Microbes and Infectious Diseases 2024; 5(2): 485-496

Microbes and Infectious Diseases

Journal homepage: https://mid.journals.ekb.eg/

## Original article

# Assessment of male partner involvement in PMTCT of HIV/AIDS among HIV-positive pregnant women attending adult HIV care in Nauth, Nnewi

***Emeka Joseph Ekeocha[1], Abuchi Emmanuel Nwafia[2], Chikwendu Ifeyinwa Joy[2], Chigozie O Ifeadike[3] , Chibuzo Faustina Okoye[3]*, Onyenmechi Johnson Afonne [4], Chioma Chetachukwu Ajator [5], Dim Basil Izuchukwu[6].***

1- *Community Medicine Department NAUTH Nnewi, Nnamdi Azikiwe University Awka, Nigeria.*
2- *Parasitology and Entomology Department, Faculty of Biosciences, Nnamdi Azikiwe University, Awka, Nigeria.*
3- *Community medicine and primary health care, Faculty of Medicine, Nnamdi Azikiwe University, Awka, Nigeria.*
4- *Department of Pharmacology and Therapeutics, Faculty of Basic Clinical Sciences, Nnamdi Azikiwe University, Awka, Nigeria*
5- *Department of Community Medicine, Faculty of Medicine, Nnamdi Azikiwe University, Awka, Nigeria.*
6- *Community Medicine Department, Nnamdi Azikiwe University, Awka, Nigeria.*

**ARTICLE INFO**

*Article history:*
Received 7 August 2023
Received in revised form 16 October 2023
Accepted 21 October 2023

**Keywords:**
PMTCT
HIV/AIDS
Male partner involvement
Pregnant women
Nigeria

**ABSTRACT**

**Background:** The prevention of mother-to-child transmission (PMTCT) of HIV/AIDS is an essential intervention to mitigate new HIV infections among newborns. Male partner involvement plays a vital role in improving PMTCT outcomes by supporting HIV-positive pregnant women in adhering to treatment regimens and making informed decisions. This study aimed to assess the level of male partner involvement in PMTCT services among HIV-positive pregnant women attending adult HIV care at Nnamdi Azikiwe University Teaching Hospital (NAUTH) in Nnewi, Anambra State, Nigeria. **Material and methods**: A cross-sectional study was conducted from October 2019 to March 2020 among 427 HIV-positive pregnant women attending adult HIV care at NAUTH. A structured questionnaire was used to collect data on socio-demographic characteristics, male partner involvement, and barriers to involvement. An observational checklist was also used to determine the factors and effects of male partner involvement in PMTCT in correlation to their female counterparts' reports. Descriptive and inferential statistics were used for data analysis. **Results**: The findings revealed that 13.8% of the participants reported male partner involvement in PMTCT services. However, the level of involvement varied significantly across different aspects of PMTCT, with higher involvement observed in HIV testing and counseling (81.0%) and lower involvement in the number of times of attendance of more than twice (3.3%). Factors such as distance to the health facility, higher education level of partners, and having discussed the feeding options for the baby were positively associated with male partner involvement. **Conclusion**: The study highlighted the importance of enhancing male partner involvement in PMTCT services to optimize HIV/AIDS prevention efforts among infants. Efforts should focus on improving knowledge and awareness of PMTCT among men and addressing socio-cultural barriers. Integrating strategies to actively engage male partners within the existing healthcare system can strengthen PMTCT programs and improve health outcomes for both mothers and infants.

## Introduction

Human immunodeficiency virus (HIV) remains a major global challenge despite decades of advocacy and investment in programs to prevent and control the spread of the virus [1]. Vertical transmission is the most common route of HIV infection for HIV-positive children under five years [1-4].

DOI: 10.21608/MID.2023.227079.1585
* *Corresponding author:* Okoye, Chibuzo Faustina
E-mail address: *buzookoye@gmail.com*

Prevention of mother-to-child transmission (PMTCT) program comprises a range of interventions, including improved antenatal services, pre and post-test HIV counseling, and testing for pregnant women, use of highly active antiretroviral drug prophylaxis for HIV-positive mothers during pregnancy, a short course of antiretroviral drugs for the baby, counseling on options for safer infant feeding practices and continued follow-up and treatment for HIV positive mothers and their children for the first 18 months of the child's life [3]. The new Sustainable Development Goals (SDGs) heightened emphasis on the prevention of mother-to-child transmission in the context of better health for mothers and their children [5].

Aside from the prevention of mother-to-child transmission of HIV/AIDS, male involvement in the PMTCT helps in maintaining family health and compliance with HIV treatment and prevention [3, 6]. It has been recognized as a priority focus area to be strengthened in the prevention of mother-to-child transmission but, it remains a challenge in most low- and middle-income countries especially in sub-Saharan Africa including Nigeria [5].

According to WHO, male partner participation has been associated with positive outcomes; greater use of antiretroviral therapy (ART), higher acceptance of post-test counseling among pregnant women, and increased spousal communication about HIV and safe sex [7, 8]. Male participation also helps with the initiation of ART and compliance [9, 10], raises the chances of giving birth at the health facility, and increases the rate of antenatal care (ANC) attendance [11]. However, several factors influence male involvement in PMTCT services, they can be categorized into health systems, community level, personal and family factors [12-14].

With a male partner participating in the prevention of mother-to-child transmission of HIV/AIDS, the couple has an opportunity to make informed decisions together on living positively with HIV, share responsibility for preventing HIV transmission to the unborn child, discuss safer sex practices, as well as to make informed decisions to access care and treatment [15, 16].

**Statement of the problem**

Globally, more than 70 million people have been infected with HIV and, have claimed more than 35 million lives so far [1]. According to the World Health Organization, approximately, 36.7 million people were living with HIV at the end of 2016, with 1.8 million people becoming newly infected worldwide. About 76% of pregnant and breastfeeding women living with HIV are receiving antiretroviral therapy and about 95% of HIV-infected children have acquired infection from their mothers [1]. Without any intervention, the prevalence of mother-to-child transmission (MTCT) cumulatively from pregnancy to cessation of breastfeeding ranges from 25.0% to 48.0% [2, 4, 17].

One of the challenges facing the prevention of mother-to-child transmission of HIV programs in sub-Saharan Africa includes a lack of male partners' support as well as domestic violence [1, 18]. These projects aim to assess the level of male partner involvement in PMTCT of HIV/AIDS among HIV-positive pregnant women attending Adult HIV care in NAUTH, Nnewi.

**Study area**

The study was carried out at the Adult care unit of Nnamdi Azikiwe University Teaching Hospital, Nnewi. Nnamdi Azikiwe University Teaching Hospital (NAUTH) is a federal university teaching hospital in Southeast East Nigeria, located in Nnewi, a town well known for the fabrication and sale of automobile spare parts [19]. The NAUTH, Nnewi, is one of the two facilities in Anambra offering comprehensive HIV/AIDS services in Anambra state [20]. It has outstations (annexes) at Ukpo, Umunya, Neni, Onitsha, and Oba

The HIV Clinic has a total of 13,905 enrolled HIV-infected individuals accessing services. This study was a cross-sectional, descriptive study involving HIV-positive pregnant women attending the Adultcare HIV Unit of Nnamdi Azikiwe University Teaching Hospital Nnewi.

**Sampling technique**

A systematic random sampling technique was used to obtain the minimum number of study participants. All eligible HIV-positive pregnant and consenting women attending the PMTCT Unit, NAUTH from the clinic attendance register served as the sampling frame. The sampling interval "K" was calculated by dividing the monthly attendance (650) at the time of study i.e., the sampling frame with the minimum sample size (427).

**Data collection**

A qualitative method of data collection was used to elicit information from the respondents (face-to-face interview and focus group discussion). A pre-tested, structured questionnaire adopted from the Nigeria Demographic and Health Survey (NDHS, 2013) was used to elicit information from the respondents on socio-demographic profile, level of partner's participation, factors affecting male participation in various PMTCT services as perceived by the women, effects of male participation, with the help of research assistants, who have been trained on the data collection procedures.

**Data analysis and management**

Data collected from the questionnaires were entered, cleaned, coded, and analyzed using International Business Machine, Statistical Package for Social Sciences (IBM-SPSS) for Windows version 22. Bivariate (Pearson's Chi-square test) analyses were conducted to ascertain if there is a statistically significant association between (categorical) independent and dependent variables.

Ethical approval and clearance for this study were sought and obtained from the Nnamdi Azikiwe University Teaching Hospital Institutional Research Ethics Review Committee, before the commencement of the study (NAUTH/CS/66/ VOL.12/228/2019/091).

**Results**

A total of 500 questionnaires were distributed to assess male partner involvement among HIV-positive pregnant women attending the Adultcare HIV Unit of Nnamdi Azikiwe University Teaching Hospital Nnewi. Only 461 were returned, giving a response rate of 92.2% the result is presented as follows: The majority of 256 (60%) of the respondents were aged between ages 22-25 years (as of their last birthday), with a mean age of 27.5 ± 6.9 **(Table 1)**. The majority of their spouses 266 (62.3%) were aged between 25-40 years (as of their last birthday). Slightly above half of the respondents 216 (50.6%) attend ANC from their residence in rural areas while the remaining 211(49.4%) reside in urban areas. Most of the respondents 415 (97.2%) were Christians and were mainly of the Igbo tribe 418 (97.9%). Thirty-three (7.7%) of the participants were unmarried at the time of this study. More than half of the respondents 296 (69.3%) were currently employed with only 54 (12.6%) of them having attained the tertiary level of education, however, 63 (14.8%) of their husbands have attended tertiary education before this study. The majority of the respondents 261(61.1%) had a monthly income of more than 18,000 NGN.

The result showed that only 59(13.8%) of the respondents had their male partners attend PMTCT visits with them of which 24(5.6%) attended such visits only once. However, 236 (55.3%) of the respondents had male partners who knew their PMTCT appointment dates. The majority 255(59.7%) of the respondents had discussed PMTCT healthcare with their partners. More than fifty percent 244(57.1%) and 134 (31.4%) had discussed the place of delivery and feeding options for the baby with their partners respectively. While 60 (14.1%) had partners who know what happens in the PMTCT clinic.

In terms of the relationship between the uptake of PMTCT among male partners and socio-demographic variable, the respondent's residence, educational level of the respondent, as well as husband's educational level showed a statistically significant relationship with the level of uptake of PMTCT by male partners ($p<0.05$). Being educated (both respondents and their partners) increased the tendency of male partner involvement.

After analysis using binary logistic regression those respondents whose spouses reside close to the healthcare center were 2 times more likely to be involved in PMTCT of HIV/AIDS compared to those who live far from the health facility (AOR: 1.93, CI: 1.091 – 3.418, ***p*** - 0.024). Those who attended tertiary education were more likely to participate in PMTCT activities compared to those who had no formal education (AOR: 204.9, CI: 54.17 – 777.25, ***p*** - <0.001). Also, those who did not discuss the place of delivery for the baby with their partners were 98% less likely to be involved in PMTCT of HIV/AIDS compared to those who did (AOR: 0.02, CI: 0.002 – 0.129, ***p*** - <0.001).

Three hundred and eighty-eight (90.9%) of the respondents had partners who had tested positive for HIV, and 346(81.0%) of them tested positive. A large proportion of the respondents (83.1%) were not using condoms at the time of this study, with 35 (8.2%) admitting to using condoms in their last sexual intercourse. Less than one-third of the participants are planning to have more children, with more than half of the respondents admitting to having gotten the suggestion from a healthcare provider. The majority of the respondents 354 (82.9%) claimed that their partners knew PMTCT.

Of the spouses of the respondents, 390(91.3%) were aware of their status and 335(78.5%) of them had partners that encouraged them. About 15(3.5%) of the respondents had partners that maltreat or abuse them because of their status with Neglect being the most common form of abuse 6(1.4%). Most 302(70.7%) of the respondents had partners that remained with them after knowing their status. The most common reasons why their partners remained with them after knowing their status were because they were also positive and because of financial implications 80 (18.7%) and 79 (18.5%) respectively.

**Table 1.** Baseline socio-demographic and clinical characteristics of the respondents

| Variables | NO. | Percentage (%) |
|---|---|---|
| **Age (as at last birthday)** | | |
| less than 22 | 102 | 23.9 |
| 22-35 | 256 | 60.0 |
| more than 35 | 69 | 16.2 |
| **Mean =27.48, SD = 6.937** | | |
| **Distance** | | |
| Close | 216 | 50.6 |
| Far | 211 | 49.4 |
| **Religion** | | |
| Christianity | 415 | 97.2 |
| Islam | 7 | 1.6 |
| Traditionalist | 5 | 1.2 |
| **Ethnicity** | | |
| Igbo | 418 | 97.9 |
| Hausa | 6 | 1.4 |
| Yoruba | 3 | 0.7 |
| **Relationship status** | | |
| Married | 394 | 92.3 |
| Unmarried | 33 | 7.7 |
| **Employment status** | | |
| Currently working | 296 | 69.3 |
| Not working | 128 | 30.0 |
| Retired | 3 | 0.7 |
| **Education level** | | |
| No formal | 121 | 28.3 |
| Primary | 141 | 33.0 |
| Secondary | 111 | 26.0 |
| Tertiary | 54 | 12.6 |
| **Number of Children** | | |
| None | 29 | 6.8 |
| less than 4 | 271 | 63.5 |
| 4 and above | 127 | 29.7 |
| **Co-habitation duration** | | |
| 1-3 | 220 | 51.5 |
| 4-6 | 73 | 17.1 |
| 7-9 | 76 | 17.8 |
| more than 9 years | 58 | 13.6 |
| **Husbands Age** | | |
| Less than 25 | 101 | 23.7 |
| 25-40 | 266 | 62.3 |
| More than 40 | 60 | 14.1 |
| **Husband Education level** | | |
| No formal | 119 | 27.9 |
| Primary | 134 | 31.4 |
| Secondary | 111 | 26.0 |
| Tertiary | 63 | 14.8 |
| **Occupation** | | |
| Farmer | 104 | 24.4 |
| Trader | 98 | 23.0 |
| Civil servant | 100 | 23.4 |
| Artisan | 91 | 21.3 |
| Unemployed | 34 | 8.0 |

| **Monthly Income** | | |
|---|---|---|
| Less than 18,000 | 166 | 38.9 |
| 18,000 and above | 261 | 61.1 |

**Table 2.** Level of male partner involvement (MPI) among the respondents

| Variables | NO. | Percentage (%) |
|---|---|---|
| Do you attend PMTCT care visits with your partner? | | |
| Yes | 59 | 13.8 |
| No | 368 | 86.2 |
| Number of times of attendance with your partner | | |
| Once | 24 | 5.6 |
| Twice | 21 | 4.9 |
| More than twice | 14 | 3.3 |
| Does your partner know your PMTCT appointment times | | |
| Yes | 236 | 55.3 |
| No | 191 | 44.7 |
| Has your partner been asked to take an HIV test? | | |
| Yes | 342 | 80.1 |
| No | 85 | 19.9 |
| Have you discussed PMTCT health care for your baby with your partner? | | |
| Yes | 255 | 59.7 |
| No | 172 | 40.3 |
| Have you discussed the place of delivery for the baby with your partner? | | |
| Yes | 244 | 57.1 |
| No | 183 | 42.9 |
| Does your partner support your PMTCT visits financially? | | |
| Yes | 300 | 70.3 |
| No | 127 | 29.7 |
| Does your partner know what happens in the PMTCT clinic? | | |
| Yes | 60 | 14.1 |
| No | 367 | 85.9 |
| Did health professionals inform you to use condoms during the time of your pregnancy? | | |
| Yes | 345 | 80.8 |
| No | 82 | 19.2 |
| Have you ever counseled and tested for HIV together with your partner at a PMTCT clinic? | | |
| Yes | 346 | 81.0 |
| No | 81 | 19.0 |
| Has your partner discussed feeding options for the baby with you? | | |
| Yes | 134 | 31.4 |
| No | 293 | 68.6 |

**Table 3.** Association between male partner involvement and socio-demographics

| Variables | Do you attend PMTCT care visits with your partner? | | $X^2$ | *p*-value |
|---|---|---|---|---|
| | Yes | No | | |
| Age | | | | |
| less than 22 | 12(11.8) | 90(88.2) | | |
| 22-35 | 40(15.6) | 216(84.4) | 1.845 | 0.398 |
| more than 35 | 7(10.1) | 62(89.9) | | |
| Distance | | | | |
| Close | 38(17.6) | 178(82.4) | 5.23 | 0.022* |
| Far | 21(10.0) | 190(90.0) | | |
| Religion | | | | |
| Christianity | 58(14.0) | 359(86.0) | | |
| Islam | 1(14.3) | 6(85.7) | 0.81 | 0.666 |
| Traditionalist | 0(0.0) | 5(100.0) | | |
| Relationship status | | | | |
| Married | 53(13.5) | 341(86.5) | 0.572 | 0.449 |
| Unmarried | 6(18.2) | 27(81.8) | | |
| Ethnicity | | | | |
| Igbo | 58(13.9) | 360(86.1) | | |
| Hausa | 0(0.0) | 6(100.0) | 1.923 | 0.382 |
| Yoruba | 1(33.3) | 2(66.7) | | |
| Employment status | | | | |
| Currently working | 41(13.9) | 255(86.1) | | |
| Not working | 17(13.3) | 111(86.7) | 0.991 | 0.609 |
| Retired | 1(33.3) | 2(66.7) | | |
| Education Level | | | | |
| No formal | 2(1.7) | 119(98.3) | | |
| Primary | 6(4.3) | 135(95.7) | 226.3 | <0.001* |
| Secondary | 8(7.2) | 103(92.8) | | |
| Tertiary | 43(79.6) | 11(20.4) | | |
| Number of Children | | | | |
| None | 5(16.7) | 25(83.3) | | |
| less than 4 | 37(13.7) | 234(86.4) | 0.020 | 0.889 |
| 4 and above | 18(14.2) | 109(85.8) | | |
| Co-habitaion duration | | | | |
| 1-3 | 23(10.5) | 197(89.5) | | |
| 4-6 | 14(19.2) | 59(80.8) | 4.670 | 0.198 |
| 7-9 | 12(15.8) | 64(84.2) | | |
| more than 9 years | 10(17.2) | 48(82.8) | | |
| Husbands Age | | | | |
| Less than 25 | 12(11.9) | 89(88.1) | | |
| 25-40 | 41(15.4) | 225(84.6) | 1.62 | 0.445 |
| More than 40 | 6(10.0) | 54(90.0) | | |
| Husband Education level | | | | |
| No formal | 3(2.5) | 116(97.5) | | |
| Primary | 2(1.5) | 132(98.5) | 306.9 | <0.001* |
| Secondary | 1(0.9) | 110(99.1) | | |
| Tertiary | 53(84.1) | 10(15.9) | | |
| Occupation | | | | |
| Farmer | 15(14.4) | 89(85.6) | | |
| Trader | 15(15.3) | 83(84.7) | | |
| Civil servant | 16(16.0) | 84(84.0) | 2.568 | 0.633 |
| Artisan | 8(8.8) | 83(91.2) | | |
| Unemployed | 5(14.7) | 29(91.2) | | |
| Monthly Income | | | | |
| Less than 18,000 | 25(15.1) | 141(84.9) | 0.352 | 0.553 |
| 18,000 and above | 34(13.0) | 227(87.0) | | |

**Table 4.** Association between male partner involvement and uptake of PMTCT

| Variables | Do you attend PMTCT care visits with your partner? | | $X^2$ | *P value* |
|---|---|---|---|---|
| | Yes | No | | |
| Has your partner been asked to take an HIV test? | | | | |
| Yes | 51(14).9 | 291(85.1) | 1.730 | 0.188 |
| No | 8(9.4) | 77(90.6) | | |
| Have you discussed PMTCT health care for your baby with your partner | | | | |
| Yes | 59(23.) | 196(76.9) | 46.2 | <0.001* |
| No | 0(0.0) | 172(100.0) | | |
| Have you discussed the place of delivery for the baby with your partner | | | | |
| Yes | 59(24.2) | 185(75.8) | 51.3 | <0.001* |
| No | 0(0.0) | 183(100.) | | |
| Does your partner support your PMTCT visits financially | | | | |
| Yes | 38(12.7) | 262(87.3) | 1.121 | 0.290 |
| No | 21(16.5) | 106(83.5) | | |
| Does your partner know what happens in the PMTCT clinic? | | | | |
| Yes | 11(18.3) | 49(81.7) | 1.196 | 0.274 |
| No | 48(13.1) | 319(86.9) | | |
| Did health professionals inform you to use condoms during the time of your pregnancy? | | | | |
| Yes | 43(12.5) | 302(87.5) | 2.764 | 0.096 |
| No | 16(19.5) | 66(80.5) | | |
| Have you ever counseled and tested for HIV together with your partner at a PMTCT clinic? | | | | |
| Yes | 52(15.0) | 294(85.0) | 2.248 | 0.134 |
| No | 7(8.6) | 74(91.4) | | |
| Has your partner discussed feeding options for the baby with you? | | | | |
| Yes | 59(44.0) | 75(56.0) | 149.7 | <0.001* |
| No | 0(0.0) | 293(100.0) | | |

**Table 5.** Effects of male partner involvement in PMTCT of HIV/AIDS

| Variables | NO | Percentage |
|---|---|---|
| Have your husband tested for HIV? | | |
| Yes | 388 | 90.9 |
| No | 39 | 9.1 |
| What is his HIV status? | | |
| Positive | 346 | 81.0 |
| Negative | 81 | 19.0 |
| Does your husband drink Alcohol? | | |
| Yes | 168 | 39.3 |
| No | 259 | 60.7 |
| Are you currently using condoms for PMTCT? | | |
| Yes | 72 | 16.9 |
| No | 355 | 83.1 |
| Did you use a condom in your last sexual intercourse? | | |
| Yes | 35 | 8.2 |
| No | 392 | 91.8 |
| Did you discuss future pregnancy with your partner? | | |
| Yes | 267 | 62.5 |
| No | 160 | 37.5 |
| Are you planning to have more children? | | |
| Yes | 126 | 29.5 |
| No | 301 | 70.5 |
| Did your health care provider advise you whether to have a baby or not | | |
| Yes | 272 | 63.7 |
| No | 155 | 36.3 |
| Does your husband know PMTCT of HIV/AIDS? | | |
| Yes | 354 | 82.9 |
| No | 73 | 17.1 |

**Discussion**

The majority 256 (60%) of the respondents were aged between ages 22-25 years (as of the last birthday), with a mean age of 27.48 ±6.937. The level of male partner involvement in this study was poor, as a low proportion (13.8%) of the respondents had male partners who attended PMTCT visits with them. Only about 3.3% attended the visits more than twice. This finding is not harmonious with the study carried out in Jos which recorded a very high prevalence (80.5%) of male partner involvement in activities of PMTCT [21]. Similarly, a study conducted in South Africa showed higher levels of male partner involvement where 44.1% of male partners reported involvement in most or all specified male partner involvement activities [22]. This could also be attributed to the relatively higher level of education and awareness as well as lower levels of HIV stigma in South Africa as compared to other parts of Africa.

Several factors have been shown to influence male partner involvement in PMTCT. Women who knew PMTCT were found to have more uptake of PMTCT, also the more educated folks among them were found to have male partners that were more likely to be involved in PMTCT. This was not limited to the educational level of the woman, but the man as well. Other factors including residence were found to be a predisposing factor towards male partners' involvement. Those whose residences were closer to the facility in Nnewi were more likely to have their male partners involved in PMTCT than those who lived in urban areas (outside the town). The findings of these studies are similar to the studies conducted by other researchers that showed that most males do not participate in PMTCT programs because they do not realize their importance due to inadequate knowledge about the programs, while in the community which poses negative perceptions towards the programs [23, 24, 25]. Well-informed men will be more likely to participate positively in the decision-making for the well-being of the couple, and women with supportive partners will be more motivated to undergo HIV testing, return for the HIV test result, and to discuss the HIV results with their partner, and the well-informed couple may be more likely to adopt a low-risk behavior and increase mutual support, regardless of the test result [26]. This finding is in line with the outcome of this study as the majority of the respondents had discussed PMTCT healthcare, place of delivery, and feeding options for the baby respectively with their partners. Similarly, in another study; older age, higher educational attainment, being employed, cohabiting, and monogamous marriages were found to be positively associated with male partner involvement [27]. On the contrary, in this study, age, employment status, and cohabitation were not statistically related to male partner involvement.

Male participation in PMTCT may have several impacts in PMTCT. In this study, the men being aware of their female counterpart's status stimulated them to encourage and support their activities. There was also less incidence of abuse among respondents whose male partners participated in PMTCT when compared to those who did not. This finding is similar to an interventional and observational study on male partner involvement in PMTCT conducted in sub-Saharan Africa that recorded a great association between reported gender-based violence and male partner involvement; as data showed that those mothers whose partners are involved in PMTCT are 98% less likely to be involved in violence than those whose partners are not involved into PMTCT. This is most likely due to the sense of belonging, responsibility, and involvement the male partner receives during the PMTCT visits [28].

The Prevention of Mother-to-Child Transmission of HIV (PMTCT) is an essential health intervention aimed at preventing the transmission of HIV from an HIV-positive mother to her child during pregnancy, delivery, or breastfeeding. Male partner involvement is crucial in ensuring the success of PMTCT programs. However, poor male partner participation is a significant challenge in many PMTCT programs, especially in low-resource settings. The focus group discussion carried out in this study was based on the findings from the observational Checklist used among male partners of women who accessed PMTCT care at Nnamdi Azikiwe University Teaching Hospital and gave their consent. It aimed to determine the level, factors, and effects of male partner involvement in PMTCT compared to their female counterparts' reports.

The focus group discussion comprised 20 participants drawn from PMTCT visits who are male partners of HIV-positive women attending PMTCT at Nnamdi Azikiwe University Teaching Hospital, Nnewi. Out of 59 women who attended

PMTCT with their male partners, only 20 (33.90%) agreed and gave consent to participate in the focused group discussion. Of the 20 participants who completed the questionnaire, 5 (25%) reported that they always attend PMTCT care visits with their female partners, while 6 (30%) reported that they sometimes attend. The remaining 9 (45%) reported that they never attended. These findings are in harmony with the outcome of **Nkhoma et al.** [29]. It also corresponds with their female partners' reports. It also showed that male partner participation in PMTCT care visits was relatively low among the participants.

In terms of factors that may influence male partner involvement in PMTCT, the Findings from this study showed that a significant number of male participants (6 out of 20, or 30%) reported that they did not know their partner's PMTCT appointment time, while 6 (30%) also stated that did not know what happens in the PMTCT clinic. This suggests that a lack of knowledge about PMTCT may be a barrier to male partner involvement in this study, and it is in tandem with other work carried out [26].

In terms of communication; a significant number of participants (9 out of 20, or 45%) reported that they had not discussed PMTCT healthcare services for their baby with their partner, while 8 (40%) had not discussed feeding options for the baby. This suggests that a lack of communication between partners may be a barrier to male partner involvement and corresponds to the findings of other works [25].

Concerning stigma and fear of HIV testing; although all participants had been asked to take an HIV test before, 2 (10%) reported that they had never been tested. This suggests that stigma and fear of HIV testing may discourage some male partners from getting tested and becoming involved in PMTCT.

Substance abuse was also one of the factors highlighted. It was observed that a significant number of participants (8 out of 20, or 40%) reported drinking alcohol, and 6 (30%) reported not using condoms. One of the participants went further to state that there is no need to use condoms since my wife and I are already infected with HIV. This suggests that substance abuse may be a barrier to male partner involvement in PMTCT.

Poor male partner involvement in PMTCT can have several negative effects; which may lead to poor health outcomes, increased risk of HIV transmission, and gender-based violence. In this study, several participants (7 out of 20, or 35%) reported that they had not discussed the place of delivery for the baby with their partner. This implies that poor male partner involvement in PMTCT may lead to poor health outcomes for the baby.

Several participants (4 out of 20, or 20%) reported that they did not use condoms in their last sexual intercourse. This indicates that poor male partner involvement in PMTCT may increase the risk of HIV transmission between partners. One participant reported that they maltreated or abused their partner at home because of her HIV status, with the most common form of abuse being neglect. This suggests that poor male partner involvement in PMTCT may increase the risk of gender-based violence against women.

Male partner involvement in PMTCT is critical for the success of PMTCT programs, yet it remains a challenge in many settings. This study has identified several factors that influence male partner involvement in PMTCT, including poor health outcomes for the baby, increased risk of HIV transmission, and gender-based violence. These findings suggest the need for interventions that address these barriers and promote male partner involvement in PMTCT to improve the quality of care and support for pregnant women living with HIV/AIDS.

## Conclusion

In a society that strives to reduce the incidence of HIV, PMTCT plays a key role. PMTCT is better achieved when there is cooperation between both male and female partners. This study shows that the level of male partner involvement and uptake of PMTCT is still on the low side. This could be attributed to the level of education of both parties involved, the proximity to the health center, relationship status, and other salient factors.

The outcome of this study also highlighted that male participation in PMTCT of HIV/AIDS will increase the uptake of PMTCT, as partners will be more involved in decision-making processes regarding their children; such as place of birth, feeding options, and use of condoms. Participation in PMTCT will also lower the incidence of abuse faced by HIV-positive women.

It is recommended that continuing health education to the public on the importance of male participation and cooperation in PMTCT of HIV/AIDS should be made a priority.

**References**

1- **World Health Organization (2019).** HIV/AIDS. Available from http://www.who.int/mediacentre/factsheets/fs360/en/. Accessed November 25, 2022.

2- **Dutt S, Ezeama C.** The use of option B+ in the prevention of mother-to-child transmission of HIV infection programs. Journal of HIV and Human Reproduction 2013; 1(2): 84. https://doi.org/10.4103/2321-9157.126637.

3- **Mandelbrot L, Tubiana R, Le Chenadec J, Dollfus C, Faye A, Pannier E, et al.** No perinatal HIV-1 transmission from women with effective antiretroviral therapy starting before conception. Clinical Infectious Diseases 2015; 61(11): 1715-1725. https://doi.org/10.1093/cid/civ578.

4- S**chouten EJ, Jahn A, Midiani D, Makombe SD, Mnthambala A, Chirwa Z, et al.** Prevention of mother-to-child transmission of HIV and the health-related Millennium Development Goals: Time for a public health approach. The Lancet 2011; 378(9787): 282–284. https://doi.org/10.1016/S0140-6736(10)62303-3.

5- **World Health Organization (2015).** Mother-to-child transmission of HIV. Retrieved from http://www.who.int/hiv/topics/mtct/en/index.html. Accessed November 25, 2023.

6- **Alemayehu M, Etana B, Fisseha G, Haileselassie K, Yebyo H, Berhe Y, et al.** The role of male partner involvement on mother's adherence to PMTCT care and support, Tigray, Northern Ethiopia. Family Medicine & Medical Science Research 2014; 3(4): 1-7. https://doi.org/10.4172/2327-4972.1000137.

7- **Kalembo FW, Yukai D, Zgambo M, Jun Q.** Male partner involvement in prevention of mother-to-child transmission of HIV in Sub-Saharan Africa: Successes, challenges, and way forward. Open Journal of Preventive Medicine 2012; 02(01): 35–42. https://doi.org/10.4236/ojpm.2012.21006.

8- **Kalembo FW, Zgambo M, Mulaga AN, Yukai D, Ahmed NI.** Association between male partner involvement and the uptake of prevention of mother-to-child transmission of HIV (PMTCT) interventions in Mwanza district, Malawi: a retrospective cohort study. PloS one 2013; 8(6): 66517. https://doi.org/10.1371/journal.pone.0066517.

9- **Kanguya T, Koyuncu A, Sharma A, Kusanathan T, Mubanga M, Chi BH, et al.** Identifying barriers to ART initiation and adherence: An exploratory qualitative study on PMTCT in Zambia. PLOS ONE 2022; 17(1): 262392. https://doi.org/10.1371/-journal.pone.0262392

10- **Wesevich A, Mtande T, Saidi F, Cromwell EA, Tweya H, Hosseinipour MC, et al.** Role of male partner involvement in ART retention and adherence in Malawi's Option B+ program. Aids Care-psychological and Socio-medical Aspects of AIDS/HIV 2017; 29(11): 1417–1425. https://doi.org/10.1080/-09540121.2017.1308464.

11- **Dunlap J, Foderingham N, Bussell S, Wester CW, Audet CM, Aliyu MH.** Male involvement for the Prevention of Mother-to-Child HIV transmission: a brief review of initiatives in East, West, and Central Africa. Current HIV/AIDS Reports 2014; 11(2): 109–118. https://doi.org/10.1007/s11904-014-0200-5.

12- **Abajobir A, 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. Journal of AIDS and Clinical Research 2013; 4(6): 1 – 7. https:// doi.org/ 10.4172/2155-6113.1000215.

13-**Addis AA, Mesfin WK, Yonas YA, Zemenu MS, Markos KA, Ambachew WH.** Factors that affect male partner involvement in PMTCT services in Africa: a review literature. Science Journal of Public Health 2015; 3(4):460. https://doi.org/ 10.11648/ j.sjph. 20150304.13.

14-**Melis T, Fikadu Y.** Magnitude and determinants of male partner involvement in PMTCT service utilization of pregnant women attending public health facilities of Ethiopia, 2021: a systematic review and meta-analysis. AIDS Research and Therapy 2022; 19: 5. https://doi.org/10.1186/s12981-022-00436-5.

15-**Akarro R, Deonisia M, Sichona FJ.** An evaluation of male involvement in the program for PMTCT of HIV/AIDS: A case study of Ilala Municipality in Dar es Salaam, Tanzania. 2011; 2, 1.

16-**Osman RJ, Unkels R, Aliyu UA, Musa HK, Mathew O.** Barriers to male involvement in uptake of prevention-of-mother-to-child-transmission (PMTCT) of HIV in Sub-Saharan Africa. IOSR Journal of Nursing and Health Science 2014; 3(5): 01–07. https://doi.org/10.9790/1959-03510107.

17-**Elias M, Mmbaga EJ, Mohamed AA, Kishimba RS.** Male partner involvement in the prevention of mother-to-child transmission of HIV infection in Mwanza Region, Tanzania. The Pan African Medical Journal 2017; 27: 90. https://doi.org/-10.11604/ pamj. 2017.27.90.8901.

18-**Morfaw F, Mbuagbaw L, Thabane L, Rodrigues C, Wunderlich AP, Nana P, Kunda J.** Male involvement in prevention programs of mother to child transmission of HIV: a systematic review to identify barriers and facilitators. Systematic Reviews 2013; 2:5. https://doi.org/10.1186/2046-4053-2-5.

19-**Obioma CF, Jeremiah ZA, Okamgba O, Obeagu EI.** Haemorheologic and fibrinolytic activity in HIV seropositive subjects at Nnamdi Azikiwe Teaching Hospital, (NAUTH), Nnewi. European Journal of Pharmaceutical and Medical Research 2017; 4(8):159-164.

20-**Nwabueze SA, Joe-Ikechebelu NN, Modebe IA, Adogu PO, Ele PU.** Relationship between peripheral neuropathy and antiretroviral drugs used in management of adult human immunodeficiency virus patients. Journal of HIV Human Reproduction 2013; 1: 36 – 40.

21-**Oyeocha HC, Halima MS, Emeka UE, Rosemary KO, Cordelia YA, Vivian Y.** Assessment of male partner involvement in prevention of mother-to-child transmission of HIV amongst HIV-positive women in Jos, Nigeria. Highland Medical Research Journal 2020;20(2):1-6.

22-**Matseke MG, Ruiter RAC, Rodriguez VJ, Peltzer K, Setswe G, Sifunda S.** Factors associated with male partner involvement in programs for the prevention of mother-to-child transmission of HIV in rural South Africa. International Journal of Environmental Research and Public Health 2017; 14(11): 1333. https://doi.org/10.3390/ijerph14111333.

23-**Abuhay Y, Abebe L, Fentahun N.** Male involvement in prevention of mother-to-child transmission of HIV and associated factors among males in Addis Ababa, Ethiopia. American Journal of Health Research 2014; 2(6): 338 – 343. https://doi.org/ 10.11648/ j.ajhr.20140206.13.

24-**Amano A, Musa A.** Male involvement in PMTCT and associated factors among men

whose wives had ANC visits 12 months before the study in Gondar town, Northwest Ethiopia, December 2014. The Pan African Medical Journal 2016; 24: 239. https:-//doi.org/ 10.11604/pamj.2016.24.239.8460.

25-**Roudsari RL, Sharifi F, Goudarzi F.** Barriers to the participation of men in reproductive health care: a systematic review and meta-synthesis. BMC Public Health 2023; 23: 818. https://doi.org/10.1186/s12889-023-15692-x.

26-**Ditekemena J, Koole O, Engmann C, Matendo R, Tshefu A, Ryder R. et al.** Determinants of male involvement in maternal and child health services in sub-Saharan Africa: a review. Reproductive Health 2012; 9: 32. https://doi.org/10.1186/1742-4755-9-32.

27-**International Business Machine Corporation (2013).** IBM SPSS Statistics for Windows, version 22.0. Armonk, NY: IBM Corporation.

28-**Takah NF, Kennedy ITR, Johnman C.** The impact of approaches in improving male partner involvement in the prevention of mother-to-child transmission of HIV on the uptake of maternal antiretroviral therapy among HIV-seropositive pregnant women in sub-Saharan Africa: a systematic review and meta-analysis. BMJ Open 2017; 7(11): 018207. https://doi.org/10.1136/bmjopen-2017-018207.

29-**Nkhoma N, Nyondo-Mipando LA, Makanjee C, Myburgh ND, Nyasulu PS.** 'What will I be doing there among so many women?': perceptions on male support in prevention of mother to child Services in Lilongwe, Malawi. Global Pediatric Health 2019; 6, p.2333794X1986544. https://doi.org/ 10.1177/2333794x19865442.