Knowledge, Practices and Attitudes of Traditional Birth Attendants to Intermittent Preventive Treatment for Malaria Prevention among Pregnant Women within Ondo West Local Government Area of Ondo State, Nigeria.

Abstracts

Intermittent preventive treatment (IPT) for malaria among pregnant women is a recommendation of the World Health Organization(WHO) to combat the various adverse outcomes of malaria in pregnant women, which includes low birth weight, preterm delivery, severe anemia, maternal morbidity and mortality especially among primigravids. Traditional Birth Attendants (TBA) has emerged as a significant influence in our society, particularly in the realm of maternal care and childbirth. Several economic, religious and socio-cultural factors have contributed to the preference of some pregnant women for their services over medical facilities.This study was therefore carried out to assess the knowledge, practices and attitudes of traditional birth attendants within Ondo West Local Government area to IPT for pregnant women reporting to them for care and delivery. The design employed in the study was descriptive cross-sectional survey. Data were collected by means of an adapted semi-structured questionnaire. The analysis of the data was done using SPSS version 26.0. Their demographic parameters were summarized with simple percentages and non-parametric chi-square test was used to determine the different associations of the variables. P values less than 0.05 were considered statistically significant. The findings indicated that most of the TBAs have good knowledge of the malaria vector and factors promoting the transmission of malaria. Majority (mean=82.9%) also demonstrated excellent understanding of the symptoms associated with malaria in pregnancy however, their knowledge on the risk associated with malaria in a pregnant woman remains comparably low (mean=61.1%). Their low knowledge on the risk associated with malaria in pregnancy affected significantly their attitudes and practice to intermittent preventive treatment for malaria prevention. This is because 50% of the TBA have not heard about IPT (P=0.01) and therefore do not administer treatment to asymptomatic pregnant women as recommended by WHO (P=0.00) and report of this study shows that majority (57.40%) of them attend to more than 31 pregnant women in a year. TBAs in this study need to be trained, retrained and equipped in order to ensure the policy on the free treatment of all pregnant women intermittently for malaria prevention is sustained.

Keywords: Knowledge, Practices, IPT, TBAs, Malaria, Pregnant women, Ondo West.

Introduction

Access to appropriate equipments, drugs, skilled attendants, referral to higher facilities, are some of the advantages of health facility delivery for women of reproductive ages and these has improved maternal and birth outcomes greatly according to the 2018 global health science report. The building and commissioning of Mother and Child hospital,a state of the earth facility greatly equipped with adequate medical appliances, competent and specialized health officials of various categories, needed to ensure safe motherhood, in Ondo West local government in the year 2011granted women and children below seven years free access to medical care at government expense. The hospital was not only in Ondo west local government but was replicated in other major local government areas across the state. Some other states in Nigeria also adopted these measures to ensure safe delivery for women across the country. However, despite this, Adedokun and Uthman (2019) affirmed in their study that 62% of women in Nigeria do not utilize government health services during child delivery.

In Nigeria, Malaria accounts for more cases and deaths than any other country in the world. It is a risk for 97% of Nigeria's population. According to the recently published World Health Organization report, Nigeria accounts for almost one-third (27%) of the global malaria cases (68 million) and the highest number of deaths (194,000) in the year 2021. Malaria causes 60% of outpatient visits and 30% of hospitalizations among children under five years of age in Nigeria. (Report on Malaria in Nigeria, 2022).

Malaria in pregnancy is of great concern especially because of the risks it poses not only to the mother but also the fetuses and neonates (Fried and Duffy, 2017). It often results into poor birth outcomes such as low birth weights and predisposes babies to infant mortality and lifelong morbidities. Although the 2016 World Health Organization (WHO) antenatal care model has been adopted by the Nigeria Government to minimize malaria impacts on pregnant women, evidences abound that many pregnant women patronizes traditional and religious birth outlets and there are no proofs malaria treatments are administered to them intermittently as prescribed. Reports of studies conducted by Ogundipe (2013) reflect on the attitude of pregnant women in Ondo West local Government Areas to the utilization of government facilities for child delivery. It was reported that despite free treatment, certain religious, cultural and traditional factors

hinders many women from utilizing government health services for child delivery. In the recent times, the services provided by these government health facilities are no longer free and the fuel subsidies removal by the Nigerian government is biting hard on people. The economic realities together with other factors earlier mentioned might have caused a surge in the number of pregnant women reporting for care in traditional and religious birth homes. Sustaining intermittent preventive treatment for malaria prevention in pregnancy therefore requires detailed information to fill the research gaps on the knowledge, practices and attitudes of local birth attendants within Ondo west local government Area to malaria management among pregnant women reporting to them for care and child delivery.

Methods

This study was conducted in Ondo West local government area, one of the eighteen local government areas in Ondo State, in the southwestern region of Nigeria. The headquarters of the local government is in Ondo city. It has an area of 970km^2 and a population of 283,672 according to the report of the 2006 national population census. Ondo people are mostly farmers, traders, artisans and civil servants. It has infrastructural facilities, tertiary institutions, state university teaching hospital, a few private clinics and primary health care centres. Most inhabitants are Christians while few are Muslims. The climate of Ondo west local government area is tropical with two distinct seasons, the rainy season (April –October) and the dry season (November-March) the temperature throughout the year ranges between 21^{0}C-29^{0}C while the humidity is relatively high. Malaria transmission in Ondo State is high and occurs throughout the year because of the favorable climatic and environmental conditions.

The study was carried out among traditional birth attendants who are interested to be part of the study. Their leader was interviewed, who arranged a meeting with others who are said to be more than eighty within Ondo local government area. A date for meeting was fixed with the attendants for data collection and sensitization on malaria management during pregnancy. A semi-structured interviewer-administered questionnaire was used to collect information on the respondents' demography, knowledge of the causes and consequence of malaria infection during pregnancy and their attitudes and practices to intermittent preventive treatment for malaria prevention among pregnant women reporting in the care homes for antenatal and delivery.

Four field interviewers were trained by the principal investigator on how to interprete each items on the questionnaire to the study participants who consented to participate in the study by

coming for the meeting on the fixed date. 54 traditional birth attendants consented to participate out of more than eighty reportedly to be in operation within ondo west local government areas. The field interviewers explained each items in details before the participant select from the options provided in the closed ended questionnaire. The participants were then sensitized on malaria causes, transmission and breeding patterns. The consequences of malaria on pregnant women and their fetus werealso explained to them in details. The importance of intermittent preventive treatment for malaria prevention among pregnant women was adequately analysed to them. Thereafter, long lasting insecticide nets (LLINs) were distributed to the participant for use in their birth homes and further distribution to pregnant women reporting to them for care.

Data Analysis

Statistical analysis was done using version 26.0 Statistical Package for Social Sciences (SPSS) for windows. Simple percentages were used to compare their demographic parameters while Non-parametricchi-square test was used to determine the different associations of the variables as regardstheir knowledge, practices, and attitude to intermittent preventive treatment. *P* values less than 0.05 were considered statistically significant.

Results

Socio-demographic characteristics of the respondents

Fifty-four birth attendants agreed to participate in the study out of the more than eighty verbally reported to be in operation within the local government area under study. The socio demographic characteristics of the respondents are summarized in Table 1. Most of the birth attendants regards the career as a yield to a divine call (75.93%) while few others (25.07%) were simply interested.

Trainings and Technical know-how of birth attendants

Most of the birth attendants have more than 10 years experience (42.60%) and majority (57.40%) were trained in schools affiliated with churches popularly referred to as mission schools. Many have received in-service training organized by government but majority have only received the training once in the last ten years. Details of their trainings and technical-know how is shown in Table 2.

Knowledge of birth attendants on malaria causes, symptoms and risks associated with Malaria in Pregnancy

The birth attendants were all aware that mosquito bites transmits malaria parasites and majority also see factors such as poor sanitation (100%), stress (79.60%) cold weather (87.00%) intense sunlight (96.30%) and nutritional deficiencies triggers malaria symptoms in pregnant women. Symptoms associated with malaria in pregnancy according to the traditional birth attendants includes cold (74.10%), convulsion (59.30%) headache (77.80%) vomiting (72.20%) feverish feelings (100%), bitter taste (100%) general body weakness (92.60%) cough (90.70) and loss of appetite (79.60%)

The birth attendants all know that malaria in pregnancy could results into maternal illness. Majority of them know that malaria could lead to Jaundice (81.50%) and low birth weight (61.10%), however, less than 50% knows it could result into stillbirth and just 51.90% knows malaria causes Anemia. Details of their knowledge on causes, symptoms and risks associated with malaria in pregnancy are shown on tables 3, 4 and 5

Attitudes and Practice of birth attendants to IPT for malaria prevention among pregnant women reporting to them for care

Only 50% of the birth attendants ensure blood screening for their patients. A good number of them (57.40%) usually administered intermittent malaria treatments. However, 77.80% of them seem to restrict administration of malaria treatment to symptomatic patients. Majority (85.20%) of them have never been supplied ITNs freely in their clinic and most of them (75.90%) discussed malaria prevention with their patients. A good number of pregnant women patronized them as 57.40% of them attend to more than thirty women yearly. Details are shown in table 6.

Table 1: Demographic information of consenting birth attendants within Ondo-West LGA.

Demographic information	Number of Respondents N=54	Percentage (%)
Age group		
25 – 35	8	14.82
36 – 45	12	22.22

46 – 55	26	48.15
56 and above	8	14.82
Marital Status		
Single	15	27.78
Married	25	46.29
Divorced	14	25.93
Religion		
Pentecostal	48	88.89
Orthodox	2	3.70
Traditional	4	7.41
Muslim	0	0.00
Others	0	0.00
Educational Level		
Primary	27	50.00
Secondary	18	33.33
Tertiary	9	16.67
No formal education	0	0.00
Motivation for chosen career		
Divine call	41	75.93
Personal interest	13	24.07

Table 2: Information on Training and Technical know-how of birth attendants

Training and Technical know-how	Number of Respondent N=54	Percentage (%)	$\chi 2$	df	p value
Years of experience asmid-wife					
5 – 10 years	9	16.70	11.481	3	0.009

11 – 15 years	23	42.60			
16 – 20 years	15	27.80			
20 years and above	7	13.00			
Type of Training School					
Midwifery School	8	14.80	15.444	2	0.000
Mission School	31	57.40			
Trained by a midwifery	15	27.80			
Have you ever received in-service training organized by Government					
Yes	42	77.80	16.667	1	0.000
No	12	22.20			
How many times have you received government-organized training in the last ten years					
Once	37	68.50	30.778	2	0.000
Twice	11	20.40			
None	6	11.10			
Total	54	100.00			

Table3: Knowledge of birth attendants on the causes of Malaria among Pregnant Women

Knowledge on causes of Malaria	**Number of Respondent N=54**	**Percentage (%)**	**χ2**	**df**	**p value**
Poor Sanitation					
Yes	54	100.00			
No	0	0.00			

Stress					
Yes	43	79.60	18.963	1	0.000
No	11	20.40			
Cold Weather					
Yes	47	87.00	29.630	1	
No	7	13.00			
Bite from an infected mosquito					
Yes	54	100.00			
No	0	0.00			
Intense sunlight					
Yes	52	96.30	46.296	1	0.000
No	2	3.70			
Nutritional deficiencies					
Yes	49	90.70	35.852	1	0.000
No	5	9.30			

Table4:Knowledge of birth attendants on the Symptoms of Malaria among Pregnant Women

Knowledge of symptoms of malaria	Number of Respondent N=54	Percentage (%)	χ2	df	p value
Cold					
Yes	40	74.10	12.519	1	0.001

No	14	25.90			
Convulsion					
Yes	32	59.30	1.852	1	0.220
No	22	40.70			
Headache					
Yes	42	77.80	16.667	1	0.000
No	12	22.20			
Vomiting					
Yes	39	72.20	10.667	1	0.001
No	15	27.80			
Fever					
Yes	54	100.00			
No	0	0.00			
Bitter taste					
Yes	54	100.00			
No	0	0.00			
Weakness					
Yes	50	92.60	39.185	1	0.000
No	4	7.40			
Cough					
Yes	49	90.70	35.852	1	0.000
No	5	9.30			
Loss of Appetite					
Yes	43	79.60	18.931	1	0.00
No	11	20.40			

Table 5:Knowledge of birth attendants on the RisksAssociated with Malaria in Pregnancy

Risk Associated with Malaria Infection	**Number of Respondent N=54**	**Percentage (%)**	**χ2**	**df**	**p value**
Jaundice					
Yes	44	81.50	21.407	1	0.000
No	10	18.50			

Anaemia					
Yes	28	51.90	0.074	1	0.892
No	26	48.10			
Low birth weight					
Yes	33	61.10	2.667	1	0.134
No	21	38.90			
Maternal illness					
Yes	54	100.00			
No	0	0.00			
Still birth					
Yes	21	38.90	2.667	1	0.134
No	33	61.10			

Table 6: Attitude and Practice of birth attendants to intermittent preventive treatment for malaria prevention among pregnant women reporting to them for care

Attitude and Practice	Number of Respondent N=54	Percentage (%)	χ2	df	p value

Have you heard about IPT for malaria prevention in pregnancy?					
Yes	27	50.00	9.000	2	0.010
No	18	33.3			
Not sure	9	16.70			
Do you treat pregnant women intermittently for malaria prevention as recommended by WHO?					
Yes	31	57.40	1.185	1	0.341
No	23	42.60			
A pregnant woman only needs to take anti-malaria when having feverish feelings					
Agreed	42	77.80	16.667	1	0.000
Disagreed	12	22.20			
Have you ever been supplied ITNs freely in your clinic?					
Yes	8	14.80	26.741	1	0.000
No	46	85.20			
Do you discuss malaria prevention with your patients					
Yes	41	75.90	14.519	1	0.000
No	13	24.10			
On the average, how many pregnant women do you attend to yearly?					
10 – 20	8	14.80	15.444	2	0.000
21 - 30	15	27.80			
31 and above	31	57.40			

Discussion

Intermittent preventive treatment has been adjudgedeffective for malaria prevention among pregnant women (Peters and Naidoo, 2021). Report of this study shows that 48.15% of the traditional birth attendants (TBAs) within Ondo West local government areas were elderly

women whose ages ranged between 46 and 55 years old. This is comparable to the report of study conducted by Esan *et al.*,(2023) where 50.5 % of the TBAs were aged between 40-59 years old. A study carried out by Ofili and Okojie in 2005 indicate that only 11.1% of TBAs in Oredo local government of Edo state were less than 40 years old. Emerging reports from this study indicate younger women are becoming interested in the profession as about 25% are less than 40 years old similar to 19% reported by Esan *et al*., 2023. The increase in the number of younger women practicing as TBAs may be associated with high patronage receive from the populace. This is consistent with the report of the survey carried out by Adedokun and Uthman (2019) across Nigeria and found that 62% of women do not utilize modern health service for their child delivery. It also agrees with the report of Ogundipe (2013) that the number of women utilizing the services of mother and child hospital in ondo state for child delivery is low compared with the number registered for antenatal programmes. 50% of the women have only primary education, which is an improvement on the report of Ofili and Okojie (2005) where 60% of the TBAs had no formal education similar to what was reported by Itina (1997) from a study conducted in South-south, Nigeria. Low educational level among TBAs has been reported to posing certain challenges in effectively communicating and impacting significant knowledge through training for their development (Iwu*et al*., 2021;Gill *et al*., 2011; Balogun, 2010).

Majority of the TBAs had good knowledge on the factors that increases the risk for malaria infection and certain symptoms that may be associated with malaria.Although gaps were observed in their awareness of the risks associated with malaria in pregnancy. The high level of awareness on the causes and risk factors for malaria among the respondents may be associated with thefact that many of them are literate and have at least once received in-service training from government. Similar studies havereported high knowledge of malaria causes and symptoms among TBAs (Ejike,*et al*., 2016; Alabi *et al*., 2017).

Result from this study indicates poor knowledge of the TBAson the risks associated with malaria infection in pregnancy. A significant number of them do not know malaria in pregnancy can cause stillbirth (61.10%), low birth weight (38.90%) and anemia (48.10%). This could result into inadequate protection of pregnant women in their care against malaria infection. It may as well be argued that pregnant women reporting to these TBA for care do not have adequate knowledge of the risk associated with malaria in pregnancy. Fiavor and Adaobi (2022) emphasizes that it is

important pregnant women themselves havegood knowledge of the risks associated with malaria in pregnancy, this will help them to make informed decisions on where to receive adequate care during pregnancy. Educational level has been reported to be an important factor determining how knowledgeable pregnant women are on the risks associated with malaria in pregnancy (Akaba *et al*., 2013; Hill *et al*., 2013).

This study shows that 50% of the TBAsare not aware of intermittent preventive treatment (IPT) for malaria prevention in pregnancy similar to the observation of Adeniran *et al*., (2016).It can be assumed that they are yet to adopt the WHO guidelines on the treatment of asymptomatic malaria in pregnant women. It is shocking to observe that majority (77.80%) of the respondents feels treatment for malaria in pregnancy becomes necessary only when clinical symptoms are exhibited by the pregnant woman. These are clear signs of poor knowledge of the guidelines for the treatment of asymptomatic malaria in pregnancy in areas of stable malaria transmission as outlined by the WHO. The respondents equally have poor knowledge of the risks associated with malaria in pregnancy.Other studies have reported poor knowledge (awareness or understanding of a concept) of malaria management in pregnancy among TBA in Nigeria (Esan *et al*., 2023; Alabi *et al*., 2017; Ejike *et al*., 2016).

Although many (75.90%) of the respondents discuss malaria infection and itsprevention with their patients but their poor knowledge on the risk associated with malaria infection in pregnancy limits whatever instructions on malaria prevention they give to pregnant women under their care. The inability of most (85.20%) respondents to access free insecticide treated bed nets (ITN) and sulphadoxine-pyrimethamine (SP) either donated by the government or some other Non-Governmental Organizations (NGOs)threatens the sustainability of intermittent preventive treatment of malaria in pregnancy. This is because, the prevailing economic realities in Nigeria today may prevent asymptomatic pregnant women from prioritizing intermittent preventive treatment with sulphadoxine-pyrimethamine, if the supplies are not free as it is obtained in public health facilities. This could contribute to increase in morbidity and mortality attributed to malaria in pregnancy since more than 55% of the TBAs attends to more than thirty pregnant women annually. It is imperative that government through the Ministries of Health and collaborations with modern, trained and skilled health workers, organizedtrainings through conferences and

seminars for the TBAs on regular basis. This will ensure sustained adequate maternal care for pregnant women and consequently safe motherhood.

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