
KNOWLEDGE, ATTITUDES AND PRACTICES OF MALARIA AMONGST PREGNANT WOMEN IN ABA SOUTH LOCAL GOVERNMENT AREA, ABIA STATE, NIGERIA

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ABSTRACT

Malaria during pregnancy poses a substantial risk to mother and foetus especially in sub Saharan Africa. The study was therefore carried out to assess the knowledge, attitude and home based practices towards malaria among pregnant women attending antenatal care in Aba South Local Government Area, Abia State. Data was collected from 432 pregnant women who attended Primary Health Care Centre and Abia State University Teaching Hospital (ABSUTH) using structured questionnaires. Majority of the respondents 230(53.2 %) had good knowledge on the causes of malaria. Regarding symptoms associated with malaria in pregnancy, the respondents had varied opinion which included fever (47.2 %), headache (22.2 %), cold (13.2 %) amongst others with corresponding increase in the level of education. Quite a good number of the respondents correctly identified possible risk associated with malaria in pregnancy to include jaundice (51.6 %), anaemia (19.7 %), still birth (2.1 %) among many others. Many of the respondents alluded to visiting health centres (36.3 %), while a few others resorted to self-medication (17.1 %). The study therefore reveals the need to enlighten women of child bearing age on the usefulness of adequate and prompt preventive therapy to reduce the risk of malaria infection during pregnancy.

Keywords: Malaria, Pregnant women, Knowledge, Attitude, Practices, Aba South, Nigeria

INTRODUCTION

Malaria, a serious public health problem especially in most developing countries affects people living in tropical and sub-tropical areas (Snow *et al.*, 1999). A deadly parasitic disease caused by infection with *Plasmodium*. Malaria disease imposes serious effect on the blood by interfering with hemoglobin and destroying red blood cells (WHO, 2003). Malaria poses tremendous public

health problems across the globe with estimated 600,000 – 1,000,000 deaths attributed to it. Mortality is especially high in people not adequately protected by an acquired immunity, such as young children, pregnant women and migrants (WHO, 2013). In Africa, an estimated 10,000 pregnant women and 200,000 infants die as a result of malaria in pregnancy, Studies have shown that malaria worsens certain pregnancy outcomes that include, increased incidence of

anaemia, spontaneous abortions, inter uterine growth restrictions, still birth, low birth weight, fetal distress and congenital malaria (Rogerson *et al.*, 2007). Nigeria is known for high prevalence of malaria where at least 50 % of its population suffers from at least one episode of malaria each year accounting for over 45 % of all outpatient visits (Iriemenam *et al.*, 2011).

Regarding problems associated with malaria in pregnancy, the World Health Organization (WHO, 2001) has adopted a three pronged approach for reducing malaria burden among pregnant women. These approaches include, effective case management of malaria infection, the use of insecticide treated nets and intermittent preventive treatment in areas of stable transmission. The knowledge of how these strategies work in the population together with the identification of main determinants that influence protective behaviours among pregnant women are required to monitor and evaluate the progress of the malaria control efforts. Insufficient knowledge on the contributory factors to malaria justifies the study and therefore serves to educate women of child bearing age of the effects on maternal and neo-natal health and possible prevention and control measures in curbing the menace.

This study was therefore carried out to assess the level of knowledge of pregnant women on the causes, symptoms and risk of malaria in pregnancy with respect to their level of education. It is hoped that the result of this study would be used as base line information for researches that have envisioned a comprehensive understanding of the problem of malaria and design holistic intervention approach.

MATERIALS AND METHODS

Ethics: The study protocol was approved by the Postgraduate Committee of the Department of Zoology and Environmental Biology, Michael Okpara University of Agriculture, Umudike before commencing the hospital survey. Permission was then taken from the Head, Haematology and

Blood Transfusion Department of Abia State University Teaching Hospital as well as from the Head of Departments, Primary Health Care Centre, Aba South to work with pregnant women who attended their antenatal routine check-up. The purpose of the study was carefully explained to the subjects after which their consent was sought after, before administering the questionnaire.

Study Area: The study was carried out in selected areas of Aba, Aba South Local Government Area of Abia State, Nigeria. Aba is characterized by tropical climate with distinct wet and dry seasons spanning March – October and November – February respectively. Aba is located between latitude $5^{\circ} 7^{\prime}N$ and longitude $7^{\circ} 22^{\prime}$ (Amaechi and Ukpai, 2013). The inhabitants are mainly traders, farmers, artisans with a few civil servants. Aba is a city with infrastructural facilities, tertiary institutions one of which is Abia State University Teaching Hospital, a few private clinics and Primary Health Care Centres. The major religion is Christianity. The average humidity is 90 ± 5 % with an average temperature of 27 ± 5 °C and an average rainfall of about 2400 ± 1500 mm. The major agricultural crops grown include yam, maize, plantain, cassava, oil palm and vegetables. Flooding is widespread in the rainy season creating breeding sites for mosquito vectors and ideal transmission conditions for malaria.

Study Population: Four hundred and thirty two pregnant women between the ages of 15 and 45 years, who came for their antenatal routine checkup at Abia State University Teaching Hospital and Primary Health Care Centre, Aba South Local Government Area, Abia State between May and September, 2013 were used for this study. They were selected randomly without prior knowledge of their clinical and family history. Voluntary informed consent was obtained after each pregnant woman was given information regarding the research objectives and assurance of confidentiality.

Data Collection: Structured questionnaires were administered to the women containing questions on socio-demographic characteristics of the respondents, their knowledge on causes, symptoms and risk of malaria in pregnancy and their treatment seeking behaviour when malaria complications is suspected. Those who could not read or write were guided by the researcher to respond to the questionnaire.

Data Analysis: Data collected on peoples' KAP were managed and analyzed using computer program SPSS version 17.0. Chi-square (X^2) test was calculated to determine the different associations of the variables. Significant level was placed at $p < 0.05$.

RESULTS

Pregnant Women Knowledge on the Causes of Malaria: 1,230(53.2 %) pregnant women responded correctly to the cause of malaria which they attributed to mosquito bites. Incorrect causes of malaria proffered included stress, intense sunlight, spiritual attack among others. Knowledge on the causes of malaria improved with increase in the level of education as those who had obtained a tertiary education had the highest knowledge 91(60.7%), while those who had had no formal education had the lowest knowledge 2(13.3%). This association was found to be statistically significant ($p < 0.05$) (Table 1).

Knowledge of Symptoms of Malaria in Pregnancy with Respect to Level of Education: 204(47.2 %) of the respondents recognized fever as a major symptom of malaria. 96(22.2 %) recognized headache, while others symptoms recorded were cold 57(13.2 %), bitter taste 20(4.6 %) and weakness, 18(4.2 %). Again, the more educated respondents had significantly higher level of knowledge 87(58.0%) on the symptoms of malaria than the uneducated 3(20.0 %) (Table 2).

Knowledge on the Risk of Malaria in Pregnancy with Respect to Level of Education:

The knowledge on the risk of malaria in pregnancy with respect to the level of education as shown in Table 3 revealed that 223(51.6 %) of the respondents indicated that jaundice was a risk factor for malaria in pregnancy, 85(19.7 %) attributed it to anaemia, while 61(14.1 %) admitted that they had no knowledge on the risk of malaria in pregnancy. The level of knowledge improved with increase in the educational status of the respondents. The association was also statistically significant ($p < 0.05$) (Table 3).

Treatment Seeking Behavior of Respondent in Relation to Malaria:

The health-seeking behaviour of respondents showed that 99(22.9 %) of the women consult a medical doctor in a hospital when they are infected with malaria, while 157(36.3 %) would visit a health care centre. Interestingly, 78(18.1 %) of the respondents reported that they would visit a medical shop, while 5(1.2 %) preferred to use herbs (scent leaves). However, malaria prevalence was highest 52(70.3 %) among respondents that took drugs without prescription (self-medication) and lowest 21(21.2 %) among respondent that visited the hospital (Table 4).

DISCUSSIONS

The results obtained from the survey indicated varied knowledge on the causes, symptoms and treatment seeking behavior amongst pregnant women in Aba south Local Government Area, Abia State, Nigeria. The understanding of the possible causes and treatment seeking behavior amongst individuals especially high risk group such as pregnant women vary from person to person and from one locality to another (Idowu and Mafiana, 2007; Idowu *et al.*, 2008; Sam-Wobo *et al.*, 2008; Amaechi and Ukpai, 2013).

Table 1: Knowledge of the causes of malaria in pregnancy with respect to their level of education

Purported causes of malaria	Level of education of respondents				
	None (%)	Primary (%)	Secondary (%)	Tertiary (%)	Total (%)
Poor sanitation	1 (6.7)	5 (13.9)	67 (29.0)	45 (30.0)	118 (27.3)
Stress	5 (33.3)	9 (25.0)	12 (5.2)	5 (3.3)	31(7.2)
Cold weather	0 (0.0)	4 (11.1)	15 (6.5)	4 (2.7)	23(5.3)
Bite from an infected mosquito	2(13.3)	13 (36.1)	124(53.6)	91(60.7)	230(53.2)
Intense sunlight	5(33.3)	5 (13.9)	10 (4.3)	5 (3.3)	25(5.8)
Nutritional deficiencies	0 (0.0)	0 (0.0)	3 (1.3)	0 (0.0)	3(0.7)
Spiritual attack	2(13.3)	0 (0.0)	0 (0.0)	0 (0.0)	2(0.5)
Total	15	36	231	150	432

Table 2: Knowledge of the symptoms of malaria among the respondents with respect to the level of education

Suggested symptoms of malaria	Level of education of the respondents				
	None (%)	Primary (%)	Secondary (%)	Tertiary (%)	Total (%)
Cold	1 (6.7)	5 (13.9)	35(15.2)	16 (10.7)	57 (13.2)
Convulsion	2(13.3)	0 (0.0)	0(0.0)	0(0.0)	2 (0.5)
Headache	4(26.7)	4 (11.1)	67 (29.0)	21 (14.0)	96 (22.2)
Vomiting	2(13.3)	2 (5.6)	3(1.3)	5(3.33)	12 (2.8)
Fever	3(20.0)	9 (25.0)	105(45.5)	87(58.0)	204 (47.2)
Bitter taste	0 (0.0)	4 (11.1)	8(3.5)	8 (5.3)	20 (4.6)
Weakness	2(13.3)	4 (11.1)	8 (3.5)	4 (2.7)	18 (4.2)
Cough	1(6.7)	5(13.9)	4(1.7)	0(0.0)	10 (2.3)
Loss of appetite	0(0.0)	3(8.3)	1(0.4)	9(6.0)	13 (3.0)
Total	15	36	231	150	432

Table 3: Knowledge of the risk factors associated with malaria in pregnancy with emphasis on the level of education

Suggested risk factors of malaria in pregnancy	Level of education of respondents				
	None (%)	Primary (%)	Secondary (%)	Tertiary (%)	Total (%)
Jaundice	3 (20.0)	18(50.0)	124 (53.7)	78 (52.0)	223 (51.6)
Anaemia	0 (0.0)	3(8.3)	43 (18.6)	39 (26.0)	85 (19.7)
Low birth weight	0 (0.0)	0(0.0)	4 (1.7)	16 (10.7)	20 (4.6)
Maternal illness	0 (0.0)	1(2.8)	18 (7.8)	15 (10.0)	34 (7.9)
Still birth	0 (0.0)	0(0.0)	9(3.9)	0 (0.0)	9 (2.1)
No knowledge	12 (80.0)	14(38.9)	33 (14.3)	2 (1.3)	61 (14.1)
Total	15	36	231	150	432

Table 4: Treatment seeking behaviour of respondent in relation to malaria prevalence

Treatment seeking behaviour	Number of respondents (%)	Number positive for malaria parasite	Prevalence (%)
At the hospital	99(22.9)	21	21.2
A health centre	157(36.3)	38	24.2
Use of herbs	5(1.2)	2	40.0
Self-medication	74(17.1)	52	70.3
At a medical store	78(18.1)	50	64.1
No response	19(4.4)	10	52.6
Total	432	173	40.0

$\chi^2=79.253$, $df = 5$, $p<0.05$ (Significant)

It is known that malaria intervention programme aims at preventing mortality and reducing morbidity in areas of high endemicity and as well as alleviating socio-economic losses arising from malaria especially among the high risk group (Amaechi and Ukpai, 2013). For this to be realizable, frequent sustained effort at assessing local malaria situations for the implementation of adequate control measure is advocated.

Majority of the respondent had good knowledge on the causes and common symptoms associated with malaria and they recognized it as an important health risk during pregnancy. The study found a widely held perception of mosquito bite as the cause of malaria, although other causes such as stress, cold weather and intense sunlight were reported. A previous study on the cause of malaria in Aba revealed good knowledge among mothers and caregivers (Amaechi and Ukpai, 2013). The high knowledge of the correct cause of malaria will have a positive implication on the malaria control programme that is targeted on pregnant women. Similar surveys carried out in other parts of Nigeria have revealed a lack of knowledge on the cause of malaria where majority of respondents attributed malaria infection to involvement in strenuous jobs in hot sun, while a small portion attributed it to mosquito bites (Idowu *et al.*, 2008; Okeke and Okafor, 2008). The respondents recognition of fever, weakness, headache, body pains, vomiting and loss of appetite as common symptoms of malaria was similar to earlier report of Sam-Wobo *et al.* (2008) in Abeokuta, but reports from Akinleye *et al.* (2009) and Yusuf *et al.* (2008) in south-west Nigeria showed poor knowledge of the symptoms of malaria. Otubanjo *et al.* (2000) and Fawole and Onadoko (2001) had also reported poor knowledge, attitude, perception and home management of malaria in Lagos. However, improved symptoms of malaria were in agreement with previous findings from Enugu (Oguonu *et al.*, 2005) and Oyo town (Adedotun *et al.*, 2010). Public health education by mid wives and nurses during antenatal session may have brought about this right perception of malaria causes among the

respondents in the study area. However, knowledge of the consequences of malaria during pregnancy was poor especially the risk posed on the foetus. Poor physical access to public health facilities is a recognized impediment to the provision of early treatment in developing countries, especially in sub-Saharan Africa (McCombie, 1996). In order to cope, communities have resorted to self-medication through the unregulated private and informal sector. Thus, pharmacies, medicine shops or vendors, retail shops and medicines left over in homes are often the first source of treatment at the onset of symptoms (Ukaga *et al.*, 2003). Treatment seeking behavior of the respondents revealed a high prevalence of malaria among those who took drugs without prior prescription by a medical doctor (self-medication) followed by those who visited the patent medicine store each time they had the symptoms of malaria. However, higher percentage of the respondents reported that they would visit a health facility if infected with malaria during pregnancy. Also, the use of herbs by some pregnant women proved to be effective against to *Plasmodium falciparum*. In other words, herbs can be effective for treating malaria if government can educate those involved in the practice regarding the normal dose to be taken before getting well. Thus, adequate education of the people on effective home management of malaria will contribute significantly in reducing the burden of malaria.

Conclusion: Malaria, especially in pregnancy has remained a major public health problem in Nigeria despite concerted efforts to provide effective measures for its control and management. Despite the efforts in technological advancement in research, diagnosis, prevention and treatment, malaria is still one of the world's most serious health problems. Certain factors such as ignorance, illiteracy, drug resistance, poverty etc. have been shown to militate against the effective implementation and sustainability of the strategy. Therefore, political will from various governments and their agencies as well as empowering and

inculcating positive attitudes towards managing malaria effectively at home will help overcome these factors thereby reducing maternal and infant mortality and morbidity.

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