Assessment of Service Utilization of Mother to Child Transmission of HIV among Pregnant Mothers Attending ANC Clinic in Assosa Town

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Abstract

Background: Mother-to-child transmission [MTCT] of human immune virus [HIV] refers to the transmission of HIV from an HIV positive woman to her child during pregnancy, labor, delivery or breastfeeding. Globally, an estimated 36.7 million [30.8-42.9 million] people were living with HIV in 2016, of which 17. 8 million [15.4-20.3 million] were women and 2.1 million [1.7-2.6 million] children under 15 years of age.

Method: Facility based cross-sectional study was conducted in Assosa Hospital ANC clinic from February 15, 2011 to April 15,2011E.C.

Results: A total of 312 pregnant women attending antenatal care in Assosa General Hospital were approached and participated in the data collection interviews. They were between 15 to 48 years and above. 170 [54.5%] fall in the age range between 20 - 35 years. As to their occupation 84 [26.9%] were house wives, 127 [40.7%] were government employee. Most of them 237 [76%] were unmarried [single]. Only 45 [14.4%] of pregnant mothers were aware of the interventions that can prevent MTCT of HIV and 125 [40.1%] were not aware.

Conclusion: This study revealed that MTCT service utilization is better among ANC attendees in Assosa General Hospital. Awareness rising on intervention ways of MTCT services for pregnant mothers should be done strongly. Male partners’ HIV counseling and testing during mothers pregnancy were reported to be low. There were different factors that might hinder the effective utilization of MTCT services and all these factors have implications in limiting the PMTCT service utilization. Thus efforts are needed to address barriers that the pregnant women may face in accessing and using MTCT services. Starting time of ANC by some mothers was late at 2nd and 3rd Trimesters.

Introduction

Mother-to-child transmission [MTCT] of human immune virus [HIV] refers to the transmission of HIV from an HIV positive woman to her child during pregnancy, labor, delivery or breastfeeding. Globally, an estimated 36.7 million [30.8-42.9 million] people were living with HIV in 2016, of which 17.8 million [15.4-20.3 million] were women and 2.1 million [1.7-2.6 million] children under 15 years of age. An estimated 1.0 million [830,000-1.2 million] AIDS related deaths occurred globally in 2016, of which 120,000 [79,000-160,000] were children under 15 years of age. The burden of the epidemic continues to vary considerably among regions with 25.6 million people living with HIV in 2016 living in Africa alone, which accounts for nearly 70% of the overall global burden [1]. The vast majority of this number occurring in Sub-Saharan Africa, low- and middle- income countries [2].

According to the Federal HIV/AIDS Prevention and Control Office [FHAPCO], 741,478 people are living with HIV, with 16,865 AIDS related deaths in Ethiopia in the year 2015 [3]. The pediatric HIV population in Ethiopia are mostly those vertically infected in earlier years when MTCT rates were high but the coverage and effectiveness of MTCT in the country was low [3,4]. Mother-to-child HIV transmission [MTCT] accounts for the vast majority of more than 700,000 estimated new HIV infections in children worldwide annually [4]. In 2015, there were roughly 2.1 million new HIV infections, 150,000 of which were among children most of these children live in sub-Saharan Africa [4,5].

In the absence of prevention of mother-to-child transmission [PMTCT] services, 30 to 40% of pregnant women with HIV will pass the disease to their infants during pregnancy, delivery, or breastfeeding [5]. Effective interventions of PMTCT can reduce the risk to below 5%, and effective PMTCT programmer require women and their infants to receive a cascade of interventions including uptake of antenatal services and HIV testing during pregnancy, use of antiretroviral treatment [ART], safe childbirth practices and appropriate infant feeding, uptake of infant HIV testing and other post-natal healthcare services [5,6].

Despite there has been an increase in the number of health facilities providing prevention of mother-to-child transmission [PMTCT] services in Ethiopia, the proportion of women who receive HIV test during pregnancy as well as HIV-positive pregnant women who receive antiretroviral drugs [ARVs] for PMTCT remains low [6].

Most recently, a revised strategy for accelerated implementation of the PMTCT programmer was endorsed, with
an “opt out” strategy recommended by international PMTCT guidelines. In the opt-out strategy, HIV counseling and testing is offered to all women during pregnancy, delivery and postnatal care [7]. Despite remarkable achievements on HIV prevention and control, there is a wide concern all over the country and efforts for PMTCT have been lagging behind [7-10].

Objectives of the Study

General objective

To assess service utilization of mother to child transmission of HIV among pregnant mothers attending ANC clinic in Assosa Town

Specific objectives:
1. To determine service utilization of mother to child transmission of HIV
2. To identify service utilization of prevention of mother to child transmission of HIV/AIDS.
3. To determine knowledge, perception and attitude towards HIV/PMTCT

Methodology

Study area

Benishangul Gumuz regional state is one of the nine regional states of federal democratic republic of Ethiopia. Assosa, the capital of the region, is located in the North western part of the country about 661 kms away from Addis Ababa. As per the 2007 census, the projected total population of the region is 936,549. The estimated total population of Assosa town is 64,172, of which 32,279 [50.3%] are female and 31,893 [49.7%] are male. The town constitutes 10 kebeles. Regarding the health facilities there is one General Hospitals, one Health center and different privat health facilities that are providing health care services for the community. The potential Health service coverage of the town is 85%. Assosa Hospital is the regional Hospital found in the capital city of Benishangul Gumuz regional state. It is the Government owned Hospital with Medical Director, manager, Matron and other specialized staff. The Hospital has four [10-14] wards, made up of Medical, Surgical, Obstetrics and Gynecology and Pediatrics wards. There is also HIV testing and counseling clinic serving the ANC visiting mothers and other out patients. There are a total of 100 beds in the whole wards of the Hospital.

Study design and period

Facility based cross-sectional study was conducted in Assosa Hospital ANC clinic from February 15, 2011 to April 14

Source population

The source population was pregnant women living in Assosa town.

Study population

The study populations were all pregnant women attending ANC in Assosa General Hospital during the study period.

Inclusion criteria

All pregnant women attending ANC services at Assosa General Hospital

Exclusion criteria

Pregnant women with severe illnese and unable to participate, and those who have been suffering from known psychiatric problem were not participated in the study.

Sample size determination

The sample size determined based on single population proportion formula with the following assumption.

By taking the value of p=0.5, Confidence level=95% [Z=1.96], and d=0.05

Sample size determination formula

\[ n = \frac{Z^2 p (1-p)}{d^2} = \frac{[1.96]^2 \times 0.5 [1-0.5]}{0.05^2} \]

\[ = \frac{3.84 \times 0.5}{0.0025} \]

\[ = 380.0025 \]

Total pregnant women of Assosa town resident [2017 health bureau report]

By population correction formula

\[ n = \frac{n}{1 + \frac{n}{N}} \]

Which n=384, N=1651

Therefore, \[ \frac{384}{1 + \frac{384}{1651}} = \frac{384}{1.23} = 312 \]

Therefore, our sample size is 312

Sampling technique

Simple random sampling method was used in the study.

Variables

Independent variables:
- Availability of health institutions
- Accessibility of health facility
- Health education service

Dependent variables: Service utilization of PMTCT.

Operational definition of terms

PMTCT—it is mechanism to prevent the child not to be infected by HIV/AIDS by screening the pregnant mother blood for
HIV during ANC visit, labor and delivery and starting Niverapine prophylaxis immediately after birth for infants born from mothers who are HIV positive

Option B+ - ART regimen which given to positive pregnant women as soon as detected as positive for HIV test regardless of CD4 count and WHO clinical staging [TDF/3TC/EFV].

Counseling—supporting someone minds through discussion to adhere to ART treatment.

Adherence to treatment—not follows up of ART treatment according to time and dose.

Partner testing—it is testing of both husband and wife for HIV.

Data collection and measurement

Data was collected by interviewing clients using structured questionnaire prepared in English and translated to Amharic. This was again translated back to English for its consistency and to make it simple during entry and analysis. Matching was made on the exact fitness of the two languages. The data was collected by a face to face interview.

Data quality control and assurance

The questionnaires were pretested before the actual study from the targeted sample respondents. All the questionnaires were checked daily for completeness, darity and its consistency and the necessary corrections were made on a daily basis.

Data processing and analysis

After collecting data, it was important to check the questionnaires whether they were completely answered or not, and then processing was performed by preparing and using tally sheet and calculating the frequency, the total and percentage. Finally the data were presented using tables, figures, graphs and text forms.

Ethical consideration

Ethical clearance letter was taken from Assosa city Administration and Participants were informed about the objectives of the study and they were assured of the confidentiality of the data collected. Informed consent were obtained from all participants prior to data collection.

Challenges of the study

• Shortage of sufficient references
• Weak internet connection in Assosa city

Results

Socioeconomic characteristics

A total of 312 pregnant women attending antenatal care in Assosa General Hospital were approached and participated in the data collection interviews. They were between 15 to 46 years and above. More than half of them 170 [54.5%] fall in the age range between 20 - 35 years. As to their occupation 84 [26.9%] were house wives, 127[40.7%] were government employee, 73[23.4%] were jobless [15-19]. Their level of education was found that 164[52.5%] illiterate, 23[7.3%] primary education, 65[21%] Diploma and 45[14.4%] Degree graduates. Religion wise 128[41%] of the women were Orthodox, 107[34.3%] Muslim, 65[20.8%] Protestant and 12[3.9%] Catholic. Most of the women 237[76%] were unmarried [single], 46[14.7%] married, 19[6.1%] divorced and 10[3.2%] were widowed (Table 1).

Knowledge, perception and Attitude towards HIV/ PMTCT

The result showed that 290 [93%] of the women heard about PMTCT and only 22 [7%] did not hear about PMTCT. Most of them, 120 [41.4%] heard from Health facility and the others heard from friends, relatives, radio, TV, school and reading magazines. Most of them have the understanding of HIV transmission from mother to baby through different ways. In this regard 243 [77.9%] knew HIV transmission from Mother to Baby during pregnancy, 240[76.9%] during delivery/labor and 221 [70.8%] by breastfeeding. 221 [70.8%] of them knew that every pregnant woman should be screened for HIV, 47 [15.1%] responded should not be screened and 44 [14.4%] they do not know whether a pregnant woman should be screened for HIV or not. Concerning the awareness of pregnant mothers on the interventions that can

<table>
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<td>20 – 35</td>
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<td>54.5</td>
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<tr>
<td></td>
<td>36 - 45</td>
<td>82</td>
<td>26.3</td>
</tr>
<tr>
<td></td>
<td>46 &amp; above</td>
<td>28</td>
<td>8.9</td>
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<td>26.9</td>
</tr>
<tr>
<td></td>
<td>Gov employee</td>
<td>127</td>
<td>40.7</td>
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<td>Daily laborer</td>
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<td>2</td>
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<td>Job less</td>
<td>73</td>
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<td>2.8</td>
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<td>237</td>
<td>76</td>
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<td>19</td>
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<td>3.2</td>
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</table>
prevent MTCT of HIV only 45 [14.4%] of them were aware of it but 125 [40.1%] were not aware and 142 [45.5%] do not know about it at all (Figure 1). Those who were aware of the interventions responded that the intervention mechanisms are Implementing Health workers advice, not sharing sharp materials; follow up on every 3 months, Exclusive breast feeding, Drug utilization and Delivery at Health facility (Table 2).

**Barriers to utilization PMTCT service**

The whole participants of the survey were asked for their continuation on utilization of PMTCT services and only 35 [11.2%] replied to continue, 120 [38.5%] replied not to continue and the remaining 157 [50.3%] do not know whether to continue or not. 274 [87.8%] of the respondents need permission from their spouse to do HCT and only very few 38 [12.2%] do need permission from their spouses. Most of them 300 [96.2%] did disclose their test result to their partner and 12 [3.8%] did not disclose since they were afraid of being abandoned/divorced by husband and family, physical abuse by husband and separation from their children. They have also mentioned that far health facility, fear of confidentiality, lack of knowledge, fear of stigma and fear of coming to Health institution is the factors that limit utilization of PMTCT services. Their relatives reaction based on knowing their HIV status was responded that being thrown out of home by 42 [13.5%], physical violence/abuse by 24 [7.7%] and care for them by 246 [78.8%] of the respondents [20-25]. Mothers were asked whether cost of transportation is an issue or not and 130 [41.7%] replied that it is an issue for them and for 182 [58.3%] it is not an issue. Assosa Hospital, where they are attending PMTCT services, is easily accessible for 259 [83%] of the mothers and not easily accessible for 53 [17%] of the respondents. All the study participants responded that they have received one to one type of pretest and posttest counseling and 231 [74%] of the found the counseling good and the remaining 81 [26%] found it poor as they respond it. Follow up counseling was done for 283 [90.7%] of them and not done for 29 [9.3%]. Couple counseling was done for 85 [27.2%] of the mothers but for large number of the couples 227 [72.8%] counseling was not done [26]. This is because 48 mothers were afraid of disclosing to partner, 142 were not encouraged to do it and 37 were not married/have no couple (Figure 2).

Regarding their starting time of ANC 175 [56.1%] mothers started at their 1st trimester, 91 [29.2%] at 2nd trimester and 46 [14.7%] at 3rd trimester and all of them intend to give birth at Health facility/ Assosa Hospital. All the participants are not interested in the attitude of the health workers as they responded it discouraging to continue accessing PMTCT Services (Figure 3).

**Discussion**

According to this study findings most of the respondents, 93%, have the knowledge of PMTCT and they heard about PMTCT from

![Figure 1](https://example.com/figure1.png) Awareness of pregnant mothers on interventions of PMTCT.

![Table 2](https://example.com/table2.png) Barriers to utilization of PMTCT services.
different sources such as Health facility, friends, relatives, radio, TV, school and reading magazines. This finding is supported by EDHS 2016, that indicated increasing general knowledge about prevention of HIV from mother to child and reducing the risk of transmission using antiretroviral drugs are critical in reducing mother-to-child transmission [PMTCT], [27]. This finding is also similar with the study conducted in Addis Ababa, Tikur Anbessa and Zewuditu memorial Hospitals that indicated 90% of the mothers knew that HIV can transmitted from an infected mother to her child. This high level of knowledge may be attributed to various health education programs conducted both at health facility and community levels and a broadcast through mass media in this urban setting [28]. Most of the mothers know the mechanisms of HIV transmission from mother to baby through different ways such as during pregnancy, during delivery/labor and by breast feeding. The awareness of pregnant mothers on the interventions that can prevent MTCT of HIV 45 [14.4%] of them were aware but 125 [40.1%] were not aware and 142 [45.5%] did not know about it all. Those who were aware of the interventions are less and education on the issue is very essential so that mothers become aware of it and utilize the service more appropriately. Though PMTCT service is known to be critical in reducing the transmission of HIV from mother to child, its use has been limited because of various reasons/barriers. The present study had revealed different factors that might hinder the success of the PMTCT services. 274 (87.8%) of the respondents need permission from their spouse to do HCT. Similar to the present findings study done in Addis Ababa indicated that percentage of partners tested for HIV decreased from 6.4% in 2004 to 5.8% in 2009 [29].

There are many others who do not disclose their test result to their partner since they were afraid of being abandoned/divorced by husband and family, physical abuse by husband and separation from their children. They have also mentioned that far health facility, fear of confidentiality, lack of knowledge, fear of stigma and fear of coming to Health institution is the factors that limit utilization of PMTCT services. For 130[41.7%] of the mothers cost of transportation is an issue to go to health facility. 81 [26%] of the respondents explained/found the counseling poor. Couple counseling was not done for large number 227[72.8%] of the couples because the mothers are afraid of disclosing to partners and not encouraged to do it. All these factors coming together play great role in limiting the PMTCT service utilization. Starting time of ANC by some mothers was late at 2nd and 3rd Trimesters.

**Conclusion**

In conclusion, this study revealed that PMTCT of HIV service utilization is better among ANC attendees in Assosa General Hospital. Awareness rising on intervention ways of PMTCT services for pregnant mothers should be done strongly. Male partners’ HIV counseling and testing during mothers pregnancy were reported to be low. There were different conditions that might hinder the effective utilization of PMTCT services and all these conditions have implications in limiting the PMTCT service utilization. Thus efforts are needed to address barriers that the pregnant women may face in accessing and using PMTCT services. Starting time of ANC by some mothers was late at 2nd and 3rd Trimesters.

**Recommendations**

The awareness of pregnant mothers on the interventions that can prevent MTCT of HIV was very low [14.4%], hence awareness rising on intervention ways of PMTCT services for pregnant mothers should be done by concerned bodies. The decision to involve male partners in the maternity services plays an important role in the utilization of ANC/ PMTCT services. The strategy to inform the male partners about PMTCT services and inviting them to ANC clinic with their female partners for couple counseling has to be encouraged and partner’s involvement has to be strengthened. Efforts are needed to address barriers that the pregnant women may face in accessing and using PMTCT services. Similar study has to be conducted covering the large area of Benishangul Gumuz regional state to get a better practice.

**Acknowledgment**

I would like to thank Assosa University for giving us the chance to carry out this proposal. I will also acknowledge the regional health beareue and respective heath institutions for providing us the required information to carry out the proposal and all staffs of Health Science College of Assosa University for their help and courage in preparation of this proposal.
References


2. Antiretroviral drugs for treating pregnant women and preventing HIV infections in infants: Towards universal access recommendation for a public health approach.


Annexes

Questionnaire

1. Socio-demographic characteristics

1. Age
   - 15--20
   - 20--35
   - 35--45
   - >45

2. Occupation
   - House wife
   - Governmental employee
   - Daily laborers
   - Commercial sex worker
   - Jobless
   - Others

3. Highest level of education
   - Illiterate
   - Primary education
   - Secondary education
   - Grade 11-12
   - Diploma
   - Degree

4. Religion
   - Orthodox
   - Muslim
   - Protestant
   - Others

5. Marital status
   - Married
   - Single
   - Divorced
   - Widowed
   - Others

Knowledge, Perceptions and Attitudes towards HIV/AIDS/PMTCT

1. Have you ever heard about PMTCT before?
   - Yes
   - No

2. Where did you hear about it? From:
   - Friends
   - Relatives
   - Health institutions
   - Radio
   - Television
   - Magazines
   - Others

3. Can HIV be transmitted from Mother to Baby during pregnancy?
   - Yes
   - No
   - Don’t know

4. Can HIV be transmitted from Mother to Baby during delivery?
   - Yes
   - No
   - Don’t know

5. Can HIV be transmitted from Mother to Baby during breastfeeding?
   - Yes
   - No
   - Don’t know

6. Do you think that every pregnant woman should be screened for HIV?
   - Yes
   - No
   - Don’t know

7. Are you aware of interventions that can prevent MTCT of HIV?
   - Yes
   - No
   - Don’t know

If yes, what are they?

Barriers to utilization of PMTCT services

8. Are you going to continue utilization of PMTCT Services?
   - Yes
   - No
   - Don’t know

9. Do you need permission from your spouse/partner to do HCT?
   - Yes
   - No

10. Did you disclose your result to your spouse?
    - Yes
    - No
Afraid of being abandoned/divorced by husband and family

Physically abused by husband

Separated from the children

Others

11. What will be your relatives reaction if they know your HIV status

I will be thrown out of home

I will be physically violated/abused

they will start to care for me

Others

12. Do you think that cost of transportation will be an issue

Yes

No

13. Is this hospital easily accessible to you?

Yes

No

14. Which type of pretest counseling did you receive:

Group counseling

One-on-one

Non

15. Which type of Post test counseling did you receive:

Group counseling

One-on-one

Non

16. How will you rate the counseling you received

Good

Poor

Unacceptable

17. Was follow up counseling done?

Yes

No

18. Was couple counseling done?

Yes

No

If no why:

Afraid of disclosing to partner

Partner refused to come

You were not encouraged to do it

It was not necessary

Not married

19. At what month in pregnancy did you register for ANC

First trimester

Second trimester

Third Trimester

20. Where do you intend to give birth this pregnancy

In this hospital

In another hospital offering PMTCT

Deliver at home under supervision of relatives

21. Does the attitude of health workers discourage you to continue accessing PMTCT Services

Yes

No

Don’t know

If yes, what are the attitudes?

22. Are you satisfied with the quality of PMTCT services you are currently receiving?

Yes

No

Don’t know

If no, what do you think needs to be done to improve services?

23. In your own opinion, what do you think prevents other HIV Pregnant mothers from accessing service

24. Any additional information you would like to mention with respect to underutilization of PMTCT service by pregnant women.

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