

Knowledge, Attitude and Practice towards Prevention of Mother to Child Transmission of HIV among Pregnant Women Attending Antenatal Care in Southeast Ethiopia

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Abstract

Introduction: Globally, HIV/AIDS is a major public health problem; and mother to child transmission is the largest source of HIV infection in children below the age of 15 especially in developing countries. Approximately 1800 children were newly infected and 1400 were died per day in the world. Among this figure around 90% of the infections and deaths were happening in developing countries.

Objective: The aim of this study was to determine knowledge, attitude and practice towards prevention of mother to child transmission among pregnant women attending antenatal care in Goba referral hospital.

Methodology: An institutional based cross-sectional descriptive study was conducted from March, 2019 to May, 2019 to determine knowledge, attitude and practice towards preventions of mother to child transmission of HIV among pregnant women attending antenatal care in Goba referral hospital. A systematic random sampling technique was used to select the study participants. Data was analysed using SPSS version 20 software.

Result: This study showed 94.6% of the respondents reported that they have ever heard about HIV/AIDS. About 93.6% of mothers were knowledgeable, 62.6% have good attitude and 37.4% have good practice towards PMTCT.

Conclusion: In this study the knowledge was high among pregnant women. However, the practice of the participants was low. It is due to all knowledge can't be changed into action. So, health service organizations and other responsible bodies should perform activities which can impart behavioural change.

Keywords: Knowledge; Attitude and Practice; Mother to Child Transmission; HIV/AIDS; Pregnant Women; Antenatal Care

Abbreviations: AIDS: Acquired Immune Deficiency Syndrome; ANC: Antenatal Care; ART: Anti-Retroviral Therapy; ARV: Anti-Retroviral; ARVDs: Anti-Retroviral Drugs; BF: Breast Feeding; EBF: Exclusive Breast Feeding; HAART: Highly Active Anti-Retroviral Therapy; HIV: Human Immune-deficiency Virus; KAP: Knowledge, Attitude and Practice; MCH: Maternal and Child Health; MTCT: Mother to Child Transmission; NGOs: Non-Governmental Organizations; MOH: Ministry Of Health; OPD: Out-Patient Department; PMTCT: Prevention of Mother to Child Transmission; STDs: Sexually Transmitted Diseases; SPSS: Statistical Package for Social Science; VCT: Voluntary Counseling and Testing; WHO: World Health Organization.

Introduction

Background

Acquired Immune Deficiency Syndrome (AIDS) is a syndrome first described in 1981. The consequence of progressive immune debilitation. AIDS pandemic has succumbed millions of people all over the world since it was first recognized in early 1980s, and no continent is free from the pandemic [1,2]. Human immunodeficiency virus (HIV-1) and human immunodeficiency virus (HIV - 2) are retroviruses with RNA genomes; they are the etiologic agents of HIV infection and diseases AIDS. Forty million people infected with HIV worldwide, of which 50% are women. Communicable disease control center (CDC) estimates 40,000 new infections per year in US; about 70% among men, and 30% are women; 2,000 new infections/day in children <15 years [3,4]. Due to effective retroviral therapy, number of individuals with chronic HIV was increasing in spite of decline in new infections in the 1990s; as a result fifteen percent of HIV infected pregnant women in the US obtain no prenatal care [5].

The main route of HIV transmission includes sexual contact, blood contact and mother to child transmission (MTCT). MTCT of HIV remains a major public health problem worldwide. It is the most common mode of transmission in children under the age of 15years, which is vertically transmitted from HIV positive pregnant women to her unborn baby [4,6]. Male to female transmission more efficient than female to male and anal receptive sex more likely to transmit than vaginal sex, because of fragile nature of rectal mucosa and high viral load is present in rectal mucosa [4]. Exposure to infected blood through parenteral exposure via transfusions or sharing needles or occupational exposure, risk of transmission is 0.3% and 0.09% after mucous-membrane

exposure, with needle stick injury, risk of transmission is 1/300 and the overall transmission risk of HIV/AIDS in breast fed child is as high as 30-40% [7]. Additional HIV/AIDS transmission mechanisms are in uterus or during labor/delivery 20% of transmission occurs <36 weeks, 50% in days before delivery, 30% intrapartum, risk of infant to be infected is ~20% increased rate of transmission if low CD4 counts or if high viral loads are recorded. And in patient who previously diagnose of HIV/AIDS, who have vaginal delivery, especially with ROM >4 hours, increases risk of infant infection up to around 40% [7,8]. Untreated STDs, prematurity, and chorio-amnionitis increase the risk of mother-to-child transmission of HIV [9]. However, HIV is not believed to be transmitted by bites, sharing, utensils, bathrooms, bathtubs, exposure to urine, feces, vomitus (except if grossly contaminated with blood, and even then transmission is rare, if at all) [10].

More than 70% of over 42 million people living with HIV/AIDS worldwide live in sub-Saharan Africa. Of this 17 million are women and 2.5 million are children under the age of 15 years. AIDS has now become the leading cause of death in these countries and it has further worsened the morbidity and mortality of infants and children [4,11]. Similarly, the virus continued to spread at a rapid pace, sparing no part of Ethiopia unaffected by the virus. In 2003 alone 90,000 adults and 25,000 children died of AIDS. This makes a cumulative total of 90,000 deaths leaving 539,000 orphans by the end of 2003 [2,7,11].

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 impacts on socio-economic development of the country. This study determined knowledge, attitude and practice towards prevention of mother to child transmission among pregnant women attending antenatal care.

Methods

Study Area, Period and Design

An institutional based cross-sectional study was conducted from March, 2019 to May, 2019. The study was conducted in Goba referral hospital which is found in Goba town, Bale Zone, Southeast Ethiopia. Goba town is located 445 km from Addis Ababa. According to population and housing census of Ethiopia, the total population of the town is estimated to be over 32,000

[12]. Goba referral hospital has four Emergency OPD such as; gynecology, internal medicine, surgery, and pediatrics, ten ROPD including minor unit like dermatology, ophthalmology, dentistry, psychiatry, and also one operation room, four ward admission room, MCH, NICU, laboratory and drug store staff. There is respective specialist: four internist, three surgeon, two pediatrician, two gynecologist and obstetrician, 60 general practitioner, 128 nurses, 6 midwives and 40 medical interns working there, and there is also liaison officer, clinical director and respective department head to supervise them. The last year's quarter report of patient flow at the ANC from registration book of MCH unit which was found to be 25 per day, 415 monthly and around 4,000 annually. During the study period the number of pregnant women attending ANC is increasing; estimated to be 31 per day and 600 monthly.

Sample Size Determination

The required sample size was calculated using a single population proportion formula assuming $P = 84.6\%$, $Z =$ standard normal distribution taken as 1.96 at 95% confidence level, $d =$ margin of error taken as 5%, 10% non-response rate and the final sample size calculated to be 220.

Data Collection and Sampling Procedure

The questionnaires were adapted from different literatures. Data was collected by face interview using structured and pretested questionnaire filled for respondent. This was first prepared in English and translated to Amharic then back to English again to check for its consistency. Four 12 graduates and one BSc nurse were recruited for data collectors and supervisor respectively. The interview was conducted after ANC service and each client was being interviewed privately. The study participants were selected by systematic random sampling; and we used medical registration number from their cards as lottery enrolment with sampling frame.

Data Quality Control

The supervisor and data collectors were trained for two days before data collection. Before actual data collection, the questionnaire was pre-tested for validity and reliability on 11 mothers; thereby possible adjustment or modification was made accordingly. The pre-test was done in Adaba health center among pregnant women attending ANC and was not included in our data

analysis. The supervisor checked the data daily for its completeness.

Data Processing and Analysis

Data was cleaned, coded, explored for outliers and missed values. The data was entered into the computer and analysed and processed using SPSS software version 20 for window package. Descriptive analysis was carried out to examine the distribution of each of study variables.

Operational Definitions

Knowledge: Is that knowing what is diseases, the mode of transmission, the natural history of the disease means that whether it is cured or not, and the impact of diseases in day to day activity, future hope and how make to be not suffered the diseases. Knowledge was assessed by 11 questions.

- **Knowledgeable:** The study participants who score half or more than half (≥ 5 out of 11) of the knowledge questions are considered as knowledgeable.
- **Not knowledgeable:** The study participants who score less than or equal to half (≤ 5 out of 11) of the knowledge questions are considered as not knowledgeable.

Attitude: Measured by the understanding about the diseases, and attitude toward the suffered individuals. Attitude was assessed by asking 8 questions.

- **Positive attitude:** The study participants who score half or more than half (≥ 4 out of 8) of the attitude questions are considered as positive attitude.
- **Negative attitude:** The study participants who score less than or equal to half (≤ 4 out of 8) of the attitude questions are considered as negative attitude.

Practice: It sees and changes it in to meaning, full thing and uses it to prevent themselves and community from diseases, teach the other friends and relatives about it. Practice was assessed by asking 11 questions.

- **Good practice:** the study participants who score half or more than (>5 out of 11) of the practice questions are considered as good practice.
- **Poor practice:** study participants who score less than or equal to half (≤ 5 out of 11) of the practice questions are considered as poor attitude.

MTCT: Mother to child transmission of HIV/AIDS either prenatal (Trans placental), Intrapartum (during Labor), and post natal (breast feeding, needle sharing, body

secretion) periods. Any way means if it is transmitted to her child [6].

Antenatal care: A general and/or medical care given to pregnant women before delivery [13].

- **Per-natal transmission:** A transmission that occurs during pregnancy, delivery or breast feeding [14].
- **Un-protected sex:** A sex that is practiced without proper and consistent use of condom [4].

Ethical Consideration

Ethical clearance letter was obtained from student research program of Madda Walabu University College of Medicine and Health Sciences. The respondents were informed about the purpose of the study, and verbal consent was obtained. The respondents' right to refuse or

withdraw from participating in the interview was fully maintained.

Result

Socio-demographic Characteristics

A total of 220 pregnant mothers were interviewed yield the response rate of 100%. The median age of the respondents was 28 years with majority 84(38.18%) of the respondents are between the age groups of 20-24 years. Regarding their residence, most of the respondents came from the rural area 119(54.09%). The majority 115(52.3%) were orthodox followers. One thirds 66(30%) attended no formal education. More than half, 117(53.2%) were housewives (Table 1).

Variables	Frequency	Percent
Age group	15-19	6.81
	20-24	38.18
	25-29	26.36
	30-34	20.02
	35 and above	8.63
Residence	Rural	54.09
	Urban	45.91
Ethnic group	Oromo	54.5
	Amhara	32.82
	Tigre	8.18
	Others	4.5
Religion	Orthodox	48.57
	Muslim	34.29
	Protestant	17.14
Educational status	No formal education	30
	Primary	23.2
	Secondary	25.5
	Tertiary and above	21.4
Occupation	Housewife	53.2
	Government employee	29.1
	Student	2.25
	Day worker	2.25
	Merchant	12.3
Parity	Primi-para	15.5
	Grand multi- Para	8.6
	Multi-para	57.7
Husband's occupation	Farmer	15.5
	Government worker	47.3
	Private worker	13.6
	Merchant	21.8
	Others	1.8

Family income(monthly)	<1000 ETB	75	34.09
	1001 ETB -3000 ETB	83	37.77
	3001 ETB-5000ETB	38	17.27
	>5000 ETB	24	10.6

Table 1: Socio-demographic characteristics of ANC clients in Goba referral hospital, 2019.

Knowledge towards MTCT and PMTCT of ANC Clients

The majority 208 (94.5%) of the respondents reported that they have heard about HIV/AIDS. Among those respondents 29.1% of them knew all the major routes of transmission thus are unsafe sexual practice, blood contact and MTCT. About 40% mentioned two major routes of transmission, while only 30% of them mentioned one major routes of transmission. Among the

major route of transmission, unsafe sex was mentioned as one route of HIV transmission by 99.5% of respondents and 97.7% mentioned blood contact and MTCT of HIV was mentioned as a route of transmission by 37.1%. From all respondents 110 (47.8%) said that HIV positive mothers can reduce MTCT transmissions, around 45(19.6%) of them think that there is no ways of reducing risk of MTCT and 32.6% of are not understanding MTCT of HIV/AIDS (Table 2).

Variables	Frequency	Percent	
Ever heard about HIV/ADIS	Yes	208	94.6
	No	12	5.4
Route of transmission	Mentioned all	64	29.1
	Mentioned one	88	40
	Mention two	68	30.9
Aware about MTCT	Yes	160	72.7
	No	60	27.3
Means of transmission	During pregnancy	64	29.1
	during delivery	85	38.6
	During breast feeding	75	34.1
Does MTCT is preventable?	Yes	140	63.6
	No	80	36.4
By which Preventive methods?	By giving prophylactic drug	93	42.3
	By abstaining from breast feeding	33	15
	By safe delivery service	94	42.7
Can HIV infected mother do anything to reduce risk of HIV transmission, if she decides to breast feed her baby?	Yes	97	44.1
	No	45	20.5
	Don't know	78	35.4
Ways of reducing the risk, if the above answer is yes.	Excusive breast feeding	57	63.6
	By taking ART drugs to treat HIV	33	36.4
Have you ever heard about PMTCT of HIV?	Yes	145	65.9
	No	75	34.1
Have you ever heard of the drugs that can prevent a baby from getting HIV from mother?	Yes	104	47.2
	No	116	52.8
Does it is important to know HIV status during pregnancy?	Yes	161	73.18
	No	59	26.82

Table 2: Knowledge of ANC clients towards PMTCT in Goba referral hospital, 2019.

Attitude towards MTCT and PMTCT among ANC Clients

The majority 151(68.6%) believed that HIV positive women should have a baby. About sixty percent of participants thought that HIV positive women should breast feed her baby. The majority 118(55.2%) believed that if HIV positive women decided to breast feed her

baby their husbands will support. Around eighty four percent of the participants thought that the community will reject them if HIV positive women decided to breast feed her baby. The majority 75(55.6%) believed that breast feeding for HIV positive women is natural obligation (Table 3).

Variables		Frequency	Percent
Believe that HIV positive women should have a baby	Yes	151	68.6
	No	69	31.4
Believe that HIV positive women should breast feed her baby	Yes	135	61.4
	No	85	38.6
Reasons for saying, yes	Obligation	75	55.6
	Can't afford formula	36	26.7
	Fear of rejection	24	17.8
HIV positive mother decided not to breast feed her baby. Believe that their husband react as	Will reject	74	33.5
	Will support	118	55.2
	Do not know	28	11.3
HIV positive mother decided not to breast feed her baby. Believe that the community react as	Will reject	183	83.18
	Will support	30	13.64
	Do not know	7	3.18

Table 3: Attitude towards PMTCT of HIV among pregnant women attending ANC in Goba referral hospital, 2019.

The majority 153 (69.6%) agreed that BF is nutritionally complete. Around 63(28.7%) of respondents agreed that formula food is nutritionally complete. More

than half, 127 (57.73%) haven't ever been tested for HIV. The majority 189(85.9%) were willing to have HIV test for the current pregnancy (Table 4).

Variables		Frequency	Percentage
Risks involved in providing replacement food in breast feeding baby	Child will be malnourished	77	35
	Child will be infected	14	6.36
	Child will not grow well	129	58.64
Satisfied with health worker advice about PMTCT	Yes	204	92.72
	No	16	7.28
Who do you prefer to take advice regarding PMTCT	Family	10	4.54
	Health workers	113	51.37
	Friends	88	40
	Partner	9	4.09
Breast feeding is nutritional complete	Agree	153	69.6
	Disagree	32	14.5
	Neutral	35	15.9
Formula food is nutritionally complete	Agree	63	28.7
	Disagree	40	18.3
	Neutral	33	15.2
Willing to have HIV test	Yes	210	95.5
	No	10	4.5
	Fear of rejection by husband	3	30
	Fear of rejection by community	1	10
	Fear to deal with stress full	2	20

Reason for not being tested	condition		
		Believe of having no risk faced to acquire the virus	4
Reason for being tested	To prevent my partner/husband	97	44.11
	To protect my child from HIV	113	51.39
Ever visited ANC in previous pregnancy	Yes	108	49.09
	No	112	50.91
Ever been tested for HIV	Yes	93	42.27
	No	127	57.73
Willing to have HIV test in the current pregnancy	Yes	185	85.9
	No	31	14.1
Willing to accept your result	Yes	216	98.6
	No	4	1.4
Willing to disclose the result	Yes	141	64.09
	No	79	35.91

Table 4: Practice towards MTCT and PMTCT of ANC clients in Goba referral hospital in 2019.

Prevalence of Knowledge, Attitude, and Practice

Generally, 206(93.6%) of mothers were knowledgeable, among this figure 129(62.6%) have good

attitude and 77(37.4%) have good practice towards PMTCT (Figure 1).

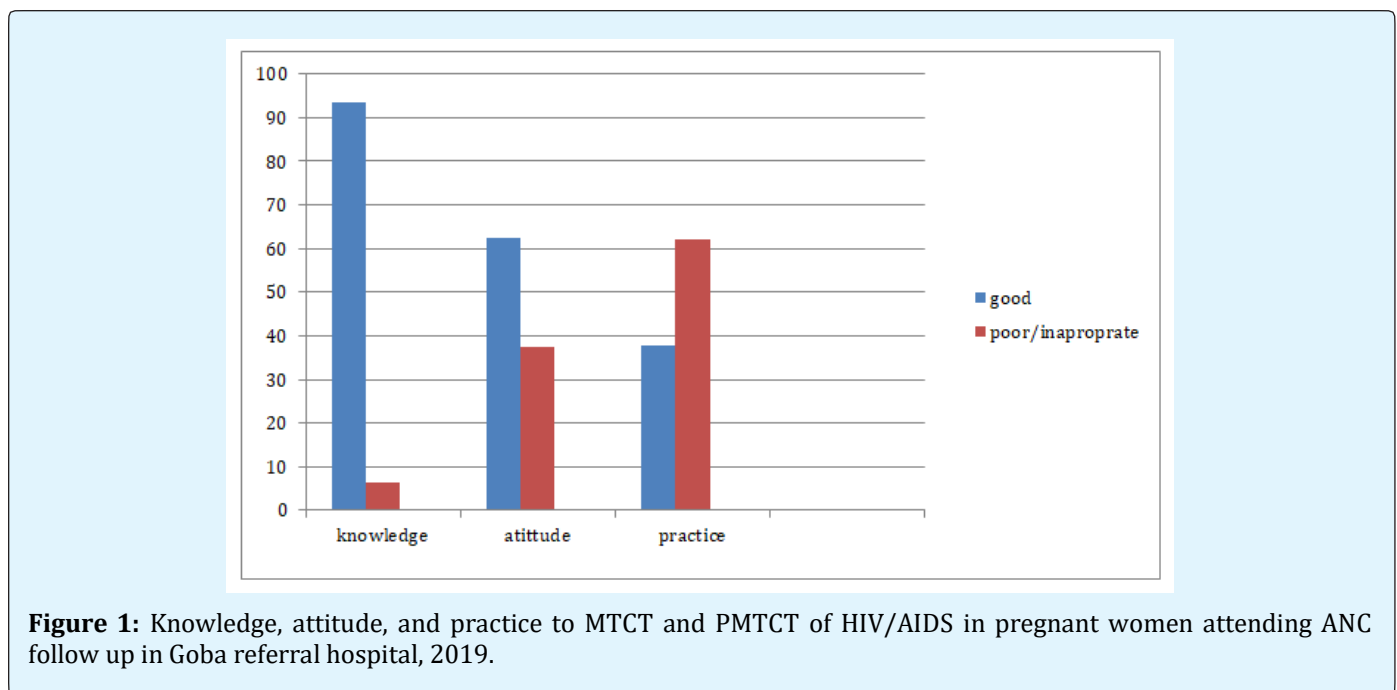


Figure 1: Knowledge, attitude, and practice to MTCT and PMTCT of HIV/AIDS in pregnant women attending ANC follow up in Goba referral hospital, 2019.

Discussion

Of the total respondents about 208 (94.6%) have heard about HIV/AIDS which is comparable with a finding in Addis Ababa [15]. One thirds of them have identified all

the major routes of HIV transmission. This finding was in line with a study conducted in Asela town [16]. One hundred forty five (65.9%) of respondents have heard about PMTCT, this result is consistent with a study done in Uganda [17]. One hundred sixty (72.7%) respondents

knew that HIV can be transmitted from an infected mother to her unborn baby. This is consistent with findings from Arba Minch hospital and health center [18] and the higher prevalence were reported from Mekelle town [19]. In this study, 140 (63.6%) of respondents knew MTCT of HIV is preventable. This result higher than the finding in Burkina Faso [20]. Around sixty four percent of the mothers mentioned exclusive breast feeding and 36.7% mentioned that the mother should take ART as a means of reducing risk of transmission if a mother decides to breast feed her baby. This is comparable with a study done in Gondar town [21]. Majority (93.5%) of the respondents in this study agreed on importance of knowing HIV status during pregnancy which is similar with a study done in Nigeria [22]. In this study, 63% of the respondents heard of drug that can prevent MTCT of HIV. This study was high from a study done in primary health center of Nigeria [22]. In our study around 68.6% of the respondent think that HIV positive should have a baby. It was similar with a study done in Mekelle [23]. In our study, 121 (55.2%) of them think that her husband will support if HIV positive women decided not to breast feed her baby, this consistent with a study done at south India [24]. A study conducted at regional hospital in Hong Kong showed, 78.5% tested HIV to protect their partners, 72.8% to care for their child and 77% to know their status [25-30]. It was higher than our results, 42.2% to protect their partner, 57.8% to protect their child and 64% to know their status. This difference may be due to health information disseminations, and geographical difference.

Generally, about 93.6% of the respondents are knowledgeable among those 62.6% had good attitude and 37.4% had good practice. The good knowledge positively affects attitude and practice. Counseling pregnant women attending ANC has greater impact to enhance knowledge, attitude and practice about MTCT and to encourage PMTCT service utilizations [31-33]. Accordingly, counselling during ANC has greater impact on PMTCT utilization. Also factors like providing ART drugs can also increase PMTCT utilization.

Conclusion

In this study the knowledge of pregnant women was high compared with another study conducted in Ethiopia [34-36]. The attitude and practice of the participants were low even though there is high knowledge. This is because all pregnant women couldn't apply their knowledge in to practice. Therefore, health service organizations and other responsible bodies should do activities such as

counselling on PMTCT utilization during antenatal care and providing ART drugs will be essential to enhance prevention of mother to child transmission. The counselling should be designed to impart behavioral change among pregnant women.

Ethics Approval and Informed Consent

The study was performed by interviewing pregnant mothers after an ethical consent was obtained from Madda Walabu University ethical clearance committee and individual verbal consent is obtained from the study participants. This manuscript has never been submitted and considered for publication to any other journal.

Consent for Publication

Not applicable.

Data Availability

The data will be available upon request.

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Competing Interests

The authors declare no competing interests.

Authors' Contributions

This work was carried out in collaboration between all authors and the authors have equal contribution for this research. All authors read and approved the final manuscript.

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Authors' information

SK, DC, EE and GO are students at Madda Walabu University, and GM, AL, AA and AY are lecturers at Madda Walabu University.

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