

## Knowledge of Prevention of Mother to Child Transmission of HIV/Aids among Women of Child Bearing Age in Secondary Health Facility in Calabar, Cross River State, Nigeria

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**Abstract:** This study was conducted to assess knowledge of prevention of mother-to-child transmission (MTCT) of HIV among women of childbearing age in Secondary Health Facility in Calabar, Cross River State. The specific objectives of the study were to explore general knowledge on prevention of mother-to-child transmission (MTCT), assess knowledge of Caesarean Section as measures for preventing (MTCT), assess knowledge on the use of anti-retroviral drugs as a measure for preventing MTCT of HIV and to assess knowledge of avoidance of breastfeeding as a measure for preventing mother-to-child transmission (MTCT) of HIV among of women of childbearing age in secondary health facility in Calabar. Three research questions and one hypothesis were formulated to guide the study. The research design employed was the survey design. A sample of 250 women of childbearing age were randomly selected from antenatalclinic from August to October 2016, using the simple random sampling technique. The instrument used for data collection was a self administered questionnaire. Data were presented using frequencies, percentages and tables. The hypothesis was tested using the Chi-square ( $X^2$ ) analysis at 0.05 level of significance and 3 degrees of freedom. The findings of the study revealed that: knowledge of the women of childbearing age on prevention of mother-to-child transmission (MTCT) of HIV was 92.5%. knowledge of women of child bearing age and elective Caesarean Section as a measure for preventing mother-to-child-transmission (MTCT) of HIV was 42.2%. Knowledge of women of childbearing age on the use anti-retroviral drugs as a measure for preventing mother-to-child transmission (MTCT) of HIV was 100%, knowledge on avoidance of breastfeeding as a measure for prevention of mother-to-child transmission (MTCT) of HIV was 85.6%. There was a significant relationship between educational level and women's level of knowledge on prevention of mother-to child transmission (MTCT) of HIV. When the  $X^2$  calculated of 58.39% was greater than the  $X^2$  critical of 7.81. Base on the findings, it was recommended that; Health education program should be organized and intensified for women of childbearing age to educate them on the measures for prevention of mother-to-child transmission (MTCT) of HIV.

**Keyword:** Knowledge, prevention, mother-to-child-transmission

### I. Introduction

Mother to child transmission of HIV has attracted attention because of the high mortality rate and healthcare cost associated with it<sup>1</sup>. Between 44,000 and 98,000 individuals die annually in the United States due to preventable medication errors<sup>2</sup>. Everyday there are nearly 1800 new cases of HIV infections in children under 5 years of age, resulting in over 1400 daily death toll among under 5 children as a result of HIV-related illness<sup>3</sup>. The UN declaration established specific goals of reduction of the proportion of infants infected with HIV: reduced 20% by 2005, and reduced 50% by 2010<sup>4</sup>. The Nigerian national goals for PMTCT, as stated in the 2005 National Policy on HIV/AIDs, were to reduce MTCT by 50% by 2010<sup>4</sup>and to increase access to quality, confidential counseling and testing services by 50% that same year<sup>4</sup>. But this goal has not been achieved, as the rate of mother to child transmission of HIV is still alarming.

The high rate of mother to child transmission of HIV has been attributed to many factors including poor knowledge of mothers on prevention of mother to child transmission of HIV<sup>5</sup>. This trend could be prevented if the measures for prevention are adhered to. But mothers of childbearing age seem to have poor knowledge of the strategies for preventing mother child transmission of HIV; hence the problem has continued to prevail at an alarming rate. In Nigeria,<sup>4</sup> study have shown that poor knowledge of women about prevention of mother to child transmission of HIV is the reason why mother to child transmission of HIV has continued to prevail. If the trend continues, it will have devastating effect on the Nigerian healthcare system.

In assessment knowledge, attitudes and practices of prevention of Mother to Child Transmission (PMTCT) of Human Immunodeficiency Virus (HIV) among child bearing women aged between 14-45 years old in Laroo division in Gulu Municipality, Uganda,<sup>6</sup> the Cross sectional and descriptive study design was applied in multistage sampling method with random selection of a parish followed by random selection of a village

within the parish from which a sample of homesteads was randomly selected. The results of the study revealed that 165 (79.3%) mother had adequate knowledge about various PMTCT methods. Out of these, only 21(13%) knew of elective caesarean section as method of preventing mother to child transmission (PMTCT) of Human Immunodeficiency Virus (HIV).

<sup>7</sup>Evaluate the awareness and knowledge of mother-to-child transmission of HIV and its prevention among pregnant women attending the antenatal clinic of a federal medical center in Nigeria. Data was collected using questionnaires and interview. Results revealed that all respondents were aware of HIV/AIDS, but only 68% were aware of mother-to-child transmission. Also, even though vaginal delivery and breastfeeding were identified as routes of transmission from mother to child by 38% and 52% of respondents, caesarean section was believed to be a route of transmission by 43% of respondents, but only 3% identified caesarean section as a method of prevention of mother-to-child transmission.

Similarly, <sup>8,9</sup>conducted a study to ascertain attitude to voluntary counseling and testing for HIV among pregnant women in a rural South-West Uganda as a way of preventing mother to child transmission. The result revealed that pregnant women were generally aware that HIV can be transmitted from mother to child during delivery by blood contact. However, knowledge about cesarean section as a measure to prevent mother to child transmission was poor.

In assessment of knowledge, attitudes and practices of Prevention of Mother to Child Transmission (PMTCT) of Human Immunodeficiency Virus (HIV) among child bearing women aged between 15- 45 years old in Kenya<sup>10</sup>. The Cross-sectional and Descriptive study design was applied in multistage sampling method with random selection of a parish followed by random selection of participants. Questionnaires were administered to a total of 208 respondents who registered and were interviewed between the February to march 2011. The results of the study revealed that 165 (79.3%) mothers had adequate knowledge about various PMTCT methods. Out of these, 50(30%) knew about exclusive breast feeding, while another 50(30%) use of ART.

In an investigation of the level of awareness and knowledge of mother-to-child transmission of HIV and its prevention among pregnant women attending the antenatal clinics in South Central from February 2005 to March 2006 in China<sup>11</sup>, it was observed that all the 2,390 pregnant women included in the study were aware of HIV/AIDS, 91 were aware that HIV/AIDS can coexist with pregnancy, but only 64% had heard about mother-to-child transmission. It was revealed that 85%, 60% and 20% of respondents, respectively identified transplacental route, vaginal delivery and breastfeeding as routes of transmission of HIV from mother to child. Knowledge about breastfeeding as a measure for preventing mother- to-child transmission (MTCT) of HIV was poor.

An exploration of knowledge, attitudes and practices of Prevention of Mother-to-Child Transmission (PMTCT) South Africa <sup>12&13</sup> on Immunodeficiency Virus (HIV) among child bearing women aged between 15- 45 years old in Laroo division in Gulu municipality, Uganda. The Cross-sectional and Descriptive study design was applied in multistage sampling method with random selection of respondents. Questionnaires were administered to a total of 118 respondents who registered and were interviewed between the period of February to March 2012. The result of the study revealed that 165 (79.3%) mothers had good knowledge about various PMTCT methods. Out of these,50(30%) use of ART, 45(27%) knew about replacement feedings and only 21(13%) knew of caesarean section as method of PMTCT. Cross River State is rated as one of the states in Nigeria with high incidence of HIV/AIDs. In this study area, some pregnant women were tested positive to HIV/AIDs<sup>14</sup>. It is against this backdrop that his study was carried out to assess the knowledge of prevention of mother to child transmission of HIV/AIDs among women of childbearing age and to educate them on the strategies for prevention of mother to child transmission (MTCT) of HIV.

## **II. Materials and methods**

**Design:** Survey research design was adopted.

**Setting:** The setting of the study was a secondary health facility in Calabar. It was founded in 1991. The hospital renders surgical medical, maternal and child health services, laboratory and radiography services.

**Participant:** From the target population of 665 women of child bearing age that patronized the hospital between August-October, 2016. Simple random sampling technique was used to select 250 women that were willing to participate in the study.

**Instrument for data collection:** A self developed structured questionnaire was used. The reliability coefficient of 0.79 was gotten using Cronbach Alpha reliability test.

**Procedure for Analysis:** Data collected were analyzed using frequencies and percentages. The hypothesis was tested for significance at 0.05 level using the chi-square test analysis.

**Human right and ethical consideration:** The subjects were chosen according to criteria. Informed consent was obtained to participate in the study. Thereafter, the purpose of the study was explained to all participants and their consent obtained. Participation was voluntary.

### III. Results

**Table 1:** Knowledge of women of childbearing age on prevention of mother-to-child transmission (MTCT) of HIV

Questions	Yes		No		Total
	Freq.	%	Freq.	%	
Do you know about the disease condition called HIV?	250	100.0	0	0.0	250
Are you aware that HIV can be transmitted from a mother to her unborn child?	250	100.0	0	0.0	250
Have you heard about mother-to-child transmission (MTCT) of HIV?	217	90.8	33	9.2	250
Mother-to-child transmission (HTCT) of HIV is the transmission of HIV from an infected mother to her unborn child?	208	83.2	42	16.8	250

The result in Table 1 revealed that all the 250 (100%) respondents knew about the disease condition called HIV and that it can be transmitted from a mother to her unborn child. Majority, 217 (90.8%) of the respondents have heard about mother-to-child transmission (MTCT) of HIV, while 33 (9.2%) have not. Also, majority, 208 (90.8%) of the respondents knew what mother-to-child transmission (MTCT) of HIV is all, but 42 (16.8%) did not know.

**Table 2:** Knowledge of women of childbearing age on elective cesarean section as a measure for prevention of mother-to-child transmission (MTCT) of HIV

Questions	Yes		No		Total
	Freq.	%	Freq.	%	
Knew that HIV can be transmitted from a mother to her child during vaginal delivery	172	68.8	78	31.2	250
Aware that a caesarean section can prevent mother-to-child transmission (MTCT) of HIV	112	44.8	138	55.2	250
Knew that pregnant women should go for an elective caesarean section in order to prevent mother-to-child transmission (MTCT) of HIV.	85	34.0	165	66.0	250

The result in Table 2 revealed that 172 (68.8%) respondents knew that HIV can be transmitted from a mother to her child during vaginal delivery, but 78 (31.2%) did not know. 112 (44.8%) respondents are aware that a caesarean section can prevent mother-to-child transmission (MTCT) of HIV, but 138 (55.2%) were not aware. Also, 85 (34.0%) respondents knew that pregnant women should go for an elective caesarean section in order to prevent mother-to-child transmission (MTCT) of HIV, but 165 (66.0%) respondents did not know. The level of knowledge of women of childbearing age on elective cesarean section as a measure for preventing mother-to-child transmission (MTCT) of HIV is 42.2%.

**Table 3:** Knowledge of women of childbearing age on the use of anti-retroviral drugs as a measure for prevention of mother-to-child transmission (MTCT) of HIV

Questions	Yes		No		Total
	Freq.	%	Freq.	%	
Knew that the transmission of HIV from mother-to-child (MTC) be prevented by taking antiretroviral drugs.	250	100.0	0	0.0	250
Knew that strict adherence to HIV treatment regimens and compliance can prevent mother-to-child transmission (MTCT) of HIV.	250	100.0	0	0.0	250

The result in Table 3 revealed that all the 250 (100.0%) respondents knew that the transmission of HIV from mother-to-child (MTC) be prevented by taking antiretroviral drugs. They also knew that strict adherence to HIV treatment regimens and compliance can prevent mother-to-child transmission (MTCT) of HIV. Thus, the level of knowledge of women of childbearing age on the use of anti-retroviral drugs as a measure for preventing mother-to-child transmission (MTCT) of HIV is 100.0%.

**Table 4:** Knowledge of women of childbearing age on avoidance of breastfeeding as a measure for prevention of mother-to-child transmission (MTCT) of HIV

Questions	Yes		No		Total
	Freq.	%	Freq.	%	
Knew that HIV can be transmitted from a mother to her newborn child through breastfeeding.	214	85.6	36	14.4	250
Aware that avoiding breastfeeding can prevent mother-to-child transmission (MTCT) of HIV.	214	85.6	36	14.4	250
Know that HIV positive women should avoid breastfeeding their babies to prevent mother-to-child transmission (MTCT) of HIV.	214	85.6	36	14.4	250

The result in Table 4 revealed that 214 (85.6%) respondents knew that HIV can be transmitted from a mother to her newborn child through breastfeeding, but 36 (14.4%) did not know. The 214 (85.6%) respondents also knew that avoidance of breastfeeding can prevent mother-to-child transmission (MTCT) of HIV, but 36 (14.4%) did not know. Lastly, 214 (85.6%) respondents knew that HIV positive women should avoid

breastfeeding their babies to prevent mother-to-child transmission (MTCT) of HIV, whereas 36(14.4%) respondents did not know.

**Table 5:** Chi-square ( $X^2$ ) analysis of relationship between Educational level and women’s level of knowledge on prevention of mother-to-child transmission (MTCT) of HIV

Educational level		Level of knowledge		Total	Sig.	df	Cal $X^2$	Crit. $X^2$	Remark
No. form education	Fo	2	27	29	0.05	3	58.39	7.81	significant
	Fe	17.3	11.7	29.0					
Primary Education	Fo	36	40	76					
	Fe	45.3	30.7	76.0					
Secondary Education	Fo	57	24	81					
	Fe	48.3	32.7	81.0					
Tertiary Education	Fo	54	10	64					
	Fe	38.1	25.9	64.0					
Total		149	101	250					

The results of Chi-square ( $X^2$ ) test showed that the calculated value of 58.39 was higher than the critical value of 7.81 at 0.05 level of significance and 1 degree of freedom. The result is significant, therefore the null hypothesis which states that there is no significant relationship between level of education and women’s level of knowledge on prevention of mother-to-child transmission (MTCT) of HIV in was Calabar.

#### IV. Discussion of finding

The findings of this study revealed that women of childbearing age had good knowledge of prevention of mother-to-child transmission (MTCT) of HIV. All the respondents knew about the disease condition called HIV and that it can be transmitted from a mother to her unborn child. Majority of them have heard about mother-to-child transmission (MTCT) of HIV, but few have not heard. This result shows that knowledge of MTCT of HIV among the women was very high compared with the result reported by<sup>9&10</sup>.

The findings agreed with<sup>9&10</sup> who reported that knowledge of mother-to-child transmission (MTCT) of HIV among women was good. Also, the finding corresponds with<sup>10</sup> who reported that knowledge of mother-to-child transmission (MTCT) of HIV among mothers was good. However, the finding was much lower than that of<sup>8</sup> who after examining knowledge of MTCT revealed very high level knowledge among the respondents.

It was revealed in the second objective that the level of knowledge of women of childbearing age on elective cesarean section as a measure for preventing mother-to-child transmission (MTCT) of HIV was poor. Some of the respondents knew that HIV can be transmitted from a mother to her child during vaginal delivery, but majority did not know. Also, some respondents knew that pregnant women should go for an elective caesarean section in order to prevent mother-to-child transmission (MTCT) of HIV, but majority did not know. The result showed that knowledge of CS as a prevention measure for MTCT was low. The result is at par with<sup>13</sup> whose evaluation of knowledge of CS as a measure for preventing MTCT showed that some of the respondents did not know.

Also, the finding agrees with the findings of the study in South Central China which revealed that some respondents had poor knowledge about cesarean section as a Measure for Preventing Mother-To-Child Transmission (MTCT) of HIV. Other researchers with similar results showed that knowledge among pregnant women was low. <sup>8&9</sup> reported that only few respondents were aware that cesarean section could prevent mother to child transmission, while <sup>14</sup> reported that some did not know of elective caesarean section as method of preventing mother to child transmission (PMTCT) of Human Immunodeficiency Virus (HIV).

Furthermore, the findings revealed that knowledge of women of childbearing age on the use of antiretroviral drugs as a measure for preventing mother-to-child transmission (MTCT) of HIV was very good. All the respondents knew that the transmission of HIV from mother-to-child (MTC) could be prevented by taking antiretroviral drugs. They also knew that strict adherence to HIV treatment regimens and compliance can prevent mother-to-child transmission (MTCT) of HIV. The result was higher than a report by whose study<sup>13</sup> in Laroo division in Gulu municipality, Uganda revealed that of knowledge on the use of antiretroviral drugs as a measure for preventing mother-to-child transmission (MTCT) was poor.

The result was also higher than that of<sup>10</sup> who after exploring knowledge, Attitude, practice of prevention of mother- to-child transmission (MTCT) of HIV/AIDS reported that some of the respondents knew that antiretroviral drugs could prevent mother to child transmission. In addition, the result was higher than that of<sup>11</sup> who reported that more than half of the study participants had inadequate knowledge on the use of antiretroviral therapy as a measure of preventing PMTCT of HIV/AIDS.

The result of this study further showed that knowledge of avoidance of breastfeeding as a measure for prevention of mother-to-child transmission (MTCT) of HIV was good. Majority of the respondents knew that HIV can be transmitted from a mother to her newborn child through breastfeeding and that HIV positive women

should avoid breastfeeding their babies to prevent mother-to-child transmission (MTCT) of HIV. The result also corresponds with that of <sup>15</sup>, which revealed that majority of the respondents had good knowledge about breastfeeding as a means of transmitting HIV from mother to child.

However, the result was higher than <sup>16</sup>, whose assessment of pregnant women's knowledge about mother-to-child transmission of HIV infection through breastfeeding revealed that only few of the women knew that breastfeeding while suffering from HIV/AIDS may put the baby at risk of contracting the virus.

## V. Conclusion

In conclusion, mother-to-child transmission (MTCT) of HIV is a health problem in society with the increasing rate of HIV/AIDS among all including women of childbearing age. In order to prevent mother-to-child transmission (MTCT) of HIV, women must have good knowledge of the preventive strategies for MTCT of HIV. This study had revealed that general knowledge on mother-to-child transmission (MTCT) of HIV in Secondary Health in Calabar was good among women of childbearing age. Also, knowledge on the use of antiretroviral drugs and avoidance of breastfeeding as measures for prevention of mother-to-child transmission (MTCT) of HIV was good. However, knowledge of elective cesarean section as a measure for preventing mother-to-child transmission (MTCT) of HIV was poor. There is need for health education for child bearing women on other measure for preventing mother-to-child transmission (MTCT), especially elective cesarean section. This will enlighten them so that they could willingly take elective CS in order to save the lives of their babies.

## VI. Recommendations

Based on the findings of the study, the researcher recommends that:

1. Health education program should be organized and intensified for women of childbearing age to educate them on the measures for preventing mother-to-child transmission (MTCT) of HIV.
2. Efforts should be made to educate women in general and their husbands on the measures for preventing mother-to-child transmission (MTCT) of HIV, especially elective caesarean section and breastfeeding where there is still gap in knowledge. This will help them to willingly take elective CS in order to prevent transmission of HIV to the newly born baby through vaginal delivery.
3. Health talks and health programmes on the measures for preventing mother to child transmission of HIV should be broadcast through the mass media to educate women of childbearing age in particular and the general public on the measures for preventing mother to child transmission of HIV.

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