

Assessment of male partner involvement in prevention of mother to child transmission of HIV amongst HIV-positive women in Jos, Nigeria

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Abstract

Background: Mother to child transmission (MTCT) of HIV is still a crucial problem in Nigeria. Due to sociocultural/economic factors, a woman's decision to access and adhere to PMTCT services may depend on her male partner as the key decision maker. Male partner involvement (MPI) may thus influence the uptake of PMTCT and ultimately impact on the HIV status of a baby born to the couple. This study assessed MPI in PMTCT and impact on HIV status of babies delivered by participants.

Method: In a hospital-based cross sectional study, 123 HIV-positive women who had accessed PMTCT services were interviewed to determine their MPI in PMTCT and their babies' HIV status at 18 months. Data was analyzed using statistical package for social Science, Version 20.

Results: Prevalence of MPI was 80.5%, with a mean score of 6.7 ± 0.6 for positive responses/adherence to PMTCT

parameters. There was a statistically significant difference between the mean scores of male partners involved in PMTCT and those who were not ($p = < 0.0001$). All babies tested negative to HIV at 18 months.

Conclusion: The study showed a high rate of male partner involvement and a high positive response/adherence to PMTCT parameters among the men who were involved. However, there was no MTCT of HIV among the babies. MPI may have some contribution to this but needs to be further investigated in future studies.

Keywords: Male partners, PMTCT, HIV-positive women, babies

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Introduction

Human Immunodeficiency Virus (HIV) remains a major public health problem, as the source of a global pandemic. In 2019, global estimates of people living with HIV (PLWH) stood at 38.0 million, including 1.8 million children aged 0-14 years.¹

The greatest proportion of PLWH worldwide live in low- and middle- income countries, with about two-thirds living in sub-Saharan Africa.² It is estimated that South Africa, Uganda and Nigeria contribute almost half of all new infections in sub-Saharan Africa.³ In 2019, Nigeria's national prevalence of HIV was 1.4% in adults aged 15-49 years, and 0.2% in children aged 0-14 years.⁴ Recent statistics show that 58% of PLWH in Nigeria are women, predominantly those in the child bearing age 15 -49.⁴ Without any intervention, a HIV-infected woman has a 15% to 45% risk of transmitting the virus to her baby during pregnancy, delivery or breastfeeding; however this risk can be reduced to below 5% by antiretroviral therapy (ART) and other interventions.⁵ It is estimated that 90% of children newly

infected with HIV get infected via mother to child transmission (MTCT), and approximately 90% of them are in sub-Saharan Africa.^{5, 6} Over 26.9% of the global cases of (MTCT) of HIV occur in Nigeria.⁷

Prevention of MTCT (PMTCT) programme provides a range of services geared towards women of childbearing age (15-49 years) living with or at risk of HIV, to maintain their health and prevent their babies from acquiring HIV.⁴ This involves primary prevention of HIV infection in women of childbearing age, prevention of unwanted pregnancies in women living with HIV, providing lifelong ART for women living with HIV to maintain their health, and preventing transmission of HIV during pregnancy, delivery and breast feeding. It also supports safe child delivery practices, ART prophylaxis at birth, safe infant feeding practices, virologic testing for infants exposed to HIV and ART treatment as appropriate.⁵ Comprehensive PMTCT therefore involves child follow up after delivery particularly for the first 18 months of life. Support and participation from male partners serve to strengthen these preventive strategies.

Notwithstanding the advancement in strategies well-adapted for use in resource-limited settings like sub-Saharan Africa, MTCT of HIV has continued to be a serious problem in the developing world. Nigeria was one of 22 countries prioritized for virtual elimination of MTCT of HIV as a public health problem. The 22 countries had 90% of the global HIV-positive pregnant women resident in them.⁸ Among the 22 Global plan countries, decline in new infections from 2009 to 2015 was least in Nigeria.⁸

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Male partners play a key role in PMTCT; being sexual partners who may predispose the woman to the risk of acquiring HIV, as well as decision makers with influence over the woman's utilization of PMTCT services such as HIV testing/returning for result, consistent condom use, medication adherence (mother and infant), hospital delivery and adherence to safe infant feeding practices.^{9,10} Researchers have recommended that adequate knowledge about PMTCT be provided for male partners to fulfil their key role of involvement in PMTCT for improved outcomes.¹¹

Studies in Africa evaluating male partner involvement (MPI) in PMTCT have recorded low levels of MPI and have focused more on PMTCT uptake and associated factors.⁹⁻¹⁴ However, hardly any of these studies have reported on the HIV status of the babies subsequently delivered. PMTCT impact can be measured using MTCT at 6 weeks and 18 months postpartum through infant testing.⁹⁻¹⁴ To the best of our knowledge, MPI in PMTCT has not been evaluated in Jos, Nigeria. This study sought to assess MPI in PMTCT among women who attended PMTCT clinic at AIDS Prevention Initiative in Nigeria (APIN) Centre of Jos University Teaching Hospital (JUTH), and the impact on HIV status of infants born to them.

Methodology

Study Site: The PMTCT clinic, located in the APIN Centre of JUTH, a tertiary institution in the urban city of Jos, Plateau. The centre provides comprehensive HIV care including ART and other services to PLWH in PMTCT, Adult and Paediatric ART clinics. About of 30 to 40 patients attended the clinic weekly.

Study population: HIV-Positive women in Adult ARV/PMTCT clinics of APIN-JUTH who had accessed PMTCT services in their last pregnancy within the previous 18 months.

Study design: Cross sectional hospital-based study from September to November 2019.

Sample size: The formula $n = z^2 pq / d^2$ was used to determine the sample size of 123.^{13,15}

Ethical Consideration: Ethical clearance was obtained from the Research and Ethics Committee of JUTH. Permission to conduct the study was sought from the Principal Investigator of APIN Centre JUTH. A written informed consent was obtained from each participant, and their information was kept anonymous and confidential.

Recruitment and data collection: One hundred and twenty three HIV-positive women were recruited by non-probability convenience sampling, excluding women who were not linked to a male partner, very ill or declined participation. A structured questionnaire was administered by the researcher to obtain relevant information from the women about theirs and their partner's sociodemographic characteristics and responses/adherence to PMTCT parameters shown in Table 2. The questionnaire adapted from a previous similar study was used to assign scores according to responses relating to MPI in PMTCT.¹³ The maximum and minimum total scores obtainable were 8 and 0 respectively. A total score of ≥ 6 was considered as involvement in PMTCT while a score of < 6 was considered as non-involvement in PMTCT. Results of HIV screening of the babies' at 18 months were obtained from the patients' routine records.

Data analysis: Data was analyzed using statistical package for social Science (SPSS, IBM version 20, Chicago IL USA). Results were expressed as means, frequencies and percentages. Student t-test was used to compare means of scores obtained for positive responses/adherence to PMTCT parameters for MPI in PMTCT. A 95% confidence interval was used and a P value ≤ 0.05 was considered statistically significant.

Results

Sociodemographic/PMTCT related characteristics of participants and male partners.

The age range of the women was 26 – 46 years (mean of 36.5 ± 4.5 years). The mean duration of HIV infection was 11.5 ± 3.5 years. Majority (92%) were married, Christians (74%), engaged in business (51%) and had secondary/tertiary education (46.3/39.1%). Most (95.9%) had accessed PMTCT services in previous pregnancies. The median parity was 4 and the mean gestational age at commencement of PMTCT was 4 ± 1.5 months. Mean age of male partners was 45 ± 6.1 years (range 33 – 62 years), most had tertiary education (53.7%), and were civil servants (42.3%). A total of 97.6% of male partners had tested for HIV, 58.5% were HIV-positive and 26% of them used condoms always. All male partners were aware that their female partners were HIV-positive and had accessed PMTCT services (Table 1).

Table 1: Sociodemographic and PMTCT related characteristics of women who attended PMTCT clinic and their male partners.

Women who accessed PMTCT (n = 123)		
Variable	Value	
Age (mean + SD, years)	36.5 + 4.5	
Gestational age at start of PMTCT (mean + SD months)	4.1 + 1.5	
Parity (median)	4	
Duration of HIV infection (mean + SD, years)	11.5 + 3.5	
	Frequency	(%)
Marital status		
Single	4	3.2
Married	113	92.0
Separated	1	0.8
Divorced	1	0.8
Widowed	4	3.2
Religion		
Christianity	92	74.8
Islam	31	25.2
Educational status		
Primary	18	14.6
Secondary	57	46.3
Tertiary	48	39.1
Occupation		
Artisan	11	8.9
Business	63	51.2
Civil servant	33	26.8
Housewife	16	13.1
Accessed PMTCT in previous pregnancy		
Yes	118	95.9
No	5	4.1
	Male partners (n = 123)	
Age (mean + SD, years)	45.1 + 6.1	
Educational status		
None	1	0.8
Primary	10	8.1
Secondary	46	37.4
Tertiary	66	5.7
Occupation		
Artisan	16(13.0)	13.0
Business	46(37.4)	37.4
Civil servant	52(42.3)	42.3
Farmer	6(4.9)	4.9
None	3(2.4)	2.4
HIV status		
Positive	71	57.7
Negative	49	39.9
Unknown	3	2.4
Male partner knows of participant's HIV status		
Yes	123	100

Table 1: Continued

Variable	Frequency	(%)
Male partner knows of participant's PMTCT attendance		
Yes	119	96.7
No	4	3.3
Male partner uses condom always		
Yes	32	26
No	91	74
Place of delivery of baby		
Hospital	118	95.9
Home	5	4.1
Baby received ART prophylaxis at birth	123	100
Feeding choice for baby in 1st 6 months		
Exclusive breast feeding	103	83.7
Exclusive breast-milk substitute	15	12.2
Mixed feeding	5	4.1
HIV status of baby		
Negative	123	100

MPI in PMTCT

Of 123 male partners, 80.5% were assessed to be involved in PMTCT. The mean scores of positive responses/adherence to PMTCT parameters for those assessed to be involved and not involved in PMTCT were 6.7 ± 0.6 and 4.4 ± 1.3 respectively (Table 2).

Delivery, infant feeding and HIV status of babies at 18 months

Ninety-six percent of the participants delivered in hospital. All babies received Nevirapine prophylaxis at birth. In the first 6 months of life 84% of babies were exclusively breast-fed, 12% were exclusively fed breast-milk substitutes and 5% had mixed feeding. All babies (100%) tested HIV-negative at 18 months (Table 1).

Discussion

The results of this study showed a prevalence of MPI in PMTCT in JUTH of 80.5%. However, since the men were not interviewed directly this may have been subject to bias. This is higher than the prevalence recorded in most other studies in Africa.⁹⁻¹⁴ In Cameroon the prevalence recorded was 41.3% and reasons proffered for the low involvement were non invitation of the menfolk and lack of time to get involved.¹¹ Unlike the current study, where the partners were couples and male interview was done by proxy, the male and female participants in the Cameroonian study were not couples but independently selected individuals, and the male participants were interviewed directly within the community, while the women were interviewed in clinics.¹¹ These factors may have contributed to the differences in prevalence between both studies. In South

Central Ethiopia, MPI was lower at 30.9%, and the population was a mix of urban and rural settings contrasting with the index study which was urban.¹³ The low MPI was linked to low level of education, influence of sociocultural factors, lower monthly income and lack of awareness of PMTCT services.

Table 2: Male partner involvement in PMTCT according to scoring parameters (n = 123)

PMTCT parameter assessed	Positive responses/ adherence to PMTCT parameters	
	Frequency	Percentage %
1. Male partner aware respondent assessed PMTCT services	119	96.8
2. Male partner has tested for HIV	119	96.8
3. Male partner supports condom use all the time	32	26.0
4. Accessing PMTCT services :		
a. Encouraged respondent to register for ANC early	112	91.1
b. Reminded respondent to take drugs/go for drug pick-up	101	82.1
c. Supported transportation to the clinic	105	85.4
d. Accompanied respondent to the clinic.	76	61.8
e. Provided financial support	108	87.8
5. ART prophylaxis for baby:		
a. Supported the child taking ART prophylaxis	122	99.2
b. Gave consent for administration of prophylaxis	118	95.9
c. Collected the drug from the hospital	57	46.3
d. Reminded respondent to administer the drug to the baby	103	83.7
e. Administered the drug to the baby	57	46.3
6. Supported recommended infant feeding choice	118	95.9
7. Child follow up:		
a. Supported infant follow-up visit	115	93.5
b. Reminded respondent to take the baby to the clinic.	96	78.1
c. Transported respondent and baby to the clinic	106	86.2
d. Accompanied respondent and baby to the clinic.	67	54.5
e. Other supporting activities	2	1.63
8. Male partner asked respondent about baby's test result	111	90.2
MPI in PMTCT		
Yes	99	80.5
No	24	19.5
[Involved = score > 6 ; Not involved= score < 6] Mean score of male partners involved in PMTCT = 6.7 + 0.6 Mean score of male partners not involved in PMTCT = 4.4 + 1.3 Overall mean score = 6.3 + 1.2		
statistically significant		P = < 0.0001

An even lower level of MPI (20.9%) was seen in North West Ethiopia where male partners were more likely to be involved with PMTCT if they had secondary or higher education, were government-employed, married/in a union or had previously heard about PMTCT.¹⁰ The MPI recorded in southern Ethiopia was 53% which was lower than MPI in the current study but higher than those reported for other parts of Ethiopia, and was positively influenced by age group 36-55 years, educational level above grade 12, easy accessibility to health facility, non users of khat, non smokers and having HIV knowledge.¹⁴ Perception of PMTCT as women's affair and perception of men involved in PMTCT as weak were factors that negatively influenced MPI.¹⁴ Researchers in Uganda recorded an MPI prevalence of 26% which was more in those with secondary education and hindered by fear of disclosure of HIV status, being a driver, poor health system, socioeconomic and cultural factors.¹² Though this current study did not report on factors associated with MPI, other Nigerian studies have shown that MPI was inhibited by societal norms and cultural barriers, interference of timing with activities of daily living, fear of stigma, poverty, poor attitude of health workers, sociocultural beliefs, distance/cost to attend facilities and poor organization of health services.¹⁶⁻¹⁸

There was a statistically significant difference between the mean scores of those male partners involved in PMTCT and those not involved. The higher prevalence of MPI documented in this current study may be attributed to several factors, in particular the fact that this study was carried out more recently at a time when greater attention is being paid to strengthening MPI to ensure the success of PMTCT, compared to what obtained in previous years when the other studies were done.^{9,14} The PMTCT clinic in JUTH encourages couple counselling and when such opportunities present, male partners get enlightened. In addition, while the other studies were carried out in the community, regular hospitals or antenatal clinics, the current study was conducted in a primarily PMTCT clinic with presumably greater focus on providing standard PMTCT care to achieve PMTCT goals which may have been less intense in the other facilities/ communities where those studies were carried out. Differences related to geographical locations may also have contributed to the varied results. In all the studies reporting low levels of MPI, recommendations for improvement were similar and included: invitation for couple counselling, making available adequate knowledge about PMTCT to male partner, adjusting clinic hours, making clinics more male-friendly, community sensitization to break barriers to interventions and change negative perceptions, improved geographical accessibility to PMTCT facilities, creation of a more supportive community that is stigma free, encouraging spousal support to enable women

circumvent the socio-cultural barriers that limit access to PMTCT services and a collaborative strategic effort by stakeholders to ensure increased PMTCT uptake.^{10-12,16-19}

None of these studies mentioned reported the outcome of the babies' HIV status, which would have been interesting to note in relation to MPI. The index study recorded 100% HIV negative status for all the babies born to the participants in spite of the 19.5% noninvolvement of male partners in PMTCT. The women's educational background (85.4% secondary/tertiary education), previous access to PMTCT services (95.9%), and peer influence between mothers are factors that could enhance better understanding of the value of adherence to PMTCT guidelines, thus contributing to the 100% HIV negative status among the babies despite non-involvement of male partners in some of them.²⁰ Nonetheless, the importance of MPI in PMTCT cannot be downplayed in all settings.

Limitations

This was a cross sectional study, so causal inference cannot be made. Information was obtained from the women about their male partners and this may have introduced some bias.

Conclusion

The study showed a high rate of male partner involvement and a high positive response/adherence to PMTCT parameters among the men who were involved. However, there was no MTCT of HIV among the babies. MPI may have some contribution to this but needs to be further investigated in future studies.

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Conflict of interest

The authors declare no conflict of interest.

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