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MALE PARTNER INVOLVEMENT AMONG HIV POSITIVE WOMEN RECEIVING OPTION B+ PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV AND ITS ASSOCIATED FACTORS, EASTERN ZONE, TIGRAY, ETHIOPIA

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ABSTRACT

Background: Prevention of mother to child transmission of HIV is one of the strategies to prevent pediatrics HIV infection.Poor male partner involvement in option B+Prevention of mother to child transmissionservices is one of the factors contributing to reduced effectiveness of the PMTCT services and hence failure to achieve the elimination of maternal to child transmission of HIV. Therefore, this study was assessedmale partner involvement in the option B+ PMTCT services and its associated factors, Eastern zone, Tigray, North Ethiopia. **Methods**: An institutional based cross sectional studywasemployedto select121 HIV positive mothers attending option B+ PMTCT services using simple random sampling technique. Bivariate and multivariate logistic regression was employed using SPSS version 20 to see the association of variables to the outcome variable at a p value <0.05. **Results:** The proportionof male partner involvement in the option B+ PMTCT services was33.1%. PMTCT related services (AOR, 0.24; 95%CI; 0.08,0.67), Place of residence(AOR;0.20, 95%CI:0.04,0.97), low income (AOR;0.15, 95%CI;0.05,0.44) and source of information on PMTCT from health professional (AOR;7.2, 95%CI;1.14,45.23) were the factors significantly associated with male partner involvement in the option B+ PMTCT services. **Conclusions**: There was a poor male partner involvementin the option B+Prevention of mother to child transmissionservices. So, strengthening of the current PMTCT program and further revising strategies for male partner involvement in option B+ PMTCT services should be considered.

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INTRODUCTION

Globally, there were 3.3 million children living with HIV infection. Poor male partner involvement in PMTCT services is one of the factors contributing to reduced effectiveness of the PMTCT and hence failure to achieve the elimination of maternal to child transmission of HIV(Ditekemena, 2012). A total of 370,000[90%] children estimated to be infected with HIV through mother-to-child transmission and 210,000 AIDS deaths in 2009, most of them live in Sub Saharan Africa. In developing countries approximately, 15% of all new cases of HIV infection are diagnosed in children.

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Between one half and two thirds of the children who become infected with HIV will die before their second birthday (FMOH/FHAPCO, 2007). Male partner involvement in option B+ PMTCT services reduces the risk of vertical transmission and infant mortality by 40% compared to non-involvement (Falnes, 2011). More than 90% of childhood HIV infections are due to mother to child transmission of HIV thus newly infects 600,000 children annuallyworldwide (Kebaabetswe, 2007). In addition, male partners involvement in PMTCT services can often be utilized as an entry point for the provision of additional PMTCT services notably partner testing, condom use and infant feeding recommendations (UNAIDS, 2013). Among women counseled as a couple, only 18% of women were accompanied by their partners for testing and counseling (Federal ministry of health, 2012). Prevention

of mother to child transmission of (PMTCT) of HIV is one of the strategies to prevent pediatrics HIV infection. Taking this fact in to account, PMTCT service has been implemented in Ethiopia since 2001. However it remained a challenge for the country due to low coverage of the service, inadequate quality of available service and low male involvement (Mary, 2010). Reports from MOH of Ethiopia in 2012 stated that, low male partner involvement is one of the challenges to success of the country's PMTCT program (Morfaw, 2013). Their male partner involvement and support is critical to improving women's uptake of the services including the decision to test, returning for test results and correctly taking ARV drug. Involvement of male partners may increase adherence to PMTCT and its program outcomes, therefore this study was assessed male partner involvement in the option B+ PMTCT services and its associated factors, Eastern zone, Tigray, North Ethiopia interest on (Belato, 2017).

MATERIALS AND METHODS

An institutional based cross sectional study design was conducted from April 7- June 9/2017 in Eastern zone of Tigray, North Ethiopia. Sample size was computed using single population proportion formula with thelevel of confidence 95% and margin of error 3%. From a total of seven hospitals in the study area, four hospitals were selected using a simple random sampling technique. Using a simple random sampling technique 121 HIV positive mothers receiving option B+ PMTCT services were selected from 131 mothers of PMTCT/ANC cohort registration book. Seriously sick mothersand those who have hearing and speaking problemswere excluded from the study.The outcome variable was male partner involvementand the other variables likeSocio-demographic and economic factors, source of information on option B+ PMTCT, attitude of HIV positive women on male partner involvement and option B+ PMTCT services were the independent variables.

The data was collected using face-to-face interview administered questionnaire. The principal investigator trained for the data collectors and supervisors.The questionnaire was translated in to local language Tigrigna and back translated in to English by translators. After data collection, data was stored in a secured place to maintain confidentiality. The collected data was coded, entered, cleaned and analyzed using SPSS version 20. Descriptive statistics was used to describe male partner involvement among in the option B+ PMTCT services. Odds ratios, 95% confidence intervals (CIs) and P-value<0.05 were calculated using a logistic regression model to determine association levels of predictors to the outcome variables. A multivariate logistic regression analysis was used to estimate the adjusted OR of predictors to male partner involvements in option B+ PMTCT tocontrol confounding factors. The operational definitions were: Option B+ PMTCT: All pregnant women living with HIV are offered life-long ART to prevent the transmission of HIV to the newborn baby and to stay positive live.

Positive attitude: Those women in the option B+ PMTCT services who scored points equal to and more than the mean from a total of questions were considered as having positive attitude towards male partner involvement unless we consider as negative attitude.

Good PMTCT services: Those mothers in the option B+ PMTCT services who scored points equal to and more than the mean score and was making comfortable for your male partner was considered as having good PMTCT servicesunless we consider poor PMTCT services.

RESULTS

Socio-demographic and economic characteristics of respondents: A total of 121 HIV positive women receiving option B+ PMTCT services were enrolled in the study. The mean age of the mothers were 33.3 (± 0.59) years. Majority (77.7%) of the mothers were urban residents. Most of the respondents (97.5 %) were orthodox followed by 1.7% Muslim and 0.8% protestant followers (Table-1).

Table 1. Socio-demographic and economic characteristics of respondents, Eastern zone, Tigray, Ethiopia, 2017

Variables		Frequency	Percentage
Age of mothers	<25	19	15.7
	25-35	78	64.5
	>35	24	19.8
Ethnicity	Tigray	107	88.4
	Afar	14	11.6
Educational status of wife	Unable to read and write	14	11.6
	Able to read and write (informal education)	54	44.6
	Formal education	53	43.8
Educational Status of husband:	Unable to read and write	4	3.3
	Able to read and write (informal education)	72	59.5
	Formal education	45	37.2
Occupational status of wife:	Government employee	4	3.3
	Self employee	24	19.8
	Employed in private work	13	10.7
	House wife	80	66.1
Occupational status of husband:	Governmental employee	16	13.2
	Self employee	53	43.8
	Employed in private work	46	38.0
	Not applicable	3	2.5
	Other specify	3	2.5
Monthly income of households	<1000	18	14.9
	1000-3000	86	71.1
	3000-5000	14	11.6
	>5000	3	2.5

Attitude of HIV positive women receiving option B+ PMTCT services on male partner involvement: More than half (55.4%) of the mothers had a negative attitude on male partner involvement in the option B+ PMTCT services.

Table 2. Factors significantly associated towards male partner involvement among HIV positive women receiving option B+ PMTCT services, Eastern zone, Tigray, Ethiopia, 2017

Variables		Male partner involvement among HIV positive women receiving option B+ PMTCT services		OR, 95% CI		P-value
		Yes	No	Crude	Adjusted	
PMTCT services for male partner involvement	Poor	21(25.9%)	60(74.1%)	0.39(0.18,0.86)*	0.24(0.08,0.67) **	0.01
	Good	19(47.5%)	21(52.5%)	1	1	
Place of residence	Rural	2(7.4%)	25(92.6%)	0.12(0.03,0.53) *	0.20(0.04,0.97) **	0.04
	Urban	38(40.4%)	56(59.6%)	1	1	
Have an income	Yes	19(23.2%)	63(76.8%)	0.26(0.12,0.58) *	0.15(0.05,0.44) **	0.001
	No	21(53.8%)	18(46.2%)	1	1	
Information on HIV/AIDS/PMTCT	Health worker	7(77.8%)	2(22.2%)	8.6(1.70,43.85) *	7.2(1.14,45.23) **	0.036
	Television	32(28.8%)	79(71.2%)	1	1	
Mothers attitude towards male partner involvement	Negative	26(38.8%)	41(61.2%)	1.81(0.83, 3.96)	1.78(0.64,4.90)	0.27
	Positive	14(25.9%)	40(74.1%)	1	1	

**Significantly associated variables

During pregnancy, 46 % of mothers were strongly agree to took the HIV testing and counseling with their male partner. The respondents strongly agree that (42.1%) HIV test result of pregnant or lactating mothers indirectly confirms the HIV status of her husband.The respondents disagreethat (22.3%) unprotected sexual intercourse can increase MTCT of HIV. About (11.6%) of the respondents agree that, their male partner believed as the PMTCT clinic is very far and transport was expensive. Less than half (41.3%) of the respondents agreed that, ANC clinics were allowedfor women and children only.

Male partner involvement among HIV positive women receiving option B+ PMTCT services: Around (33.1%) mothers hadinvolved their male partners in the option B+ PMTCT services. During their pregnancy about 78.5% of the motherswerenot self-initiated to discuses on the importance of PMTCT services with theirmale partner. Majority (83.5% of the respondents werenot requested by their male partner to be tested for HIV during their last pregnancy. More than half 65.3% of the mothers respond the male partner was not confident to use condom consistently. Only (5%) respondents said PMTCT room was not adequate for HIV testing and counseling with their male partner. Around two-third (66.9%) of the participants were responding PMTCT clinic working time was not suitable for the respondent's male partner. Around half (56%) of respondents were not satisfied option B+ PMTCT servicesbecause of non-cooperative staff (24%), long waiting time (14%) anddrug side effect (8.9%).

Factors significantly associated withmale partner involvement in the option B+ PMTCT services: The multivariate logistic regression analysis showed that, those respondents who lived in rural area were 80% less likely to accompany their male partner to the PMTCT services than those who live in the urban area [AOR: 0.2, 95%CI: 0.04, 0.97, P =0.04]. Those mothers in the option B+ PMTCT services with low income were 85% less likely to accompany their male partner to PMTCT services than those who had high income [AOR: 0.15, 95%CI: 0.05,00.44, P=0.01], which were statistically significant.Respondents who had get information on PMTCT service from health workers were 7.2 times more likely to involve their male partner as compared those who had get information fromtelevision [AOR: 7.17, 95%CI: 1.14, 45.23, P=0.036] and Respondents who had got poor PMTCT services for their male partner were 76 % less likely to participate their male partner than those who had got good PMTCT services [AOR: 0.24, 95%CI: 0.18, 0.86, P=0.036] (Table-2).

DISCUSSION

This study was able to determine magnitude of male partner involvement in the option B+ PMTCT services as well as identifying factors affecting male partner involvement in the option B+ PMTCT services perceived by mothers and has a significant influence on preventing of mother to child transmission of HIV.In this study, their male partner involved mothers in the option B+ PMTCT services were 33.1%. This finding was almost similar with a study conducted in Hadiya, Southern Central Ethiopia (30.9%) (Haile, 2014), but higher than a studyconducted in Mekelle, Northern Ethiopia (20%) (Access, 2016) in Gondar town, North West Ethiopia (20.9%) (Lemma, 2017), Fantale District, Ethiopia (14%) (Kalembo, 2012)Sub-Saharan Africa (vary between 12.5% and 18.7%) (Kalembo, 2013), and in Malawi (3.2%) (Kalembo, 2012). This difference might be due to under reporting of the routine data used to compile the report, sample size difference, study period and might be difference in awareness and knowledge of the participants. In this study around 55.4 % of the mothershad negative attitude on male partner involvement in the option B+ PMTCT. This study was lower than a study conducted in Malawi (60%) (Mmbaga, 2017). This difference might be due to information and attitude of the participants.In this study, source of information on PMTCT from health professional [AOR: 7.17, 95%CI: 1.14, 45.23] werefound statistically significant association as compared to television. This study was different from a study conducted in Tanzania source of information get fromtelevision (AOR 4.6, 95% CI: 1.5-14) (Alemayehu, 2017), were found statistically significant compered to heath professional.In this study around 74.4% of women receiving option B+ PMTCT services were not tested and counseled for HIV with their partner which werealmost similar with a study conducted in Goba town, Ethiopia (77.3%) (Tadesse, 2015).

In this study, place of residence [AOR: 0.2, 95%CI: 0.04, 0.97, P =0.04] had a significantly associated with male partner involvement in PMTCT services which was similar with a study conducted in Fantale District, Ethiopia (AOR=3.8, 95% CI: 1.24, 7.86) [13]. In our study around two-third, 66.9% of the respondents said that, the PMTCT services were not suitable for the male partner involvement which were lower than a study conducted in bale zone, south welo Ethiopia

(90%) (Mulusew Teshome, 2015), this difference might be difference in culture of the community and information.

Conclusion

The level of male partner involvement in the option B+ PMTCT services was found 33.1%.Their spouses did not accompany womenduring PMTCT services. PMTCT services of male partner, place of residence, income, and information on PMTCTwere the factorsassociated that was statistically significantly. Therefore, the district health office and health professionalshould be work in collaboration with the community for providing appropriate information to increase the male partner involvement in the PMTCT services. This is also used as a base line for the policy makers and researchers who are interested in this area.

Limitation

Small sample size the reason was data on HIV positive women receiving option B+ prevention of mother to child transmission of HIV was not available in some of the health facilities during the study period. The health management information system data were also incomplete.

List of abbreviations

AIDS- human Acquired Immuno deficiency syndrome, AOR- Adjusted odds ratio, ARV- Antiretro viral therapy, HIV- Human immuno deficiency virus, PMTCT- prevention of mother to child transmition.

Declarations

Ethics approval and consent to participate

Ethical clearance was obtained from Adigrat University, College of Medicine and Health Sciences ethical review committee. Permission was obtained from the administrators of the health institutions. Our data collection was conducted after obtained informed written consent from each participant. The study population includes all HIV positive women receiving option B+ PMTCT services. The respondents' privacy and right to anonymity and confidentiality was respected at all times.

Consent for publication

'Not applicable' in this section
Availability of data and material
The datasets used and analyzed during this study is available from the corresponding author on reasonable request.

Competing interests: All the authors declare that they have no competing interests.

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Author's contributions: HG was the principal investigator who contributed to the conception and design of the study, collected, entered, analyzed and interpreted the data. HD and AT contributed to data analysis, interpretation and drafted the manuscript. All authors read and approved the final manuscript.

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