

Association between Socio-Demographic Characteristics and Knowledge, Attitudes and Perceptions of Malaria in Pregnancy among Pregnant Women Attending Antenatal Clinics at Hospitals in Okitipupa, Ondo State, Nigeria

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ABSTRACT

Background: Malaria is a life threatening parasitic disease caused by Plasmodium Species, transmitted by female Anopheles mosquitoes. Malaria in pregnancy is an obstetric, social and public health problem of all over the world particularly in tropical and sub - tropical countries which can have serious consequences for both the mother and her unborn child.

Objective: The objective of this study was to gain more understanding on the socio - demographic characteristics and knowledge, attitudes and perceptions on malaria in pregnancy among pregnant women attending antenatal clinics at hospitals in Okitipupa, Ondo state.

Methodology: This was a descriptive cross - sectional study. A multistage random sampling method was used to select 165 pregnant women attending antenatal clinics at hospitals in Okitipupa. Quantitative method was used for data collection. A self - administered was used for data collection. Data was analyzed using SPSS version 23.

Results: The mean age of the respondents was 28.6+5.1 years, 66.1% were between 26 -35 years, 95.2% were Christians, 84.2% were Yoruba, and 52.7% had secondary school education, 81.8% have had 1-3 pregnancies and births, 40.6% were in their third trimesters. 35.8% were traders. The chi - square revealed that there is a relationship between age ($p<0.001$), level of education ($p<0.000$), health care centre ($p<0.001$) and Knowledge, Attitudes and Perceptions of malaria in pregnancy.

Conclusion: This study therefore concluded that malaria in pregnancy is a global burden which it's present and future effects are very dangerous to the health of the individual, mother and the foetus in the womb, family, society and the nation at large. It is therefore recommended that health education on malaria in pregnancy should be upheld in high esteem. A clear understanding of the knowledge, attitudes and perceptions of a particular community can inform the design of Behavioural Change Communication (BCC) campaigns to measure the risk influence acceptance and use of any malaria control measures.

Keywords: Knowledge; Attitudes; Perceptions; Malaria; Pregnancy

INTRODUCTION

Malaria is a life threatening parasitic disease transmitted by female Anopheles mosquitoes. The infection during pregnancy is a major public health problem in tropical and subtropical regions of the world. In most endemic areas of Africa, pregnant women are the main adult risk group for malaria. Every year at least 30 million women in malaria prone areas of Africa become pregnant; most of these women live in areas of relatively stable malaria transmission

[1].

Malaria in pregnancy is an obstetric, social and medical problem in most parts of the world particularly the tropical and sub - tropical countries. Moreover, approximately 50 million women are living in malaria - endemic countries throughout the world become pregnant in each year. It is worth noting that, malaria worsens during pregnancy and together with anaemia is responsible for 10,000 maternal deaths and 200,000 infant deaths per year [2].

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The main burden of malaria infection during pregnancy results from infection with *Plasmodium falciparum*. (P. falciparum). Pregnant women are known to be more susceptible than non-pregnant women to malaria, and this susceptibility is greatest in first and second pregnancy. Maternal death may result either directly from severe malaria or indirectly from malaria -related severe anaemia. In addition, malaria may result in a range of adverse pregnancy outcomes, including Low Birth Weight (LBW), spontaneous abortion and neonatal death [3].

There has been an increase in human and financial commitments to the control of malaria nationally and internationally. It creates a major challenge and of public concern in Nigeria with a high prevalence rate. Federal Ministry of Health posited that malaria accounts for 110 million clinical cases annually [4]. It stated further that malaria has great impact on the nation's economy as about N132 billion is lost to malaria in form of treatment, cost, preventive and loss of man hours. The burden of malaria contributes substantially to the poor health situation in Africa and still remains a major global problem. It has devastating effects on both health and development, exacting its greatest toll on the world's poorest and most marginalized [1].

Malaria is a major public health problem in Nigeria where it accounts for more cases and deaths than any other country in the world Nigeria Malaria Facebook. Malaria is a risk for 97% of Nigeria's population and contributes to an estimated 11% of maternal mortality [5]. Early diagnosis and prompt effective treatment of malaria illness has been a cornerstone of malaria control [6]. This study therefore seeks to investigate the pregnant women in Okitipupa community's knowledge, attitudes and perceptions (KAP) on malaria in pregnancy (MiP).

MATERIALS AND METHODS

Study area

This study was conducted in Okitipupa, Ondo State. It has always been known as Ode-Idepe. The name Okitipupa originated from the elevation of the town and the colour of the soil which is red in colour referred to in Yoruba language and its dialects as 'pupa'. Okitipupa is derived from Yoruba language Okiti (Hilly) and Pupa (Red). There are various rivers in this Local Government Area like River Oluwa, Ofe, Miller, Yewa, Obondepe, Logoji and others that are numerous to mention that all goes to the Atlantic Ocean. The

presence of various rivers in this area provides breeding places for mosquitoes to develop from egg to adult mosquito stage. This has contributed to an increase in malaria in pregnancy among women attending antenatal clinic in Okitipupa, Ondo State. It has a Specialist Hospital, several Private Hospitals and Primary Health Care (PHC) facilities that provide antenatal care services for the pregnant women in Okitipupa. The residents of Okitipupa are predominantly farmers. It has an area of 803 km² and a population of 272,030 (est. as at 2011).

Study population

The study population comprises of all the pregnant women attending antenatal clinics at hospitals in Okitipupa, Ondo state. Leslie Kish formula ($n=Z^2 \times pq/d^2$) was used for calculating sample size. (Where; $z^2=1.96^2$, $p=11\%$ (World Malaria Report, 2011), $q=1-p$, $d^2=0.05^2$).

Study design and sampling

A cross - sectional descriptive method was adopted. A multistage sampling method was used in selecting the respondents from State Specialist Hospital and Comprehensive Health Centre, Ebute, Okitipupa which are both government owned health facilities. to see the level of infectivity.

Data collection methods

Information was collected using self - administered questionnaire. Questionnaire was pretested and used to collect data from the sample of population. 165 pregnant women were sampled and administered questionnaires to. The questionnaire comprised of questions on Socio - Demographic information, Knowledge on malaria in pregnancy, Attitude towards malaria in pregnancy and Perceptions on malaria in pregnancy.

Data analysis

The responses of the respondents were analyzed using Statistical Package for Service Solutions (SPSS) Version 23. The computation was done using tables, charts, means and simple percentages. The research statistics was tested at 0.05% level of significance and bivariate analysis was done with chi-square test.

RESULTS

The results have been tabulated below: (Tables 1-4)

Table 1: Socio - Demographic characteristics of the respondents.

Variables	Observable variables	Frequency (%)
Age group (in years)	16 - 25	41 (24.9%)
	26 - 35	109 (66.1%)
	36 - 45	15 (9.1%)
	Mean + Std deviation (28.6 + 5.1)	
Gender	Female	165 (100%)
Marital status	Married	165 (100%)
	Christianity	157 (95.2%)
Religion	Islam	7 (4.2%)
	Traditional	1 (0.6%)
	Yoruba	139 (84.2%)
Ethnicity	Hausa	3 (1.8%)
	Igbo	10 (6.1%)
	Others	13 (7.9%)

Number of pregnancies ever had and births	1-3	135 (81.8%)
	4-5	16 (9.7%)
	6 and above	14 (8.5%)
Gestational age (months)	First (1-3)	32 (19.4%)
	Second (4 -6)	66 (40.0%)
	Third (7 -9)	67 (40.6%)
Level of income	<10,000	51 (30.9%)
	10,000-30,000	79 (47.9%)
	31,000-50,000	25 (15.2%)
	51,000 and above	10 (6.1%)
Educational level	Primary	5 (3.0%)
	Secondary	87 (52.7%)
	Tertiary	77 (44.2%)
Occupation	Trading	59 (35.8%)
	Teaching	27 (16.4%)
	Civil Servant	19 (11.5%)
	Self-Employed	42 (25.5%)
	Unemployed	18 (10.9%)
Hospital/health centre name	State specialist hospital	95 (57.6%)
	Comprehensive health centre	70 (42.4%)

Table 2: Relationship between Socio - Demographic characteristics and knowledge of malaria in pregnancy.

Variables	Have you ever heard about malaria in pregnancy		X ²	P-value	Remarks
	Good (%)	Poor (%)			
Age groups (in years)					
16 - 25	38 (24.20%)	3 (37.50%)	21.461	0.001	SS
26 - 35	106 (64.24%)	3 (37.50%)			
36 - 45	13 (7.88%)	2 (25.00%)			
Total	157 (100%)	8 (100%)			
Level of education					
Primary	4 (2.55%)	1 (12.50%)	22.535	0.000	SS
Secondary	81 (51.59%)	6 (75.00%)			
Tertiary	72 (45.86%)	1 (12.50%)			
Total	157 (100%)	8 (100%)			

Note: SS: Statistically Significant, NSS: Not Statistically Significant
Significant relationship at value less than 0.005

Table 3: Relationship between Socio - Demographic characteristics and attitudes towards malaria in pregnancy.

Variables	To prevent myself from getting malaria is to avoid getting mosquito bites		X ²	P-value	Remarks
	Positive (%)	Negative (%)			
Age groups (in years)					
16 - 25	37 (25.52%)	4 (20.00%)	17.365	0.004	SS
26 -35	98 (67.59%)	11 (55.00%)			
36 - 45	10 (6.89%)	5 (25.00%)			
Total	145 (100%)	20 (100%)			

Note: SS: Statistically Significant, NSS: Not Statistically Significant
Significant relationship at value less than 0.005

Table 4: Relationship between Socio - Demographic characteristics and perceptions of malaria in pregnancy.

Variables	Use of herbs (agbo) can prevent malaria during pregnancy		X ²	P-value	Remarks
	Good (%)	Poor (%)			
Age groups (in years)					
16 - 25	30 (26.09%)	11 (22.00%)	17.526	0.004	SS
26 - 35	76 (66.09%)	33 (66.00%)			
36 -45	9 (7.83%)	6 (12.00%)			
Total	115 (100%)	50 (100%)			
Hospital/health centre name					
State Specialist Hospital	54 (46.96%)	41 (82.00%)	17.520	0.000	SS
Comprehensive Health centre	61 (53.04%)	9 (18.00%)			
Total	115 (100%)	50 (100%)			

Note: SS: Statistically Significant, NSS: Not Statistically Significant
Significant relationship at value less than 0.005

DISCUSSION

Socio-demographic characteristics of the respondents

The respondents' ages were between 16-45 years and their mean age is 28.6±5.1. 109 (66.1%) were between 26-35 years old. All the respondents 165 (100%) were females and married, 157 (95.2%) were Christians, 139 (84.2%) were Yoruba, 3 (1.8%) respectively. 135 (81.8%) have had 1-3 numbers of pregnancies/births, 67 (40%) and 66 (40.6%) of the pregnant women are in their second and third trimesters. 79 (47.9%) earned between 10,000- 30,000 monthly, 87 (52.7%) had secondary school education and 59 (35.8%) are traders and 95 (57.6%) registered at State Specialist Hospital, Okitipupa for their antenatal clinics. A similar study was conducted in Badagry, Lagos State, Nigeria of which the age of the women ranged from 16 to 45 years, with a mean age of 29±4.3 years. The predominant ethnic was Yoruba, 277 (62%). Commonest occupation was traders, 160 (36%). Educationally, 185 (41%) had secondary education, 345 (76%) of the respondents were Christian, most of the women (95.8%) were married. Results showed that 162 (36%) and 122 (27%) of the women have 1 or 2 children, respectively. At the time of the interview, the ages of their pregnancies ranged between 8 and 38 weeks, with a mean of 28 weeks [7-12].

Knowledge of malaria in pregnancy

The chi-square pointed out that there is a significant relationship between age ($p < 0.001$), level of education ($p < 0.000$) and the knowledge of malaria in pregnancy.

Attitudes towards malaria in pregnancy

The chi-square showed that there is a significant relationship between age ($p < 0.004$) and the attitudes towards malaria in pregnancy.

Perceptions of malaria in pregnancy

The chi-square result revealed that age ($p < 0.004$) and hospital/health centre ($p < 0.000$) where the respondent registered for antenatal clinics has a significant relationship with the perceptions of malaria in pregnancy.

CONCLUSION

This study therefore concluded that malaria in pregnancy is a global burden which its present and future effects are very dangerous to the health of the individual (mother and the foetus in the womb), family, society and the nation at large. All efforts must be channelled towards the prevention, diagnosis, treatment and control of malaria in pregnancy so as to avert the resultant effects of malaria in pregnancy on the mother, unborn child, family, community, nation and the world at large.

ETHICAL CONSIDERATION

Approval to conduct the research in the health facilities in Okitipupa was sought from the authority in the various health facilities. Informed consent was obtained from the respondents before administering the questionnaire and confidentiality of all respondents was ensured.

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