

**WILLINGNESS AND KNOWLEDGE TOWARDS PROVIDER INITIATED HIV TESTING AND COUNSELING (PITC) AMONG HIGH SCHOOL AND PREPARATORY STUDENTS IN DEBERE MARKOS TOWN ETHIOPIA 2015.****Hadgu Gerensea^{*1}, Haimanot Zeleke², Dereje Gedle², Mesafint Tilahun², Muluwork Wasie² Sefineh Asmamaw² Tadese Tsehay², Tesfay Wiaregay² Tolossa Negusie²**¹School of Nursing, College of Health Science, Axum University, Tigray, Ethiopia.²Department of Nursing, College of Health Science, Debre Markos University, Amara, Ethiopia.***Correspondence for Author: Hadgu Gerensea**

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Article Received on 27/02/2016

Article Revised on 15/03/2016

Article Accepted on 05/04/2016

ABSTRACT

Background: Human immune virus (Acquired Immune deficiency syndrome) possesses an enormous challenge on the survival of mankind in the world. In 2011 over 34 million people were living with the virus. Ethiopia as a country in sub Saharan region is a country with high HIV prevalence. All most a quarter of people living with HIV are under the age of 25. PITC is internationally recognized as an effective and important strategy for both prevention and Care of HIV. **Objective:** To assess willingness and knowledge of PITC among high school and preparatory students in Debera Markos town. **Methods:** cross sectional study design was carried out to assess willingness and knowledge of PITC among high school and preparatory students in Debera Markos town. A multistage sampling technique was used to recruit study participants by taking school as a cluster and a single population proportion formula was used to determine the sample size. Semi-structured, Self administered questionnaire was used to collect the necessary data. **Results:** All the participants have heard of HIV or the disease called AIDS. Out of total respondents 231(67.94%) knew that there is no cure for HIV/AIDS. Most of the respondents 330 (97.05%) mentioned sexual intercourse as a means of HIV/transmission. Only 208 (61.18%) of participants have ever been tested for HIV. Only 113(33.24%) of the participants, perceived themselves as having risk for HIV and the rest 227(66.76) are not perceived themselves as having risk for HIV/AIDS. **Conclusion:** there is a need to work on awareness creation on stigma and discrimination since they were among the alarming factor for the uptake of PITC. More over building the knowledge of people in rural about PITC should be an area of focus to work on. Explanation of facilities that provides PITC and training of counselors' are also important activities that must be done to improve utilization of the service.

KEYWORDS: Willingness, Knowledge, PITC.**1. INTRODUCTION****Background**

Human immune virus (HIV) acquired immune deficiency syndrome (AIDS) possesses an enormous challenge on the survival of mankind in the world in 2011 over 34 million people were living with the virus.^[1]

There are around 33 million people living with virus globally 2010. In the year 2008, there were about 30.8 million adults living with HIV/AIDS; including 15.4 million women and 2.5 million children. IN 2008 there were 2.7 million new infections and from this about 2.1 million were adults and 0.42 millions children's.^[2]

In sub-Saharan Africa there were 22 million adults and children living with the virus in the year 2008, with an adult prevalence of 5%. There were 1.7 million adults

and children newly infected in 2008 and there were a total of 1.5 million deaths of both adults and children.^[3]

Ethiopian as a country in sub-Saharan region is a country with high HIV Prevalence. According to the single point estimate, the Ethiopian adult HIV prevalence was 2.2% in 2008 with an estimated 1,037267 people living with HIV in the country.^[4] According to the Ethiopian demographic and health survey reports of 2011, the overall national adult (age 15-49) HIV prevalence was 1.5% which is similar with 2005 Ethiopian Democratic and Health survey (EDHS) that was 1.4%.^[2, 5]

In Amharic region, According to 2011 Ethiopian demographic and health survey the prevalence of HIV was 2.2%.^[5]

HIV Testing is the first step in many HIV Prevention, care and treatment programs because testing allows individuals who are at high risk for HIV infection to learn about their infection status and access appropriate services.^[6]

As anti retro viral therapy (ART) becomes more widely available in resource limited settings, increasingly, the challenges case identification. So that patients may benefit from ART in a timely fashion improve the quality of life. Moreover, HIV testing may also help to prevent HIV secondary transmission.^[7]

Voluntary counseling and testing (VCT) for HIV has been demonstrated to be one of the most effective strategies in identifying HIV infected individuals. VCT was highly efficacious in reducing risky sexual risk behavior, especially for higher risk population.^[6, 8]

Provider initiated HIV testing and counseling (PITC) is a stream lined model promoted by the world health organization (WHO) 2007 (9) WHO policy guide line suggest that HIV testing and counseling has to be offered by health care providers as part of the routine care of all patients or clients.^[9]

Compared with VCT, PITC simplifies information a question and counseling about high risk behavior and allows to avoid fear, in this way PITC can increase HIV detection rate, catch HIV infections earlier and thus improve cost effectiveness by cutting down on treatment cost.^[9-11]

Statement of the problem

Human immune deficiency virus (HIV) is a major health problem in many parts of the world, and is considered as pandemic disease.^[12] By the year 2010, the world health organization (WHO) estimated 34 million people living with HIV and an estimated 1.8 million death around the world.^[13] Sub-Saharan Africa remains the region most affected by HIV. In 2010, about 68% of all people living with HIV resided in Sub-Saharan Africa. Sub-Saharan Africa also accounted for 70% of new HIV infections and all most half of the deaths from AIDS related illness in 2010 ^[14] almost a quarter of people living with HIV are under the age of 25. Young people ages 15-24 represent 45% of all new HIV infections. In sub-Saharan Africa nearly 3.3 million youth are living with HIV lack of information, skills, and access to services for Youth is expected fuel the epidemic.^[15]

Ethiopian as a country in sub-Saharan region is a country with high HIV prevalence. According to the estimate of single point, the Ethiopian adult HIV prevalence was 2.2% in 2008 with an estimated 1,037,267 people living with HIV in the country (14, 15). Many countries has been trying to take many different Approach in attain to slow the spread of HIV infection and minimize its impact on the individual, family and society.^[16]

Among these strategies include voluntary counseling and testing (VCT), provider initiated counseling and testing (PITC), diagnosis of HIV in infants and young children, family care and partner testing and counseling based on index care, condom promotion and provision, detection and management of sexually transmitted infections, safer sex and risk reduction counseling, male circumcision, targeted interventions for sex workers and homosexuals.^[17] Among these PITC is internationally recognized as an effective and important strategy for both prevention and care of HIV.^[18]

Studies in different areas indicated that knowledge, attitude and practice of high school students towards PITC is low and as up take is minimal. The low uptake was found to be associated with ignorance, fear of being positive, cost of PITC, inadequate member of PITC center and stigmatization constituted major hindrances to acceptance of PITC for HIV.^[18-21]

Significance of the study

Surveys in sub-Saharan Africa have shown that a median of 12% of men and 10% of women had been tested for HIV and received the results.^[5, 22] One of the Ethiopia HIV/AIDS five years plan (FY 2004-2008) is that by 2008, approximately 50% of Ethiopian over 15 years of age will know their HIV status through the routine and/or voluntary counseling and testing.^[23] But according to EDHS 2005 report among the adult population of age 15-49 years, only 40% of women and 6% of men have been tested for HIV at sometime.^[24]

World health organization (WHO) and joint United Nations program on AIDS (UNAIDS) strongly support the continued scale up of client initiate HIV testing and counseling, but recognize the need for additional innovative and varied approaches in the system. Health facilities represent a key point of contact with people with HIV who are in need of HIV prevention, treatment, care and support. Evidence from most industrialized and resource constrained settings suggests that many opportunities to diagnose and counsel individuals at health facilities are being missed and that PITC facilitates diagnosis and access to HIV related services.^[22]

Nationally after the adaptation of the PITC strategy, it has been implemented in different settings especially for those clients with tuberculosis and sexually transmitted infection. Some studies were under taken to assess willingness and acceptability of clients on this regard. However, the diagnostic approach is not only meant for those with tuberculosis and sexually transmitted infection, but also for those sexually active individuals. On the other hand, there is scarcity of information on PITC in the county on this regard; therefore the aim of this study is to assess willingness and knowledge of PITC among high school and preparatory students.

2. OBJECTIVE

2.1 General Objective: To assess willingness and knowledge of PITC among high school and preparatory students in Debre Markos town, North West Ethiopia 2015.

2.2 Specific Objectives: To assess willingness of PITC among high school and preparatory students in Debre Markos town. To determine knowledge of PITC among high school and preparatory students in Debre Markos town.

3. METHODS AND MATERIALS

3.1 Study area: The study was conducted at Debre Markos town, Amhara region 299 km away from Addis Ababa to North West direction and 265 km away from Bahirdar. Debre Markos town was founded in 1852 by Dejazmach Tedle Gualu. Its name was initially called Menkoror. The name of the town was changed to Debre Markos when due to the establishment of Saint Markos church, King Tekle Haimanot who came to power in 1879 proclaimed that the town should be named Debre Markos instead of Menkoror.

Based on 2007 national census conducted by the central statistical agency of Ethiopia (CSA), this town has a total population of 62,497, of whom 29,921 are men and 32,576 are women. The majority of the inhabitants practiced Ethiopian orthodox Christianity, with 97.03% reporting that as their religion while 1.7% of the population said they were Muslim and 1.1% were Protestants.

4.2 Study design and study period

Across sectional study design was carried out among high school and preparatory students from March 3-May 4, 2015.

4.3 Source Population and Study Population

4.3.1 Source population: All high school and preparatory students in Debre Markos town, North West Ethiopia

4.3.2 Study population: All regular high school and preparatory students in Debre Markos town North West Ethiopia during the study period of March 3-May 4, 2015.

4.4 Inclusion and Exclusion Criteria

4.4.1 Inclusion Criteria: All regular high school and preparatory students in Debre Markos town

4.4.2 Exclusion criteria: Those who are not regularly and those students who are critically ill during data collection period are excluded.

4.5 Sample size

A total of 398 sample was calculated using single proportion formula. Similarly correction formula was used since the total population is less than 10,000. For non-response rate 10% of the total sample was added. The following assumptions are used for calculation.

CI=95%, confidence interval=1.96.

p = Population proportion =50%=0.5,

d = Margin of error = 0.05

Power: 80%

4.6 Sampling technique (procedure)

A systematic sampling technique was used so as to select a fair representative sample of adolescence students in the schools (stratification in to grades and simple random sampling was used to select sections and respondents in a respective section).

Four high schools were identified by name (Menkoror secondary school, Nigus T/Haymanot secondary school, Debre Markos General preparatory school and Ethio-Japan secondary and preparatory school). The sample size was distributed proportionally to each selected school based on the student population they have.

Each school was stratified by grades (9, 10, 11, and 12) proportional distribution of sample will be assigned to respective grade. Three sections were randomly selected from each grade.

Using students list from each school's office, respondents were selected by simple random sampling. In case of absenteeism the next number were included in the study.

4.7 Data collection instruments

Data was collected using self administered questionnaires. First prepared in English language and was translated in to Amharic language.

4.8 Operational Definition

Provider initiated HIV testing and counseling: - is a process in which the individual undergoes counseling and HIV testing by health provider initiation once or more.

Knowledge about HIV transmission based on five knowledge assessing questions for HIV transmission

Good knowledge -if someone knows all five means of transmission. Fair-if someone knows two up to four means of transmission. Poor-if someone knows zero up to one means of transmission.

Misconception: study participants is considered to have misconceptions about HIV/AIDS transmission and prevention If they agreed incorrectly to any of the a misconception questions (annex1).

Willing: an individual not agreeing to accept the PITC recommendation Risk perception for HIV/AIDS: Respondents feeling of vulnerability of being infected for HIV/AIDS.

4.9 Data collection procedures

Data was collected by six selected fourth year Nursing students. Those data collectors were trained about data collection procedure for a day.

4.10 Data quality assurance

All collected data was checked and missed information was completed and necessary correction was carried out in each day. Unclear question was clarified for respondents by data collectors. To reduce non respondent rate, miss of necessary information one additional visit was conducted for a participants who are absent at first visit.

4.11 Data analysis procedures

The collected data was checked for completeness. The data was analyzed by using SPSS. The result was presented using tables and diagrams.

4.12 Ethical Consideration

Official letter was taken from Debre Markos University College of medicine and health science department of Nursing and was read in front of respondents and informed consent was obtained from each respondents. The confidentiality of the information was explained to respondents.

5. RESULTS

Overall 340 study subjects, out of 398 respondents to the questionnaire, with a response rate of 85.43% of 40 were non respondents and 10 were refusal and the rest were in complete interview.

5.1 Socio demographic characteristics of the respondents

Table 1 indicates that out of 340 total study subjects 181(53.24%) of the respondents were females, and 159(46.76%) respondents were males with male to female ratio of 0.88:1. As to the age distribution of the participants the majority 206(60.59%) were within the age range of 14-18 years, 124(36.47%) were between 19-22 and 10 (2.94%) were age group greater than 22 years.

Among 340 study subjects 327 (96.17%) were orthodox christen followers, followed by protestant 9(2.65%),

Muslim 3(0.88%) and catholic 1(0.29%) the ethnic distribution of the participants constituted Amhara 334(98.23%) benisangul gumiz 3(0.88%), oromo 2(0.59%) and Tigray 1(0.29%).

Regarding the marital status of the participants 297(87.35%) were single, 31(9.12%) were married and 12(3.53%)divorced .Out of 340 study subjects 108(31.76%) were grade 9th student, 90(26.47%) were grade 10th students, 78(22.94%) were grade 11th and 64(18.82%) were grade 12th students.

Table 1: socio demographic characteristics of high school and preparatory students towards PITC, in Debre Markos town April; 2015 (n=340).

Variables		Number	Percent
Age group	14-18	206	60.59
	19-22	124	36.47
	>22	10	2.94
Sex	Male	159	46.76
	Female	181	53.24
Religion	Ortodox	327	96.17
	Muslim	3	0.88
	Protestant	9	2.65
	Catholic	1	0.29
Ethnicity	Amhara	334	98.23
	Oromo	2	0.59
	B.Gumuz	3	0.88
	Tigray	1	0.29
Marital status	Married	31	9.12
	Single	297	87.35
	Divorced	12	3.53
Educationa l level	9 th	99	29.12
	10 th	99	29.12
	11 th	71	20.88
	12 th	71	20.88

Table 2: Knowledge and personal risk perception about HIV/AIDs towards PITC among high school and preparatory students, in Debre markos town, April 2015(n=340).

Variables		Number	Percent
Can HIV be cured?	Yes	71	20.88
	No	231	67.94
	I don`t know	38	11.17
Have you ever heard of HIV?	Yes	340	100%
	No	0	0
Means of HIV transmission	Sexual intercourse	330	97.05
	Mother to child during pregnancy	243	71.47
	Mothers to infected blood	237	69.71
	Transfusion of infected blood	256	75.29
	Shaking hands a person living with HIV/AIDS	17	5
	Wearing clothes of a person living with HIV/AIDS	16	4.71
	Sharing of sharp materials	150	44.12

Means of prevention	Avoiding sex /abstinence/	328	96.47
	Using a condom	221	65
	Be faithful with a partner	229	67.35
Healthy looking percent can be positive for HIV?	Yes	278	81.76
	No	14	4.12
	I Don't know	48	14.11
Do you think you can get the virus?	Yes	113	33.24
	No	227	66.76
Chances of getting infected with HIV	High	21	18.58
	Medium	22	19.47
	Low	77	68.94

5.2 Knowledge about HIV/AIDS

All the participants have heard of HIV or the disease called AIDS. Out of total respondents 231(67.94%) knew that there is no cure for HIV/AIDS, 71(20.88%) though that there is cure for HIV/AIDS and 38(11.17%) they didn't know whether is cure or not. Most of the respondents 330 (97.05%) mentioned sexual intercourse as a means of HIV/transmission, 256 (75.29%), 243 (71.47%), 237(69.71%), 17(5%) and 16 (4.71%) mentioned blood transfusion and by blood contact, transplacentally from mother to fetus, through breastfeeding mothers to child, by shaking hands and by wearing patients cloth as a means of HIV transmission respectively.

In regard with means of HIV prevention 328 (96.47%) mentioned Abstinence from sex, followed by 229(67.35) being faith fit and 221(65%) using condoms and 1(0.29%) didn't know means of HIV prevention.

Only 113(33.24%) of the participants, perceived themselves as having risk for HIV and the rest 227(66.76) are not perceived themselves as having risk for HIV/AIDS. Risk rating for the participants was 77(68.14%) rated risk as low, 22(19.47%) as medium, and the rest 21(18.58%) as high.

Table 3: accepting attitude toward those living with HIV among high school and preparatory students in Debre Markos town, April 2007 E.C (n=340).

Variable	Strongly agree (N/%)	Agree (N/%)	Neutral (N/%)	Disagree (N/%)	Strongly disagree (N/%)
Agree to shared meal health a person you knew had HIV/AIDS	181(53.24)	110(32.4)	23(6.76)	13(3.82)	10(2.94)
Agree to care for HIV positive person	193(56.76)	96(28.4)	17(5)	20(5.88)	14(4.12)
Agree to purchase from shop of HIV positive person	170(50)	82(24.12)	27(7.94)	60(17.65)	1(0.29)
Agree to keep secret it somebody is HIV positive in the family	84(24.71)	53(15.59)	18(5.29)	110(32.35)	75(22.06)
An HIV positive teacher should be allowed to continue teaching	154(45.29)	85(25)	29(8.53)	40(11.76)	32(9.41)

Provider initiated HIV testing and counseling

As shown in Table-2 294(86.47%) of the respondents know about PITC their main source being health facility, 167(56.8%) followed by mass media, 135(45.92%) family members 50(17.01%) and friends 26(8.84%).

Variable	Number	Percentage
Have you heard of PITC?		
• Yes	294	86.47%
• No	46	13.53%
To what extent are you favoring of PITC?		
• Extremely in favor	213	72.45%
• Very much	50	17%
• Some what	21	7.14%
• Not at all	10	3.4%
Did you feel that PITC is important?		
• Yes	262	89.12
• No	23	7.82
• I don't know	9	3.06

Did you feel that PITC has influence? N=294)		
• Yes	100	34.01
• No	173	58.84
• I don't know	21	7.14
Any one should check for aerostats (n=340)		
• Yes	307	90.29
• No	33	9.71
At which time should one be tested for HIV? (n=340)		
• When one is sick	121	35.59
• Before marriage	236	69.41
• If one has multi sexual partner	138	40.59
• At any time	150	71.53
Have you ever been tested for HIV? (n=340)		
• Yes	208	61.18
• No	132	38.82
What was the reason of having HIV test? (n=208)		
• Self interest	143	68.75
• Initiated by health works	41	19.71
• For blood donation	24	15.54
Where did you do your test? (n=208)		
• Go health institution	149	71.63
• Private health institution	21	10.10
• Stand alone VCT centers	32	15.38
• School	19	9.13
Willing to PITC (n=340)		
• Yes	243	71.47
• No	97	28.53
Barriers for PITC		
• Feel of stigma and discrimination	16	12.12
• Thinking self as not being at risk	48	36.36
• Not sure of confidentiality	6	4.55
• Fear of test result	13	9.85
• Self trust	55	41.67
• Partner trust	1	0.76

Majority 262 (89.12%) of participants feel that PITC is important to get ART. When asked who needs HIV testing majority responded that female commercial sex workers 269(79.12%), anyone who have unprotected sex 266 (78.324%), anyone who have multiple sexual partner 250 (73.58%), drivers 222 (65.29%) for those who are sick 213 (62.65%) and Tb patients 197(57.94%).

Only 208 (61.18%) of participants have ever been tested for HIV. Among those who undergo HIV testing 149(71.63%) got the test in governmental health institution 32 (15.38%) tested in standalone VCT centers, 21(10.10%) in private health institution and 19 (9.13%) tested in school. The reason given by the respondents who never had the test were self trust 55 (41.67%) thinking self as not being at risk, 48 (36.36%), fear of partner reaction 17 (12.87%), fear of stigma and discrimination 16 (12.12%) fear of the result 13 (9.85%), don't want to know about the result 9 (6.82%).

DISCUSSION

HIV counseling and testing is a key entry point and corner stone to comprehensive HIV/AIDS prevention and care service. One of the element of HCT PITC,

which is regard as cost effective in all settings even when HIV prevalence is relatively low (25, 26). There is high knowledge about HIV transmission (78.38%); particularly transmission through sexual intercourse (97.05%) and about HIV prevention (76.41%, and the willingness (71.47%) noticed in this study. There is also low (33.24%) risk perception for HIV infection in this study.

All participants have heard of HIV or the disease caused AIDS which is in line with EDHS report and studies in Addis Ababa University.^[24]

Two hundred thirty one (67.94%) of the study subjects believed that there is no cure for HIV /AIDS which is higher than studies done in Addis Ababa which reported 64.90%.^[27, 28]

Two hundred seventy eight (81.76%) of the participants believed that a health looking person could be positive for HIV which is higher compared to EDHS report which is 63 for women and 78 for men which might be explained by the setting of this study which is urban compared the comprehensive nature of EDHS report

(both urban and rural) and also by time factor as EDHS was conducted four years before.^[24]

Majority (97.05%) of the respondents mentioned sexual intercourse as a means of HIV transmission which is slightly greater than study in Addis Ababa. About 71.47% of participants mentioned mother to future transmission and 69.71% of participants mentioned mother to child transmission as means of HIV transmission which is greater than studies done in Addis Ababa.^[27, 28]

Majority of the participants mentioned Abstinences (96.47%) as method of prevention followed by faith fullness (67.35%) and using condom (65%) which is greater than studies done in Addis Ababa that is 74.7%, 60.2% and 51.70% respectively.^[28]

Only few (18.58%) of the participants reported high risk of perception to HIV which is slightly increased compared to Addis Ababa.^[27] Studies in Ethiopia and elsewhere identified personal risk perception as one of the predictor for accepting HCT, but in this study about 66.76% of the study participants lack risk perception for HIV infection. Besides, the major reason cited as a barrier for PITC willingness among the study participants was thinking self as not being at risk (41.67%).

About 53.24% of participants reported that they are strongly agreed to eat with person who had HIV. 50 % of participants reported they are strongly agree to purchase from shop of HIV positive person and 45.29% of the participants that HIV positive teachers without symptoms should be strongly agreed allowed to continue teaching which is higher proportion when compared to EDHS report.^[24] A lower proportion of participants said that it somebody is HIV positive in the family they will keep it secret (40.30%) than reported by EDHS 2015 which is 59 women and 66 of men.^[24]

There is a need to increase the rate of HIV testing in Africa as a means of dealing with the aids pandemic from a public health stand point, and in this study about 294 (86.47%) of participants have heard about PITC and majority 89.45% of them support it externally very much which is comparable with a study done in Addis Ababa. Majority (89.12%) of participants felt that PITC is important the reason being is that it help the clients get ART(74.32%) ,makes either for clients to get tested (56.03), increase the number of people (31.91%) which are greater than study done in Addis Ababa.^[27, 28]

On the other hand, there is a concern that PITC might be coercive and lead to testing without consent which intern might lead to people avoid using health care faculties because of fear of testing which holds trust for this study too (23.53%).

Most of the participants (71.47%) were willing to undergo PITC which is comparable with the study done in Addis Ababa (70.2%) but higher than study conducted in masschusetts (32%) which might be due to the fact that the massachutes PITC approach was routine.^[29]

PITC is meant to supplement VCT service, so the exciting VCT with the diagnostic PITC and routine PITC is believed to play an important role for the prevention and control of HIV/AIDS transmission in the country.

CONCLUSION

The current study sought to explore the willingness and knowledge towards PITC of HIV among high school and preparatory students in Debre markos town. Since PITC is an important to HIV prevention and control knowing the level of uptake of the service by this high risk group is vital in the future activities to be conducted .From this study it can be concluded that there is a need to work on awareness creation on stigma and discrimination since they were among the disarming factor for the uptake of PITC. More over building the knowledge of people in rural about PITC should be an area of focus to work on. Explanation of facilities that provides PITC and training of counselors' are also important activities that must be done to improve utilization of the service.

RECOMMENDATION

All stalk holders of Debre Markos town administrator, Debremarkos College of health science, director of high school and preparatory and health centers should be work integrated on creation of awareness and provision of PITC in Debre markos high school and preparatory students.

CONFLICT OF INTEREST

The authors declare that they have no compete of interest.

ACKNOWLEDGMENT

Our heartfelt thanks and appreciation goes to our study participants for their cooperation. Finally our appreciation extends to Debre Markos University for gave this opportunity and their financial support.

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