International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2015): 78.96 | Impact Factor (2015): 6.391

Knowledge and Attitude towards Option B+ Prevention of Mother to Child Transmission among HIV/AIDS Positive Pregnant and Breast Feeding Mothers in Ethiopia

Delelegn Tsegaye[1], Yemiamrew Getachew Tessema[2], Prema Kumar[3]

[1, 2, 3]Department of Comprehensive Nursing, College of Medicine and Health Science, Wollo University, Ethiopia

Abstract: ***Knowledge and attitude of pregnant and breast feeding mothers to option B+ prevention of mother to child transmission (PMTCT) of HIV is vital for effective and efficient utilization of the service. The objectives of this institution based cross sectional study was to assess knowledge and attitude as well as factors associated with option B+ PMTCT of HIV among pregnant and breast feeding mothers in government health facilities in north east Ethiopia. Simple random sampling technique was used to recruit one hundred and ninety HIV/AIDS positive pregnant and lactating mothers for the study. Data was collected using standard structured data collection instruments, entered into EpiData 3.1, and exported to statistical package for social sciences (SPSS) version 21 for analysis. Bivariate and multivariate logistic regression analyses were used to determine the objective. About 110 (58%) and 76.3% of mothers were knowledgeable and had positive attitude respectively. Far distance to reach health facility (AOR 0.18, 95% CI (0.04-0.75) and thought of stopping option B+ treatment (AOR 0.08, 95%CI (0.01-0.9) were statistically significant factors affecting knowledge while having previous PMTCT experience (AOR 0.26, 95%CI (0.08-0.88) was statistically significant associated with attitude. The knowledge and attitude of HIV/AIDS positive pregnant and lactating mothers towards option B+ PMTCT was low. Therefore, efforts should be made to facilitate the transportation of women who live in distant areas from health facilities; comprehensive counselling should be given to pregnant and lactating women who had previous PMTCT experience by zonal health officers and health workers for good knowledge and attitude in option B+ PMTCT care and support.***

Keywords: Knowledge & attitude, Option B+, HIV/AIDS. PMTCT

1. Introduction

Mother to child transmission (MTCT) of human immune deficiency virus (HIV) is the transmission of the virus from an HIV infected mother to the child during pregnancy, delivery or breastfeeding [1, 2]. More than 90% of children infected with HIV are infected through mother to child transmission and nearly 90% of this figure occurs in sub-Saharan Africa [3]. To tackle this, Option B+ prevention of mother to child transmission program (PMTCT), an approach of initiating lifelong ART for all HIV positive pregnant and breastfeeding women irrespective of CD4 count or clinical stages, was initiated [4].

Different literature show that good knowledge and positive attitude related to HIV and lifelong ART (option B+) for all HIV positive pregnant and lactating mothers is mandatory for creating an HIV free generation [5,6]. According to UNAIDS report, comprehensive knowledge about HIV is low in Ethiopia with just over 25 % of men and under 25% of women having accurate knowledge of HIV prevention [7].

In South Western Ethiopia about 57.5% of pregnant mothers had full knowledge about the three critical modes of HIV transmission from mother to child[8]. On the other hand, in Nigeria 83.1% of participants had good knowledge and also 98.1% of respondents had positive attitude towards ART and most of them had positive perception towards their health care provider [9].

Even though there is widespread information, education, and communication (IEC), still there is limited knowledge of HIV, MTCT and option B+ PMTCT in the North eastern parts of Ethiopia [8]. This might lead to program ineffectiveness and high mother to child transmission of HIV. Thus, this study was designed to contribute to determining knowledge and attitude towards option B+ PMTCT among HIV/AIDS positive pregnant and lactating mothers in South Wollo Zone.

2. Methods and Materials

Study setting and participants

This institution based cross sectional study was conducted as part of a broader study which collected data on levels of adherence and factors associated with adherence to option B+ PMTCT among pregnant and lactating mothers from March 1 to April 14, 2016 in two hospitals and five health centers in south Wollo zone, Amhara region, north east Ethiopia[10]. Simple random sampling technique was employed to select study participants. The study population was HIV/AIDS positive pregnant and breast feeding women who had PMTCT follow up in those selected health facilities of south Wollo zone during the study period. The reason for selecting seven health facilities was based on high number of client flow prior to the study period.

Data collection procedure

Data was collected using structured data collection formats which were prepared in English then translated into the local language Amharic [10, 11]. Pre test was done with 5% of the sample size in Tita health center. The collected data were

Licensed Under Creative Commons Attribution CC BY

checked for completeness, consistency and rechecked before data entry. The data was entered daily into EpiData 3.1 then exported to Statistical Package for Social Sciences (SPSS) versions 21 for analysis.

Descriptive statistics were used for summarizing the data. Bivariate analysis was employed in order to indicate the association of dependent variable with independent variables. Multiple logistic regression analysis was used to control for confounding variables to those significantly related to the outcome variable at the bivariate regression. Based on the findings of bivariate analysis; variables that had (P<0.25) with outcome variables were entered to multivariate logistic regression to identify the association with the dependent variable. The p-values < 0.05 and 95% confidence intervals (CIs) were used to identify associations between independent predictors and the outcome variable.

Ethical Consideration

Ethical approval was obtained from the ethical review board of Addis Ababa University, Department of Nursing and Midwifery. Permission was taken from the responsible authorities of each health institutions. Detailed explanations on the purpose of the study were given and verbal consent was taken from all study participants.

Operational definition

The knowledge of mother on HIV, MTCT and PMTCT option B+ care was determined by the sum of knowledge questions and those who scored above the mean (12.73) were considered as knowledgeable whereas if the score was below the mean, it was categorized as not knowledgeable.

The attitude of mothers towards option B+ PMTCT were categorized in to two. These were positive attitude (those who scored above the mean) and poor attitude (those who scored below the mean). Each attitude question contained either 0 or 1 value.

3. Results

A total sample size of 191 HIV positive pregnant and lactating mothers were invited to participate only 0.5 % (1) of respondent refused to take part in this study. The mean age of the study participants were 29.1 with standard deviation of 4.43 years. Of the total respondents, 79.5% (151) were married and about 49.5% (94) of mothers attended primary education (grade1-8th). Of the total respondent, 56 % (105) of mothers were Muslims. About 78% (149) of study participants lived in the urban area. Fifty five percent (105) of women traveled for above one hour on foot from their home to reach the health facility (**Table1**).

Table 1: Socio demographic characteristics of participants among pregnant and lactating mothers in selected government health facilities of south Wollo zone, Amhara region, North East Ethiopia, (N=190).

Variables	Frequency	Percentage (%)
Number of study participants in health facility		
Health center	122	64.2
Hospitals	68	25.8
Study participants		
Pregnant mother	94	49.5
Breastfeeding mother	96	50.5
Age		
≤29	105	55.3
≥30	85	44.7
Place of residence		
Rural	41	21.6
Urban	149	78.4
Religion		
Muslim	105	55.3
Orthodox	77	40.5
Others	8	4.2
Marital status		
Cohabitated(single, divorced and widowed)	39	20.5
Married	151	79.5
Respondent's educational level		
No formal education(can't read and write)	42	22.1
Grade1-8	94	49.5
Grade 9-12	37	19.5
Technical/vocational and above	17	8.9
Mothers occupation		
Housewife(no job)	122	64.2
Private employee	25	13.2
Merchant	21	11.2
Government employee	16	8.4
Others	6	3
Male partner occupation(N=151)		
Government employee	41	27.2
Merchant	38	25.2
Daily laborer	23	15.2
Private worker	16	10.6
Farmer	22	14.6
Driver	11	7.3
Time taken to reach in health facility		
Far (≥1hr on foot)	105	55.3
Near (<1hr on foot)	85	44.7

Knowledge of mothers on HIV, MTCT, PMTCT option B+

In this study, 91.6% (174) of HIV positive pregnant and lactating mothers had heard about the existence of lifelong ART (option B+) for all HIV positive pregnant and lactating women. But regarding the benefits of PMTCT option B+; only 44.7 % (85) of mothers knew that option B+ PMTCT will help to protect MTCT of HIV in the future pregnancy where as 85.8% of mothers correctly responded on 'adhering to ARV drugs can reduce the risk of opportunistic infections'(Table 2). The highest score was 16 while the lowest was 5 out of 20 points to knowledge questions and it was normally distributed to the mean. In this study, 58 %(

Licensed Under Creative Commons Attribution CC BY

110) of mothers were knowledgeable where as 42% of them were not knowledgeable

Table 2: Knowledge on HIV/AIDS, MTCT, PMTCT option B+ PMTCT among pregnant and lactating mothers in selected government health facilities of south wollo zone, Amhara region, north east Ethiopia, (N=190).

Variables	Frequency	Percentage (%)
Know about how HIV is transmitted		
Yes	188	98.9
No	2	1.1
Ways HIV/ AIDS is transmitted		
Unsafe sexual intercourse	178	94.7
Contact with infected blood	139	73.
MTCT	169	89.9
Contaminated sharps	128	68.1
Can a pregnant women living with HIV/AIDS transmit the disease to her unborn baby		
Yes	188	98.9
No	2	1.1
Time of HIV transmission		
Pregnancy	141	74.2
Delivery	161	85.6
Breast feeding	149	79.3
Have you ever heard about life long Rx for any HIV positive pregnant and lactating mothers		
Yes	174	91.6
No	16	8.4
The benefit of PMTCT option B+ for pregnant and lactating women		
To prevent transmission to her husband	92	48.8
To improve mothers health	130	68.4
To reduce HIV transmission for next pregnancy	85	44.7
To prevent transmission to her baby	158	83.2
Condom use can prevent HIV transmission during sex with an HIV infected partner		
True	161	84.7
False	29	15.3
HIV positive women can reduce the risk of HIV transmission to their babies if they take PMTCT drugs		
True	175	92.1
False	15	7.9
Omitting to take some of the PMTCT drugs has effect on the effectiveness of PMTCT care and support		
True	170	89.5
False	20	10.5
Adhering to ARV drugs can reduce the risk of opportunistic infections		
True	163	85.8
False	27	14.2
The support of male partner during PMTCT care does not have any effect on mothers adherence		
True	72	39.9
False	118	62.1

Attitude of mothers towards option B+

Regarding attitude of mothers towards option B+ PMTCT, 90 %(171) of mothers agreed on "Taking PMTCT drugs gives benefit not only for the mother but also for the baby". Also 67.9 %(129) of mother didn't agree on "Taking PMTCT drugs each day is tiresome"

The mean score to attitude questions was 3.98 out of the five points. The minimum and maximum scores were 0 and 5 respectively. In this study 76.3% of study participants had positive attitude while others had poor attitude

Factors associated with knowledge and attitude towards option B+ PMTCT

To identify factors associated with knowledge and attitude for option B+ PMTCT, logistic regression analysis was done at bivarate and multivariate level for different variables. The result of multivariate logistic regression analysis showed that, mothers who travelled long distance, above an hour on foot, to reach the health facility were less knowledgeable than those who travelled short distance on foot (AOR 0.18, 95% CI (0.04-0.75).

The HIV positive pregnant and breast feeding mothers who had thought of stopping option B+ treatment were not knowledgeable as compared to those who had not thought on discontinuing option B+ drugs (AOR 0.08, 95% CI (0.01-0.9). HIV positive pregnant and lactating mothers who had poor attitude were less likely knowledgeable towards option B+ PMTCT than those who had positive attitude (AOR 0.19, 95%CI (0.04-0.79) (Table 3).

Table 3: Bivariate and multivariate logistic regression analysis for factors associated with knowledge of mothers to Option B+ PMTCT among HIV positive pregnant and breast feeding women in selected government health facilities of south Wollo zone, Amhara region, north east Ethiopia

Variables	Knowledge on option B+		Crude OR(95%CI)	Adjusted OR(95%CI)
	Knowledgeable	Not knowledgeable		
	N (%)	N (%)		
Health facility				
Health center	94(77)	28(23)	1.952(1.02 -3.73)	1.15(0.37-3.57)
Hospital	43(63.2)	28(36.8)	1	1
Age				
<29	72(68.6)	33(31.4)	0.671(0.35-1.28)	0.8(0.29-2.23)
>30	65(76.5)	20(23.5)	1	1
Place of residence				
Rural	25(61)	16(39)	0.52(0.25-1.07)	1.46(0.41- 5.2)

Licensed Under Creative Commons Attribution CC BY

Urban	112(75.2)	37(24.8)	1	1
Distance to reach health facility				
Far(1 hour and above)	70(66.6)	35(3.4)	0.26(0.11-0.66)	0.18(0.04-0.75)*
Near (below 1 hour)	67(78.8)	18(21.2)	1	1
Thought of stopping option B+ treatment				
Yes	3(33.3)	6(66.7)	0.17(0.04-0.73)	0.08(0.01-0.9)*
No	134(74)	47(26)	1	1
WHO clinical category at admission to option B+				
Stage 1 or 2	116(69)	52(31)	0.11(0.02-0.81)	0.36(0.04-3.33)
Stage 3 or 4	21(95.5)	1(4.5)	1	1
Difficulty in decision to initiate option B+ at the same day of HIV diagnosis				
Yes	48(76.2)	15(23.8)	0.31(0.92-5.79)	1.73(0.61-4.85)
No	18(58.1)	13(41.9)	1	1
Attitude				
Poor	11(52.4)	10(47.6)	0.37(0.15-.94)	0.19(0.04-0.79)*
Positive	126(74.6)	43(25.4)	1	1
Disclosure				
Yes	135(73)	50(27)	4.05(0.65-24.95)	1.98(0.04 - 92.6)
No	2(40)	3(60)	1	1

WHO- world health organization, HIV- human immune virus

HIV positive pregnant and lactating mothers who had previous PMTCT experience had poor attitude as compared to those who did not have previous experience in PMTCT prophylaxis in the previous births (AOR 0.26, 95%CI (0.08-0.88). Lastly, HIV positive pregnant and lactating mothers who were not knowledgeable on option B+ PMTCT also had poor attitude (AOR 0.15, 95%CI (0.04-0.51) (Table 4).

Table 4: Bivariate and multivariate logistic regression analysis for factors associated with attitude to Option B+ PMTCT among HIV positive pregnant and breast feeding women in selected government health facilities of south Wollo zone, Amhara region, north east Ethiopia.

Variables	Attitude		Crude OR(95%CI)	Adjusted OR(95%CI)
	Positive	Poor		
	N(%)	N(%)		
Health facility				
Health center	106(86.9)	16(13.1)	0.53 (0.18 – 1.5)	0.26 (0.06- 1.31)
Hospital	63(92.6)	5(7.4)	1	**1**
Partner support				
Low	15(75)	5(25)	0.27 (0.08- 0.86)	0.38 (0.11- 1.31)
Good	134(91.8)	12(8.2)	1	1
Place of Residence				
Rural	34(82.9)	7(17.1)	0.50 (0.18-1.35)	0.77 (0.23- 2.6)
Urban	135(90.6)	14(9.4)	1	1
Knowledge				
Not knowledgeable	43(81.1)	10(18.9)	0.37 (0.15-0.94)	**0.15 (0.04– 0.51)**
Knowledgeable	126(92)	11(8)	1	1
Having previous PMTCT experience				
Yes	47(83.9)	9(16.1)	0.47 (0.18-1.21)	**0.26 (0.08-0.88)**
No	123(91.7)	11(8.3)	1	1

4. Discussion

The main objective of this study was to assess knowledge and attitude of pregnant and lactating mothers towards option B+ PMTCT and associated factors in health facilities of south Wollo zone, north east Ethiopia. In this study, 58% of HIV positive pregnant and lactating mothers were knowledgeable on option B+ PMTCT and also 73.6% of respondents had positive attitude to option B+. Knowledge of mothers in this study was higher than in India and Malawi (41%) [12, 13] the difference may be due to the study period and study setting. Population awareness may have changed overtime which in turn might result in improved knowledge and attitude. On the other way, in this study, the attitude of HIV positive pregnant and lactating mothers were lower than study done in Kenya (89%), and west Ethiopia (93.6 %) [14,15]. The discrepancy may be due to the difference in the data collection instruments and small sample size.

The knowledge and attitude of mothers towards PMTCT were similar with study done in Assos town, south west Ethiopia (57.5%), Nigeria (76 %), and Addis Ababa, Ethiopia (76.8%) [8, 16, 17] but it was lower than study done in south west Nigeria (83.1%, 98.1% respectively), Ambo west Ethiopia (100%, 93.6%), Hawassa Referral Hospital, South Ethiopia (82.3%, 97.4%) and Hossana town, south Ethiopia(88.7% knowledgeable) [9, 15, 18,19]. The difference might be due to difference in socio-demographic characteristics, sample size difference, study set-ups and the study period where this study was conducted on HIV positive pregnant and lactating mothers who came for PMTCT follow up and in the hospital and health centers.

In our study, mothers who travelled long distances to reach health facilities were less likely knowledgeable than those who traveled short distance for less than an hour on foot. The potential reasons could be if the distance to reach health facilities is far, it may not motivate mothers to ask and know

Licensed Under Creative Commons Attribution CC BY

different things related to PMTCT option B+ and also they may be too tired. This finding was supported by a study done in Hawassa referral Hospital, south Ethiopia [18]. Mothers who had thought of discontinuing their PMTCT option B+ treatment were not knowledgeable to option B+ PMTCT than those who had not. The reason for this might be due to inadequate counselling about option B+ PMTCT including its advantage and side effects of drugs[20-22]. Knowledge of HIV positive pregnant and breastfeeding mother was positively associated with positive attitude as is supported by a study done in Assosa town, North West Ethiopia[8].

In this study mothers who had previous PMTCT experience in previous birth had poor attitude on current option B+ for current pregnancy or birth but there were no studies to support this finding.

5. Conclusion

The knowledge and attitude of mothers towards option B+ PMTCT were 58% and 76.3% respectively which were low. Factors associated with knowledge of pregnant and lactating mothers on option B+ PMTCT were distance to reach the health facility and thought of stopping their option B+ treatment. On the other hand, factors associated with attitude of mothers to option B+ PMTCT were previous PMTCT experience before the current pregnancy or birth. Therefore, coordinated efforts of zonal health administration and health care providers are recommended for creating community awareness as well as effective interventions to handle factors affecting knowledge and attitude towards option B+. Further studies should be carried out with large sample size to assess the practice of mothers in option B^+ PMTCT.

6. Acknowledgement

We acknowledge Wollo University, Addis Ababa University, all study participants and data collectors for their support. DT was involved in the design of the study, data analysis, and interpretation of the findings, report writing and manuscript preparation. YG and PK were involved in manuscript preparation.

References

[1] UNAIDS. AIDS Epidemic Update. 2009. Geneva, UNAIDS.
[2] World health organization. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants. Recommendations for a public health approach. [Internet].Geneva: WHO; 2010. Available from: http://whqlibdoc.who.int/publications/2010/9789241599818_eng.pdf (accessed October 3, 2015).
[3] World Health Organization. Programmatic update: use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants. Geneva: WHO; 2012.
[4] Keehn E and Karfakis J. Current Practices to increase uptake, retention and adherence for Option B+ in Malawi. Lilongwe, Malawi: mothers2mothers Malawi; 2014.
[5] World Health Organization. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Geneva: World Health Organization; 2013.
[6] Besada D, Cutsem GV, Goemaere E, Ford N, Bygrave H, Lynch S. The case for Option B and Option B +. Ensuring that South Africa's commitment to eliminating mother-to-child transmission of HIV becomes a reality. South Afr J HIV Med. 2012; 13(4):178–81.
[7] UNAIDS. AIDS in Ethiopia 6th Report. 2006. Geneva, Switzerland
[8] Abtew S, Awoke W and Asrat A. Knowledge of pregnant women on mother-to-child transmission of HIV, its prevention, and associated factors in Assosa town, Northwest Ethiopia. HIV/AIDS - Research and Palliative Care 2016:8 101–107
[9] Kasumu LO and Balogun MR. Knowledge and attitude towards antiretroviral therapy and adherence pattern of HIV patients in southwest Nigeria. Int J Infect Control 2014, v10:i3 doi: 10.3396/IJIC.v10i3.024.14
[10] Tsegaye D and Wodajo S. Adherence to option B+ PMTCT among pregnant and lactating mothers in selected government health facilities of south Wollo zone, Amhara region, north east Ethiopia. Epidemiology and Health. 2016; 38:e2016043
[11] Ebuy H, Yebyo H and Alemayehu M. Level of adherence and predictors of adherence to the Option B + PMTCT programme in Tigray, northern Ethiopia. Int J Infect Dis [Internet]. International Society for Infectious Diseases; 2015;33:123–9. Available from: http://dx.doi.org/10.1016/j.ijid.2014.12.026
[12] Baek G and Rutenberg N. Implementing programs for the prevention of mother-to child HIV transmission in resource-constrained settings: Horizons studies, 1999–2007. Public Health Reports, 2010; 125(2):293-304.
[13] Bwirire LD. Reasons for loss to follow-up among mothers registered in a prevention-of-mother-to-child transmission program in rural Malawi. Transactions of the Royal Society of Tropical Medicine and Hygiene, 2008; 102(12):1195-1200
[14] Otieno PA, Kohlerb PK , Bosirec RK , Brownd ER, Machariaa SW, and John-Stewart GC. Determinants of failure to access care in mothers referred to HIV treatment programs in Nairobi, Kenya. AIDS Care, 2010; 22(6):729-736.
[15] Tesfaye G, Tufa B, Likisa J, Alebachew M, Temesgen G and Dinsa H. Knowledge, Attitude and Practice towards PMTCT of HIV among Women Attending Ambo Hospital ANC Clinic, West Ethiopia. J AIDS Clin Res 6: 2014. 407.doi:10.4172/2155-6113.1000407
[16] Owoaje ET, Omidokun AD and OK Ige. Knowledge and perception of Prevention of Mother to Child services amongst pregnant women accessing antenatal clinic in a Primary Health Care centre in Nigeria. Afr J Prm Health Care Fam Med. 2012. 4(1), Art. #432, 7 pages. http://dx.doi.org/ 10.4102/phcfm.v4i1.432
[17] Jebessa S and Teka T. Knowledge and attitude towards mother to child transmission of HIV and its prevention. Ethiop.J.Health Dev. 2005;19(3)

Licensed Under Creative Commons Attribution CC BY

[18] Abajobir AA and Zeleke AB, Knowledge, Attitude, Practice and Factors Associated with Prevention of Mother-to-Child Transmission of HIV/AIDS among Pregnant Mothers Attending Antenatal Clinic in Hawassa Referral Hospital, South Ethiopia. J AIDS Clin Res 4: 215. 2013. doi:10.4172/2155-6113.1000215
[19] Hamdela B, Zekiewos F and Workneh T. Knowledge on Mother to Child transmission and Utilization Of Services Designed to Prevent Mother to Child Transmission of HIV/AIDS among Pregnant Women in Hossana Town, Southern Ethiopia. J AIDS Clin Res. 2014) 5: 396. doi:10.4172/2155-6113.1000396
[20] Joint United Nations Program on HIV/AIDS (UNAIDS). UNAIDS report on the global AIDS epidemic. [Internet]. 2013. Available from: Available at: http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2015/gr2015/
[21] World health organization. Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Geneva: WHO; 2010.
[22] Odendal L. Option B+' women are at increased risk of loss to follow-up after starting HIV treatment. NAM Publ [Internet]. 2013; Available from: http://www.aidsmap.com/Option-B-women-are-at-increased-risk-of-loss-to-follow-up-after-starting-HIV-treatment/page/2699596/. accessed date Deember,2015

Author Profile

Delelegn Tsegaye received Master degree in OBG from Aadis Ababa University in 2015. Presently, working as Lecturer in the Department of Comprehensive Nursing, College of Medicine and Health Sciences, Wollo University, Ethiopia. Adding to this, Author is actively participating in different research activities at University and National level. He also involved in communinity services in and around the campus and he is a very good academician in his working set up.

Licensed Under Creative Commons Attribution CC BY