

## Knowledge and Practice of Prevention of Mother-to-child transmission of HIV Among Traditional Birth Attendants in Taraba State, North-east Nigeria

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### Abstract

**Background:** In resource-constrained countries such as Nigeria, Traditional Birth Attendants (TBAs) still play a crucial role in providing maternity and childcare services including Prevention of Maternal to Child Transmission of HIV (PMTCT). It is therefore imperative to assess the knowledge and practice of PMTCT of HIV among TBAs in Taraba State.

**Methods:** This study adopted descriptive cross-sectional study. The cluster sampling method was used to select the facilities to be included in the study. In the first stage, the state was divided into three zones, one zone was selected using balloting with replacement. In the second stage, all the facilities in the selected zone with TBAs were used for the study. The purposive sampling method was used to select 143 TBAs. A researcher structured, questionnaire was used for data collection. Frequencies and per centages were used to analyze the research questions while chi-square statistic was used to analyze the hypotheses at 0.05 level of significance using the Statistical Package for Social Sciences (SPSS) version 28.

**Results:** All respondents in the study were females, and majority (86%) had good knowledge about HIV and PMTCT, while one-third (31.5%) believed that HIV can be cured. A good number of the respondents observed good infection prevention control measures, however, the majority of the TBAs (85.0%) lacked adequate water supply during deliveries. Good knowledge of HIV and PMTCT was significantly associated with HIV counselling of the clients ( $p=0.035$ )

**Conclusion:** Most of the participants had good knowledge and practice of HIV and PMTCT. Continuous training and retraining of TBAs, adequate water supply as well as increase remuneration will improve the quality of their services.

**Keywords:** HIV/AIDS, PMTCT, TBA, Prevention, Practice

### Introduction

Human Immunodeficiency Virus /Acquired Immunodeficiency Disease (HIV/AIDS) remains a disease of public health importance globally, being one of the leading causes of morbidity and mortality (WHO, 2022) Studies have revealed that sub-Saharan Africa (SSA) accounts for 71% of People Living with HIV/AIDS (PLWHV) worldwide, and the infection is more in women than men (WHO, 2018). In 2021, 1.5 million people were newly infected worldwide, and almost 60% of these were from the WHO African Region (Global Health Observatory, 2022). Unlike other regions of the world such as East Asia and the Pacific, the high infection rate in SSA based on age and sex distribution pattern, is mainly through

heterosexual transmission (UNICEF, 2022). Other drivers of the HIV epidemic in some developing countries include cultural practices that are adjudged to relate to increased risk of virus transmission such as female genital mutilations (FGMs), medicinal blood lettings, use of shared sharp instruments, group circumcision among others (Ahmed et al., 2005). They further reported that, it is estimated that more than 17,000 Nigerian women become pregnant every day and approximately 1000 of these women are HIV positive. In 2016, Nigeria accounted for 37,000 of the world's 160,000 new cases of babies born with HIV (HIV initiative, 2019).

Of the estimated 1.9 million people infected with HIV in Nigeria, (Federal Ministry of Health, 2018) heterosexual transmission accounts for 80%, about 10% through mother-to-child transmission (MTCT), while the remaining 10% is as a result of the use of unsterilized needles, surgical instruments, infected blood and blood products. In 2009, a total of 278,000 Nigerian children were said to be living with HIV infection and 90% of these infections were as a result of MTCT (Balogun & Odeyemi, 2010). To stem the tide of MTCT of HIV infection in Nigeria, like many other resources constrained high burdened countries of the joint united nations programme on HIV/AIDS (UNAIDS), it is the recommendation of partners including WHO, UNICEF, UNAIDS and governments for national and sub-national HIV response programs to institutionalize PMTCT strategy B+ (Kings et al., 2020). This entails early HIV counseling and testing of all pregnant mothers, enrollment on Anti-Retroviral Therapy (ART) for those that are eligible, medical care before, during and after child births of HIV positive women, as well as early diagnosis and treatment of exposed babies (Darby & Jones, 2021). However, it is reported that at least half of all births in developing countries occur in the absence of skilled birth attendants (Doctor et al., 2020).

The World Health Organization (WHO) in 2004, defined TBA as "traditional, independent (of health system), non-formally trained and community-based providers of care during pregnancy, childbirth and the post-natal period" (WHO, 2004). TBAs suffer some forms of rejection from qualified health personnel for lack of competence and skills in recognizing and dealing with Emergency Obstetric Care (EMOC) and they do not adequately & timely link clients with the formal health system (Thatte et al., 2009; Samento, 2014 ). Yet, in view of the varying degrees of shortages of qualified health personnel globally, estimated to be up to 4.2 million by WHO; in sub-Saharan African countries and indeed in all parts of Nigeria, TBAs are adjudged to play important roles in providing maternity care based on the local conditions (Samento, 2014; Musyamba et al., 2017 ). Studies have shown that they command the respect and confidence of community members since they are more familiarized with their local clients than the facility based skilled health workers as well as more indigenous in their duty posts and do not usually demand monetary payments from their clients for the services given (Vyagusa et al., 2013). In the light of trained TBAs advantage position in filling the gap in maternal care, especially in hard-to-reach rural areas, they have been involved in the PMTCT services to enhance service uptake through clients mobilization, initiation of ART and infant diagnosis; as high number of HIV positive pregnant women do not receive prophylaxis to prevent the virus transmission to their babies (Madhivanan et al., 2010).

In Nigeria it has been demonstrated that only about 20% of pregnant women receive HIV counseling and Testing (HCT), and this low coverage is attributable to several issues among which are limited number of HCT centers and limited number of deliveries taking place at health facilities (Balogun & Odeyemi, 2010). A previous study reported that TBAs take about 60% of deliveries in Nigeria (Ahmed, et al., 2005) Therefore, trained TBAs can

play a major role in the prevention of HIV infection as they attend to deliveries in their respective communities, hence the compelling need for them to observe "standard precautions" to prevent HIV transmission through blood contacts (Audet et al., 2015; Friday et al., 2012). However, many a times, TBAs become complaisant especially the untrained ones and use bare hands or unsterilized sharp instruments that may increase the risk of HIV infection to themselves or mothers (Bij et al., 2002). It has also been found that TBAs in Nigeria trained in HCT significantly increased their knowledge and skills around HIV prevention and adopt universal precaution measures inclusive of wearing of gloves during delivery, sterilization of delivery equipment, participation in blood safety training and disposal of sharps which themselves are key to improve maternal and child health (Amaran & Onwube, 2013; Osuji et al., 2015; Taiwo & Jalo, 2006). This study was conducted to determine the knowledge and practice of prevention of mother-to-child transmission of HIV among TBAs in Taraba State bearing in mind their immense contribution to the health system and the community. The outcome will shape the ways and manner TBAs are being integrated into the existing health systems with reference to PMTCT services. The objectives of this study include: to determine the level of knowledge of TBAs towards the prevention of mother-to-child transmission of HIV and to determine the practices of prevention of mother – to- child transmission of HIV among TBAs. The study hypothesized that there is no significant relationship between the level of knowledge and the practice of prevention of mother –to-child transmission of HIV among TBAS working in Taraba State Health facilities.

## **Methods**

### **Design , Study Area, Population and Sampling, Data Collection and Data Analysis**

This study was conducted in Taraba State, one of the 36 states in Nigeria; located in the Northeastern part of the country. Taraba is often referred to as "nature's gift to the nation" because of its rich natural endowments that is attractive for tourism, agriculture, and mineral explorations. The State is bounded by Bauchi, Gombe, and Adamawa States to the North-east, and by Plateau, Nasarawa and Benue to the north central. It shares an international boundary with the Republic of Cameroon to the south and south-east. The State has an estimated population of 3.4 million people; projected from the 2006 National Population Census figures, residing in 168 political wards across 16 Local Government Areas (LGAs) and 2 Special Development Areas (SDAs). The cross-sectional research design was adopted for the study. The facilities used for the study were selected using cluster random sampling technique. The first stage consisted of clustering the state into three zones; one zone was randomly selected using balloting with replacement. In the second stage, all the facilities with TBAs in the selected zone were included in the study. The study population consisted of government registered Traditional Birth Attendants (TBAs) residing and practicing in Taraba State. Purposive sampling was used to select 143 respondents who were available and gave their consent for participation for the study

### **Ethical considerations**

The study was reviewed and approved by the Health Research Ethics Committee of the Federal Medical Center Jalingo, Taraba State. Informed consent was obtained from all participants, and participation was made voluntary. Respondents' personal identifiers were not obtained to ensure anonymity and confidentiality of the information collected. The data

was password-protected in a personal computer that only the data analyst and researchers had access to them.

**Data collection procedure, Processing and Analysis**

Four trained research assistants collected the data using a pretested, semi structured questionnaire designed by the researchers. Knowledge and practice of PMTCT among TBAs was measured using three sections of the questionnaire. Section A elicited information on respondents’ socio-demographic variables, section B elicited information on knowledge of PMTCT, while section c elicited information on practice of PMTCT.. The data analysis was done using the IBM Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics were performed, and data presented in frequency and percentages. Continuous variables were summarized using mean (standard deviation) or median (interquartile range) as appropriate. The chi- square statistic was used to test the association between knowledge and practice at 0.05 level of significance. The main outcome variable- Prevention of transmission of HIV from Mother-to-child ; hand washing with soap and water between patients, wearing of surgical gloves, eye shield, apron, gown, proper sterilization of instruments, HIV counseling and testing, HIV drugs for HIV positive mothers, timely referral of positive infants for treatment, were measured dichotomously. Respondents were asked to indicate yes if they adopted them for HIV prevention or otherwise no. Explanatory variables include number of births attended to, years of practice, training etc.

**Results**

**Table 1: Socio-demographic Characteristics of Respondents (n=143)**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age group (years)</b>		
20-29	11	7.7
30-39	36	25.2
40-49	51	35.7
50-59	31	21.7
60+	14	9.8
<b>Mean (SD)</b>	44.8(10.82)	
<b>Sex</b>		
Female	143	100
<b>Marital status</b>		
Married	87	60.8
Separated/Divorced	8	5.6
Single	6	4.2
Widowed	42	29.4
<b>Education</b>		
None	24	16.8
Primary	72	50.3
Secondary	14	23.1
Tertiary	33	9.8
<b>Religion</b>		
Christianity	78	54.5
Islam	65	45.5
<b>Ethnicity</b>		

Mumuye	54	37.8
Hausa/Fulani	33	23.1
Wurukum	15	10.5
Jenjo	8	5.6
Jukun	4	2.8
Others	29	20.2
<b>Duration of practice</b>		
(years)		
1-10	77	56.6
11-20	34	25.0
21-30	13	9.6
30+	12	8.8
Median (IQR)	10(20)	
<b>Source of training</b>		
Other TBAs	79	55.2
Health facility	75	52.4
Mother	69	48.3
Other relatives	28	19.6
Father	3	2.1
<b>Duration of training (months) n = 142</b>		
1-6	89	62.7
7-12	40	28.2
13-24	6	4.2
>24	7	4.9
Median (IQR)	5 (9)	
<b>Deliveries/month</b>		
1-5	100	69.9
6-10	39	27.3
>10	4	2.8
Median (IQR)	5(3)	
<b>*Other work activities</b>		
Home visits	83	58.5
Family planning	22	15.5
ANC	9	6.3
Infertility treatment	7	4.9
Circumcision/incision	3	2.1
Others	4	2.8
None	49	34.5

**\*Multiple responses apply**

Table 1 shows that all respondents (100%) were females and majority (60.8%) of them married. The highest proportion (35.7%) of them was in the age group 40-49 years with a mean age of 44.8 years  $\pm$  10.8 SD. One-half (50.3%) had only primary education and less than one-quarter (23.1%) were educated up to secondary school. The Mumuye ethnicity had the highest proportion of respondents (37.8%), followed by Hausa/Fulani (23.15). The highest proportion of the respondents were trained on the job by other TBAs (55.2%), more than one-half (56.6%) had practiced for 1-10 years with median (IQR) of 10 (20), and the training duration for most (62.7%) was 1-6 months, median (IQR) of 5 (9). The median (IQR) number of deliveries conducted per month was 5 (3).

**Table 2: Respondents’ Knowledge of Modes of Transmission of HIV (n=143)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>*Modes of transmission</b>		
Contaminated sharps	138	96.5
Sexual intercourse	136	95.1
Infected mother to child	117	81.8
Blood transfusion	102	71.3
Misconceived responses	77	53.8
<b>Possibility of MTCT of HIV</b>		
Yes	122	85.3
No	18	12.6
Don’t know	3	2.1
<b>*Period of MTCT of HIV</b>		
During pregnancy	47	32.9
During delivery	94	65.7
During breastfeeding	104	72.7
<b>HIV can be cured</b>		
Yes	45	31.5
No	95	66.4
Don’t know	3	2.1
<b>Overall knowledge</b>		
Good	123	86.0
Poor	20	14.0

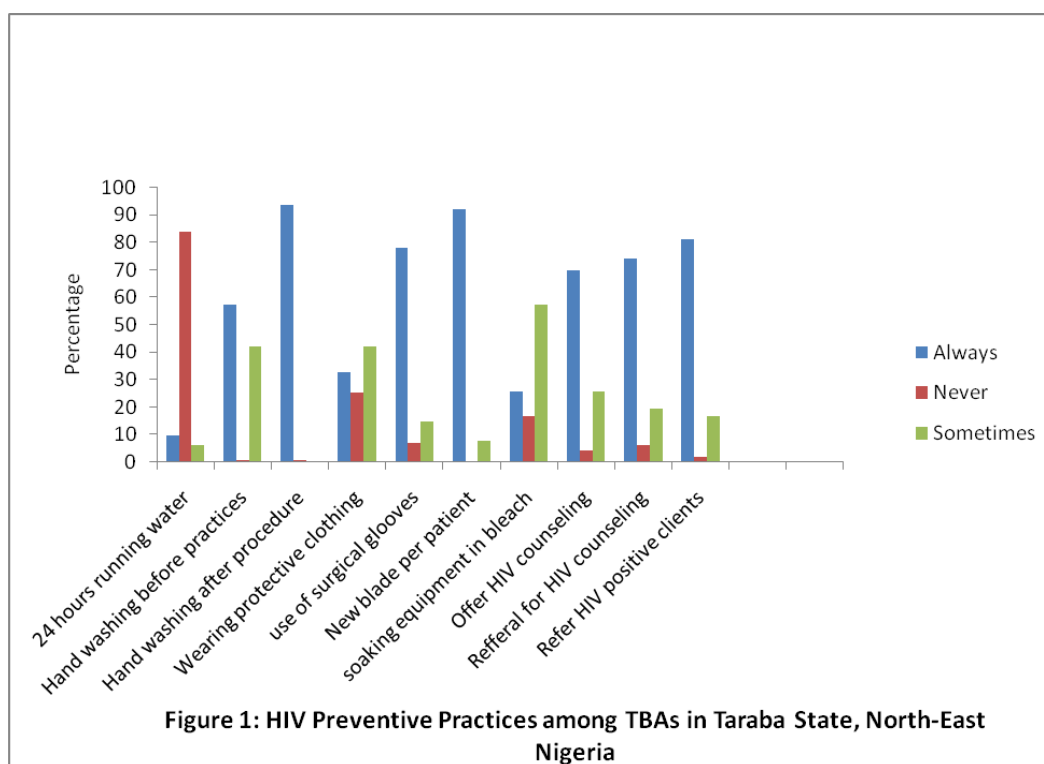
**\*Multiple responses apply**

Table 2 shows that the modes of transmission of HIV commonly known to the TBA were contaminated sharps (96.1%) and sexual intercourse with an infected partner (95.1%). More than half (53.8%) of the respondents gave some misconceived responses such as kissing, sharing of utensil, and mosquito bites as possible modes of transmission of HIV. The majority (85.3%) of the participants possess the knowledge that it was possible for an infected mother to transmit HIV to her child. The period of maternal transmission known to most (72.7%) was during breastfeeding while about two-thirds (65.7%) mentioned during delivery. Over three quarters (86.0%) had good knowledge of HIV and PMTCT.

**Table 3: Association between Level of Knowledge and HIV Preventive Practices of Respondents**

<b>Variable</b>	<b>Knowledge of HIV/MTCT</b>			<b>Chi-square (P-value)</b>
	<b>Good</b>	<b>Poor</b>	<b>Total</b>	
<b>HIV Counselling of patients</b>	<b>Freq (%)</b>	<b>Freq (%)</b>	<b>Freq (%)</b>	
Always	82(82.0)	18(18.0)	100(100)	4.452(0.035)
Not always	41(95.3)	2(4.7)	43(100)	

Table 3: shows that only about one-tenth (9.8%) of respondents had 24-hour supply of running water in their facility, as overwhelming majority (83.9%) did not. Surgical gloves were always used by more than three-quarter of the respondents but only one-quarter soaked their instruments in bleach after use and 7.7% did not use new razor blade per patient in cutting the umbilical cord. Most of the participants (74.1%) referred their clients for HIV testing services to health facilities that offer them [Figure 1]. Over two-thirds (69.9%) counselled all their patients about HIV. There was a statistically significant association between level of knowledge and the practice of counselling clients for HIV ( $p=0.035$ ) as those with good level of knowledge about HIV and MTCT claimed to counsel their clients for HIV.



## Discussion

The knowledge and practice of HIV prevention, by TBAs who complement child delivery services in low-resource settings, is required to keep everyone, especially the next generation, free from the menace of HIV. Research has shown that 90% of HIV in children is because of mother-to-child transmission, therefore the use of preventive measures by this group of women is one of the sure ways of preventing HIV transmission to children (WHO, 2022). Since there appears to be high preference for TBAs during home deliveries by some women in developing countries, determining the knowledge and utilization of PMTCT among TBAs is very crucial in designing interventions for them to promote and maintain the utilization of these services in the prevention of transmission of HIV/AIDS especially from mother-to-child.

In this study, all the TBAs were females, like another study in Kenya (Balogun & Odeyemi, 2010). This contrasts with a survey in Lagos State, South-West Nigeria where about 41% of the TBAs were males.<sup>9</sup> This finding is not unusual in our study setting as cultural practices and beliefs in northern Nigeria do not allow men to examine or see the nakedness of a woman except their husbands, and only in situations where there is no female health worker.

Although majority of the respondents knew that there is the possibility of MTCT of HIV, above one-tenth either denied such possibility or were not aware. Elsewhere in Lagos, (Balogun & Odeyemi, 2010) Ethiopia (Negassa et al., 2001) and Kenya (Serone et al., 2012) too, a proportion of TBAs did not know that there is possibility of MTCT of HIV. This is worrisome as such knowledge is fundamental for such a group of people. Ignorance of the fact of MTCT will likely affect their understanding of the need to practice infection control measures against HIV. This calls for continuous training and retraining of TBAs on HIV especially in countries and communities where their involvement in child delivery has come to stay. Similarly, even though overall knowledge of HIV and PMTCT was good, certain wrong perceptions and beliefs among some TBAs such as the presence of a cure for AIDS are also issues of concern to the success of PMTCT programmes. A study in Ethiopia among TBAs however reported that all the women studied knew that HIV/AIDS cannot be cured (Negassa et al., 2001). In societies where religious and or traditional beliefs are strong, people believe that prayers or the use of some traditional concoctions can cure HIV/AIDS. (Tembo & Tembo, 2015). The implication is that these unscientific practices will likely put both TBAs and their clients at risk of contracting HIV as the false impression that prayers or traditional medications can prevent transmission of HIV or cure it, will make them not to employ the valid ways of preventing HIV transmission. Obviously, such people often decline the use of ARVs even when they get infected, preferring the use of wrong remedies.

Regarding preventive practices against MTCT, the practice of HIV counseling and referral for HIV testing were good among our study population. The majority of TBAs referred clients for HIV testing services at health facilities and or counseled all their patients about HIV. This finding is expected as people are becoming increasingly aware of the need to be tested as a means of protecting themselves and their families. Statistically significant association was found between level of knowledge and the practice of counseling clients for HIV. This is in agreement with the study of TBAs in Lagos State and in Kenya where those with good level of knowledge about HIV and MTCT had also counselled their clients for HIV.(Seroney et al., 2012). Similarly, TBAs in Delta state, Nigeria who had good knowledge about HTS were more likely to adopt good preventive practices against MTCT including offering HIV testing to their clients (Osuji et al., 2015). Majority of TBAs in Kenya also reported educating their clients to go for HIV counselling and testing (Seroney et al., 2012). The practice of counselling or referring pregnant women for HIV testing services by TBAs is becoming widespread and is often argued as one of the ways that TBAs can interface with health facilities in ensuring better maternal and child health outcomes.

Over three-quarters of the participants always used surgical gloves, and a new blade for cutting the umbilical cord. This corroborates with reports from previous studies in other states and countries (Balogun, & Odeyemi, 2010; Vyagusa, 2013). Some notable deficiencies in their practices were lack of running water, wearing of protective clothing to take deliveries and deficient sterilization process such as the non-use of bleach in soaking their instruments. These deficiencies were also found among TBAs in Lagos, Zambia, Tanzania, India, and have been reported even in health facilities in both southern and northern Nigeria (Tembo & Tembo, 2015).



## **Conclusion**

The study concluded that TBAs in this study had good knowledge about MTCT of HIV and good level of safe practices. Knowledge of MTCT was positively associated with the practice of HIV counselling and testing.

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