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Knowledge and Practice of Prevention of Mother-To-Child-Transmission of HIV among Traditional Birth Attendants Practicing in Akwa Ibom, Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author UIE designed the study, wrote the protocol and wrote the first draft of the manuscript. Author PGE managed the literature searches and analysis of the data. Both authors read and approved the final manuscript.

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ABSTRACT

Background: Transmission of HIV from mother to child is by far the most common route of HIV infection in children. It is estimated that without effective interventions, between 67,500 and 125,000 infants will be infected with HIV annually in Nigeria. Traditional birth attendants assist in 60–80% of all deliveries and even more in the rural areas of developing countries including Nigeria.
Objective: This study is aimed at assessing the knowledge and practice of Prevention of Mother-To-Child-Transmission of HIV among Traditional Birth Attendants practicing in Akwa Ibom, Nigeria.
Methods: A descriptive, cross-sectional survey using well structured, validated and pre-tested questionnaires to interview 600 TBAs from 21 randomly selected local government areas of Akwa Ibom State to assess their knowledge and practice of prevention of mother to child transmission (PMTCT) of HIV.
Results: 96.8% (581) of the study population were aware of the existence of HIV/AIDS, however only 194(32.3%) of these respondents who were aware of the existence HIV/AIDS were also aware of mother-to-child-transmission (MTCT) of HIV. Furthermore only 83 (42.8%) of the 194 respondents who were aware of MTCT of HIV were able to state correctly the various routes

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through which MTCT of HIV could occur. In addition 174(89.7%) of our respondents who were aware of MTCT of HIV also believed that MTCT of HIV could be prevented. However only 121(69.5%) of these 174 respondents knew that PMTCT can be achieved through proper medical interventions.

Conclusion: The knowledge and practice of PMTCT of HIV by the TBAs practicing in Akwa Ibom, Nigeria is less than adequate thus increasing the risk of vertical transmission of HIV. There's an urgent need for the education and training of TBAs to improve their knowledge and enhance their practice.

Keywords: Prevention of mother-to-child-transmission of HIV; traditional birth attendants; Akwa Ibom.

1. INTRODUCTION

African traditional healthcare delivery is grounded in thousands of years of knowledge and has sustained life, on its own or in concert with Western medicine [1].

The World Health Organization (WHO) defines a Traditional Birth Attendant (TBA) as "a person who assists the mother during childbirth and initially acquired her skills by delivering babies herself or through apprenticeship to other TBAs" [2]. TBAs are essential members of their communities and provide an important window to local customs, traditions, and beliefs regarding childbirth and neonatal care and are thus an integral part of African medicine [3].

As many as 95% of women in developing countries seek medical attention from TBAs at one point or the other during the course of their pregnancy [4].

HIV infection is a common health problem affecting pregnancy in many countries. The severity of mother-to-child transmission (MTCT) problem in Sub-Saharan Africa is due to high rates of HIV infections in women of reproductive age [5]. In 2005 the World Health Organization, placed an estimate of maternal mortality ratios at more than 1000 per 100,000 live births in most African countries [6]. The transmission of HIV from an HIV-positive mother to her child during pregnancy, labour, delivery or breastfeeding is called vertical or mother-to-child transmission (MTCT). MTCT is by far the most common way that children become infected with HIV (about 90%) [7].

In the absence of any intervention during these stages, rates of HIV transmission from mother-to-child can be between 15-45% [7]. MTCT can be nearly fully prevented if both the mother and the child are provided with antiretroviral (ARV) drugs throughout the stages when infection could occur [7]. Factors promoting MTCT include widespread poverty, low literacy among rural women, home deliveries by traditional birth attendants (TBAs), high rate of HIV infection among women, and religious and cultural beliefs [8].

In developing countries, specifically in Sub-Saharan Africa, many women do not have access to properly trained and skilled personnel during child birth [6]. In 2010, about 390,000 children, under 15 years of age, who were living with HIV acquired the infection mainly through Mother-To-Child Transmission (MTCT) globally [5]. HIV and AIDS continue to affect the lives of millions of people around the world with 33.3 million adults and children living with HIV and 2.6 million new infections globally. Although there has been a decrease in the number of new infections in Sub-Saharan Africa from 2001 to 2009, this region still holds the bulk of infections with 22.5 million of adults and children living with HIV and 1.8 million new infections [9].

Globally, TBAs assist in 60–80% of all deliveries and even more in the rural areas of developing countries [10]. For many women living in rural areas, antenatal care as well as institutional deliveries with skilled health workers remains a distant reality. Inclination towards home births supervised by TBAs is associated with cultural norms and religious beliefs as well as cost and accessibility of the services [1].

Effective PMTCT programmes require women and their infants to receive a cascade of interventions including uptake of antenatal services and HIV testing during pregnancy, use of antiretroviral treatment (ART) by pregnant women living with HIV, safe childbirth practices and appropriate infant feeding, uptake of infant HIV testing and other post-natal healthcare services [11]. HIV prevalence rate has been consistently high in Akwa Ibom state. In a study carried out in Oron the prevalence rate of HIV was 14.7% in 2005, 14.0% in 2008, and 15.9% in

2010 [12,13]. This has impacted negatively on maternal and child health, increasing infant, child and maternal morbidity and mortality and reduction of life expectancy [11].

Prevention-of-Mother-to-Child-Transmission (PMTCT) of HIV programme commenced in Nigeria in 2002 in six tertiary health institutions spread across the six geo-political zones of the country with the support of UNICEF and other development and implementing partners [12].

Nigeria is a country with more than 160 million people has about 70% of its population residing in rural areas. These areas lack the basic amenities of life such as good road networks, portable drinking water, and adequate health facilities.

With the increasing prevalence of HIV/AIDS as well as the high patronage of the services of the TBAs, there is need to assess the knowledge and practices of prevention of other-to child transmission (PMTCT) of HIV among TBAs.

This study is thus designed to assess the knowledge and practice of Prevention of Mother-To-Child-Transmission (PMTCT) of HIV among Traditional Birth Attendants (TBAs) practicing in Akwa Ibom, Nigeria.

2. METHODS

This research was a descriptive, cross sectional survey using a questionnaire that was self-validated by our team. The questionnaire was designed and used to obtain relevant information from Traditional Birth Attendants (TBAs) practicing in Akwa-Ibom, Nigeria. The questionnaire consisted of both open and closed ended questions. The information on the questionnaire included; socio-demographic details (such as age, sex, religion, gender, etc.), knowledge of MTCT and PMTCT of HIV as well as practices of traditional birth attendants in the prevention of mother to child transmission of HIV. Akwa-Ibom state, the study site is located in the coastal south-southern part of Nigeria. The state is bordered on the east by Cross-Rivers state, on the west by Rivers state and Abia state, and on the South by the Atlantic Ocean and the South most tip of Cross River state [14]. Akwa Ibom is made up of three senatorial districts namely; Uyo, Eket, and Ikot-Ekpene senatorial district. There are a total of 31 local government areas in Akwa-Ibom state. Twenty-one local government areas were randomly selected and all the Traditional Birth Attendants (TBAs) identified in each selected local government area who consented to participate in the study were interviewed. The local government areas randomly selected for this study were; Etinan, Uyo, Ibesikpo Asutan, Nsit Atai, Ibiono Ibom, Nsit Ibom, Uruan, Nsit Ubium, Itu, Oron, Onna, Mbo, Eket, Okobo, Esit Eket, Mkpat Enin, Ikono, Essien Udim, Ikot Ekpene, Obot Akara, and Ini. A total of 600 Traditional Birth Attendants (TBAs) were interviewed in the local dialect on a one-on-one basis with the assistance of a trained interpreter while maintaining strict confidentiality. The responses were written down by the interpreter. Data was collected between September 2014 and April 2015. Quantitative data was analyzed using Statistical Program for the Social Science (SPSS) version 20.0 computer package with descriptive statistics with $P<0.05$ considered as significant. Ethical clearance and formal approval for this research was sought for and obtained from the Akwa Ibom state Ministry of Health.

3. RESULTS

Almost all the respondents were female 599(99.8%) with an exception of one male 1(0.2%). Most of our respondents 327(54.5%) were aged greater than 50 years, 208(34.7%) were between 41-50 years, 62(10.3%) were between 31-40 years, while 3(0.5%) were between 20-30 years of age. Only a small proportion of the respondents 53(8.8%) had attained tertiary level of education, while primary and secondary levels of education were attained by 156(26%) and 146(24.3%) of the respondents respectively. The rest 245(40.8%) of the respondents had no formal education. Sixty-nine (11.5%) of the respondents claimed that they had undergone some form of formal training as traditional birth attendants. However more than three-quarter 530(88.3%) of the respondents had no formal training as birth attendants. Many of the respondents 236(39.33%) believed that they acquired their skills as TBAs by divine inspiration from God, 189(31.5%) of the respondents reported to have inherited their skills in traditional birth attendance from their parents. Seventy-nine (13.2%) of the respondents claimed to have acquired their skills as TBAs after responding to an emergency delivery situation. Seventy (11.7%) of the respondents claimed to be retired nurses/mid-wives and that they received their training from the school of nursing/midwifery while 35(4.5%) of the respondents reported to have acquired their skills as TBAs by serving as

an apprentice to the local community nurses/midwives. Thirty-eight (6.3%) of the respondents claimed to have over 30 years of experience as TBAs. More than three-quarter of the respondents 581(96.8%) were aware of the existence of HIV/AIDS while the rest 19(3.2%) of the respondents were not aware of the existence of HIV/AIDS. Two hundred and twenty two (37.0%) of the respondents were not able to state correctly any route of transmission of HIV, however 378(63.0%) of the respondents were aware of at least two routes of transmission of HIV. Furthermore our study revealed that only 194(32.3%) of the respondents were aware of mother-to-child-transmission (MTCT) of HIV, while majority of the respondents 355(59.2%) were not sure of the fact that HIV could be transmitted from mother to child. On the other hand 51(8.5%) of the respondents were not aware of mother-to-child-transmission of HIV claiming it was impossible for HIV to be transmitted from mother-to-child. A Further probe of the 194 respondents who claimed to be aware of MTCT of HIV showed that only 83(42.8%) of these respondents were aware of the fact that it could be transmitted during pregnancy, at delivery, and while breastfeeding the child. Thirty-four (17.5%) of theses respondents said MTCT could only occur during pregnancy and breastfeeding alone, 49(25.3%) said HIV could be transmitted to the child via breastfeeding alone, 14(7.2%) of these respondents said that HIV could be transmitted to the child only during pregnancy, and the rest of the respondents 14(7.2%) admitted not to have any idea as to how the infection can be transmitted from mother-to-child.

One hundred and seventy four (89.7%) of the 194 respondents who claimed to be aware of MTCT of HIV also believed that MTCT of HIV can be prevented, 18(9.3%) of these respondents said they were not sure MTCT of HIV could be prevented, while the rest 2(1.0%) of the respondents were of the opinion that MTCT of HIV could not be prevented. Out of 174 respondents who believed that MTCT of the infection (HIV) could be prevented 121(69.5%) of the respondents stated that this could only be achieved through proper medical intervention (however, they couldn't give details of the form of intervention), 24(13.8%) of these respondents stated that MTCT of HIV could also be prevented by divine intervention (through prayers to God) in addition to medical intervention. 22(12.6%) of these respondents stated that avoidance of breastfeeding was the only means of preventing MTCT of HIV, while 7(4%) of these respondents (although aware that MTCT of HIV could be prevented) did not have any idea how PMTCT of HIV could be achieved.

138(23.0%) of the respondents claimed to always refer their clients for voluntary counseling and testing (VCT) for HIV, 151(25.2%) claimed to refer their clients for VCT sometimes, while 311(51.8%) admitted that they had never sent any of their clients for VCT for HIV. 58(9.7%) of our respondents claimed to have attended to HIV-positive pregnant women, 298(49.7%) were not sure if they had ever attended to an HIV client, while 244(40.7%) claimed never to have come across any client who was HIV-positive. 52(89.7%) of the respondents who claimed to have attended to an HIV-positive clients stated that they referred such clients to the hospital for proper medical attention however they could not ascertain if such clients actually went to the hospital as there was no effective follow-up of the clients by the TBAs. Most of the respondents 591(98.5%) claimed to always use protective gloves during delivery of babies, however 9(1.5%) out of these 591 respondents admitted to using one set of protective gloves for multiple deliveries (according to them these gloves were washed before being reused). On the other hand 9(1.5%) of the respondents admitted to using their bare hands to deliver babies. Majority 565(94.1%) of the respondents admitted to using unsterilized blade (such as razor blade or local blade) to cut the umbilical cord during child delivery, 35(5.8%) of the respondents claimed to use sterile surgical blade to cut the umbilical cord. However, 5(0.9%) of the respondents admitted to reusing the same blade for multiple deliveries.

4. DISCUSSION

In Sub-Saharan African countries many child bearing women are still being attended to by traditional Birth Attendants (TBAs) at deliveries [15]. Globally TBAs assist in 60-80% of all deliveries and even more in the rural areas of developing countries. In these countries antenatal care as well as institutional deliveries with skilled health workers remains a distant reality. Inclination towards home birth supervised by TBAs is associated with cultural norms and religious beliefs as well as cost and accessibility of the services [16,17,18,19]. In Africa the transmission of HIV from mother to child during pregnancy, delivery, and during the period of breastfeeding is by far the most common routes

of HIV infection in children [20]. In this study, we sought to determine the knowledge and practice of prevention of mother-to-child-transmission (PMTCT) of HIV among TBAs practicing in Akwa-Ibom State.

Most of the respondents had no form of formal education. Only a small proportion of the TBAs had attained tertiary education. A similar study in Thailand reported a literacy rate of 53% amongst the TBA studied [21]. Previous studies in Edo and Akwa Ibom Sates of Nigeria have reported a relatively high illiteracy rate of 60% and 85% amongst TBAs practicing in these states [22,23]. The level of education attained by a TBA may have a huge impact on his/her practice. About 12% of our respondents claimed to be auxiliary nurses or retired nurses/midwives and thus had formal training in child delivery. However, 44.5% of the TBAs interviewed claimed to have acquired their skills by divine inspiration from God. Ejembi in his study in northern Nigeria reported that 73.5% of the TBAs interviewed claimed to be taught by their family members [24]. A similar report was also given from southern Nigeria where 62.2% of the TBAs interviewed claimed to be taught by their family members and a few by non-family members [22]. This is an indication that most of the TBAs may lack sufficient knowledge on maternal and child health care.

A great majority of the traditional birth attendants interviewed in this study were aware of the existence of HIV/AIDS. The high awareness of HIV amongst TBAs as observed in our study conforms to a report from Lagos state, Nigeria where all of the TBAs were aware of HIV/AIDS [25]. However, in contrast, a study in Ebonyi State, Nigeria showed that only 65.1% of practicing TBAs knew of the existence of HIV/AIDS [26]. Another report from southern India revealed that 85% of TBAs interviewed had no knowledge of HIV/AIDS [27]. In this study, although 96.8% of the respondents (TBAs) were aware of the existence of HIV/AIDS only 63.0% were aware of at least two routes of transmission of HIV. A similar study in Lagos reported that the

Table 1. Socio-demographic profile of respondents

N= 600	Number	Percentage (%)
Gender		
Female	599	99.8
Male	1	0.20
Age		
(20-30) years	3	0.50
(31-40) years	62	10.3
(41-50) years	208	34.7
(>50) years	327	54.5
educational level		
No formal education	245	40.8
Primary	156	26
Secondary	146	24.3
Tertiary	53	8.8
Religion		
Christianity	600	100
Training as a TBA		
Yes	294	49
No	306	51
Source of skill acquisition		
Received via divine inspiration from God	236	39.33
Responded to an emergency situation	79	13.2
Inherited from parent	189	31.5
Trained locally by mid-wife	27	4.5
Retired Nurse/Mid-wife	69	11.5
Duration of experience		
(1-10) years	226	37.7
(11-20) years	221	36.8
(21-30) years	115	19.2
(>30) years	38	6.3

knowledge of the existence of HIV/AIDS as well as the knowledge of modes of transmission of HIV amongst traditional birth attendants is less than adequate as the TBAs were unable to distinguish HIV from other disease conditions [28]. The knowledge of HIV/AIDS as well as its modes of transmission will enable the birth attendant to ensure safer practices during delivery of babies.

About one half of the respondents admitted that they had never sent any of their clients for voluntary counseling and testing (VCT). This could be as a result of lack of awareness of the existence of HIV, MTCT of HIV, and PMTCT of HIV. HIV testing in pregnancy is the gateway to accessing care for the mother and the child. Many HIV-positive people are unaware that they are infected with the virus [29]. For example, in 2001 less than 1% of the sexually active urban population in Africa had been tested, and this proportion is even lower in rural populations. Furthermore, in 2001 only 0.5% of pregnant women attending urban health facilities were counseled, tested or received their test results. Again, this proportion is even lower in rural health facilities [30]. This study revealed that only 32.3% percent of he respondents who were aware of the existence of HIV/AIDS were also aware of MTCT of HIV. Sibley and Sipe in their study reported that most of the TBAs were deficient in knowledge of MTCT of HIV [18]. Health knowledge of some kind is necessary before a conscious personal health action can occur. The desired health action will probably not occur unless a person receives a cue strong enough to trigger the motivation to act on that knowledge [31]. Adequate knowledge of MTCT of HIV by TBAs promotes by far safer practices and reduces the risk of MTCT of HIV [32].

We found that only 42.8% of the 194 TBAs who were aware of mother to child transmission (MTCT) of HIV were able to state correctly the various ways in which MTCT of HIV could occur (that is during pregnancy, at delivery, and during breastfeeding of the child). The rest of the respondents either had no idea how it could be transmitted or they could only state one or two modes of MTCT of HIV. Similarly studies in Tanzania and Uganda revealed that 50% of the TBAs who claimed to be aware of MTCT of HIV could only identify breastfeeding as a possible route of mother to child transmission [25]. Mobalanle and Kofo also reported that 62% of the TBAs interviewed could only identify breastfeeding as a possible route of MTCT of HIV [25]. The revelation that many TBAs are ignorant of MTCT of HIV/AIDS and the routes through which MTCT can occur underscores the need for an increase in HIV/AIDS awareness campaign as well as MTCT of HIV awareness campaign particularly among TBAs and their clients. One intervention, of which there is now many years of experience in numerous countries is that of training traditional birth attendants in parts of the world where skilled professional attendants are scarce [33].While pediatric HIV infection has been virtually eliminated in most developed countries with structured interventions, many developing countries (Nigeria inclusive) still record high transmission rates [34,35]. Some tasks that TBAs could perform to help prevent prenatal transmission of HIV include dissemination of information about how HIV can be transmitted between mother and child and explanation of effective strategies to prevent such transmission; identification of pregnant women in their communities and facilitation of their use of available antenatal and maternity care; ensuring that pregnant women and their partners are routinely offered HIV counseling and testing and that their uptake of this is facilitated; reinforcement of health messages; including the importance of improved nutrition during pregnancy; supervision of directly observed treatment of mother and infant; and offering advice on reducing the risk of HIV transmission to women and their partners [36]. TBAs if trained effectively may play a major role in informing most pregnant women who are not knowledgeable on MTCT about the importance of them knowing their HIV status and the dangers of MTCT of HIV if proper medical intervention is not effected on time.

Most of the TBAs interviewed claimed to always use protective gloves during delivery of babies, however, 1.5% of the TBAs interviewed admitted to reusing one set of gloves for multiple deliveries. According to them these gloves were washed before being reused. Furthermore, 0.8% of our respondents admitted to using their bare hands during delivery. The use of bare hands during delivery exposes TBAs to the risk of HIV infections. The use of one set of gloves for multiple deliveries increases the risk of HIV transmission from one client to the other. These risks have also been identified in other studies in Nigeria [28,37]. A similar study in Guatemala showed that rural midwives worked without gloves, soap, or running water [38]. A Tanzanian study also reported that 30.9% of TBAs admitted to using one pair of gloves for multiple deliveries.

The justification for this very unsafe practice by the TBAs is usually the claim that many of their clients were poor and hence cannot afford these essential disposables [39]. This unsafe and risky practice by the TBAs is inappropriate and should be discouraged.

Majority of the respondents who claimed to be aware of MTCT of HIV also believed that MTCT of HIV could be prevented. However, 9.3% of these respondents said they were not sure MTCT of HIV could be prevented, while 1% of these respondents were of the opinion that MTCT of HIV could not be prevented. Further investigation revealed that out of the 174 respondents who believed MTCT of HIV could be prevented, 69.5% believed that PMTCT could be achieved through proper medical intervention while 13.8% believed that it could only be achieved via divine intervention, 12.6% of these respondents stated that avoidance of breastfeeding was the only means of preventing MTCT of HIV, while 4% of these respondents (although aware that MTCT of HIV could be prevented) did not have any idea how this could be achieved. In a similar study in Uganda, 79% of the TBAs interviewed were aware that PMTCT of HIV can be achieved, however, further probing of the respondents who were aware that PMTCT of HIV can be achieved revealed that 62% of these TBAs could not spontaneously name any of the means of achieving PMTCT of HIV [20]. Almost all of our respondents admitted to using unsterilized blade (such as razor blade, local blade, etc) to cut the umbilical cord during child delivery. A similar study in north-east Nigeria showed that 91.7% of TBAs practicing in this region severed the umbilical cord using unsterilized razor blade [40]. This finding is in contrast with a report from Thailand were 80% of the TBAs claimed that sterilization of the blade used to cut the umbilical cord is carried out before use [21]. The use of unsterilized sharp objects to cut the umbilical cord during delivery by TBAs is an unsafe practice. A significant number of the TBAs interviewed admitted to reusing the same blade for multiple deliveries. The use of one blade for multiple deliveries by TBAs has also been reported by Eregie and Oforwe as well as Ofili and Okojie [22,41]. This very unsafe practice further exposes the neonates to the risk of HIV infection. Although TBAs play a significant role in providing psychosocial support to the pregnant women and attend to deliveries particularly in rural areas with inadequate health facilities, their knowledge and practice of PMTCT as revealed in this study is less than adequate. Training of TBAs can increase knowledge, improve attitudes and reduce risky practices [42]. A study in South Africa to evaluate the impact of training of TBAs in HIV/AIDS showed that the training of TBAs significantly improved their knowledge and enhanced their practices [43,44]. Interventions such as PMTCT programmes can only be successfully implemented if communities understand the underlying problems and know about the existence and benefits of the services [44]. The integration between community health workers such as TBAs and the formal health services can bring valuable benefits to community-based public health interventions and open ways for a number of activities related to prevention and care [45,46]. Complementary approaches, in which community-based interventions are paired with the strengthening and/or expansion of services at the health facility level, also have the potential to address a variety of other health challenges, such as uptake of HIV testing and compliance to PMTCT regimens [46,47]. Although the scale-up of PMTCT of HIV awareness campaign is on the increase however a number of barriers need to be overcome in order to increase access to PMTCT services.

5. CONCLUSION

The knowledge and practice of PMTCT of HIV among TBAs practicing in Akwa Ibom, Nigeria as revealed in this study is less than adequate. Though the level of awareness of the existence of HIV/AIDS among the TBAs was high, most of the TBAs had a poor knowledge of MTCT of HIV and PMTCT of HIV. There is need for increased HIV, MTCT and PMTCT of HIV awareness campaign amongst TBAs practicing in Akwa Ibom, Nigeria. There is also need for increased community participation for support and delivery of PMTCT services.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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