

Knowledge of Pregnant Women on Mother-to-Child Transmission of HIV in Yaoundé

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Abstract: *Introduction:* Mother-to-child transmission of HIV is a major public health problem in Cameroon. The aim of this study was to assess knowledge of pregnant women on HIV transmission and prevention, particularly the four pillars of mother-to-child transmission.

Materials and Methods: This was a descriptive cross-sectional study from October 2008 to January 2009 at the Yaoundé Gynaecology-Obstetrics and Pediatric Hospital. All women presenting at the Ante-Natal Care (ANC) Clinic for the first time were included in the study after obtaining a verbal informed consent.

Results: The ages of the 260 women included in the study ranged from 15 to 42 years. Almost 99% (257/260) of the women interviewed had heard about HIV. Respectively, 80.5% (209/260), 89.3% (232/260) and 81.2% (211/260) of the women cited pregnancy, delivery, and breastfeeding as risk periods for HIV transmission from mother to child. Use of the male condom, the female condom, abstinence, and faithfulness to a single partner were considered as effective methods of HIV prevention by 73% (190/260), 76% (198/260), 88% (229/260) and 46% (120/260) of respondents respectively. About 79% (64/81) of participants with higher education considered HIV infection to be contagious as opposed to 45.5% (5/11) of women with no formal education (P = 0.008).

Conclusion: Our data suggest that women have some good knowledge on the Prevention of Mother-To-Child Transmission (PMTCT) of HIV. Nevertheless, improving the formal educational level of these women may contribute to a further reduction of HIV transmission.

Keywords: Mother, child, transmission, HIV, education.

INTRODUCTION

The transmission of HIV infection from the mother to the child constitutes a global challenge especially for developing countries. In the absence of any intervention, the risk of infection of HIV-exposed children can be as high as 25% for HIV type 1 and 4% for HIV type 2 [1]. The Prevention of Mother-to-child Transmission of HIV (PMTCT) is based on four pillars: Primary prevention of HIV infection among women of reproductive age; prevention of unplanned pregnancies among HIV infected women; prevention of HIV transmission during pregnancy and/or breastfeeding; treatment, care and support of HIV infected women and their families [2]. Ineffective implementation of this holistic approach can have serious implications for the transmission

of the HIV to the child. The participation of pregnant women in this process and accessibility to PMTCT information are therefore mandatory.

The coverage rate of antiretroviral prophylaxis in Cameroon is low despite the involvement of the state and other development partners. The proportion of HIV infected pregnant women receiving antiretroviral prophylaxis has progressed slowly from 2005 (4.2%) to 2007 (10%). Meanwhile, the National Demographic and Health Survey in 2004 revealed that 98% of women in the general population had heard about HIV [3].

Some authors have argued that most of the knowledge is on sexual transmission of HIV while knowledge on specific aspects of PMTCT is sparse among women of reproductive age [3-5]. The purpose of this study was to assess the knowledge of pregnant women on the methods of transmission and prevention of HIV in a health facility at the tertiary level of the Cameroon health system.

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PATIENTS AND METHODS

This was a descriptive cross-sectional study from October 2008 to January 2009 at the Yaounde Gyneco-Obstetrics and Pediatric Hospital. This is a reference public hospital with a capacity of 300 beds dedicated to mother and child health. Moreover, it is an Affiliated HIV Treatment Center.

After obtaining an informed verbal consent, all pregnant women on their first ANC visit during the study period were interviewed irrespective of their age, social class or obstetrical history.

A total of 260 eligible women finally participated in the study. Women on their first visit were sent to the ANC clinic and seen by a team made of two general physicians, nurses, midwives; nurses specialized in reproductive health and a community relay agent. The women took part in the Information, Education and Communication (IEC) sessions before individual consultations. During these consultations, the study questionnaire was administered. Many themes were discussed during the IEC sessions including: transmission routes between the mother and child, prevention modalities, exposed child nutrition, mother nutrition, early infant diagnosis.

Evaluation of knowledge on HIV infection was done using a standard and pretested questionnaire (in French). The questionnaire was self administered by the participant with the assistance of an investigator when necessary. Data was collected on the following variables: demography (age, level of education), obstetrical history, knowledge of transmission routes and prevention of HIV, exposure to information on HIV and perception of the risk of HIV contamination during sexual intercourse with a regular partner.

Data was analyzed using SPSS 11.0 statistical software, comparing proportions by the Chi² test. The significance level was set at P<0.05.

Ethical clearance was obtained from the National Ethics Committee.

RESULTS

The ages of the 260 participants varied from 15 to 42 years with a mean age of 26.7 years. About 30.4% (79/260)

of the women had never delivered, 44.4% (115/260) had less than four deliveries while 25.1% (66/260) had at least four deliveries. Respectively 4.2%, 15.0%, 49.6% and 31.2% of the women had no formal education, primary, secondary and higher education (Table 1).

Approximately 99% (198/260) of the women interviewed declared that they had received some information on HIV before the current ANC consultation. As concerns the period of mother-to-child transmission of the HIV, 80.5% mentioned the pregnancy period, 89.3% cited delivery while 81.27% mentioned the breastfeeding period (Table 2).

Classification of HIV infection appeared to be influenced by the level of education. More women with higher education [79% (64/81)] than those with no formal education [45.45% (5/11)] classified HIV as a sexually transmitted or contagious disease [P= 0.008, Table 1].

The proportion of women who considered the female condom, the male condom, abstinence and faithfulness to a single partner to be effective means of preventing HIV infection were 73% (190/260), 76% (198/260), 88% (229/260) and 46% (120/260) respectively.

About 42% (109/260) of the women interviewed declared that they felt at risk of being infected with HIV by their regular partner.

DISCUSSION

The mean age of our sample population was comparable to the findings of the third National Demographic and Health survey in 2004 which revealed a high prevalence of early pregnancies as from the 15-19 years age range and reaching a peak in the 20-29 years age range (231-236‰) [6]. These findings emphasize the importance of PMTCT interventions as the HIV prevalence in the age group of maximum fertility ranges from 7.9% to 10.2% [7].

Our findings show that about 99% of the women interviewed had heard about HIV infection. These results are similar to the findings of a survey in 2006 in Cameroon which revealed that 95% of women in the general population in the age range of 15-49 years had heard about HIV infection [8, 9]. Several studies among women attending an ANC clinic have also reported a high familiarity with the

Table 1. Perception of HIV Infection with Respect to Level of Education

Perception of HIV Infection	No Education n=11	Primary Level n=39	Secondary Level n=129	Higher Education n=81	(%) n=260
Contagious disease (STD) n=166	5	18	79	64	63.84
Viral infection n= 33	2	6	17	8	12.70
Hidden disease n=35	3	7	21	4	13.46
Others n=26	1	8	12	5	10.00
(%) n= 260	4.2	15.0	49.6	31.12	100.00

Table 2. Knowledge on HIV Contamination/Transmission Routes

	Cited the Different Transmission Routes		Did Not Cite the Different Transmission Routes	
	n	(%) n= 260	n	(%) n= 260
Sexual transmission	259	99.6	1	0.4
Blood transmission	254	97.7	6	2.3
Transmission through contaminated objects	252	96.9	8	3.1
Mother to child transmission	247	95	13	5
• During pregnancy	209	80.5	51	19.5
• During delivery	232	89.3	28	10.7
• Breastfeeding	211	81.2	49	18.8
Transmission through saliva	32	12.3	228	87.7
Transmission through mosquito bites	41	15.8	219	84.2
Transmission through handshake	8	3.1	252	96.9
Mystic or occultic transmission	17	6.5	243	93.5

sexual transmission of HIV [4, 5, 10]. This high level of knowledge on HIV infection is however lower than that reported among men of the same age range in Cameroon. A survey in 2004 in Cameroon among the general population between 15 and 49 years revealed that a higher proportion of men (32%) than women (23%) had complete knowledge on HIV/AIDS [3]. A 2005 UNICEF report noted that significantly less girls than boys between 15 and 19 years had basic information on HIV infection [11]. UNAIDS also reported that in countries like Cameroon, Lesotho, Mali, Senegal and Vietnam, 2/3 of the population, and mostly young women between 15 and 24 years, were unable to cite three methods of HIV prevention [12].

Our data suggest that there are still some misconceptions about HIV transmission. Some of the study subjects thought that virus may be transmitted by insect bites (15.8%) or witchcraft (6.5%). However, we do observe a progressive reduction in the proportion of subjects with these misconceptions from 2004 through 2006: 72% and 72% respectively in 2004, 45% and 35% respectively in 2006 [3, 8] probably resulting from the huge efforts made over the years in health education. The small sample size in the current study could have led to a bias hence the need to confirm our findings through a bigger study.

About 95% of the women had knowledge on mother-to-child transmission of HIV. The proportion that could cite each of the three routes of transmission varied from 80.5% to 89.3%. Our results are higher than those reported in a general population survey in 2004 in Cameroon. According to that survey, knowledge on HIV transmission during pregnancy, delivery and breastfeeding was 60%, 49%, and 47% respectively [3]. Several authors have argued that despite widespread IEC campaigns and the extension of PMTCT services, women's knowledge on risk factors of mother-to-child transmission of HIV and periods of transmission is sparse. This has significantly contributed to ineffectiveness of the PMTCT strategy [4, 13]. There is therefore need for an integrated communication strategy

involving all aspects of mother and child health with messages drawn from the four pillars of the PMTCT program.

Although our study did not explore the source of information of the participants, it is obvious that the IEC sessions cover a minority of the women. Igumbor *et al.* have demonstrated that there is a very weak correlation between the number of antenatal consultations by pregnant women and their level of exposure to health education activities [10]. Moreover, these Health education activities have been shown to contribute only by 7% to the observed variation in the level of exposure to information in different health facilities [10]. There is therefore need for health providers to go beyond conventional health facilities to the communities to effectively sensitize women on reproductive health issues. This community approach should be based on available communication tools and resources like the radio, television, posters and billboards.

About 41% of the women interviewed in the present study mentioned the sexual habits of a regular partner as a risk factor for HIV infection. A previous survey in Cameroon: Multiple Indicator Cluster Survey (MICS III) had revealed that 40% of women in the general population perceived a risk of HIV infection with their regular partner [8]. Moreover, in the same MICS III survey, 54.3% of those interviewed were skeptical about prevention messages encouraging 'faithfulness to a single uninfected partner'. The implication of this potential source of contamination, over which women hardly have any control, is that there needs to be a change in the present communication strategy on HIV/AIDS. Counseling of couples appears to be the best way to enable mutual risk assessment and reduction. This is however a serious challenge as Semrau *et al.* observed that only 10% of women were able to convince their partners to participate in a couple counseling session [14].

Apart from exposure to information, other factors influence the vulnerability of a woman to HIV infection. About ½ of the women attending the ANC clinic at the

Yaoundé Gyneo-Obstetric and Pediatric Hospital had secondary education while 2.7% lacked formal education. We observed that women with the highest level of education were most capable of categorizing HIV infection. Recent data from 11 African countries have shown a link between the level of education and HIV prevalence with a higher vulnerability of uneducated people to HIV infection [15]. Data from rural South Africa shows that for every supplementary year of education, the risk of HIV infection was reduced by 7%. The authors therefore concluded that education appears to be an effective means of reducing the vulnerability of the general population and women in particular to HIV infection [16-18]. This may be through increasing their ability to assimilate messages on HIV infection and stimulating their service-seeking behavior with respect to reproductive health activities including PMTCT.

We acknowledge the fact that due to some limitations, our results can hardly be generalized to represent the views of pregnant women in Cameroon. First of all, the study was carried out in a reference hospital in an urban area with a likelihood of having women of a higher socio-economic class than the rest of the country. Secondly our sample size was not sufficiently big to permit such extrapolations. Thirdly we were not able to appraise what the women believe the risk of mother to child transmission is and whether they know it is preventable but this could be done in a subsequent study. Finally, since the women were interviewed after the group IEC sessions, we are unable to determine which information they had before these sessions.

In conclusion, we observed that most of the women interviewed had heard about HIV and were conscious of the risk of HIV transmission from mother to child during pregnancy, delivery and breastfeeding. The sexual habits of the regular partner were perceived as a risk for HIV infection by 42.1% of those interviewed. Assimilation of HIV information appeared to improve with increasing level of education. In order to reach a greater number of women, especially those with limited access to information, there is need to change the communication strategy on prevention of mother-to-child transmission of HIV. Such a strategy must integrate PMTCT information within a general framework of communication on mother and child health with a multiple sector approach of information promotion. It must also include modification of information targets (involving men) and the education of girls which would enable better assimilation of health messages and reduce HIV infection risk.

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