ORIGINAL ARTICLE

Awareness and Acceptability of Strategies for Preventing Mother to Child Transmission of HIV among Antenatal Clients in Calabar, Nigeria

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ABSTRACT

Background*: Mother to child transmission is the major route through which children below the age of 15 years acquire HIV infection. The most effective way to reduce childhood HIV infection is to prevent the infection in mothers and for already infected mothers use appropriate strategies to prevent transmission to their children. This study was conducted to determine the level of awareness and acceptability of strategies for preventing mother to child transmission of HIV.*

Method*: Exploratory multi-centric descriptive study involving 400 antenatal attendees in Federal, State and a Private health facility was used. Interviewer-administered questionnaire was the tool for data collection.*

Result*: Majority of the respondents (94.7%) were aware of transmission of HIV from an infected mother to her child. Respondents were more aware of the use of antiretroviral drugs in pregnancy (63.2%) than they were of avoiding breastfeeding (58.5%) and Cesarean delivery (22.8%) as strategies for preventing mother to child transmission. They were also more likely to accept the use of antiretroviral drugs (78.2%) than they would avoid breastfeeding (69.0%) and accept Cesarean delivery (38.0%) for preventing mother to child transmission of HIV. High educational status was significantly associated with a positive attitude to these strategies.*

Conclusion*: There is need for more educational programs and social support to bridge the gap between the levels of awareness and acceptability of strategies for preventing mother to child transmission of HIV among the populace.*

Keyword: *Awareness, acceptability, PMTCT, antenatal clients*

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INTRODUCTION

According to UNAIDS, by the beginning of 1998 over 30 million people were infected with HIV, the virus that causes AIDS, and 11.7 million people around the world had already lost their lives to the disease.[1] Vast majority of the people living with HIV/AIDS today are in Sub-Saharan Africa and almost half of them are women.[1] Worldwide, an estimated one million children below 15 years are living with HIV and over 90% of them are in sub-Saharan Africa.[1]

Mother to child transmission is the major route through which children less than 15 years acquire HIV infection.[1] This can take place during pregnancy (intrauterine), during delivery (intra-partum) or through breastfeeding (post-partum). About 14 - 40% of babies of HIV positive mothers acquire this infection through these routes.[2] In the absence of breastfeeding, 25-40% of these infections will occur in-utero while 60-70% will occur during labour and delivery.[3] Among infected mothers who breastfeed, approximately 20-25% of perinatal infections are believed to be associated with intrauterine transmission, 60-70% with intrapartum transmission or very early breastfeeding and 10-15% with later post-partum transmission through breastfeeding.[4]

The burden of mother to child transmission of HIV is much higher in sub-Saharan Africa because of higher levels of hetero-sexual transmission, high female: male ratio, high total fertility rate and high levels of breastfeeding. In Nigeria, 5.0% of women attending antenatal clinics are HIV sero-positive.[5] Comparison of the HIV sero-prevalence among women attending antenatal clinics in Cross-river state showed an increasing trend from 4.1% in 1993 to 12.0% in 2003; and the highest proportion of those affected were young people aged 20-24 years.[5] This is worrisome and suggests a high incidence of childhood infection that may reverse the entire gains achieved from child survival strategies. The cost of care and support for HIV infected children also place a heavy financial burden on families, communities and the health care system.

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The most effective way to reduce the number of children infected with HIV is to prevent mothers from acquiring the infection. However, where mothers are already infected, antiretroviral therapy, safe delivery practices and safe infant feeding options that reduce the risk of mother to child transmission of HIV provide the solution.[1] The Federal Ministry of Health in Nigeria had adopted these strategies with the ultimate goal of reducing mother to child transmission of HIV by 50% by the year 2010.[2] For this program to be effective, women of childbearing age need to be knowledgeable and have positive attitudes toward these strategies. Hence, this study was designed to determine the level of awareness and acceptability of these strategies for the Prevention of Mother to Child Transmission (PMTCT) of HIV among pregnant women attending antenatal clinics in Calabar, Cross-River State an area with high HIV prevalence of 12% in 2003.[5]

METHODOLOGY

Study Area:

This cross-sectional, multi-centric descriptive study was carried out in Calabar, the capital of Cross River State in the south-south geopolitical zone of Nigeria. Calabar is made up of two Local Government Areas (LGAs) and 22 geopolitical wards. The LGAs are similar in socio-cultural and economic activities with political boundaries being their only distinguishing factor. The total population for this area is 418,652 with majority of the workforce being in government employment or involved in small scale business ventures. The area hosts a Teaching Hospital, one General Hospital and several private hospitals.

Subjects And Method:

Subjects were pregnant women attending antenatal clinics under the supervision of obstetricians in Calabar. Stratification of these health facilities based on ownership (Federal, State and Private) was done. The University of Calabar Teaching Hospital and the General Hospital being the only health facilities at the federal and state levels, respectively in Calabar were included in the study. Simple random sampling was used to select one out of the twelve private hospitals supervised by specialists in Calabar. The actual study participants included a total population of 400 pregnant women attending these health facilities on alternate antenatal clinic days over a period of two weeks in October 2005. Informed oral consent was sought and obtained from participants before inclusion in the study.

Data was collected using a semi-structured, interviewer-administered questionnaire that was pretested using pregnant women that came for tetanus toxoid immunization at the maternal and child health clinic of the University of Teaching Hospital. Variables included demographic characteristics, knowledge and attitude about strategies for PMTCT of HIV. Adequacy of knowledge of vertical transmission of HIV and strategies for PMTCT was assessed as excellent if the respondents were able to identify all correct options given; fair if one or two correct options were identified and the rest classified as having poor knowledge.

Field assistants ensured that all retrieved questionnaires were fully and appropriately answered. Data were analyzed using the Epi - Info (version 2002) statistical software package. Frequency tables were generated and chi-square test was used to evaluate statistical association among these variables. Statistical significance was established at $p < 0.05$.

RESULTS

Of a total of 400 antenatal clients who were studied, three hundred and fifty seven (89.2%) were married and 43 (10.8%) were single (Table I). Majority of the respondents 379 (94.7%) were aware of the possibility of transmission of HIV from an infected mother to her child. Overall, 40 (10.0%) of the respondents had excellent knowledge, and 55 (13.7) had poor knowledge of the timing of vertical transmission of HIV (Table II). Respondents were more aware of the use of antiretroviral drugs 253 (63.2%) during pregnancy as a strategy for PMTCT of HIV than they were of the option of avoidance of breastfeeding 234 (58.5%) and operative delivery 91 (22.8%) - Table III. Excellent knowledge of the strategies for PMTCT of HIV was elicited in 51 (12.8%) respondents (Table III). With regards to their attitude towards these preventive strategies, 313 (78.2%) respondents accepted the use of antiretroviral drugs in pregnancy; while 276 (69.0%) and 152 (38.0%) accepted avoidance of breastfeeding and delivery by cesarean section, respectively (Table IV). Level of education was significantly associated with positive attitude towards the use of antiretroviral drugs, avoidance of breastfeeding and acceptance of caesarean section as strategies for prevention of mother to child transmission of HIV ($p = 0.01$, 0.006, 0.005 respectively).

Table I: Demographic Characteristics of Respondents

Demographic Profile		Freq.	%
Age	< 20 years	51	12.7
	20-29	222	55.5
	30-39	127	31.8
Marital Status	Married	357	89.2
	Single	43	10.8
Educational Status	No Formal education	11	2.8
	Primary Education	22	5.5
	Secondary education	155	38.7
	Tertiary Education	212	53.0
Religious Affiliation	Christian Religion	383	95.7
	Moslem	13	3.3
	African Traditional Religion	4	1.0
Total		**400**	**100**

Table II: Awareness by Antenatal Clients of Mother-to-Child Transmission (MTCT) of HIV

Characteristics	Freq (%)
Awareness of possibility of MTCT of HIV	
Yes	379 (94.7)
No	21(5.3)
Awareness of timing of MTCT (n = 379)	
In the womb	197(52.0)
During birth	124(32.7)
During breastfeeding	190(50.1)
Dont know	21(5.5)
Adequacy of knowledge of timing of MTCT	
Excellent	40(10.0)
Fair	305(76.3)
Poor	55(13.7)

Table III: Respondents awareness of strategies for preventing MTCT of HIV

Characteristics	Freq (%)
Awareness of preventive strategies	
Use of antiretroviral drugs in pregnancy	253(63.2)
Delivery by cesarean section	91(22.8)
Avoiding breastfeeding	234(58.5)
Adequacy of knowledge	
Excellent	51(12.8)
Fair	292(73.0)
Poor	57(14.2)

Table IV: Relationship between Respondent's attitudes to Strategies for Preventing Mother to Child Transmission of HIV and their demographic characteristics

Demographic profile	Acceptance of ARV		p-value	Acceptance of no breastfeeding		p-value	Accept of Caesarean Section		p-value
	Yes Freq (%)	No Freq (%)		Yes Freq (%)	No Freq (%)		Yes Freq (%)	No Freq (%)	
Age									
< 20	39 (76.5)	12 (23.5)	0.89	37(72.5)	14(27.5)	0.85	21(41.2)	30(58.8)	0.66
20-29	173(77.9)	49(22.1)		152(68.5)	70(31.5)		79(35.6)	143(64.4)	
30-39	101(79.5)	26(20.5)		88(69.3)	39(30.7)		50(39.4)	77(60.6)	
Marital status			0.95[c]			0.95[c]			0.96[c]
Married	279(78.2)	78(21.8)		246(68.9)	111(31.1)		135(37.8)	222(62.2)	
Single	34(79.1)	9(20.9)		30(69.8)	13(30.2)		17(39.5)	26(60.5)	
Educational status									
No formal education	5(44.5)	6(54.5)	0.01*	6(54.5)	5(44.5)	0.006*	2(18.2)	9(81.8)	0.005*
Primary education	14(63.6)	8(36.4)		9(40.9)	13(59.1)		3(13.6)	19(86.4)	
Secondary education	126(81.3)	29(18.7)		102(65.8)	53(34.2)		51(32.9)	104(67.1)	
Tertiary education	168(79.2)	44(20.8)		157(74.1)	55(25.9)		94(44.3)	118(55.7)	
Total	**313(78.2)**	**87(21.8)**		**276(69.0)**	**124(31.0)**		**152(38.0)**	**248(62.0)**	

* Significant

c Yate's correction for continuity applied

DISCUSSION

This study has shown that majority (94.7%) of the pregnant women were aware of transmission of HIV from an infected mother to her child. However, knowledge of specific aspects of mother to child transmission was varied. Over half of them knew that HIV infection can be transmitted in the womb and during breastfeeding while about a third knew that it can be transmitted during delivery. This is similar to the findings from other parts of the country.[6,7]

Overall knowledge about the strategies for PMTCT of HIV was moderate since 73.0% of respondents had fair knowledge. Specifically, the respondents were more knowledgeable about the use of Antiretroviral (ARV) drugs in pregnancy (63.2%) followed by avoiding breastfeeding (58.5%) and delivery by Cesarean section (22.8%) as strategies for PMTCT of HIV. This high level of knowledge on the use of ARV drugs could be attributed to the intensive PMTCT program being implemented by the Cross-river State Government which emphasizes mostly the use of ARV drugs. Studies have shown that short course regimens that begin as late as the onset of labour [8-10] and possibly ARV chemotherapy given only to the newborn[11] are also effective in reducing the risk of perinatal transmission. Short antepartum / intrapartum ARV regimen given during the last few weeks of pregnancy has been shown to be effective in reducing vertical transmission by 50% in breastfeeding and non-breastfeeding women though the efficacy is lower in breastfeeding women.[8-11] Short course ARV regimens have many advantages for women in developing countries where poverty thrives. This is in terms of feasibility, adherence to therapy and cost. Accessibility to subsidized ARV drugs in the study area was restricted to the Teaching Hospital and General Hospital in Calabar. A major limitation of this situation in the implementation of PMTCT strategies is that free ARV drugs are available only in selected government hospitals in major cities of Nigeria. They are not accessible to the majority of women who will need them, especially those who receive care from private health facilities and primary health centers in rural areas.

A large proportion of the respondents accepted the use of ARV drugs as against avoiding breastfeeding and delivery by Cesarean section. In Nigeria, most mothers would want to breastfeed their newborns because of strong cultural beliefs and practices regarding breastfeeding. Besides the current emphasis by Baby Friendly Hospital Initiative (BFHI) as well as the negative attitude of fathers and cost of formulae feeds are major contributors to these limitations. The choice of feeding should involve an understanding of the risks and benefits of breastfeeding and its alternatives by mothers, their spouses and families. Therefore, healthcare providers need to educate HIV positive women and their spouses about the options of infant feeding practices such as complete avoidance of breastfeeding, early weaning, pasteurization of breast milk and avoiding breastfeeding in the presence of breast abscess or cracked nipples.[2] The women should be encouraged to make an informed decision with support given through care providers.

The low level of acceptance of Cesarean section may be attributed to the cultural aversion to the procedure, the perceived risk of complications and the cost. Elective Cesarean section performed before the onset of labour and rupture of membrane has been reported to decrease the risk of vertical transmission of HIV.[12, 13] However, use of Cesarean delivery must take into account the possibility of higher maternal morbidity [14] as well as the availability of safe operating facilities.

A high educational status was consistently and significantly associated with a more positive attitude to the use of ARV drugs, avoiding breastfeeding and accepting Cesarean delivery as strategies for preventing mother to child transmission of HIV. Educating the female child thus appear to be the best investment the government can make to improve reproductive health, especially in poor resource countries like Nigeria. This study demonstrates the educated woman as being more receptive to the uptake and practice of new evidence based interventions in reproductive health.

CONCLUSION

This study has demonstrated that a gap thus exist between the levels of awareness and acceptability of the strategies for preventing mother to child transmission of HIV among antenatal clinic clients. It also had shown the level of education of mother to be an important predictor for the acceptance of PMTCT strategies. There is the need for more enlightenment programs to improve the present level of acceptability of these strategies, especially alternative infant feeding and acceptance of elective cesarean section, among the populace. Improving general access to subsidized ARV drugs is also a viable option in PMTCT of HIV.

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