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Male Participation in Prevention Programs of Mother to Child Transmission of Hiv in Enugu, South Eastern Nigeria: A Cross Sectional Survey

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Abstract Mother to child transmission of HIV (MTCT) accounts for over 95% of all HIV infection in the children globally. This study evaluated the extent of male participation in the prevention programs of mother to child transmission (PMTCT) of HIV in Enugu, South Eastern Nigeria. This was a cross sectional study of married men whose spouses were sero-positive for HIV infection and were attending antenatal care at University of Nigeria Teaching Hospital Ituku/ozalla, Enugu. The extent of male participation in prevention programs of mother to child transmission of HIV was evaluated based on 10structured questions. The result showed that 51.7% of the men were aware of their own HIV status while 53.4% were aware of their wife's HIV status and that 41.4% of the men were aware of the benefits of PMTCT program. Only 3.4% of the men interviewed have ever attended ANC/ PMTCT clinic with their spouses. Majority of the respondents 94.8% provided financial support to their spouses to attend ANC/PMTCT clinic but only 24.1% of the participants admitted taking time to find out what goes on in the PMTCT clinic. Only 22.4% of the respondents discuss information/interventions offered at the PMTCT clinic with their spouses while 39.7% of the men admitted that they encouraged their spouses to take their PMTCT drugs. The average involvement index for the men was 19.8%. This study demonstrated a low level of male participation index in the PMTCT program. Given the positive influence male participation has on the acceptance of perinatal interventions, there is urgent need to improve male participation in PMTCT services. Also, promotion of couple VCT outside antenatal settings in male friendly and accessible settings should be given priority

Keywords: *Enugu, male participation, mother to child transmission, HIV, southeast*

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1. Introduction

Mother to child transmission of HIV (MTCT) accounts for over 95% of all HIV infection in the children globally. [1] This transmission can occur during the antenatal period, labor and delivery or during breastfeeding [1].

Without any form of interventions, the risk of such transmission is 15-30% in non breast feeding infected mothers [2]. The risk of MTCT can be reduced to less than 2% by interventions that included antiretroviral (ARV) prophylaxis given to women in pregnancy and labor with other obstetrical interventions [3].

The rate of mother to child transmission of HIV infection is unacceptably high in sub-Saharan Africa compared to what is obtainable in developed part of the world possibly due to poor uptake of PMTCT programs in our environment [4]. By the end of 2010, it was estimated that there are 3.1 million Nigerians living with HIV, with 126,000 new infection in adults and 154,920 in children, largely acquired through maternal to child transmission(MTCT). [5] The epidemic in Nigeria has extended beyond the commonly classified high risk groups and is now common in the general population with a national point prevalence of 5.0% in 2003 and a drop to 4.4% in 2005.5 Furthermore, according to the most recent National HIV survey, the HIV/AIDS prevalence of the south eastern region of the country was 4.7% while that of Enugu state was 6.5% [6].

Available evidence suggests that male participation in the PMTCT services during the antenatal care of their spouses enhances use of available interventions for prevention of HIV transmission from mother to child [7,8,9,10]. For most women to even book for antenatal care they need approval and financial support from their husband and this is even more so for the women to effectively carry out PMTCT services to reduce the risk of transmission to the child [11].

It is clear, that the importance of PMTCT programs in the reduction of mother to child transmission of HIV cannot be over emphasized and for the program to be effective it requires the cooperation and the full support of the husband especially in our environment. Similar to

other low resource countries of the world facing the integration of PMTCT into routine pregnancy and infant care, attempt in Nigeria to improve PMTCT and reduce transmission to less than 5% have fallen far short of the United Nations goal of 50% reduction in pediatrics HIV by 80 % coverage of mothers [12,13]. Evidence has shown that there are high dropout rates in PMTCT services and that increased male involvement and couple joint HIV counseling/ testing during antenatal care seem crucial for improving PMTCT outcomes. [14,15]

Currently, the extent of male participation in the prevention programs for mother to child transmission of HIV in our centre is not known. Hence this study was conducted to evaluate the extent of male participation in the prevention programs of mother to child transmission of HIV in Enugu.

2. Materials and Methods

This study was a cross sectional survey of the spouses of HIV sero-positive pregnant women who were attending ANC at University of Nigeria Teaching Hospital Ituku-Ozalla, Enugu from 1st January to 30th September 2021. Enugu state is one of the five states in southeast geopolitical zone of Nigeria.

The study was carried out at the Prevention of Mother to Child Transmission (PMTCT) clinic of the University of Nigeria Teaching Hospital (UNTH), Ituku-Ozalla, and Enugu. The hospital is a federal tertiary health care institution. The UNTH Enugu is one of the few centers in the South- eastern region of the country designated by the Federal Government for PMTCT services. The PMTCT clinic of the hospital which started in February 2002 is fed by the antenatal clinic following voluntary counseling and testing, as well as referrals from other health institutions. [5,6] The PMTCT clinic holds every Wednesday adjacent to the antenatal clinic of the hospital. It is manned by medical doctors and other health staff. Every individual attending the antenatal clinic receives individual counseling then, she is sent to the laboratory for HIV testing using a coded laboratory form as part of antenatal investigation. Afterwards, individual post-test counseling is carried out irrespective of HIV sero-status. Then, the HIV- positive pregnant women are referred to the PMTCT clinic. The participants for the study were males whose spouses were sero-positive for HIV and were receiving antenatal care at UNTH Enugu during the period of the study. The eligibility criteria for the proposed study;

Spouses of HIV positive mothers currently attending antenatal clinic of the hospital. The exclusion criteria for the proposed study include, Refusal of the woman or her spouse to give consent and Failure of the spouse to come to the clinic after he has been requested to come either through the wife or phone call.

The ethical clearance was sought and obtained from the Health Ethics Research Committee of the study centre. The study commenced after approval by the Health Ethics Committee of the hospital. Participation in this study was voluntary, participants were not induced to participate through offer of material items or money and participants will be permitted to withdraw from the study at any point in time.

There was individual counseling of each participant recruited for the study, after which his consent was obtained. This initial counseling centered only on the need for research in the health sector so as to improve patient care. It also highlighted that the information being sought will be treated with utmost confidentiality and was used strictly for research purposes.

The male participants were contacted through their spouses or via phone call after the spouse has given consent. The aim of the study was properly explained to each pregnant HIV sero-positive woman attending ANC in the study centre and her informed consent obtained, after which she was requested to invite her husband in her next ANC visit or provide her husband's phone number through which he can be contacted.

At presentation the male participants were counseled and informed consent obtained as highlighted above, they were interviewed and the following information were obtained from them; age, education level, religion, place of residence, occupation, and tribe.

They were also requested to answer 10 structured questions; (1)Are you aware of your HIV status, (2)Are you aware of your wife's HIV status, (3)Are you aware of PMTCT program, (4)Are you aware of the benefits of PMTCT program, (5)Have your spouse received PMTCT services in the past, (6)Have you ever attended PMTCT clinic with your partner, (7)Do you take time to find out what goes on in PMTCT clinic, (8)Do you provide financial support for your spouse to attend PMTCT clinic, (9)Do you discuss with your spouse information/interventions given at PMTCT clinic and (10) Do you encourage your spouse to take her PMTCT drugs.

Each participant was scored based on the answers provided for the structured questions. Each question has yes or no options, as outlined in the questionnaire. All the information obtained was entered in a questionnaire which has been pre-tested in a similar study population.

The spouse of any HIV positive pregnant woman attending antenatal clinic at the study site, during the period of the study and gave consent to participate was recruited until the required sample size was obtained

All data collected from the study was keyed into the *Statistical Package for Social Science (SPSS) computer software version 13.0 for windows.* The variables were measured using mean, mode, median and interquartile range.

After collation, the data was analyzed by descriptive and inferential statistics at 95% confidence. The results were presented in tables and charts.

3. Results

During the nine months period of the study, a total of 7,632 women (first visit and revisit) attended the antenatal clinic of UNTH Ituku/ozalla. Of the 7632 women that attended antenatal clinic, 298 (3.9%) tested HIV positive and were enrolled into PMTCT program of the hospital. Of the 298 pregnant women that tested positive for HIV, 290(97.3%) gave consent to participate in the study. Two hundred and eighty five (98.3%) respondents (spouses of HIV positive pregnant women) completed the study and were analyzed.

Of the 285 participants included in the analysis, 147

(51.6%) were in the 25- 34 age group. The median age was 33 years. Majority of the participants were of the Ibo tribe 241(84.6%). Two hundred and thirty six (82.8%) out of the 285 participants were of Christian religion. Most of the respondents 187 (65.6%) dwell in rural area. Twenty participants representing 7.0% had no formal education while 152(53.3%) participants had primary education as their highest level of education. Eighty four persons representing 29.5% of the participants were traders while 69(24.2%) participants were farmers. A detail of the basic characteristics of the participants is as shown in Table 1.

The level of male participation in ANC/PMTCT program was evaluated using the variables as shown in Table 2. The result showed that 147 men (51.6%) out of 285 participants were aware of their HIV status while 152 men (53.3%) were aware of their wife's HIV status.

One hundred and fifty two persons (53.3%) out of the 285 respondents were not aware of PMTCT program while 118 men (41.1%) of the 285 participants were aware of the benefits of PMTCT program.

One hundred and fourteen respondents representing 40.0% of the total participants admitted that their spouses have assessed PMTCT program before but only 10 persons (3.5%) out of the 285 men interviewed have ever attended ANC/ PMTCT clinic with their spouses.

Majority of the respondents 270(94.7%) provided financial support to their spouses to attend ANC/PMTCT clinic but only 69 persons representing 24.2% of the total participants admitted taking time to find out what goes on in the PMTCT clinic.

Table 1. Basic characteristics of the participants

Variables	Participants N (%)
Age (years) 19- 24 25- 34 35- 44 45 and above	 39(13.7) 147(51.6) 84(29.5) 15(05.2)
Tribe Ibos Hausa Yoruba Others	 241(84.5) 24(08.6) 15(05.2) 05(01.7)
Religion Christians Muslims Others	 236(82.8) 39(13.7) 10(03.5)
Place of Residence Rural Urban	 187(65.6) 98(34.4)
Highest level of Education Informal Primary Secondary Tertiary	 20(07.0) 152(53.3) 93(32.6) 20(07.0)
Occupation Farmers Professionals Builders Drivers Traders Mechanics Causal Laborers Others	 69(24.1) 24(08.6) 20(07.0) 34(11.9) 84(29.4) 24(08.6) 20(07.0) 10(03.4)

Only 64 participants (22.5%) out of the 285 respondents discuss information/interventions offered at the PMTCT clinic with their spouses but 84 persons (29.5%) out of the 285 persons interviewed admitted that they did encourage their spouses to take their PMTCT drugs. The average involvement index for the men was 34.9%. Details as shown in Table 2.

Table 2. Level of male participation in ANC/PMTCT program

Variables(items)	Participants responses N (%)	
	Yes	No
Awareness of his HIV status	147(51.6)	138(48.4)
Awareness of his wife's HIV status	152(53.3)	133(46.7)
Awareness of PMTCT program	133(46.7)	152(53.3)
Awareness of the benefits of PMTCT program	118(41.4)	167(58.6)
Previous use of PMTCT services by the wife	114(40.0)	171(60.0)
Having ever attended ANC/PMTCT clinic with the partner	10(03.5)	275(96.5)
Taking time to find out what goes on in PMTCT clinic	69(24.2)	216(75.8)
Provision of financial support for wife to attend ANC/PMTCT clinic	270(94.7)	15(05.3)
Discussing with the wife information/interventions given at PMTCT clinic	64(22.5)	221(77.5)
Encouragement of spouse to take her PMTCT drugs	84(29.5)	201(70.5)

4. Discussion

This study carried out to evaluate the extent of male participation in the prevention of mother to child transmission program in Enugu south east Nigeria, it was found that the prevalence of HIV among pregnant women attending antenatal clinic was 3.9%. This figure is slightly higher than the reported national prevalence of HIV among pregnant women of 3.6%. [6] Adult HIV prevalence (ages 15-49) in Nigeria, was estimated at 3.6% in 2009, and the prevalence appears to have stabilized over the past five years[6].HIV prevalence among pregnant women of 3.6%,is comparable to the general adult population[6] The reason for the disparity may be due to the fact that UNTH is a referral center, thus most cases of HIV in pregnancy are referred to UNTH from peripheral centers.

Result of the study found that 51.6% of the participants (husbands of HIV sero positive women)

Were aware of their HIV status while 48.4% were not aware of their HIV status. Awareness of one's HIV status is the first step in prevention of spread of HIV infection and more importantly during pregnancy. Male awareness of their HIV status is also essential due to a related issue, the disturbingly high rate of HIV sero-conversion (3%) during pregnancy. This suggests the continuation of unprotected high risk sex during the middle to latter stages of pregnancy may go undetected for purpose of PMTCT unless women are re-tested just prior to delivery [10]. Again, male awareness ones HIV status may influence his involvement in the antenatal /HCT process which may led to reduce risk of HIV exposure during this critical period. Most of those who did not know their HIV status expressed fear and shame of being HIV positive if the result turn out positive.

It was found that 53.3% of the males were aware of their wife's HIV status. Awareness of spouses HIV status is very essential in PMTCT. It requires that both couple should be counseled and tested for HIV. Awareness of couples HIV status help to eliminate challenges like

maternal failure to ingest medication or provide it to the infant, risky unprotected sex and interpersonal (e.g., lack of male involvement, intimate partner violence) factors. Prenatal couples counseling and testing improved couples' communication on sexual risks among both HIV positive and negative women [15]. In Kenya, partner participation in HCT and couples counseling increased Nevirapine and formula feeding uptake among women attending antenatal clinics11 and partner attendance to 15% .11 In Rwanda and Zambia, couples HCT led to enhanced follow up among pregnant women at both sites but did not increase Nevirapine uptake. [13] Women were more likely to bring their partner for VCT if they collected their own test results, were living with their partner, had a high monthly income and had expressed at enrolment the intention to share HIV results with their partner. [13]

The study showed that only 41.4% were aware of the benefits of PMTCT program .This finding suggests that the men had low general knowledge concerning HIV and PMTCT program and was in keeping with reports from previous related study elsewhere. [11] The implication of this low level of men awareness of the benefits of PMTCT is that it can led to low adherence to PMTCT process like taking of medications by both mother and infant and adhering to certain life style modifications as most men who are not awareness of the benefits of PMTCT program are not likely to encourage or motivate their spouse.

This study further demonstrated that only 3.5% of the men have ever attended antenatal/PMTCT clinic with their spouses. This finding is relative low compared to 5%, 11% and 15% recorded in previous related studies elsewhere. [13] The differences may due to variation in socio-demographic factors and methodology. The importance of male attendance to PMTCT clinic with their spouse cannot be over emphasized, as this is essential to improving women's uptake of PMTCT services. It is a key contributor. to community acceptance and support of PMTCT. It has been linked to greater uptake of testing, greater uptake of antiretroviral, increased use of condom, increased communication and support for infant feeding choice. A cross-sectional survey in Eastern Uganda of 388 men showed that only 5% of men accompanied their spouses to the antenatal/PMTCT Clinic. [15,18] Prevention programs to increase male involvement in Tanzania, Botswana and Zambia have met with some success e.g., Tanzania found male involvement from 4% to 11%, and Zambia utilized monetary incentive and couples counseling and increased male involvement in PMTCT. [10]

Previous use of PMTCT by the spouse was 40% in this study. Use of PMTCT services is very important in reducing the incidence of mother to child transmission of HIV through various interventions offered in PMTCT clinic like use of antiretroviral drugs by the mother and the infant, counseling on safe sex, infant feeding choice. The low previous use of PMTCT services by the spouse in this study may be attributable to level of male participation in PMTCT program.

The result of the study also showed that only 22.4% of the men take time to find out what goes on in the PMTCT program. This finding is slightly lower than the result of a previous study that showed that 15% of men take time to find out what happen in the PMTCT clinic. [15,17,18,20] Taking time to find out what goes on in the PMTCT program by the men helps to motivate the women in the uptake of PMTCT services, it also help the men to obtain information that help them to continue give emotional support and more encouragement to their wives. Therefore, there is the need for more male participation in PMTCT program to increase the success rate.

It was recorded in this study that 22.5% of men discuss with their spouses about the intervention and information given at the PMTCT program. This value is similar to what was obtained in a previous related study. [15,16,19,20] Effective communication among the couple on the various interventions and information given at the PMTCT program, no doubt plays a key role to ensure that the woman adhere to the various intervention done at the PMTCT program. This equally promote uptake of PMTCT services and also ensure stability among couple. The low level of the men finding time to discuss the various PMTCT services as recorded in this study poses a challenge on why some women will not be able to make adequate use of PMTCT services. This underscores the need for increase male participation in PMTCT program.

This study demonstrated that only 29.2% of men encourage their spouses to take their PMTCT drugs. These finding were similar to results obtained in related previous studies elsewhere.[13] some women do not take their drugs regularly, may be due to stigmatization, side effects of the drugs, or being tired of taking drug or may even forget to take the drugs .In any of the above scenarios, they need moral support and encouragement from their spouse for strict adherence to PMTCT services such as taking their antiretroviral drugs regularly and also ensuring that the infant receive the antiretroviral drugs. Therefore male participation in PMTCT program helps to improve the overall success.

The result of this study showed that 94.7% of the men provided financial support to their spouse to attend ANC and PMTCT program. This is lower than the result of a previous related study in Uganda [15,16]. The difference may be due to variations in socio-demographic factors. However providing only financial support to the spouse to attend ANC/PMTCT services without further participation in the other PMTCT processes does not translate to overall increment in the uptake of PMTCT services. In as much as finance is important, active male participation in PMTCT program is very essential to the improvement in the uptake of PMTCT services, there by leading to reduction in the incidence of mother to child transmission of HIV.

5. Conclusions and Recommendations

This study demonstrated a low level of male participation in the PMTCT program which is similar to results obtained in other African countries. Given the positive influence male participation has on the acceptance of perinatal interventions, a different approach for promoting male participation in PMTCT is urgently required. Within PMTCT programs, counseling should emphasize the advantages of partner participation to encourage women to inform and convince male partners to come for voluntary counseling and testing (VCT).

Also, promotion of couple VCT outside antenatal

settings in male friendly and accessible settings should be given priority.

Statement Section

There was no conflict of interest of any sort.

Ethical clearance was obtained from the ethic committee of University of Nigeria Teaching Hospital Ituku/ozalla Enugu, Nigeria and informed consent obtained from all the participants

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All the Authors contributed to the different aspect of the research.

Okoro OS: conceptualization, data curation, formal analysis, investigation, validation, writing original draft, methodology, writing review

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Asimadu EE: conceptualization, formal analysis, validation, writing original draft, methodology, writing review

Nnagbo JP: conceptualization, data curation, formal analysis, investigation, validation, methodology

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