

# Knowledge, Attitude and Practice towards PMTCT of HIV among Women Attending Ambo Hospital ANC Clinic, West Ethiopia

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## Abstract

**Background:** Every day there are nearly 1800 new HIV infections in children under 15 years of age, more than 90% occurring in the developing world. Most (about 90%) of these infections are associated with mother-to-child-transmission (MTCT). Moreover about, 1400 children under 15 years of age die of an HIV-related illness per day. Hence, this study tried to assess the knowledge, attitude, and practice with prevention of mother-to-child transmission of HIV/AIDS among pregnant mothers attending antenatal clinic.

**Methods:** An institution-based cross-sectional study was conducted among pregnant mothers attending antenatal care clinic at Ambo General Hospital from April 1-May 30, 2014. A systematic random sampling technique was used to select 238 antenatal care attendees. Data were collected through structured pre-tested questionnaire. The data were entered into Epi Info and analyzed by using SPSS software for windows. Frequency and percentage were done.

**Results:** The study showed that all of the respondents heard about HIV/AIDS and about MTCT of HIV. Concerning the time of transmission of the virus from the infected mother to her child, 74 (31.4%) responded that it could be through breast feeding, 69 (29.2%) during pregnancy, 6 (2.7%) during labor and 2 (1.9%) did not know respectively. All the respondents have been tested for HIV. Among these, 87 (36.38%) tested six months ago, 76 (32.2%) tested three months ago, 37 (15.7%) tested one year ago and 36 (15.3%) tested on the recent pregnancy. All of them had pre- and post-counseling services. The study have showed that most of the respondents, 221 (93.6%), had good attitude towards PMTCT of HIV, while only 6.4 (2.73%) had poor attitude.

**Conclusion:** Accordingly all of the mothers knew about prevention of mother-to-child transmission of HIV and 93.6% had good attitude towards it. Only 4.4% of the respondents knew that antiretroviral drugs given for sero-positive pregnant mothers could reduce the risk of HIV transmission. All the of mothers have been tested for HIV/AIDS. Much has better to be done to maintain mothers knowledge, attitude and of all to promote the use of ART and other PMTCT of HIV methods through organized intervention programs as well as by ensuring the supply of the ART medications used for PMTCT of HIV beside the treatment of established infection.

**Keywords:** Knowledge; Attitude; Practice

**Abbreviations:** AIDS: Acquire Immune Deficiency Syndrome; ANC: Antenatal Care; ART: Anti-Retroviral Therapy; BF; Breast Feeding; BMS: Breast Milk Substitute; HCT: HIV Counselling and Testing; HIV: Human Immune Deficiency Syndromes; MTCT: Mother to Child Transmission; PMTCT: Prevention of Mother to Child Transmission; VCT: Voluntary Concealing Test; WHO: World Health Organization

## Introduction

### Background

Mother-to-child transmission (MTCT) of human immune deficiency virus (HIV) infection is the transmission of the virus from an HIV-infected mother to her child during pregnancy, labor, delivery or breastfeeding [1,2].

The global human immunodeficiency virus (HIV) epidemic continues to expand, with an estimated five million people becoming infected each year. Over the decades, the epidemic once dominated by infected males has become progressively feminized, with over half of adults living with HIV being women [3]. In sub-Saharan Africa, where about two-thirds of the global disease burden resides, 57% of adults living with HIV are women. As more women contract the virus, the number of children infected from their mothers has been growing. Every day there are nearly 1800 new HIV infections in children under 15 years of age, more than 90% occurring in the developing world. Most (about 90%) of these infections are associated with MTCT. In addition, every

day 1400 children under 15 years of age die of an HIV-related illness [4].

Thus prevention of MTCT of an HIV infection is a politically and scientifically accepted approach to reduce the impact of HIV, especially on children [5].

The prevention of MTCT plays a major role in limiting the number of children being infected by HIV. Without any intervention, 20-50% of infant would be infected; 5-10% during pregnancy, 10-20% during labor and delivery and 5-20% through breast feeding. By implementing PMTCT program, the overall risk can be reduced to less than 2% [6]. The services provided by this program include; HIV counselling and testing (HCT) for HIV in antenatal clinics and maternity wards, Antiretroviral drug therapy, comprehensive antenatal care and safer

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delivery practices, appropriate infant feeding, Counseling and support [7]. Clinical trials have demonstrated that Antiretroviral (ARV) prophylaxis, when administered to mothers and their newborn babies, can reduce the risk of MTCT by approximately 75% [8].

### Statement of the problem

The global community has committed itself to accelerate progress for the PMTCT initiative to eliminate new pediatric HIV infections by 2015 and improve maternal, newborn and child survival in the context of HIV. PMTCT advocated by UNAIDS entail [1] keeping women of reproductive age and their partners HIV-negative through reproductive health and HIV prevention services, [2] avoiding unwanted pregnancies among HIV-infected women and women at risk of HIV, through family planning and HIV testing and counseling services and [3] ensuring HIV testing of pregnant women and timely access to effective antiretroviral therapy, both for the health of HIV-infected mothers and for PMTCT, during pregnancy, delivery and breastfeeding [9]. Adherence to these practices is highly variable with better results obtained in developed countries than in the developing countries. Not surprisingly, inadequate continuum of care, magnitude of PMTCT and associated services including HIV testing and counseling and ARV prophylaxis are still very low in developing countries [10,11]. A UNAIDS report estimated only 5% of HIV-infected women accessed PMTCT interventions in a surveillance of 30 African countries with the highest HIV prevalence [9]; a huge shortfall from the UN target of 80% by 2010.

Virtual elimination of HIV MTCT has been achieved in most industrialized countries, with declines of over 80%-90% in the number of cases of perinatally acquired HIV infection, and MTCT rates of under 2%-3% [12-14]. Moreover, MTCT, in the context of antiretroviral prophylaxis is below 1% in Europe and the USA. However it exceeds 30% in many poorly resourced countries, with sub-Saharan Africa carrying the highest burden [15,16].

Various factors contribute to the high burden of pediatric HIV infection in Ethiopia and other sub-Saharan African countries. These include the high prevalence of HIV infection amongst women of reproductive age, large populations of women, high birth rates, and lack of access to effective interventions aimed at preventing mother to child transmission of HIV [17].

According to Ethiopian Demographic Health Survey (EDHS) 2011 only 34% of mothers had Antenatal Care (ANC) follow up in Ethiopia [9] thus having a negative contribution on under-utilization of PMTCT services [18].

The research done in Hawassa referral Hospital showed that only about half (48.3%) of the respondents knew that antiretroviral drugs given for seropositive pregnant mothers could reduce the risk of transmission [19]. Therefore this study was designed to assess knowledge, attitude and practice towards PMTCT of HIV among pregnant women.

### Significance of the study

In line with the millennium development goal 6 which is to halt and reverse the spread of HIV by 2015, the Ethiopian National HIV/AIDS prevention plan for 2007-2009 has been focusing on scaling up access and quality of HIV/AIDS services in a wide range of intervention areas including PMTCT. Basic knowledge about HIV and its prevention strategies as well as the attitude of mothers in accessing PMTCT services are vital to the success of the programme.

Thus the study provided baseline information about the knowledge, attitude, and practice of PMTCT services among pregnant mothers. It would also be a significant venture in promoting effective relationship between the healthcare team and the client thereby facilitating quality and efficient healthcare services to reduce mortality and morbidity of children as well as mothers.

Moreover, the results of this study would help healthcare institutions to recognize mother's knowledge, attitude and utilization of PMTCT services and hence benefit them by providing accurate information on risk of MTCT, availability of prevention options, effect of HIV on pregnancy outcomes and involvement and screening of partner to improve quality care and utility of the services.

### Objective

#### General knowledge

To assess the knowledge, attitude, practice of Mother -to -child transmission of HIV/AIDS among pregnant mothers attending Antenatal Clinic (ANC) of Ambo General Hospital.

#### Specific objective

- To determine the knowledge of prevention of mother-to-child transmission of HIV/AIDS among pregnant mothers attending antenatal clinic.
- To examine the attitude towards Voluntary Counseling and testing and prevention of mother-to-child transmission of HIV/AIDS among pregnant mothers attending antenatal clinic.
- To assess practice of prevention of mother-to-child transmission of HIV/AIDS among pregnant mothers attending antenatal clinic.

### Method and Participants

#### Study area

The study was conducted in ANC clinic of Ambo General Hospital which is located at west show zone, Oromia regional state, and 100 km away from Addis Ababa. The hospital renders various services with its departments: surgery internal medicine, gynecology and obstetrics, pediatric, ophthalmology, emergence service, laboratory, radiology, dental and pharmacy. The hospital has also ART clinic.

#### Study design

An institutional-based cross-sectional study was conducted.

#### Study period

The study was conducted from April 1-May 30, 2014.

#### Inclusion and Exclusion criteria

**Inclusion criteria:** All pregnant mothers who were attending ANC clinic were included.

**Exclusion criteria:** Severely ill (those who couldn't talk) pregnant mothers were excluded.

#### Sample size determination and Sampling technique

The sample size was calculated using single population proportion formula with estimated proportion of 10% (0.1) vertical transmission (MTCT) of HIV, according to Ethiopian Survey on pregnant mother (SPM) II [10] assuming that marginal error and 10% non-respondent

rate respectively; accordingly, it was 238. ANC follow up logbook was used to systematically select 238 eligible pregnant mothers attending the clinic.

### Data collection

Pre-tested structured questionnaire was prepared by reviewing previously done studies on the topic of interest [19-25]. The data were collected using structured interviewer administered questionnaire prepared to address knowledge, attitude, practice associated with PMTCT services. The questionnaires were administered to all volunteer pregnant women who fulfilled the inclusion criteria while they were attending ANC clinic at the hospital. The pregnant women were interviewed by three data collectors who were trained by principal investigator.

### Data quality control

Questionnaire was pre-tested on 12 pregnant women at Ambo Health center to assess clarity, understandability, flow and consistency. Data completeness and consistency was checked by the investigator. Data cleaning and editing took place; missed values were statistically handled to help address concerns caused by incomplete data using SPSS statistical package.

### Data processing and analysis

The collected data was checked for completeness and consistency, and was analyzed using SPSS version 20. The result was presented using tables.

### Ethical consideration

Ethical approval and clearance was taken from institutional review board of College of Medicine and Health Sciences, Ambo University. This study did not cost additional expenses on the study subjects. There were no potential risks that might cause any harm to study subjects. Information which was communicated with individual subjects was kept private and maintained confidential and written consent to participate in the study was obtained from all participants. Coding was used to eliminate names and other personal identification of respondents throughout the study process to ensure anonymity.

### Plan for utilization and dissemination of the result

Based on the work plan after the collected data had analyzed and conclusion was made recommendation was drawn and discussion will be made with the concerned body. After getting approval from the concerned body, the result of this study will be disseminated being published on national and international journals.

### Limitation and strength

Only pregnant mothers attending ANC clinic at Ambo General Hospital comprised the target population, therefore the result cannot be generalized and may not represent other health institutions. As interview was done for study subjects, using local language the study didn't make bias among the study subjects (i.e among those who are educated and not).

### Perational definition

- **Attitude:** -A way of thinking about something or behaving towards something.
- **Good attitude:** Those respondents who able to answer greater than or equal to 60% of the total attitude questions appropriately.

- **Knowledge:** - All the facts that some one knows about a particular subject.
- **Practice:** Actual performance of an activity in real situation.
- **Poor Attitude:** Those respondents who had answered less 60% of the total attitude `questions appropriately.
- **Used VCT:** If a respondent woman reported that she was counseled and offered voluntary HIV testing and received the test result during her most recent pregnancy.

## Result

### Socio demographic and economic characteristics

A total of 236 women responded to the questionnaire, yielding a response rate of 99.16. Majority 72 (31%) of the women were within the age group of 20-24 years. The majority, 207 (89.2%), of the respondents were married at the time of the survey. 130 (55.1%) respondents were Orthodox in religion followed by Protestant 70 (29.7%) , Muslims 34 (14.4%). 2 other religion follower .26 (11%) of them had no formal education, 45 (19.1%) had primary education, while 76 (32.2%) and 89 (37.7%) had secondary and above secondary educational status respectively. Regarding occupation, 66 (28%) of the respondents were government employed, followed by 54 (22.9%) housewives, the rest 53 (22.5%), 39 (16.5), 24 (10.2) of them were private employed, merchant and Farmer respectively (Table 1).

### Reproductive health history

Regarding the parity status of the women to 115 (48.7%) were para I, 90 (38.1%) multi para and the rest 31 (13.2%) were grand multi para.

Socio-demographic	Frequency	Percent	
Age group	15-19	31	13
	20-24	72	31
	25-29	56	24
	30-34	48	20
	35-39	21	9
	40-44	8	3
	<b>Total</b>	<b>236</b>	<b>100</b>
Marital status	Single	25	10.6
	Married	211	89.4
	<b>Total</b>	<b>236</b>	<b>100</b>
Religion	Muslim	34	14.4
	Orthodox	130	55.1
	Protestant	70	29.7
	Other	2	.8
	<b>Total</b>	<b>236</b>	<b>100</b>
Educational status	No formal education	26	11
	Primary	45	19.1
	Secondary	76	32.2
	Above secondary	89	37.7
	<b>Total</b>	<b>236</b>	<b>100</b>
Occupation	Merchant	39	16.5
	Farmer	24	10.2
	Government employed	66	28
	Private employed	53	22.5
	House wife	54	22.9
	<b>Total</b>	<b>236</b>	<b>100</b>

**Table 1:** Socio-demographic Characteristics of Pregnant Mothers Attending ANC Of Ambo General Hospital, West showa Ethiopian ,2014.

Reproductive history		Frequency	Percent
Parity	Para I	115	48.7
	Mul tipara	90	38.1
	Grandmultipara	31	13.2
	<b>Total</b>	<b>236</b>	<b>100</b>
ANC during last pregnancy	Yes	167	70.8
	No	69	29.2
	<b>Total</b>	<b>236</b>	<b>100</b>
Current ANC visit	One	14	5.9
	Two	30	12.7
	Three	83	35.2
	Four	109	46.2
	<b>Total</b>	<b>236</b>	<b>100</b>

**Table 2:** Reproductive History of Pregnant Mothers Attending ANC Clinic in Ambo General Hospital, West Showa, April 1- May 30, 2014.

Most of the 167 (70.8%) of the women had ANC follow up during last pregnancy. About half of attendances had 109 (46.2%) had four times ANC Visit for current pregnancy followed by three times 83 (35.2%) two 30 (12.1%) and only one times 14 (5.9%) visit during their pregnancy respectively Table 2.

### Knowledge of women on of mother-to-child transmission of HIV/AIDS and its prevention

This study attempted to assess the knowledge of pregnant mothers attending ANC on MTCT of HIV. Accordingly, all of the respondents heard about HIV/AIDS and about MTCT of HIV. Concerning the time of transmission of the virus from the infected mother to her child, 74 (31.4%) responded that it could be through breast feeding, 69 (29.2%) during pregnancy, 65 (27.5%) during labour and 28 (11.9%) did not know respectively.

The study assessed the knowledge on PMTCT of HIV/AIDS of the pregnant mothers attending the hospital. All the respondents knew PMTCT of HIV. Of these, 105 (44.4%) of the respondents knew ART drugs given for HIV-positive pregnant mothers could reduce the risk of HIV transmission, 84 (35.7%) and 50 (20.3%) claimed condom and other methods as method of reducing HIV transmission.

Regarding method of PMTCT of HIV during breast feeding the study had showed that exclusive breast feeding are the major method that scores 164 (69.5%), Diluted cow milk, no Breast feeding 15 (6.4%) and Good Breast care 57 (24.2%). Majorities, 204 (86.4%) were aware of Exclusive breastfeeding options of infant feeding, but only 12 (5.1%) of the respondents suggested infant formula as an infant feeding option (Table 3).

### Practices of prevention of mother to child transmission of HIV/AIDS

Prevention of mother-to-child transmission among women was assessed using different explanatory variables. All the respondents have been tested for HIV. Among these, 87 (36.38%) tested six months ago, 76 (32.2%) tested three months ago, 37 (15.7%) tested one year ago and 36 (15.3%) tested on the recent pregnancy. All of them, had pre- and post-counseling services. Among the respondents, 157 (66.5%) shared the result of HIV test with their husband/partner, 54 (22.9%) did not share it and 25 (10.6%) had no husband/partner at the time of testing.

More than half of the respondents 124 (52.5%) reported that breast feeding by HIV positive mothers is encouraged. Almost all 216 (91.5%) of the respondents encouraged condom use with spouse (Table 4).

### Attitude of respondents towards PMTCT

The study have showed that most of the respondents, 221 (93.6%), had good attitude towards PMTCT of HIV, while only 6.4 (28.73%) had poor attitude.

Majority of the respondents, 169 (71.6%) have shown their willingness to support their spouses that tested positive for HIV. Most of the respondents, 229 (97.10%), would agree to VCT, and only 7 (2.9%) would not agree. All most all of them would agree that HIV

Knowledge of women on mother to child transmission of HIV		Frequency	Percent
Have you ever heard about HIV/AIDS	<b>Yes</b>	<b>236</b>	<b>100</b>
	<b>Total</b>	<b>236</b>	<b>100</b>
Mother To Child Transmission of HIV	<b>Yes</b>	<b>236</b>	<b>100</b>
	during pregnancy	69	29.2
	during labor	65	27.5
	Through breast feeding	74	31.4
	Don't know	28	11.9
Possibility of PMTCT of HIV	Yes	236	100
Method of HIV prevention during pregnancy	ART use	105	44.4
	Use Condom	84	35.7
	Other	50	20.3
Feasible Infant feeding option	Infant Formula, No Breast milk	12	5.1
	Cow's milk, no Breast milk	20	8.5
	Breast milk only for six months	204	86.4
	<b>Total</b>	<b>236</b>	<b>100</b>

**Table 3:** Knowledge of women on of mother-to-child transmission of HIV/AIDS and its prevention Among pregnant women attending ANC clinic at Ambo General HospiWest Showa, April 1- May30, 2014.

Practices of Prevention of mother to child transmission of HIV/AIDS		Frequency	Percent
Tested for HIV	Yes	236	100
	<b>Total</b>	<b>236</b>	<b>100</b>
Have you taken Precounseling service	Yes	236	100
Have you taken Post counseling service	Yes	236	100
Time of last HIV test	three month ago	76	32.2
	six month ago	87	36.8
	one year ago	37	15.7
	up on recent pregnancy	36	15.3
	<b>Total</b>	<b>236</b>	<b>100</b>
Sharing test result with husband	Yes	157	66.5
	No	54	22.9
	no husband	25	10.6
	<b>Total</b>	<b>236</b>	<b>100</b>
Breast feeding by HIV positive lactating mother	Encouraged	124	52.5
	not encouraged	63	26.7
	I don't know	49	20.8
	<b>Total</b>	<b>236</b>	<b>100</b>
The use of condom with spouse	encouraged if advised	216	91.5
	not encouraged	8	3.4
	I don't know	12	5.1
	<b>Total</b>	<b>236</b>	<b>100</b>

**Table 4:** Practices of prevention of mother to child transmission of HIV/AIDS Among pregnant women attending ANC clinic at Ambo General Hospital West Showa, April 1- May30, 2014.



Attitude of Respondents to VCT/PMTCT		Frequency	Percent
What will you do if your spouse becomes tested result positive	Support	169	71.6
	Separate	20	8.6
	Divorce	47	19.9
	<b>Total</b>	<b>236</b>	<b>100</b>
Pregnant women should be screened for HIV on Voluntary base	Agree	229	97.1
	Disagree	7	2.9
	<b>Total</b>	<b>236</b>	<b>100</b>
HIV infected pregnant mother must delivered with skilled person	Agree	217	91.9
	Disagree	8	3.5
	Neutral	11	4.6
HIV positive mothers should take ARV during pregnancy	Agree	223	94.5
	Disagree	1	0.4
	Neutral	12	5.1
HIV positive women should not breastfeed her child if there is risk of infection	Agree	216	91.5
	Disagree	19	8.1
	Neutral	1	0.4
<b>Total</b>	<b>236</b>	<b>100</b>	

**Table 5:** Attitude of Respondents towards PMTCT of HIV Among pregnant women attending ANC clinic at Ambo General Hospital West Showa, April 1- May30, 2014

positive mother should get ART during pregnancy to reduce risk of transmission of HIV to her child (Table 5).

## Discussion

For the achievement of Millennium Development Goals (MDGs), creating awareness and enhancing PMTCT practice has great importance particularly in the reduction of childhood and maternal morbidity and mortality which in turn has enormous impact on socio-economic development of the country.

In this study, all of the respondents heard about HIV/AIDS. This finding was the same with other studies done in Ethiopia (i.e. in Addis Ababa at Tikur Anbessa and Zewuditu memorial hospitals and Hawassa University Hospital). This may be because of the global or universal nature of the problem. This finding was greatest than those study finding in above mentioned hospital (Ethiopia) in both knowledge of MTCT and PMTCT of HIV as All the respondents were knowledgeable. This may be because of the time difference between this and those studies, as awareness increases with a time increase [18,24].

This study showed that 105 (44.4%) of the respondents knew ART drugs given for HIV-positive pregnant mothers could reduce the risk of HIV transmission, and this result is similar with the study done in Hawassa University referral Hospital Within which about half (48.3%) of the respondents knew that antiretroviral drugs given for seropositive pregnant mothers could reduce the risk of transmission [18].

This study has also reported that all of the respondents have been tested for HIV and have taken Pre and Post counseling service. This result is almost the same with the study done in Uganda and Hawassa University Referral Hospital which have reported that 99.5% and 96% of mothers have been tested for HIV respectively. However, the finding of this study is much different from the study done in North Central Nigeria and Primary Health care center Nigeria, which have revealed that 55.7% and 71% of pregnant mothers have tested respectively. This may be due to the difference in geography, study time and Sample size taken among those studies. [18,19,22].

This study have showed that most of the respondents, 221 (93.6%), had good attitude towards PMTCT of HIV, while only 6.4 (28.73%) had poor attitude by this the result of this study is much different from that of Southwestern Nigeria which have showed that many of the respondents, 275 (71.27%), had poor attitude towards PMTCT of HIV, while only 111 (28.73%) had good attitude but similar with the study done Hawassa University Referral Hospital which have showed that 97.4% had good attitude towards it. This may be due to the difference in study area and sample size. This study have showed that most of the respondents, 229 (97.10%), would agree to VCT, and only 7 (2.9%) would not agree. This result is similar with that of south western Nigeria which has showed that Most of the respondents, 349 (83.10%), would agree to VCT, 36 (8.60%) would not agree, while 35 (8.30%) were not sure [18,21,22].

## Conclusion

In general, some of the findings of this study are consistent with what had previously been reported. Accordingly all of the mothers knew about prevention of mother-to-child transmission of HIV and 93.6% had good attitude towards it. Only 44.4% of the respondents knew that antiretroviral drugs given for sero-positive pregnant mothers could reduce the risk of HIV transmission. All of the mothers have been tested for HIV/AIDS.

## Recommendation

It is better to maintain mothers knowledge, attitude and of all to promote the use of ART and other PMTCT of HIV methods through organized intervention programs as well as by ensuring the supply of the ART medications used for PMTCT of HIV beside the treatment of established infection.

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