

## The Impact of Health Education on the Awareness and Acceptability of Strategies for Preventing Mother to Child Transmission of HIV in Enugu, Nigeria

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### ABSTRACT

**BACKGROUND:** Majority of Paediatric HIV/AIDS are from infected mothers and adequate prevention of mother to child transmission (PMTCT) of HIV is a critical factor in the control of paediatric HIV/AIDS. Success of PMTCT strategies will require a high level of acceptability of these strategies by pregnant women.

**METHODS:** A cross sectional descriptive study of the impact of health education on the awareness of strategies for PMTCT was undertaken using interviewer administered questionnaire on antenatal women recruited from three health institutions in Enugu.

**RESULTS:** A total of 150 antenatal clients were studied. Their mean age was  $29.9 \pm 4.0$ . Ninety four point seven percent (94.7%) were married and 60% of them had post secondary education. There was high level of awareness and acceptability of PMTCT measures amongst the respondents. Out of the 150 respondents, 123 (82.0%) identified correctly the meaning of HIV, 140 (93.3%) were aware it can affect the newborn, 105 (75%) knew how it is transmitted and 135 (90.0%) had awareness that we can prevent mother to child transmission of HIV. 130 (86.6%) of the respondents would accept some measures for PMTCT. Awareness that HIV can affect new born increased from 140 (93.3%) to 145 (96.7%) following health education while those who would accept PMTCT measures increased from 130(86.6%) to 146 (97.3%). These increases were statistically significant ( $P < 0.05$ ).

**CONCLUSION:** Health education has a positive and significant impact on the awareness and acceptability of Prevention of Mother to Child transmission of HIV amongst antenatal clients in Enugu.

**KEYWORDS:** Health education, mother to child transmission, HIV, Enugu.

infected with HIV during pregnancy and delivery. An additional 5-20% will become infected through breastfeeding.<sup>2</sup>

AIDS and AIDS related illnesses have killed more than 25 million people and an estimated 39.5 million people were living with HIV since end of 2006, out of which 17.7 and 2.3 million were women and children respectively.<sup>3</sup> As more women get infected with the virus, the number of children infected has been growing. About 90% of these maternal to child transmission occur in Africa and HIV/AIDS is beginning to reverse decades of steady progress in child survival.<sup>4,5</sup> It was estimated at the end of 2006, that 2.99 million Nigerians would be living with HIV with 305,080 new infections in adults and 74,520 in children largely through mother-to-child transmission.<sup>5,6</sup> Overall, heterosexual transmission accounts for nearly 80% of all HIV infections, Mother to Child Transmission accounts for 10% while another 10% is through unsterilized needles, surgical implements, infected blood and blood products.<sup>5</sup>

The burden of Mother to Child transmission of HIV is higher in sub-Sahara Africa including Nigeria than the rest of the world due to high levels of heterosexual transmission, high prevalence of HIV in women of reproductive age, higher proportion of females in reproductive age with HIV, high total fertility rate, high rate of prolonged breastfeeding and poor access to effective intervention.<sup>6</sup>

The risk of mother to child transmission can be effectively reduced to less than 2% using appropriate intervention.<sup>5,6</sup> Preventing HIV infection among prospective parents and avoiding unwanted pregnancies among HIV Positive mothers are important strategies for preventing mother to child transmission. Other strategies include prophylactic use of antiretroviral therapy in pregnancy and labour, modification of obstetric practices such as delay of membrane rupture and use of breast milk substitutes and anti-retrovirals to exposed babies.<sup>7</sup>

In developed countries MTCT has virtually been eliminated due to effective HIV counseling and testing, access to antiretroviral therapy, safe delivery practices and widespread use of breast milk substitutes. This success may be related to better health awareness and education.

In Nigeria, the inadequacy of health information and

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### INTRODUCTION

The Human Immunodeficiency Virus Infection has become a global pandemic with immense public health implications especially in sub Saharan Africa where its impact is worse. Greater than 90% of Paediatric cases of HIV/AIDS are as a result of transmission from infected mothers to their babies.<sup>1</sup> Mother to Child Transmission (MTCT) is when an HIV positive woman passes the virus to her baby. This can occur during pregnancy, labour and delivery or breastfeeding. Without treatment, around 15-30% of babies born to HIV positive women will become

education may be a strong factor in acceptability and practice of the strategies for Preventing Mother to Child transmission of HIV. In the face of increasing incidence of preventable HIV/AIDS in children, and poor or inadequate implementation of strategies for PMTCT due to several limitations that may be socio-cultural, religious, financial, health system related or outright ignorance; it is therefore necessary to study the impact of health education on the practice of PMTCT. This study was to determine the acceptability or otherwise of the various PMTCT methods among antenatal clients in Enugu and also ascertain the impact of health education on the awareness and acceptability of the PMTCT strategies.

## PATIENTS AND METHODS

Three health institutions in Enugu were selected for the study, one Federal Teaching Hospital (UNTH, Ituku Ozalla, Enugu), State Teaching Hospital (ESUT Teaching Hospital Parklane) and one Mission hospital (Ntasi-Obi Specialist hospital) from which 50, respondents were recruited in each institution making a total of 150. This was to accommodate the various choices and preferences of the antenatal women in Enugu.

It was a cross sectional descriptive survey. Data collection was by pretested interviewer administered questionnaires. In each institution, consecutive newly registered antenatal clients who had not received counseling or health education talk from the nurses and yet to see the doctor were recruited for the study. After six weeks when they had been exposed to health education talk and counselling from the nurses and consulted the doctor at least once, they received the second round of interviewer administered questionnaire. Clients were traced with their names/initials and hospital numbers. The process continued until the apportioned number of clients in the institution was got both before and after the health education process.

Data capture and analysis were done with SPSS statistical software version 15.0 for Windows (SPSS Inc. Chicago IL) using descriptive and inferential statistics at 95% level of confidence.

## RESULTS

The socio-demographic characteristics indicate that the ages of the respondents ranged from 18-46 years. The mean age was  $29.9 \pm 4.0$ . Most of the respondents were married (94.7%) and majority of the respondents had post-secondary (60.0%) and secondary (25.3%) education respectively while only 1.3% had no formal education. The number of previous deliveries among the respondents varied from 0-7 with a mean of  $1.64 \pm 2.0$ . The occupation of respondents were mainly civil servants (40.0%), house wives (20.0%) and traders (15.8%). Details of the socio-demographic characteristics are as shown in table I.

**Table 1: Socio-demographic Characteristics of the respondents**

| Characteristic            | No  | Percentage |
|---------------------------|-----|------------|
| <b>AGE (YEARS)</b>        |     |            |
| Less than 20              | 1   | 0.7        |
| 20 – 29                   | 75  | 50.0       |
| 30 – 39                   | 67  | 44.7       |
| Greater than 40           | 1   | 0.7        |
| No response               | 6   | 4.0        |
| <b>MARITAL STATUS</b>     |     |            |
| Married                   | 142 | 94.7       |
| Widowed                   | 1   | 0.7        |
| Divorced                  | 2   | 1.3        |
| No response               | 5   | 3.3        |
| <b>LEVEL OF EDUCATION</b> |     |            |
| Non Formal                | 2   | 1.3        |
| Primary                   | 15  | 10.0       |
| Secondary                 | 38  | 25.3       |
| Post Secondary            | 90  | 60.0       |
| No response               | 5   | 3.3        |
| <b>PREVIOUS DELIVERY</b>  |     |            |
| None                      | 55  | 36.7       |
| 1 – 4                     | 75  | 50.0       |
| 5 and above               | 11  | 7.4        |
| No response               | 9   | 6.0        |
| <b>OCCUPATION</b>         |     |            |
| Housewife                 | 30  | 20.0       |
| Trader                    | 23  | 15.3       |
| Civil Servant             | 60  | 40.0       |
| Student                   | 18  | 12.0       |
| Farmer                    | 2   | 1.3        |
| Others                    | 8   | 6.3        |
| No Response               | 9   | 6.0        |

Generally, there was high level of awareness and acceptability of PMTCT measures among the respondents. Out of the 150 respondents, 123 (82.0%) identified correctly the meaning of HIV, 140 (93.3%) were aware it can affect the newborn, 105 (75.0%) knew how it is transmitted and 135 (90.0%) had awareness that we can prevent mother to child transmission of HIV. Eighty six percent (86.6%) of the respondents would accept some measures of PMTCT (tables 2).

**Table 2: Aware that HIV can affect newborn**

|       | Pre Health Education | Percent | Post Health Education | Percent |
|-------|----------------------|---------|-----------------------|---------|
| Yes   | 140                  | 93.3    | 145                   | 96.7    |
| No    | 10                   | 6.7     | 5                     | 3.3     |
| Total | 150                  | 100     | 150                   | 100     |

$$X^2 = 1.75, df = 1, P = 0.185$$

It is noteworthy that health education significantly increased the level of awareness and acceptability of PMTCT measures. For instance, awareness that HIV can affect new born increased from 140 (93.3%) to 145 (96.7%) following health education while those who would accept PMTCT measures increased from 130(86.6%) to 146 (97.3%). These increases were statistically significant (tables 3 & 4).

**Table 3: Possible to Prevent MTCT**

|             | Pre Health Education | Percent | Post Health Education | Percent |
|-------------|----------------------|---------|-----------------------|---------|
| Yes         | 135                  | 90.0    | 146                   | 97.3    |
| No          | 14                   | 9.3     | 3                     | 2.0     |
| No response | 1                    | 0.7     | 1                     | 0.7     |
| Total       | 150                  | 100     | 150                   | 100     |

$$X^2 = 7.55, df = 1, P = 0.006$$

**Table 4: Accept some measures for PMTCT**

|             | Pre Health Education | Percent | Post Health Education | Percent |
|-------------|----------------------|---------|-----------------------|---------|
| Yes         | 130                  | 86.7    | 146                   | 97.3    |
| No          | 19                   | 12.7    | 3                     | 2.0     |
| No response | 1                    | 0.7     | 1                     | 0.7     |
| Total       | 150                  | 100     | 150                   | 100     |

$$X^2 = 12.56, df = 2, P = 0.002$$

In terms of specific measures, the respondents had better awareness and acceptability of taking drugs (ARVs) avoiding breastfeeding and hospital delivery than of caesarean delivery and giving drugs to the newborn as measures to achieve PMTCT (table 5).

**Table 5: Specific Measures for PMTCT (that you know)**

| Specific Measure                     | Pre Health Education | Percent | Post Health Education | Percent |
|--------------------------------------|----------------------|---------|-----------------------|---------|
| Taking drugs (ARV)                   | 50                   | 30.0    | 86                    | 40.0    |
| Hospital delivery                    | 29                   | 17.4    | 31                    | 14.0    |
| Caesarean delivery                   | 17                   | 10.2    | 13                    | 6.1     |
| Drugs to newborn                     | 12                   | 7.2     | 10                    | 4.7     |
| Avoid breastfeeding                  | 47                   | 28.1    | 64                    | 29.8    |
| Prevent HIV in future parents        | 7                    | 4.2     | 6                     | 2.8     |
| Avoid unwanted pregnancy in HIV +ves | 5                    | 3.0     | 6                     | 2.8     |

The impact of health education on those preferred measures were also statistically significant (table 6).

**Table 6: Analysis of specific measures in PMTCT Pre & Post Health Education**

| Specific Measure                    | Pre Health Education | Post Health Education | X <sup>2</sup> | DF | Percent |
|-------------------------------------|----------------------|-----------------------|----------------|----|---------|
| Taking drugs (ARV)                  | 50 (36.8%)           | 86 (63.2%)            | 136.00         | 1  | 0.000   |
| Hospital delivery                   | 29 (48.3%)           | 31 (51.7%)            | 60.00          | 1  | 0.000   |
| Caesarean delivery                  | 17 (56.7%)           | 13 (43.3%)            | 30.00          | 1  | 0.000   |
| Drugs to newborn                    | 12 (54.5%)           | 10 (45.5%)            | 22.00          | 1  | 0.000   |
| Avoid breastfeeding                 | 47 (42.3%)           | 64 (57.7%)            | 111.00         | 1  | 0.000   |
| Prevent HIV in future pregnancy     | 7 (53.8%)            | 6 (46.2%)             | 13.0           | 1  | 0.000   |
| Avoid unwanted pregnancy in parents | 5 (45.5%)            | 6 (54.5%)             | 11.0           | 1  | 0.001   |

Stigmatization and lack of money were the leading reasons for rejecting PMTCT measures among the respondents table 7.

**Table 7: Other Reasons for rejecting PMTCT**

|                  | Pre Health Education | Percent | Post Health Education | Percent |
|------------------|----------------------|---------|-----------------------|---------|
| Lack of money    | 30                   | 42.3    | 35                    | 39.8    |
| Hospital is far  | 7                    | 9.9     | 8                     | 9.1     |
| Cultural reasons | 2                    | 2.8     | 5                     | 5.7     |
| Stigmatization   | 32                   | 45.1    | 40                    | 45.5    |

$$X^2 = 0.81, df = 3, P = 0.845$$

## DISCUSSION

The pattern of socio-demographic characteristics shows that respondents aged 20-39 years accounted for approximately 95% of respondents. This may be because antenatal clients are young women of childbearing age. Also most of the respondents (94.7%) were married. The women studied had relatively high level of education with 85.3% completing at least secondary education. The number of previous deliveries among the respondents was low with an average of 1.6. Generally women with low parities are more likely to seek antenatal services. The respondents were mostly civil servants (40.0%), housewives (20.0%) and traders (15.3%) in terms of occupation. This pattern of socio-demographic characteristic is due to the urban nature of Enugu<sup>8</sup> but may not be representative of the entire state.

The high level of awareness (93.3%) of transmission of HIV from an infected mother to her child is similar to the findings of a similar study in Calabar.<sup>9</sup> Respondents were more aware of the use of antiretroviral (ARV) drug in pregnancy (30.0%), avoidance of breastfeeding and hospital delivery (17.4%) than giving drugs to the newborn (7.2%) and caesarean delivery (10.2%) as strategies for PMTCT. The high level of education of most of the respondents and the fact that they were drawn from the urban areas may be responsible for the high level of awareness. The cultural aversion which our women have for caesarean section is well documented even among the educated ones.<sup>10</sup> This may account for the poor awareness and acceptability of caesarean section as a strategy for PMTCT in this study. Again, for clients who received ARVs correctly and adequately thereby possibly reducing their viral load to less than 100/copies/ml, there is no clear benefit of the use of caesarean delivery in preventing mother to child transmission.<sup>11</sup>

The awareness that HIV can affect newborn increased from 93.3% to 96.7% following health education (table 3). The awareness that we can prevent MTCT of HIV increased from 90.0% to 97.3% (table 5). The acceptance of some measures for PMTCT increased from 86.7% to 97.3% following health education (table 4). All these indicate that health education could significantly increase the awareness and acceptability of PMTCT measures. It is presumed that the impact of health education may even be greater in the rural areas. In such rural setting, most deliveries are attended by Traditional Birth Attendants (TBA) who have little factual information on HIV/AIDS and do nothing to prevent mother to child transmission.<sup>12</sup>

The reasons for rejecting PMTCT measures among respondents was mainly fear of stigmatization and lack of money. The issue of stigmatization especially by health care providers and relations continue to affect the attitude of people in HIV related matters. Even with adequate

health education, a number of the respondents avoided PMTCT measures for fear of stigmatization (table 7). This may be a warning to health care providers to avoid stigmatization at all costs if any of our intervention will be effective and acceptable.

Mother to child transmission remains the source in over 90% of Paediatric HIV/AIDS cases, the positive role of health education in enhancing awareness and acceptability of the measures for preventing mother to child transmission has been demonstrated in this study. This is because ignorance, misconceptions and cultural bias were part of the limiting factors in the practice of PMTCT.

It is concluded from this study that health education could have a positive and significant impact on the awareness and acceptability of strategies for Preventing Mother of Child transmission of HIV among antenatal women in Enugu, Nigeria. It is recommended that further studies be done to determine specific methods of increasing health education on PMTCT strategies in the society in order to increase or sustain acceptability of PMTCT measures.

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