.03 to 2.31), age (AOR = 0.3; 95%CI =0.25 to 0.61) and low grade teachers category (AOR = 0.6; 95%CI =0.37 to 0.98). The other socio demographic variable such as location of the school, salary and educational status lost their significance with utilization of VCT uptake service.

The selected 10 key informants with different socio-demographic backgrounds have mentioned the availability of confidential VCT service in the government hospitals and family guidance association clinics. They also mentioned that women frequently use the service more than males. According to the participants, they ascribed the nature of family guidance services as a plus for women since it was women centered by enlarge i.e “we are not surprised to see the uptake to be higher among women as women frequently

visit the centre for various reasons specifically during pregnancy, family planning and engagement among others”.

Table 1: **Socio-demographic characteristics of sampled teachers in Harari Region, 2009**

Variables	Numbers	Percents
Age category (n=494)*		
15-24	65	13.2
25-34	204	41.3
35-44	122	24.7
45-54	81	16.4
55-64	22	4.5
Teachers Location (n=497)		
Urban areas	358	72.0
Rural areas	139	28.0
Sex (n=497)		
Male	309	62.2
Female	188	37.8
Marital Status (n=497)		
Single	192	38.6
Married	269	54.1
Divorced/separated	25	5.0
Widowed	11	2.2
Educational Status (n=497)		
12+1/10+1	132	26.6
Diploma	257	51.7
1 st degree	108	21.7
Religion (n=497)		
Islam	132	26.6
Orthodox	292	59.0
Catholic	59	11.9
Protestant	4	0.8
Other	9	1.8
Ethnicity (n=497)		
Amhara	255	51.3
Oromo	158	31.8
Harari	34	6.8
Tigre	20	4.0
Gurage	19	3.8
Other	11	2.2
Salary category (n=488)**		
400-1000 Eth. Birr	210	43.9
1001-2000 Eth. Birr	258	52.9
2001-3000 Eth. Birr	20	4.1

*=3 age information was missing; **=6 dubious responses were excluded

Table 2: Knowledge, source of information and uptake of VCT service among sampled teachers by gender in Harari Region, 2009

Characters	All	Male	Female
Heard about VCT (n=497)			
Yes	490 (98.6)	302 (61.6)	188 (38.4)
No	7 (1.4)	7 (100.0)	-
Heard from health workers (n=497)			
Yes	282 (56.7)	149 (52.8)	133 (47.2)
No	215 (43.3)	84 (39.1)	131 (60.9)
Heard from mass media (n=497)			
Yes	425 (85.5)	191 (44.9)	234 (55.1)
No	72 (14.5)	42 (58.3)	30 (41.7)
Heard from friends (n=497)			
Yes	124 (24.9)	65 (52.4)	59 (47.6)
No	373 (75.1)	168 (45.0)	205 (55.0)
Know centres providing VCT (n=497)			
Yes	489 (98.4)	228 (46.6)	261 (53.4)
No	8 (1.6)	2 (25.0)	6 (75.0)
Centres Providing VCT*			
Government hospital	309 (39.7)	200 (64.7)	109 (35.3)
Health centre	128 (16.7)	84 (65.6)	44 (34.4)
FGAE clinic	298 (38.4)	173 (58.1)	125 (41.9)
Private clinic	42 (5.3)	22 (52.4)	20 (47.6)
VCT uptake (n=497)			
Yes	230 (46.3)	37 (48.7)	103 (44.8)
No	267 (53.7)	182 (68.1)	85 (31.9)
Reason for VCT uptake (n=230)			
To know HIV status	76 (33.0)	37 (48.7)	39 (51.3)
It is accessible	154 (67.0)	90 (58.4)	64 (41.6)
Time of VCT utilization (n=230)			
One year ago	141 (61.3)	73 (51.8)	68 (48.2)
2 year ago	89 (38.7)	54 (60.7)	35 (39.3)

FGA=Family guidance association; Number exceeds 497 because of multiple responses; Figures are numbers and parentheses are row percentages.

Table 3: Associations of various characteristics of teachers by VCT Uptake, Harari Administrative Region, 2009

Variable	Utilized VCT		X ²	P-value
	Yes	No		
Location				
Urban	157 (43.9)	201 (56.1)	3.0	0.05
Rural	73 (52.5)	66 (47.5)		
Age category*				
15-34	138 (51.3)	131 (48.7)	5.8	0.002
35-64	91 (40.1)	134 (59.6)		
Sex				
Male	127 (41.1)	182 (58.9)	8.8	0.003
Female	103 (54.8)	85 (45.2)		
Marital status				
Single	82 (42.7)	110 (57.3)	1.6	0.2
Ever married	148 (48.5)	157 (51.5)		
Religion				
Moslems	56 (42.4)	76 (57.6)	1.1	0.3
Christians (all kinds)	174 (47.7)	191 (52.3)		
Educational level				
Diploma and below	188 (48.3)	201 (51.7)	3.0	0.08
Degree	42 (38.9)	55 (51.1)		
Teacher category				
First and second cycle	192 (48.7)	202 (51.3)	4.6	0.03
Secondary and preparatory	38 (36.9)	65 (63.1)		
Salary category**				
≤1,500 Birr	199 (48.9)	208 (51.1)	5.5	0.01
≥1,500 Birr	28 (34.6)	53 (65.4)		

*=No age information for 3 teachers; **=No salary information for 9 teachers

Table 4: Associations of various characteristics of teachers by VCT Uptake, Harari Administrative Region, 2009

Variable	Utilized VCT		AOR (95% CI)
	Yes	No	
Location			
Urban	157 (43.9)	201 (56.1)	1.1 (0.69-1.80)
Rural	73 (52.5)	55 (47.5)	1
Age category^a			
15-34	138 (51.3)	131 (48.7)	0.4 (0.26-0.67)**
35-64	91 (40.1)	134 (59.6)	1
Sex			
Male	127 (41.1)	182 (58.9)	1.1 (1.01-2.28)*
Female	103 (54.8)	85 (45.2)	1
Teacher category			
First and second cycle	188(48.3)	201 (51.7)	0.6 (1.04-2.76)*
Secondary and preparatory	42 (38.9)	66 (51.1)	1
Salary category^b			
1,500 Birr	192 (48.7)	202 (51.3)	0.7 (0.39-1.38)
1,500 Birr	38 (36.9)	65 (63.1)	1

^a=No age information for 3 teachers; ^b=No salary information for 9 teachers; AOR=Adjusted Odds Ratio; CI=confidence interval; *=significant at P<0.05; **significant at P<0.01

Discussion

HIV counseling and testing service is a very important component of HIV/AIDS prevention strategies. The proportion of VCT uptake of 46.3% (54.8% for female, 41.1% for male) in our study is in conformity with some previous studies reported among armed force which was 46.9% in 1990 (13). It is also better than the 2005 BSS-Ethiopia findings as well as the Tanzanian report for similar study group (46.3% versus 20%) (8, 14). One of the important findings in the present study is that the majority (61.3%) of the teachers among the tested group was tested a year before the data collection period. Although, there is a lot the finding is encouraging news to the region as well as to the nation since it shows an increment in the uptake of VCT.

Female were more likely to be tested for HIV than their counterpart. This is in line with the 2008 HIV/AIDS Ethiopian epidemiological synthesis and the study conducted in Butajira (7, 15). The increased uptake of VCT observed among female teachers was probably due to the fact that women in the reproductive age group are offered the VCT service while they visit the health facilities for different health reasons in general and during their antenatal check-up in particular (15). The increase in VCT uptake among the ever-married teachers was reflected during the in-depth interview and it was stated that most teachers usually get tested during engagement or marriage.

Being age less than 35 years was positively associated with the uptake of VCT probably such age category are more eager to know their HIV sero-status than older age group. Further more, this age category are young and are more likely to be tested for HIV before marriage among others. This assertion was also supported by some studies done in Ethiopia as well as other African countries like Tanzania and Zimbabwe (9, 14, 16-18)

The major sources of VCT information identified were mass media and health centers. According to this study, 98.6% of respondents heard the availability of VCT services which is comparable with the finding from pre-marital HIV utilization study in Addis Ababa (19). However it is higher than the result obtained from community based study in northwest Ethiopia which is 73.5% (20) probably due to the difference in the composition of the study participants. The participants were teachers presumed to had the access of media awareness on about HIV/AIDS risk and prevention (21). In the review made by Kloos et al, they concluded that the radio program developed since 2002 featuring serial dramas have made a significant contribution on teachers 'awareness as well other youths the media. This experience might have skewed the source of information as media rather than peer groups suggesting media accompanied by dramas are the most important sources of information (21). Firstly the low peer sharing of information observed in this study should be interpreted with some caution as the sample may not represent the entire study population of the region. Secondly, the education sector has been criticized for failing to include HIV/AIDS information and guidelines for teachers (21).

In the present study the vast majority of the respondent 489(98.4%) knew the existence of confidential VCT service in their locality. This finding is again encouraging since it is higher than the findings of 2005BSS-Ethiopia and the study done on high-school teachers of Addis Ababa in 2004 (8, 22) The reason for such success news could be due to the recent accelerated expansion of the VCT service carried out through an increased advocacy and social mobilization in the region as well as country-wide (7). Nevertheless, despite the improved knowledge as a result of the advocacy work, knowledge was not significantly associated with utilization of VCT suggesting that knowledge about HIV/AIDS alone does not necessarily guarantee to bring

a behavioral change. Similar finding was also reported by some investigators (8, 15, 19, 22-23) indicating that still social mobilization and advocacy work is on demand.

Other important findings demonstrated in this study was the increased uptake of VCT among teachers who are teaching in first and second cycle suggesting that more advocacy work targeting the high school and preparatory teacher is necessary through mass media and health workers. The increased uptake observed among the Christianity followers was also encouraging probably due to their large number (Moslem constituted for 26.6% of the total sample size). Nonetheless, to clear their doubts, it is worth considering more advocacy work.

Limitations of the Study

As with any observational study, the possibility of residual confounding effect of some factors cannot be excluded. This may result in spurious associations of the factors with some events and we thus guarded against this possibility by careful sequential building of models, in our analyses.

Conclusions

Firstly the vast majority knew the existence of confidential VCT services and large proportion of them utilized the service. Secondly, three important variables were identified as predictors for the increased VCT uptake. The odds of having used VCT significantly increased with being female, younger age group and teachers' category. Therefore, actions targeting the male and the older age groups in addition to secondary and preparatory schools are necessary to effectively enhance the use of the VCT services which allows teachers to know their HIV sero-status and prepare for treatment or care which could represent a plausible commitment towards HIV/AIDS prevention in the region as well as the country. Although it was not revealed in this study, peer education program is another opportunity to consider to reinforce knowledge and behavior change.

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References

1. UNAIDS/WHO. AIDS update, Geneva, December 2007:1-20.
2. Bakilana A, Bundy D, Brown J, et al. Accelerating the Education Sector Response to HIV/AIDS in Africa: A review of World Bank assistance, World Bank global HIV/AIDS program discussion paper. August 2005: 1-5.
3. Bennell P, Hyde K and Swainson N. Impact Of The HIV/AIDS Epidemic On The Education Sector In Sub-Saharan Africa: A synthesis of the findings and recommendations of three Country studies, centre for international education. Feb. 2002:75-97.
4. Asmelash A. Assessment of HIV/AIDS-Related Mortality among Primary and Secondary School Teachers in Addis Ababa (1998-2003) Using Verbal Autopsy. (MPH thesis) December 2004, Addis Ababa, Ethiopia.
5. FMOH. AIDS in Ethiopia. Sixth Report, September, 2006; FMOH, Addis Ababa, Ethiopia.
6. FMOH/HAPCO. Guidelines for HIV Counseling and Testing in Ethiopia. July 2007; FMOH, Addis Ababa.
7. HAPCO/GAMET. HIV/AIDS in Ethiopia: an epidemiological synthesis, the global HIV/AIDS program, April 2008.
8. FMOH/HAPCO. HIV/AIDS Behavioral Surveillance Survey (BSS II). 2005: pp. 148-154, Addis Ababa, Ethiopia. The pages cited are not correct.
9. Admasu M, Fitaw Y. Factors affecting Acceptance of VCT among different professional and community group in North and South Gondar Administrative Zones, North West Ethiopia. *Ethiop. J. Health Dev.* 2006; 20(1):24-31.
10. FMOH. Health and health indicators. Health information processing and documentation team, FMOH, Addis Ababa, 2006/07.
11. Mohammed F. Factors related to voluntary counseling and testing among 15-49years urban community of Harar. MPH Thesis, December 2000. Addis Ababa, Ethiopia.
12. Assegid M. Intention and Practice of VCT and infant feeding in the context of HIV/AIDS among lactating Mothers in Harar Town. Extracts from EPHA sponsored Master's thesis, August 2007, Addis Ababa Ethiopia.
13. Aytenfisu Y. Assessment of utilization and determinants of VCT for HIV in the armed force of Ethiopia. MPH thesis, 2007, Addis Ababa, Ethiopia.
14. Kakoko D.C, Lugoe W.L, Lie G.T. Voluntary testing for HIV among a sample of Tanzanian teachers: A search for socio-demographic and socio-psychological correlates. *AIDS Care* August 2006; 18(6):554-560.
15. Wondwoson M. Assessment of VCT Service Utilization for HIV/AIDS among Government and Non government Employees in Butajira. MPH thesis, 2007, Addis Ababa, Ethiopia.
16. FHAPCO/FMOH. Guidelines for Prevention of Mother-to-Child Transmission of HIV in Ethiopia FMOH, Addis Ababa, Ethiopia, July 2007.
17. Sherr L. Voluntary counselling and Testing: uptake, impact on sexual behavior, and HIV incidence in a rural Zimbabwean Cohort. *AIDS* 2007;21:851-860.
18. Wondimageng G. Factors Associated with VCT Utilization in Gurage zone. MPH thesis, April 2004, Addis Ababa, Ethiopia.

19. Habte D, Deyessa N, Gail D. Assessment of the utilization of pre-marital HIV testing services and determinants of VCT in Addis Ababa. *Ethiop. J. Health Dev.* 2006;20(1):18-23.
20. Alemu S, Abseno N, Degu G, et al. Knowledge and attitude towards voluntary counselling and testing for HIV: A community based study in northwest Ethiopia. *Ethiop. J. Health Dev.* 2004;18(2):82-89.
21. Kloos H, wuhib W, Haile Mariam D, Lindtjørn B. Community-based organizations in HIV/AIDS: Lessons Learned from Community-based operations, 2003;17 (Special issue):3-31.
22. Enkosa M. Study of sexual behavior and level of awareness about HIV/AIDS/STIs and their attitudes toward VCT among high- school teachers of Addis Ababa. MPH thesis, 2004, Addis Ababa, Ethiopia.
23. Bekele S. *Assessment of VCT service utilization among 15-49years age group in Mersa Tawon of Habru District, North Wollo.* MPH thesis, 2007, Addis Ababa, Ethiopia.