Original article

Knowledge and attitude towards voluntary counseling and testing for HIV: A community based study in northwest Ethiopia

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Abstract

Background: Voluntary counseling and testing (VCT) is potentially effective intervention to prevent transmission of HIV by changing sexual behaviour, and also enabling seropositive women to make informed decision whether or not to have children.

Objective: To assess the knowledge, attitude, behaviour and practice of the community on VCT for HIV and prevention of Mother-to-Child transmission (PMTCT).

Methods: This is a cross-sectional survey aimed at assessing the knowledge, attitude and practice towards VCT for HIV and PMTCT. A total of 992 subjects residing in urban and rural *Kebeles* were interviewed using a pre-tested questionnaire.

Results: 89.9% of the respondents were aware that one can check her/his HIV status. However, less number of them, i.e. 732 (73.8%) knew about the availability of VCT services. Urban dwellers were found to be more willing than rural villagers to undergo testing for HIV. The majority of women (426, 85.5%) specified their willingness to take antiretroviral treatment during pregnancy to protect vertical transmission if they are seropositive.

Conclusion: Level of knowledge about HIV/AIDS seems to be high among the study community. However, there are still wrong interpretations and misunderstanding about modes of transmission and preventive methods. The result could be used as a baseline data for instituting VCT and PMTCT activities. [*Ethiop.J.Healh Dev.* 2004;18(2):82-89]

Introduction

More than 80% of adults living with HIV reside in sub-Saharan Africa, where the epidemic still continues to spread (1). In the global scale, Ethiopia hosts the third largest number of people living with HIV/AIDS (PLWHA), and ranks 16th in terms of prevalence (2). In Ethiopia, PLWHA are estimated to be 2.2 million in 2001; 200,000 of them where children. Mother-to-child transmission is by far the largest source of infection in children. The risk of an infant acquiring the virus from an infected mother ranges from 25-35%. A study in Ethiopia has indicated a transmission rate ranging from 29-47% (3). The 2001 estimate of adult HIV prevalence in Ethiopia is 6.6% (3). Prevalence rate among women attending antenatal clinics vary between 15.1 – 20.8 %. However, this trend and figures indicate the picture in urban areas. As there is no routine surveillance in rural areas, the level and trend in such areas are difficult to estimate.

Such a high prevalence rate necessitates the implementation of multifaceted prevention activities and programmes. One of the approaches is voluntary counseling and testing (VCT). VCT is an intervention that comprises of a minimum of pre- and post- test counseling associated with testing. The primary aim of VCT is to help people change their sexual behaviour so as to avoid transmitting HIV to sexual partners, if seropositive, and to remain seronegative if negative. VCT is one of the few potentially effective and affordable methods for reducing the transmission of HIV in developing countries (4). Despite many limitations and difficulties in its implementation in Sub-Saharan Africa, many studies have shown that VCT is effective in reducing HIV transmission. Couple counseling following testing was shown to be effective for changing sexual behaviour, and resulted in a low rate of HIV seroconversion in serodiscordant couples (5-7). Another role of VCT is its potential in the Prevention of Mother To Children Transmission (PMTCT) of HIV by either enabling the seropositive women to make informed decisions about whether or not to have children, or to provide antiretrovirals with modifying infant feeding practices. PMTCT undertakings can reduce HIV transmission from mother-to-child to 10% or less (8,9).

VCT services are relatively new for Ethiopia. Counseling with or without testing is initiated in the early 1990s by providing short term training for nurses and other healthcare professionals (10) with the aim of prevention of HIV transmission and acquisition, early and appropriate uptake of service, and social benefits (normalization of HIV, challenging stigma, promoting awareness, supporting human right, etc.). At early implementation phases, due to lack of resources (8) and focus, VCT was not widely available. The other challenge to VCT was that counseling has not been a component of medical or health care in the country

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previously which necessitates training of professionals on one hand, and clients' acceptance of the mode of care, on the other hand.

There are still many barriers to large-scale implementation of VCT and PMTCT. These are dependent on societal factors such as presumed negative outcomes following VCT (abandonment and abuse, marital break-up, discrimination, psychological distress and depression) as well as factors associated with delivery of the service (availability, confidentiality, limited treatment option for PLWHA, operational issues) (8,11). These implementation related issues have been studied to a certain extent in some African countries. Since VCT and PMTCT are relatively new for Ethiopia, many issues related to their effective implementation and uses are unknown. The main objective of this study is to explore the situation (knowledge, attitude, behaviour, and practice) regarding PMTCT, VCT and HIV transmission in Gondar Town and in rural localities in the vicinity to have a base line data for the emerging VCT services and PMTCT interventions in the area.

Subjects and Methods

This cross-sectional survey aimed at assessing the knowledge, attitude and practice towards VCT for HIV and PMTCT was undertaken in January 2003. The study sites were the town of Gondar and the rural villages of Dabat District. Six urban and six rural 'kebeles' were selected randomly from Gondar Town and Dabat District, respectively. About 1032 households (516 from urban and 516 from rural) were identified from the selected urban and rural 'kebeles'. All adult males and females in the age group 15-49 years who were permanent residents of the study areas were eligible to be included in this study. The assumptions made for the sample size calculation were: a 95% confidence interval (two sided), an expected proportion (knowledge about HIV/AIDS and VCT) of 50% and a 3.2% of margin of error. Some 10% was also added for non-response and other contingencies. Accordingly, a sample size of 1032 individuals aged 15 to 49 years was proposed. However, some of the required respondents were not present at the time of the survey due to reasons not related to our study. Re-visits were made in order to reduce the non-response rate.

A questionnaire which consisted of the basic socio-demographic characteristics and questions related to the knowledge, attitude and practice of the study population towards HIV/AIDS, VCT and PMTCT was prepared in the local language (Amharic). Both closed and open-ended questions were included in the questionnaire. Pre-testing of the questionnaire was undertaken in similar areas before the actual data collection took place and some minor modifications were done accordingly. Ten nurses who were given a two-day intensive training were involved in the data collection. Three medical doctors were assigned to supervise the nurses during the process of data collection. The overall activity was coordinated by the investigators of the study.

Prior to data collection, the objectives of the study were discussed with the respective district health authorities and written consent was obtained. Oral consent was also obtained from each individual respondent. Data entry and analyses were performed using EPI INFO version 6 Statistical software package. Statistical tests such as, Chi-square were used as appropriate. P-values less than or equal to 5% were considered significant.

Results

A total of 992 subjects (response rate, 99.2%) aged 15 to 49 years residing in urban and rural 'kebeles' of Gondar and Dabat respectively were interviewed. The mean age of the study subjects was 32.6 years (median 32 years) with a standard deviation of 8.4 years. More or less an equal number of urban and rural dwellers were included in this study and the majority (96.5%) were from the Amhara ethnic group. Farmers and housewives constituted about two-thirds of the total study (sampled) population. The socio-demographic characteristics of these subjects are given in Table 1.

All respondents confirmed the fact that they had heard of HIV/AIDS and 678 (68.3%) of them reported that they

Table 1: **Socio-demographic characteristics of the study subjects in Gondar Town and the surroundings northwest Ethiopia, January 2003.**

Characteristics	Frequency (n=992)	Percent (%)
Age group		
15-19	52	5.2
20-24	138	13.9
25-29	195	19.7
30-34	180	18.2
35-39	151	15.2
40-44	168	16.9
45-49	108	10.9
Sex		
Male	486	49.0
Female	506	51.0
Ethnic group		
Amhara	957	96.5
Tigray	32	3.2
Oromo	3	0.3
Religion		
Orthodox	925	93.2
Muslim	59	6.0
Protestant	8	0.8
Place of residence		
Urban	490	49.4
Rural	502	50.6
Occupation		
Civil servant	78	7.9
House wife	380	38.3
Farmer	266	26.8
Student	41	4.1
Weaver	7	0.7
Other	220	22.2

knew someone who was infected with HIV or one who had died of AIDS. In fact, 200 (20.2%) of the study subjects reported to have had close relatives (friends) who were either positive for HIV or who lost their lives because of HIV/AIDS.

It was learned from this study that quite a big number of our respondents (381 or 38.4%) did not know (accept) the fact that people could protect themselves from HIV by using condoms correctly every time they had sex. Only 364 (36.7%) of the study subjects replied that mosquitoes could not transmit HIV from the infected to the uninfected ones. Staying with only one uninfected faitful partner was also mentioned by nearly all respondents (98.1%) as the best preventive measure against HIV/AIDS infection. About a third of the resonding study subjects reported that sharing a meal wit someone who is infected was one of the modes of HIV/AIDS transmission and 39 (4%) respondents wereunable to forward their suggestions with regard to the consequences of sharing a meal with an infected indivdual. Responses of the study subjects on questions relatig to the preventive methods and modes of transmission of HIV/AIDS are given in Table 2.

Table 2: **Knowledge of the study subjects on the modes of HIV transmission and its preventive methods in Gondar town and Surroundings northwest Ethiopia, January 2003.**

HIV/AIDS related questions	Number of respondents		
	Urban (n=490)	Rural (n=502)	Total (n=992)
Condom protects from HIV			
Yes	385	226	611
No	57	92	149
Don't Know	48	184	232
% yes	78.6	45.0	61.6
Mosquitoes (insects) transmit the virus from the infected to the uninfected individual			
Yes	170	242	412
No	256	108	364
Don't Know	64	152	216
% yes	34.7	48.2	41.5
Staying with only one uninfected faithful partner protects people from HIV infection			
Yes	484	489	973
No	2	12	14
Don't Know	4	1	5
% yes	98.8	97.4	98.1
Abstaining from sexual intercourse prevents from contracting HIV/AIDS			
Yes	451	484	935
No	33	15	48
Don't Know	6	3	9
% yes	92.0	96.4	94.3
Can a person get HIV by having a meal with someone who is infected?			
Yes	93	195	288
No	381	284	665
Don't Know	16	23	39
% yes	19.0	38.8	29.0
Can a person get HIV by getting injections with a needle that was already used by someone else?			
Yes	480	463	943
No	6	33	39
Don't Know	4	6	10
% yes	98.0	92.2	95.1
Do you think that a healthy-looking person can be a carrier of HIV?			
Yes	393	190	583
No	62	227	289
Don't Know	35	85	120
% yes	80.2	37.8	58.8
Can a pregnant woman with HIV/AIDS transmit the virus to her unborn child?			
Yes	445	473	918
No	13	16	29
Don't know	32	13	45
% yes	90.8	94.2	92.5
Can a woman with HIV/AIDS transmit the virus to her newborn child through breastfeeding?			
Yes	368	472	840
No	54	24	82
Don't know	64	6	70
% yes	75.1	94.0	84.7

Table 3: **Attitudes of the study subjects towards people living with HIV/AIDS in Gondar Town surroundings northwest Ethiopia, January 2003.**

Attitudes of the study subjects	Number of respondents		
	Urban (n=490)	Rural (n=502)	Total (n=992)
Do you share a meal with a person who is positive for HIV/AIDS			
Yes	386	125	511
No	97	375	472
Don't Know	7	2	9
% yes	78.7	24.9	51.5
If your male relative is positive for HIV/AIDS, do you take care for him in your households?			
Yes	474	377	851
No	16	125	141
% yes	96.7	75.1	85.8
If your female relative is positive for HIV/AIDS, do you take care for her in your household?			
Yes	478	376	854
No	12	126	138
% yes	97.6	74.9	86.1
If you knew a shopkeeper or food seller had the HIV virus, would you buy food from them?			
Yes	372	102	474
No	116	400	516
Don't Know	2	0	2
% yes	75.9	20.3	47.8
If one of your family members is positive for HIV, do you keep it in secret?			
Yes	183	185	368
No	300	317	617
Don't Know	7	0	7
% yes	37.3	36.9	37.1

The attitude of the respondents towards People Living with HIV/AIDS (PLWHA) was also assessed. Accordingly, roughly half of the study subjects replied that they would not accept sharing a meal with someone who is identified as having HIV/AIDS. On the average, out of 7 respondents, 6 of them were comfortable in taking care for their male or female infected relatives in their households. On the other hand, over half of the respondents (516 or 52%) reported that they would not buy food items and other materials from shops and supermarkets owned (served) by HIV positive persons. The details are given in Table 3. As shown in Tables 2 and 3, urban dwellers are in most cases, in a better position (i.e., more knowledgeable) with regard to the modes of HIV transmission and its preventive measures. For example, subjects residing in urban centers were nearly 3 times more knowledgeable about the protective effect of the 'correct use of condoms for every sexual intercourse' compared to people living in rural areas and this difference was statistically significant (OR = 2.8, P < .001). Moreover, urban dwellers were 7.6 times more knowledgeable with regard to the fact that healthy-looking people could be carriers of HIV compared to the rural settlers. (OR = 7.6, P < .001).

The attitude of urban and rural dwellers towards PLWHA was also investigated. In this respect, the attitude of urban dwellers to share a meal with an infected person was about 12 times higher compared to the rural villagers and this difference was statistically significant (OR = 11.9, P < .001). The likelihood that urban dwellers would buy food from a shopkeeper or food seller whom they knew to have had HIV virus was observed to be more than 12 times higher than the rural people (OR =12.6, P < .001). It was also learned from this study that there was a significant difference in the attitudes of study subjects living in urban and rural 'kebeles' towards PLWHA and AIDS patients. People with HIV/AIDS were more stigmatized in rural areas compared with urban centers. About 97% of the subjects taken from the urban centers reported that they would take care for their infected relatives in their households, while the corresponding figure was 75% among the study group taken from the rural villages. When investigated further, the attitude of the urban dwellers towards taking care for their infected male relatives in their households was about 10 times higher than the rural villagers (OR = 9.8, P < .001). Almost the same figure was obtained with regard to the care given for infected females by their relatives.

On the other hand, similar responses were obtained between the urban and rural dwellers in relation to the protective effects of the following behaviours: "staying with only one uninfected faithful partner" and "abstaining from sexual intercourse". In both cases, there were no statistically significant differences between the urban and rural study subjects (P > .05). Among the total

Table 4: **Knowledge and attitude related to VCT service of the study population in Gondar town and the surrounding areas northwest Ethiopia, January 2003.**

Characteristics	Urban (n=490)		Rural (n=502)	
	number	%	Number	%
Know that one can check his/her HIV status				
Yes	484	98.8	407	81.1
No	6	1.2	95	18.9
Know about the availability of VCT service				
Yes	459	93.7	273	54.4
No	31	6.3	229	45.6
Sites where one can get the service	(n=459)			
Hospitals	288	62.7	219	80.2
Polyclinic	16	3.5	45	16.5
Other sites	155	33.8	9	3.3
Preferred location for VCT	(n=459)			
Hospitals	284	61.9	60	22.0
Polyclinic	28	6.1	210	76.9
Family Guidance	4	0.9	0	0.0
Private clinics	9	1.9	3	1.1
Others	134	29.2	0	0.0
Feel that VCT service is necessary				
Yes	484	98.8	490	97.6
No	6	1.2	12	2.4
Reason for thinking that VCT is necessary	(n=484)			
To know the HIV status	122	25.2	234	47.8
To protect myself from the infection	20	4.1	177	36.1
If positive, not to transmit to others	10	2.1	23	4.7
Others	332	68.6	56	11.4

responding study subjects, 891(89.8%) were aware that one could check his/her HIV status. Regarding the availability of VCT (Voluntary Counseling Testing) services, 732 (73.8%) knew about the availability of the services and 260 (26.2%) did not know. Among the respondents who knew about the availability of the VCT services, 167 (22.8%) got the information from health personnel, 79 (10.8%) from radio, 20 (2.7%) from neighbors. The main sites mentioned by the respondents to get the VCT services were: hospitals (507 or 69.3%) and polyclinic (55 or 7.5%). The majority, 974 (98.2%) revealed that VCT is necessary. The most important reasons for thinking that VCT is necessary were the following: 356 (36.6%) to know the HIV status, 197 (20.2%) to protect themselves from the infection (Table 4). Three hundred sixteen (31.9%) of the study subjects said that they would do the screening when feeling sick, 250 (25.2%) said at any time and 127 (12.8%) said before marriage.

Nine hundred thirty (93.8%) reported their willingness to use the VCT service if made available free of charge. When investigated further, the majority of the subjects (756 or 76.2%) replied that they would pay for the VCT service while the rest 236 (23.8%) respondents were not in favor of paying any money for the VCT service they get (Table 5). When those respondents who supported payment were asked about the amount of money they could pay for VCT, 375 (42.1%) said up to 5 Birr, 266 (29.9%) said up to 10 Birr, 133 (14.9%) said 11 to 20 Birr and 92 (10.3%) mentioned more than 20 Birr. The main reasons given for being ready to use VCT were: to know the HIV status 336 (34.8%), and to avoid risky behavior 197 (21.7%).

As shown in Table 5, in relation to the question who needs VCT service, there was a considerable disparity between the responses of the urban and rural dwellers. In particular, the response of the rural respondents was more than 3 times greater than the urban dwellers in citing that the female sex workers are the ones who need VCT service (OR = 3.4, 95% C.I (2.6 to 4.4), P<.001). The same Table shows the various responses of the study subjects with regard to the measures that a person would take if he/she is found positive/negative for HIV by taking account of urban-rural differentials.

When asked whether they would agree to accept antiretroviral treatment during pregnancy in order to protect the new born from infection, the majority of the women (426 or 85.5%) agreed to take the antiretroviral drug. The male respondents were also asked the same question whether they would support if their partners take antiretroviral drug during pregnancy. In this regard, the majority (444 or 90.8%) of the male respondents replied that they would support their female partners. About three-fourths of the women (71.5%) reported that

Table 5: **Knowledge and attitude related to VCT service of the study population in Gondar Town and their surrounding areas northwest Ethiopia, January 2003.**

Characteristics	Urban (n=490)		Rural (n=502)	
	number	%	number	%
Time when one hast to be tested				
When feeling sick	41	8.4	275	54.8
At any time	179	36.5	71	14.1
Before marriage	63	12.9	64	12.8
If only has multiple partners	17	3.4	19	3.8
Others	190	38.8	73	14.5
Willing to use VCT service if made available free of charge				
Yes	470	95.9	460	91.6
No	20	4.1	42	8.4
Willing to pay for the service				
Yes	430	87.8	326	54.9
No	60	12.2	176	35.1
Who are the people who need HIV test if the service is made available*				
Female sex workers	162	33.1	314	62.5
Drivers	94	19.2	66	13.1
Students	85	17.3	74	14.7
Couples before marriage	96	19.6	72	14.3
Adolescent	207	42.2	132	26.3
People with history of unprotected sex	57	11.6	85	16.9
Pregnant women	21	4.3	7	1.4
Adults	49	9.8	11	2.2
Children	22	4.5	3	0.6
Measures a person would take if she/he is found positive*				
Abstain sex	285	58.2	296	59
Look for medical care	262	53.5	244	48.6
Avoid pregnancy	71	14.5	6	1.2
Commit Suicide	3	0.6	18	3.6
Care for self	394	80.4	113	22.5
Use condom	54	11.0	2	0.4
Avoid marriage	31	6.3	54	10.8
Get divorced	4	0.8	64	12.7
Measures a person would take if she/he is free from HIV*				
Avoid risk of HIV	400	81.6	286	57
Abstain from sex	62	12.7	30	6
Start using condom	61	12.4	5	1
Avoid risky behaviors	243	49.6	154	30.6
Others	82	16.7	27	5.4

* Shows multiple answers

they would continue breast-feeding even if they are infected with HIV.

The study subjects were also asked about the measures they would take if they are HIV negative, but their partners are found HIV positive. Accordingly, 556 (56%) said they would stop having sex, 491 (49.5%) indicated that they would take care for their partners and 367 (37%) said they would get divorced. When the urban and the rural residents were compared with regard to checking (knowing) ones HIV status, the urban dwellers were more willing than the rural villagers and the difference was statistically significant (OR = 18.8, 95% CI (7.8 < OR <48.5, P<.001). When we compared the urban and the rural residents about their willingness to pay for VCT service, the urban dwellers showed 3.9 times more willingness than the rural ones and the difference was statistically significant (OR =3.9, 95% CI (2.7< OR<5.4, P<.001).

Discussion

Unlike the findings from other studies, all study subjects of the present study who were randomly selected from both urban and rural settings, reported that they had heard of HIV/AIDS (12-14). The percentages of people who never heard of HIV/AIDS in previous similar studies were 8.9% in Kola Diba (among high school students), 2.8 in Dabat and Kola Diba (among commercial sex workers) and 5.6 in Awassa Town (among out-of-school youth). Although all subjects

included in our study claimed that they have heard of HIV/AIDS, the investigation done on their knowledge of the modes of transmission and preventive measures indicated the fact that most of the interviewed individuals were lacking the correct knowledge. In particular, subjects taken from the rural areas were unable to mention the most important modes of transmission of HIV/AIDS and its preventive measures. This reminds us the prevailing fact among our population in general and rural people in particular.

On the other hand, HIV is spreading at an alarming speed causing untold suffering and death and creating profound development challenges. In order to avert the present somewhat gloomy situation, concerted efforts which may be driven by strong political leadership and public commitment should be in place (13, 15-17). The protective effects of 'staying with only one uninfected faithful partner' and 'abstaining from sexual intercourse' were well responded by both urban and rural subjects. This has to be strengthened and the impact should be studied.

Although the above protective measures could be taken as healthy behaviours, HIV related stigma and resulting discrimination are the emerging phenomena (mostly in rural areas and to some extent in urban centers), which hinder the ongoing efforts to reduce the incidence of HIV infections. In order to reduce and avoid HIV-related stigma and resulting discrimination, there appears to be a need to unravel the concept of stigma and begin open and frank discussion (18).

According to the findings of the present study, the majority of the respondents (891 or 89.8%) were aware that one could check his/her HIV status. A Similar result was observed in the study conducted in Bahir Dar by M. Dejene in 2001. In his study, 82.8% had the knowledge of the importance of checking ones HIV status (19). About 98% of our respondents felt that VCT services are necessary. A similar finding (94.2%) was also obtained by M. Dejene in his Bahar Dar study. Another study by F. Mohammed (2000) which was conducted in Harar Town indicated that 85.4% of the study subjects wanted to have VCT and 73.9% said they would ask their partner to get VCT services (20).

If these attitudes of our people could be practical on the actual ground, it would be highly likely that the incidence of HIV would decrease in this country. However, as indicated by many studies conducted in Africa, there is a great difference in theoretical and actual uptake rates of VCT. In Zambia, for example, the readiness to utilize the VCT services among the study group was 37% and only 3.6% actually came for VCT service (21). In many African countries, women have refused testing because HIV testing and subsequent knowledge of HIV status can bring emotional distress, stigma and abandonment (22).

According to the findings from DHS of Ethiopia, condom use was extremely low among the adolescent (23). In our study as well as other similar studies (19,20), use of condom as a preventive measure was cited only by a small proportion of the study subjects. The majority of our respondents (65%) said that they would stop having sex if their partners are found to be HIV positive and 49.5% indicated that they would take care for their partners. The Bahir Dar study showed that 29.7% would stop having sex and 51% reported that they would take the necessary care for their partners (19).

In conclusion, unlike the findings of many studies conducted in Ethiopia, it can be said that the level of knowledge about HIV/AIDS seems to be high among our study subjects. However, there are still a lot of wrong interpretations and misunderstanding about the modes of HIV transmission and its preventive methods. It would be absolutely important to correct the drawbacks of the present IEC (Information, Education, Communication) related activities which lead to distortion and confusion. For example, some of the HIV related activities transmitted over the radio and through television are rather increasing stigmatization and hopelessness among PLWHA and frustration among the others. As a result, fear of discrimination and stigmatization would be one of the main reasons of the people for not being ready to tell others about their decision to be tested (24). This indicates that a research based IEC activity need to be implemented in an organized and continuous manner before launching nationwide VCT services.

Our study showed that nearly all interviewed individuals would like to use VCT services either free of charge or with a small amount of money. This necessitates making VCT services accessible to the great majority of our people. Hospitals and health centers could be the preferred sites for giving the service. However, this should be implemented following the IEC activity mentioned above.

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