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Assessment of Antenatal Care Clients' Willingness for HIV Counseling and Testing in Asella Governmental Health Institutions, Ethiopia

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Abstract

Background: It has been well established that mother to child transmission accounts for the majority of HIV infections in children below age 15 in developing countries. HIV counselling and testing is an important entry point for HIV prevention and for early access to treatment, care and support. Willingness for accepting HIV counselling and testing is the key component and a starting point of overall HIV prevention efforts and represents a critical opportunity for stemming the tide of the HIV epidemic.

Objective: To assess willingness of antenatal care clients for HIV counselling and testing.

Methods: Institutional based cross sectional study was conducted on 321 pregnant women attended antenatal care during the study period using interviewer administered, pre-tested, structured questionnaire from March to April, 2012 in Asella governmental health institutions. Data was collected using convenient sampling technique and then entered in Epi-info and analyzed using SPSS software.

Result: Among the studied women 291 (90.7%) were willing for HIV counselling and testing. The strongest association rested with parity, number of antenatal care visits and perceived risk of HIV. Primipara women were about 12 times more likely willing for HIV counselling and testing than nullipara mothers (AOR=12.33, 95% CI=1.25,121.57), and also those who had 2 and above antenatal care visits were 9.6 times more likely willing for HIV counselling and testing than those who had only 1 visit (AOR=9.64, 95% CI=1.93,48.28). Women who were perceived themselves not at risk of acquiring HIV were more likely willing for HIV counselling and testing than their counterparts (AOR=0.08, 95% CI=0.01,0.41).

Conclusion: This study revealed high-level of awareness about prevention of mother to child transmission of HIV among pregnant women attended antenatal care, and relatively increased proportion of willingness for HIV counselling and testing was seen when compared to other studies.

Keywords: Antenatal care; Adjusted odds ratio; Confidence interval; HIV counselling and testing; Human immunodeficiency virus; Mother-to-child transmission; Odds ratio; Prevention of mother-to-child transmission; Statistical package for social science research

Introduction

Background

The human immunodeficiency virus (HIV) has created an enormous challenge worldwide. Since its recognition, HIV has infected close to 70 million people, and more than 30 million have died due to acquired immunodeficiency syndrome (AIDS) [1]. According to the recently released joint World Health Organization (WHO), Joint United Nations Programme on HIV/AIDS (UNAIDS) and United Nations Children's Fund (UNICEF) Universal Access report 2009, 33.4 million people were estimated to be living with HIV Worldwide [2]; 15.7 million of these were women and 2 million were children younger than 15 years of age. Globally, HIV prevalence varies substantially, ranging from less than 0.1% in places such as Bosnia and Herzegovina and the Republic of Korea to 26.1% in Swaziland [3]. In 2009, around 400,000 children aged under 15 became infected with HIV [4]. Almost all of these infections occurred in low and middle-income countries, and more than 90% were the result of mother-to-child transmission (MTCT) during pregnancy, labour and delivery, or breastfeeding. Without interventions, there is a 20-45% chance that a baby born to an HIV-infected mother will become infected [3]. It has been well established that mother to child transmission (MTCT) accounts for the majority of HIV infections in children below the age of 15 years in developing countries [1]. The rate of transmission from an untreated HIV positive pregnant woman to her new born is high. Around 300,000 children in sub-Saharan Africa became infected with HIV in 2009 [4,5]. The vast majority of these children (more than 90%) have been infected with HIV during pregnancy, childbirth or breastfeeding, as a result of their mother being infected with the virus. Ethiopia is the second most populous and one of the seriously affected countries in sub-Saharan Africa [1]. With an estimated 1.1 million people living with HIV, Ethiopia has one of the largest populations of HIV infected people in the world [6]. However, HIV prevalence among the adult population is lower than many sub-Saharan African countries. In 2007, the estimated adult HIV/AIDS prevalence in Ethiopia was 2.1%. Although the epidemic is currently stable, HIV/

AIDS remains a major development challenge for Ethiopia. Poverty, food shortages, and other socio-economic factors amplify the impact of the epidemic. HIV prevalence was increased slightly to 2.3% by 2009. According to PEPFAR Ethiopia COP REPORT 2010, an estimated 93% of deliveries occur in rural areas [7,8]. Based on this report, with the poor uptake of prevention of mother to child transmission (PMTCT) due largely to low antenatal care coverage (28%) and institutional delivery (6%), especially in rural areas, paediatric HIV/AIDS may be a more significant problem in rural areas than previously thought. The country may be facing a growing paediatric HIV/AIDS epidemic. The report also states that, in 2008, of 3.2 million pregnancies, an estimated 79,183 were HIV-positive mother-exposed infant pairs with a possible estimated transmission to 14,468 infants.

Statement of the problem

The prevention and control of HIV infection depends on the prevention of new infections and the effective treatment of currently infected individuals [9]. Approximately 2.2 million women with HIV infection worldwide give birth each year [10]. An estimated 1.5 million of the 115 million annual births in low and middle-income countries are born to HIV-infected mothers [3]. It is estimated that 1,000 children under 15 years become infected with HIV every day; 90% of them through mother-to-child HIV transmission and of that, 2 million children (6% of the 33.4 million people living with HIV) are living with HIV [2]. The majority of these children (90%) live in sub-Saharan Africa, the most impacted and underserved region. In 2009, in Ethiopia, an estimated 72,945 children under age 15 were living with HIV, according to the 2010 UNGASS report [7]. A report from Federal HIV/AIDS Prevention and Control Office 2007 indicates that, the availability of HCT services in Ethiopia has been uneven, and even when available, uptake has been relatively low [11]. To date, only few researches are available in the country regarding the status of willingness of pregnant women towards HIV counselling and testing [12]. Since there is a desire to expand PMTCT of HIV down to the grass root level, it is important to assess the magnitude of willingness for HIV counselling and testing of pregnant women attending ANC [13-19].

Significance of the study

This study is designed to assess the magnitude of willingness of pregnant women for HCT services in Asella hospital and Asella health centre. Therefore, it will help local and regional health program managers, planners and stakeholders and moreover, health professionals who are working in these health institutions to make appropriate interventions to scale up HCT program and to enable mothers to make all the necessary efforts in the reduction of MTCT of HIV. All the responsible bodies on the area may use the study as a guide to revise, modify or change their policies based on the findings. In addition the result can also be used as a reference for those who are interested to perform further researches on the same topic in the same area and throughout the country.

Literature review

The assessment of knowledge of HIV transmission among pregnant women attending antenatal care at different time in Hong Kong, China; indicated that, they have good knowledge of HIV/AIDS (91.6%) with mean score of 4.8 of the possible six, and 62% to 89% knew that using condom reduce the chance of getting the infection [20]. However, women were less knowledgeable on MTCT during pregnancy (57%) with mean score of 3.6 of the possible six. Their knowledge was significantly associated with their educational level [21]. Accessibility of ANC and PMTCT services in sub-Saharan Africa varies greatly across and within countries (e.g. urban versus rural areas), depending on economic, geographic, cultural, and social characteristics. A 2003 evaluation of UN-supported pilot PMTCT projects in 9 countries (Botswana, Burundi, Côte d'Ivoire, Kenya, Rwanda, T anzania, Uganda, Zambia, and Zimbabwe) found that among women who came to health centres for antenatal care, uptake of HIV counselling and testing ranged from 25% to more than 90% [13]. However, only 64% to 83% of women who accepted an HIV test returned to collect their results In six of the ten countries estimated to have the largest numbers of pregnant women living with HIV (Kenya, Malawi, Mozambique, South Africa, Tanzania and Zambia), rates of counselling and testing for pregnant women have risen to 60–80% [3]. A cross sectional study done on 270 randomly selected ANC attendees on Acceptability of Routine Offer of HIV Testing (Opt-Out Approach) among Pregnant Women in the WA Municipality Ghana showed that, about 60% of the respondents were found willing to accept HCT in the current pregnancy [22,23]. A health facility based cross sectional survey conducted among 452 pregnant women following antenatal care on Utilization of HCT services among pregnant women in western Amhara region between April and June 2006 showed that, 304 (67.3%) of the respondents were willing to undergo VCT for HIV. Of all the socio-demographic variables, education was positively associated with acceptance VCT for HIV (AOR (95% CI) for formal schooling versus no formal schooling = 3.67 (1.56, 8.61) while being a rural women and being a farmer were associated with less likelihood of undergoing HIV counselling and testing [AOR (95% CI) = 0.22 (0.14, 0.35) and 0.44 (0.22, 0.98)] respectively. The main barriers for utilization of HCT services identified were incorrect perceptions regarding HIV/AIDS and stigma by husband, family and community. Another cross sectional study done on 422 pregnant women in Nekemte hospital and Nekemte health centre from May 25, to June 7, 2009 on Acceptability of PICT among pregnant mothers attending ANC showed that, the overall willingness rates of the respondents were 370 (87.7%). Almost all the respondents 412 (97.6%) were knowledgeable to the three cardinal ways of prevention of HIV/AIDS (i.e. Abstinence, avoiding multiple sexual partners and sharing sharps). And 151 (35.8%) of the respondents were knowledgeable to PMTCT during pregnancy, child birth and breast feeding. 310 (73.9%) of the respondents perceived themselves not at risk of contracting HIV/AIDS. 334 (79.1%) of the mothers had information regarding PICT, and health workers were common source of information for 260 (61.6%) of mothers.

Objectives of the Study

General objective

To assess antenatal care clients' willingness toward counselling and testing for HIV in Asella hospital and Asella health centre.

Specific objectives

- To measure the proportion of pregnant mothers' willingness to accept HCT services.
- To assess knowledge of pregnant women towards HCT
- To assess attitudes of pregnant women attending ANC towards HCT.

- To assess practices of pregnant women attending ANC towards HCT
- To identify perceived barriers that affect acceptance of HCT among pregnant women

Research Methods, Materials and Procedures

Study area

The study was conducted in Asella hospital and Asella health centre found in Oromia region, Arsi zone, Asella town which is 100 and 70 km away from the capital Addis Ababa. The hospital and the health center serve for dwellers of the town and for patients coming from different Woredas and Kebeles surrounding the zone. They have maternal and child health care units which provide antenatal care, delivery service, family planning, HIV counselling and testing service, counselling on infant feeding options and safer sex practices and ART for prevention of MTCT of HIV for pregnant women free of charge. The hospital has teaching institution for doctors, nurses, midwives and pharmacy technologists under Adama University.

Study design

An institutional based cross-sectional study was conducted on the pregnant women attended ANC in Asella Hospital and Asella health centre.

Study period

The study was conducted from September 2011 – May 2012.

Source and study population

Source population was all pregnant women attended ANC in Asella hospital and Asella health centre and the study population was those women who came to these health institutions for ANC during the study period.

Inclusion criteria: All pregnant women attended ANC in Asella hospital and Asella health centre, who were able to communicate, free of mental illness and granted permission to participate in the study.

Exclusion criteria: Those mentally ill, critically sick, mute, deaf and unconscious pregnant mothers who were unable to communicate and those who were refused to participate in the study and pregnant women who were not registered as ANC follow up clients during the study period were excluded from the study.

Sample size

The sample size was determined using the standard formula for single population proportion based on the following assumptions:-The population proportion for prevalence of willingness for HCT among pregnant women is 74.1% (Based on the research done in Tigray Regional State on Willingness of pregnant women attending antenatal care towards VCT)

Confidence interval 95%

Margin of error tolerable 5%

$n = (Z \alpha/2)2 P (1- P)$

d2

$n= (1.96)2 X 0.74(1 - 0.74)$

(0.05)2

n= 292 + 10% non- response rate (contingency) 292 + 29 = 321

Where, - $Z \alpha/2$ = the confidence limits of the survey result (critical value at 95% confidence interval of certainty) = 1.96

P = the proportion of study population willing to accept HCT = 0.74

d = margin of error = 0.05

n = the total sample size

Data collection methods – tools/instruments

Data was collected using a pre-tested, structured, interviewer administered questionnaire that was adopted from different thesis works which were tested before, and was modified to make it suitable for this study [12,24-27]. The questions in the questionnaire were close-ended (Multiple choice questions) prepared in a structured way in English and then translated into Amharic and Afaan Oromoo and again back to English by language professionals in each language who had MSc, to see its consistency. Three days training was given to data collectors, and pre-test was conducted on 10% of the study population who were not included in the main study. During this time data collection tools were tested and evaluated for their appropriateness, reliability and average time needed to administer the questionnaire. Corrections were also made accordingly before the actual data collection time.

Description of Study Variables

Dependent variable: willingness for HCT

Independen variables: All the socio-demographic characteristics (age, marital status ,religion, ethnicity, educational status, occupation, family size, income level, place of residence, parity, number of ANC visits).

Knowledge of HIV, HCT, MTCT and PMTCT. Awareness on mode of HIV transmissions, common misconceptions. - Risk perceptions of HIV Perceived risks, degree and reasons for have been at risk.

Attitude and practice towards HCT and PMTCT Perceived benefits of HCT and PMTCT - HCT services Method or approach of HCT, confidentiality and privacy Male partner's reaction to HIV positive result Stigma and discrimination

Data quality assurance

The following measures were taken to maximize the quality of the data: The research advisor was reviewed the contents of the questionnaire, the appropriateness and clarity of questions and the interview schedule before the pilot study was conducted. The questionnaire was also seen and commented by friends and other professionals. Data collectors were provided three days training by principal investigator. Pre-test of data collection instrument was conducted on similar population attended ANC in Asella hospital and Asella health centre for clarity, appropriateness and time requirement. Close supervision were made during the data collection period and, questionnaires were checked for completeness and clarity on a daily basis to ensure good quality data. Incorrectly filled or missed ones were sent back to data collectors for correction.

Data Analysis

The questionnaires were checked for their completeness and the data was given a code and then entered into a computer in Epi-info version 3.5.1 and analysed using SPSS program version 20. Frequency distribution and cross tabulation were made for the variables. Odds ratio and 95% confidence interval were also calculated.

Ethical Consideration

Ethical clearance was obtained from Department of Nursing and Midwifery Research Ethics Committee, Addis Ababa University. Official letter of cooperation was acquired from the university to Asella hospital and Asella health centre, where the study was conducted. Informed consent was obtained from each study participant after clear explanation was given concerning the purpose of the study. All documents were kept private to assure confidentiality of the information. Respondents were not identified by name in the questionnaire and were also not asked about their sero-status. All participants had the right to withdraw from the study at any juncture, if they were not comfortable, and they also had the right to refuse to participate in the study totally.

Results

A total of 321 pregnant women (response rate 100%) attending antenatal care during data collection in Asella hospital and Asella health centre were included in the study. The mean age was 26.3 (median 26 years) with a standard deviation of 3.8 years. Among the studied women 291(90.7%) were willing for HCT, and 30 (9.3%) were not willing for HCT. Majority of the respondents, willing 229 (78.7%) as well as unwilling 22 (73.3%) for HCT, were between 20 and 29 years in age. Oromo ethnic group comprised the largest proportion of the study subjects 195 (67.0%) and 22 (73.3%) for willing and unwilling for HCT respectively. The majority 161 (55.3%) of willing and 20 (66.7%) unwilling were Orthodox Christian followers. Almost all the study subjects were married 285 (99.3%) willing and 27 (90.0%) unwilling for HCT, and the majority 281 (96.6%) willing and 24 (80.0%) unwilling for HCT were living with their husbands. Regarding educational background the majority of willing for HCT 114 (39.2%) have attended or attending secondary school education where as the majority of unwilling for HCT 18 (60.0%) were at primary school level. Most of the respondents 227 (78.0%) willing and 28 (93.3%) unwilling were unemployed, and 199 (68.4%) and 18 (60.0%) willing and unwilling for HCT respectively were urban dwellers. Nullipara mothers comprised the largest proportion in both willing 109 (37.5%) and unwilling 22 (73.3%) pregnant women. 130 (44.7%) willing for HCT mothers had 2-3 antenatal care visits where as 23 (76.7%) of unwilling mothers had only 1 antenatal care visit. Table 1 shows the socio-demographic characteristics of study participants.

Variables	Willing (n=291)		Unwilling (n=30)	
	No	%	No	%
Age				
19 and below	9	3.1	6	20.0
20-29 years	229	78.7	22	73.3
30-39 years	53	18.2	2	6.7
Ethnic group?				
Oromo	195	67.0	22	73.3
Amhara	77	26.5	8	26.7
Others	19	6.5	0	0.0
Religion				
Orthodox	161	55.3	20	66.7
Muslim	100	34.4	10	33.3
Others	30	10.3	0	0.0
Marital status?				
Married	285	97.9	27	90.0
Single	6	2.1	3	10.0
Do you live with your husband?				
Yes	281	96.6	24	80.0
No	10	3.4	6	20.0
Educational status?				
Illiterate	36	12.4	6	20.0
Primary	67	23.0	18	60.0
Secondary	114	39.2	4	13.3
Tertiary	74	25.4	2	6.7
Occupation?				
Employed	64	22.0	2	6.7
Unemployed	227	78.0	28	93.3
Your place of residence?				
Urban	199	68.4	18	60.0
Rural	92	31.6	12	40.0
Parity?				
Primipara	101	34.7	4	13.3
Multipara	81	27.8	4	13.3
Nullipara	109	37.5	22	73.3
Number of ANC visits?				
Only 1	85	29.2	23	76.7
2 – 3	130	44.7	5	16.7
4 and above	76	26.1	2	6.7

Table 1: Socio-demographic characteristics of willing and unwilling for HCT of ANC attendees in Asella hospital and Asella health center, March – April 2012.

The entire respondents knew that, sexual contact is the major mode of transmission of HIV. The study participants responded that, faithfulness, condom use and abstinence are preventive measures of HIV, 288 (99.0%) willing and 30 (100%) unwilling, 255 (77.3%) willing and 19 (63.3%) unwilling, and 217 (74.6%) willing and 18 (60.0%)

unwilling for HCT respectively. About the time when MTCT of HIV could occur, the majority 287 (98.6%) willing and 29 (96.7%) unwilling pregnant mothers responded that, during pregnancy is the time when transmission of the virus to the child occurs. All of the respondents reported that, use of antiretroviral drugs is the major method of prevention of MICT of HIV (Table 2).

Variables		Willing (n=291)		Unwilling (n=30)	
		No	%	No	%
Mode of transmission?					
Sexual contact	Yes	291	100	30	100
	No	0	0	0	0
Blood & blood product	Yes	220	75.6	15	50
	No	71	24.4	15	50
Contaminated sharps	Yes	279	95.9	28	93.3
	No	12	4.1	2	6.7
What are the preventive measures?					
Abstinence	Yes	217	74.6	18	60
	No	74	25.4	12	40
Faithfulness	Yes	288	99	30	100
	No	3	1	0	0
Using condom	Yes	225	77.3	19	63.3
	No	66	22.7	11	36.7
When does MTCT of HIV occurs?					
During pregnancy	Yes	287	98.6	29	96.7
	No	4	1.4	1	3.3
During delivery	Yes	177	60.8	11	36.7
	No	114	39.2	19	63.3
During breast feeding	Yes	114	39.2	2	6.7
	No	177	60.8	28	93.3
How MTCT is prevented?					
Use of ART	Yes	291	100	30	100
	No	0	0	0	0
Avoiding breast feeding	Yes	115	39.5	2	6.7
	No	176	60.5	28	93.3

Table 2: Knowledge of pregnant women attending ANC in Asella hospital and Asella healthcenter on HIV, HCT, MTCT and PMTCT, March – April 2012.

Only 24 (8.2%) willing and most 26 (86.7%) unwilling pregnant mothers perceived that they were at risk of acquiring HIV/ADIS. Concerning the reasons why they had been at risk, both willing and unwilling pregnant women for HCT 12 (4.1%) and 22 (73.3%) respectively mentioned that, their partners were not faithful (Table 3).

Variables	Willing (n=291)		Unwilling (n=30)	
	N0	%	N0	%
Feel at risk of HIV?				
Yes	24	8.2	26	86.7
No	267	91.8	4	13.3
Reasons of feeling at risk?				
Multiple sexual partner				
Yes	10	3.4	14	46.7
No	281	96.6	16	53.3
Partner is not faithful				
Yes	12	4.1	22	73.3
No	279	95.9	8	26.7

Table 3: Risk perception of pregnant women attending ANC in Asella hospital and Asella health centre for HIV, March – April 2012.

Table 4 shows attitudes and practices of pregnant women towards HCT and PMTCT. Most of the willing respondents 247 (84.9%) reported that, they had prior HIV test. None of unwilling pregnant women on the other hand had prior HIV tests. 291 (90.7%) of the study participants accepted HCT and PMTCT.

Variables	Willing (n=291)		Unwilling (n=30)	
	No	%	No	%
Have you tested for HIV before?				
Yes	247	84.9	0	0
No	44	15.1	30	100
Willingness for HCT				
Yes	291	90.7	-	-
No	0	0	30	9.3

Table 4: Attitudes and practices of pregnant women attending ANC in Asella hospital and Asella health centre towards HCT and PMTCT, March – April, 2012.

In Table 5, which shows social factors that influence willingness of pregnant women for HCT, 181 (62.2%) of willing women would fear nothing if their HIV test result would be positive, whereas the majority 14 (46.7%) of unwilling women would fear about their own and baby's health if they were HIV positive. 283 (97.3%) willing as well as majority of unwilling respondents 24 (80.0%) reported that they would disclose their HIV test results for their husbands or partners.

Variables	Willing (n=291)		Unwilling (n=30)	
	No	%	No	%
Fear if HIV test result is positive?				
Own & baby's health				

Yes	**81**	**27.8**	**14**	**46.7**
No	**210**	**72.2**	**16**	**53.3**
Stigma, discrimination				
Yes	**55**	**18.9**	**9**	**30**
No	**236**	**81.1**	**21**	**70**
I don't fear				
Yes	**181**	**62.2**	**13**	**43.3**
No	**110**	**37.8**	**17**	**56.7**
Do you tell HIV +ve result to husband?				
Yes	**283**	**97.3**	**24**	**80**
No	**8**	**2.7**	**6**	**20**
If you don't, your reasons?				
Breaking of marriage				
Yes	**4**	**1.4**	**0**	**0**
No	**4**	**1.4**	**6**	**20**
Psychological harassment				
Yes	**8**	**2.7**	**6**	**20**
No	**0**	**0**	**0**	**0**
Physical violence				
Yes	**5**	**1.7**	**0**	**0**
No	**3**	**1**	**6**	**20**

Table 5: Social factors that influence willingness of pregnant women attending ANC in Asella hospital and Asella health center for HCT, March - April, 2012.

Concerning HCT services which influence willingness of pregnant women for HCT, as shown in Table 6, the majority of the willing respondents 192 (66.0%) preferred the approach of HCT services should be routinely provider initiated for all, but all of unwilling for HCT respondents preferred that, the test should be voluntarily, when the mother needs to be tested.

Table 7 shows socio-demographic factors associated with willingness for HCT. Willingness for HCT was significantly higher in the ages 20 and above years, and these age groups were 7 times (OR=6.94, 95% CI=2.26,21.31) more likely willing for HCT when compared with younger ages, 19 years and below. Married women were 5 times more likely willing for HCT when compared with those who were not married (OR=5.28, 95% CI=1.25, 22.30). Similarly, among married women those who were living with their husbands were more likely willing for HCT when compared with those who were not living with their husbands or partners (OR=7.03, 95% CI=2.35, 21.00). As shown in the table, the odds of willing for HCT significantly increased with an educational level. Women with secondary and above education were 4 times more likely willing for HCT than those who were illiterate and with primary education (OR=4.75, 95% CI=1.27,17.80). The odds of willing for HCT were also higher in women who gave birth before. Primipara women were 5 times more likely willing for HCT (OR=5.10, 95% CI=1.70,15.30) than those who were nullipara.

Variables	**Willing (n=291)**		**Unwilling (n=30)**	
	No	**%**	**No**	**%**
Preferable approach of HCT				
VCT	99	34.0	30	100
PICT	192	66	0	0

Table 6: HCT services that influence willingness of pregnant women attending ANC in Asella hospital and Asella health center for HCT, March - April, 2012.

Similarly, women who had 2 and above ANC visits were 7 times more likely willing for HCT (OR=7.04, 95% CI=2.60,19.22) than those who had only 1 ANC visit. Study participants were also assessed about their knowledge on route of HIV transmission (Table 8), when mother to child transmission could occur, and about attributes in the prevention of mother to child transmission of HIV infection. Both groups mentioned means of transmission of HIV like sexual intercourse, blood and blood products, contaminated sharp instruments and mother to child transmission (MTCT), and women who indicated blood and blood product as a mode of transmission were 3 times more likely willing for HCT (OR=3.10, 95% CI=1.44,6.70) than those who didn't mention it as a mode of HIV transmission. Mothers who said MTCT could occur during delivery were about 2.7 times more likely willing for HCT (OR=2.68, 95% CI =1.23,5.84), and those who said during breast feeding were 9 times more likely willing for HCT (OR=9.02, 95% CI=2.11,38.58) than those who didn't mention both occasions as times of MTCT of HIV. Pregnant women who reported avoidance of breast feeding as a means of intervention to reduce MTCT of HIV were 9 times more likely willing for HCT than those who didn't mention it as a means of intervention (OR=9.15, 95% CI=2.14,39.14).

Variables	**Willing (n=291)**		**Unwilling (n=30)**		**Crude OR**	**95% CI**
	No	**%**	**No**	**%**		
Age						
19 and below	9	3.1	6	20	1	
20-29 years	229	78.7	22	73.3	6.94	2.26,21.31
30-39 years	53	18.2	2	6.7	17.67	3.10,101.60
Marital status?						
Married	285	97.9	27	90	5.28	1.25,22.30
Single	6	2.1	3	10	1	
Living with your husband?						
Yes	281	96.6	24	80.0	7.03	2.35,21.00
No	10	3.4	6	20.0	1	
Educational status?						
Illiterate	36	12.4	6	20	1	

Primary	67	23	18	60	6.20	0.23,1.70
Secondary	114	39.2	4	13.3	4.75	1.27,17.80
Tertiary	74	25.4	2	6.7	6.17	1.19,32.10
Parity?						
Primipara	101	34.7	4	13.3	5.10	1.70,15.30
Multipara	81	27.8	4	13.3	4.10	1.40,12.32
Nullipara	109	37.5	22	73.3	1	
Number of ANC visits?						
Only 1	85	29.2	23	76.7	1	
2-3	130	44.7	5	16.7	7.04	2.60,19.22
4 and above	76	26.1	2	6.7	10.30	2.35,45.10

Table 7: Socio-demographic factors associated with willingness for HCT of ANC attendees in Asella hospital and Asella health center, March – April 2012.

Variables	**Willing (n=291)**		**Unwilling (n=30)**		**Crude OR**	**95% CI**
	No	**%**	**No**	**%**		
Mode of transmission of HIV?						
Sexual contact						
Yes	**291**	**100**	**30**	**100**		
No	**0**	**0**	**0**	**0**		
Blood & blood product						
Yes	**220**	**75.6**	**15**	**50**	3.10	1.44,6.70
No	**71**	**24.4**	**15**	**50**	1	
Contaminated sharps						
Yes	**279**	**95.9**	**28**	**93.3**	1.70	0.35,7.80
No	**12**	**4.1**	**2**	**6.7**	1	
Preventive measures from HIV?						
Abstinence						
Yes	**217**	**74.6**	**18**	**60**	1.96	0.96,4.25
No	**74**	**25.4**	**12**	**40**	1	
Faithfulness						
Yes	**288**	**99**	**30**	**100**		
No	**3**	**1.0**	**0**	**0.0**		
Using condom						
Yes	**225**	**77.3**	**19**	**63.3**	1.97	0.89,4.36
No	**66**	**22.7**	**11**	**36.7**	1	
When does MTCT of HIV occurs?						
During pregnancy						
Yes	**287**	**98.6**	**29**	**96.7**	2.47	0.27,22.88
No	**4**	**1.4**	**1**	**3.3**	1	
During delivery						
Yes	**177**	**60.8**	**11**	**36.7**	2.68	1.23,5.84
No	**114**	**39.2**	**19**	**63.3**	1	
During breast feeding						
Yes	**114**	**39.2**	**2**	**6.7**	9.02	2.11,38.58
No	**177**	**60.8**	**28**	**93.3**	1	
How MTCT will be prevented?						
Use of ART						
Yes	**291**	**100**	**30**	**100**		
No	**0**	**0**	**0**	**0**		
Avoiding breast feeding						
Yes	**115**	**39.5**	**2**	**6.7**	9.15	2.14,39.14
No	**176**	**60.5**	**28**	**93.3**	1	

Table 8: Knowledge factors associated with HCT of willing and unwilling pregnant women attending ANC in Asella hospital and Asella health centre March– April 2012.

Concerning risk perception of pregnant women attending ANC in relation with HIV/ADIS, Table 9 shows that, women who didn't perceive themselves at risk of acquiring HIV were more likely willing for HCT than those who perceived they were at risk (OR=72.31, 95% CI=23.30,224.42). Similarly, women who hadn't have multiple sexual partners were more likely willing for HCT than those who had (OR=24.59, 95% CI=9.46, 63.90), and women whose partners were faithful were also more likely willing for HCT than women whose partners were not faithful (OR=63.94, 95% CI=23.66,172.82).

As shown in Table 10, women were assessed for social factors affecting their willingness for HCT. Women who would fear nothing if there HIV test result would be positive were 2 times more likely willing for HCT than their counterparts (OR=2.15, 95% CI=1.01,4.60). Women who would not fear stigma and discrimination were 1.8 times more likely willing for HCT than those who would fear (OR=1.84, 95% CI=0.80,4.24). Also women who would not fear concerning their own and baby's health if their HIV tests result would be positive were 2 times more likely willing for HCT than their counterparts. On the other hand, women who were willing to disclose their HIV test result for their husbands if they were positive were 8.8 times more likely willing for HCT than those who were not will to disclose (OR=8.84, 95% CI=2.84,27.59).

Variables	**Willing (n=291)**		**Unwilling (n=30)**		**Crude OR**	**95% CI**
	No	**%**	**No**	**%**		
Feel at risk of HIV?						
Yes	24	8.2	26	86.7	1	

No	267	91.8	4	13.3	72.31	23.30,224.42
Reasons of feeling at risk?						
Multiple sexual partner						
Yes	10	3.4	14	46.7	1	
No	281	96.6	16	53.3	24.59	9.46,63.90
Partner is not faithful						
Yes	12	4.1	22	73.3	1	
No	279	95.9	8	26.7	63.94	23.66,171.82

Table 9: Risk perception factors associated with HCT of willing and unwilling pregnant women attending ANC in Asella hospital and Asella health centre, March– April 2012.

Variables	Willing (n=291)		Unwilling (n=30)		Crude OR	95% CI
	No	**%**	**No**	**%**		
Fear if HIV test result is positive?						
Own & baby's health						
Yes	**81**	**27.8**	**14**	**46.7**	1	
No	**210**	**72.2**	**16**	**53.3**	2.27	1.06,4.86
Stigma, discrimination						
Yes	**55**	**18.9**	**9**	**30**	1	
No	**236**	**81.1**	**21**	**70**	1.84	0.80,4.24
I don't fear						
Yes	**181**	**62.2**	**13**	**43.3**	2.15	1.01,4.60
No	**110**	**37.8**	**17**	**56.7**	1	
Do you tell +ve result to husband?						
Yes	**282**	**97.3**	**24**	**80**	8.84	2.84,27.59
No	**8**	**2.7**	**6**	**20**	1	

Table 10: Social factors associated with HCT of willing and unwilling pregnant women attending ANC in Asella hospital and Asella health center, March - April, 2012.

Variables like age, marital status, and educational status, number of birth, ANC visits and perceived risk of HIV were entered for multivariate analysis. The strongest association with willingness for HCT rested with parity, number of ANC visits and perceived risk of HIV. Primipara women were about 12 times more likely willing for HCT than nullipara mothers (AOR=12.33, 95% CI=1.25,121.57), and also those who had 2 and above ANC visits were 9.6 times more likely willing for HCT than those who had only 1 ANC visit (AOR=9.64, 95% CI=1.93,48.28). Women who were perceived themselves not at risk of acquiring HIV were more likely willing for HCT than their counterparts (AOR=0.08, 95% CI=0.01, 0.41) (Table 11).

Discusssion

This study revealed that, parity was strongly associated with willingness for HCT. Primipara women were about 12 times more likely willing for HCT than nullipara mothers (AOR=12.33, 95% CI=1.25,121.57). The association of parity with willingness for HCT might be due to the fact that, as parity increased the responsibility to the family may also increases.

Variables	Willing (n=291)		Unwilling (n=30)		AOR	95% CI
	No	**%**	**No**	**%**		
Parity?						
Primipara	101	34.7	4	13.3	12.33	1.25,121.57
Nullipara	109	37.5	22	73.3	1	
Number of ANC visits?						
Only 1	85	29.2	23	76.7	1	
2-3	130	44.7	5	16.7	9.64	1.93,48.28
Feel at risk of HIV?						
Yes	24	8.2	26	86.7	1	
No	267	91.8	4	13.3	0.08	0.01,0.41

Table 11: Adjusted determinant factors of willing and unwilling pregnant women for HCTattending ANC in Asella hospital and Asella health center, March - April, 2012.

This study revealed a strong association that, women who had 2 and more ANC visits were 9.6 times more likely willing for HCT than those who had only 1 ANC visit (AOR=9.64, 95% CI=1.93,48.28). The association between number of antenatal visit and acceptance of prenatal HIV testing may be explained by the fact that, frequent exposure of mothers to information regarding HIV, MTCT and PMTCT during their follow up, may influence the mother to accept the test.

Our study also showed that, risk perception of the mother regarding HIV was strongly associated with willingness for HCT. Women who were perceived themselves not at risk of acquiring HIV were more likely willing for HCT than their counterparts (AOR=0.08, 95% CI=0.01,0.41). According to health believe model, when people perceived that they are at risk of acquiring disease or illness, they are more prone to seek medical attention. But the finding obtained in this study was different. Most pregnant women who perceived that they were at risk of acquiring HIV/ADIS were less likely willing for HCT, this might be because of fear of HIV positive result since HIV/ADIS is not yet curable. On the other hand, women who felt that they hadn't been at risk, they were confident enough to be tested without fear.

Conclusion and Recommendation

Conclusion

My study which was conducted among pregnant women attended antenatal care in Asella hospital and Asella health centre to assess ANC clients' willingness for HCT has reached on the following conclusions. Women who aged 20 and above are more likely willing

for HCT than those who are less than 20 (as the age increases willingness for HCT also increases) Pregnant mothers who are married and living with their husbands or partners are more likely willing for HCT. Women who are at secondary and above educational level are more likely willing for HCT, than those who are illiterate or with primary education. Pregnant women who had 2 and more ANC visits are more likely willing for HCT than women with only 1 ANC visit. Pregnant women who gave birth before are more likely willing for HCT than those who didn't. Pregnant women who know MTCT as route of HIV transmission, and those who mention avoidance of breast feeding as a means of PMTCT are more likely willing for HCT. Pregnant women who know existence of intervention that reduce MTCT and acknowledge benefits of HCT are more likely willing for HCT. Pregnant women who perceive that they are at risk of acquiring HIV are less likely willing for HCT than those who think they are not at risk.

Recommendation

Based on the findings of this study we recommend on the need for intensive and continued education to both pregnant mothers and their partners about prenatal HIV transmission, the role of HIV counselling and testing (HCT) on the prevention of mother-to-child transmission of the virus, and about the existence of intervention that reduce the possibility of prenatal transmission of the virus to scale up HCT acceptance of the mother. Various means of information transmission resources should be used about HCT and PMTCT of HIV to reach all the target population. We also strongly recommend that, special attention must be given on counselling of pregnant women who are not will for HCT because of fear of HIV positive result. Increasing women education to the highest possible level.

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