

Knowledge of Malaria Infection and Preventive Seeking Behavior among Pregnant Women Attending Antenatal Clinic in a Tertiary Health Institution in North Eastern Nigeria

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Abstract

Nigeria contributes the highest morbidity and mortality rate to the global burden of malaria. It is a known fact that malaria is one of the major public health issues in developing countries in which about 3.4 billion people are at risk of the disease globally. Pregnant women and children are classified to be the most vulnerable group that is mostly affected in the population.

Methodology: a descriptive cross-sectional study was conducted among pregnant women attending ante-natal clinic in a tertiary health institution, using a semi structured questionnaire. Scores were used to grade respondent knowledge of malaria infection and preventive seeking behaviour. Data was presented using descriptive statistics and inferential statistics was used for the association between various variables and preventive seeking behaviour of respondents towards malaria.

Result: The result shows that of 204 respondents interviewed the mean age was 27.6±6.2 years, 93% has good awareness about malaria infection, and a good proportion of the respondents i.e. 60.4% has good preventive seeking behaviour and all socio-demographic characteristics are statistically associated with preventive seeking behaviour ($p < 0.05$) except age which is ($p > 0.05$).

Conclusion: This study indicates that socio-demographic variables except age affect preventive seeking behaviour towards malaria among pregnant women, preventive seeking behaviour such as drinking traditional concoction should be discouraged so as not to affect the development of the fetus and more awareness campaign on the use of insecticide treated net should be carried out.

Keyword: malaria infection, preventive seeking behaviour among pregnant women, north eastern Nigeria.

Introduction

Although preventable, malaria continues to be one of the major public health issues in developing countries including sub-Saharan Africa, where about 90% of world's malaria deaths occur (Kinney et al, 2010). Malaria is a preventable disease, however about 3.4 billion people are at risk of the disease globally with 1.2 billion people at high risk (WHO 2013). Malaria remains endemic in Nigeria where the disease is common among pregnant women and children under the age of 5 years when compared to the rest of the population group (CDC 2018).

In pregnancy, malaria increases the risk of maternal anaemia, spontaneous abortions, stillbirth, and premature deliveries, rupture of the uterus, growth retardation and low birth weight (WHO 2018). In Nigeria, malaria is responsible for 60% of the outpatient visits to health facilities, 30% of childhood deaths, 25% of deaths in children under one year and 11% of maternal deaths (National Population Commission 2008). The financial loss due to malaria is estimated to be about 132 billion naira annually in form of treatment cost, prevention cost and loss of man-hours (Noland et al; 2014).

Malaria control worldwide is quite challenging in which more attention is required

by the community and individuals. Health education can improve on the control of malaria to address the gap in the knowledge, attitude a practice of individuals in communities (Farid B 2016)). Perception about malaria illness particularly in communities perceived susceptibility and belief about seriousness of the disease are important preceding factors decision making concerning preventive and curative actions (Rakhshani et.al 2003). The understanding of the possible causes, mode of transmission and individual preference and decision making about the adoption of preventive and control measure vary from community to community, individuals to individual. (Adongo Kirkwood 2005).

Achieving sustainable control of the disease depend extensively on public health education, promotional programs which focus on current and proven method of malaria prevention and management with knowledge about vector biology and behaviour and the malaria parasites, the importance of human behaviour in malaria transmission has not been critically evaluated. Studies focusing on the current practices of malaria prevention and treatment options in the population are sparse (Minijs and Obnst 2005).

Eliminating malaria in pregnant women and the general population is challenging despite WHO's recommendation for effective intermittent drug treatment and the use of insecticide treated net both the compliance rate and the medicine adherence rate are low (WHO, 2013). To improve control program called Roll Back Malaria (RBM) was initiated in 1998 by the director of WHO and endorsed in 1999 after discussion with various partners e.g. unicef and world bank (WHO 2013). In 2005 RBM proposed the scale-up malaria control program to further increase the scope of malaria prevention and treatment and to dramatically reduce malaria (Adongo et-al 2005). The discussion on malaria in pregnancy and in children under 5 years old in stable malaria transmission area like Nigeria but using strategies recommended by WHO: intermitted preventive treatment. ITN, at ANCs (Russel et.al 2010).

Nigeria has implemented three national malaria strategies plan (NMSP) till date, and is presently implementing the NMSP (2014-2020). This fourth NMSP aims to achieve pre-elimination status and reduce malaria related

death to zero by 2020 (Federal ministry of Health Nigeria and National Malaria Elimination Program 2014).

Evidence from malaria knowledge, attitude and practice (KAP) studies reported that misconceptions on malaria transmission and risk factors still exist with adverse impact on malaria control programs (Amusen et al. 2017). Findings from study conducted by Singh et al in rural areas of Northern Nigeria revealed that although knowledge about malaria prevention was high, it was poorly reflected in their practices. Another study assessed the knowledge of malaria prevention among mother in rural communities in South western Nigeria which found poor knowledge and the use of malaria preventive measure among pregnant women and mothers/caregivers of children under 5 years in rural areas (sighn et al 2014), this study aimed to determine the knowledge of malaria infection and preventive seeking behaviour among pregnant women attending antenatal clinic in tertiary health institution North east Nigeria much has not being done in the assessment of the knowledge on malaria based settings. This is to provide new insight on the level of knowledge gaps. This study will assist to improve implementation of integrated malaria control strategies. It will reveal the baseline indicator to evaluate and improve progress by malaria control programmes. Epidemiologically and behaviorally.

Methodology

A descriptive cross-sectional study design was adopted in this study which was carried out between September and February was to assess the knowledge of malaria infection and preventive seeking behaviour among pregnant women attending ante-natal clinic in a tertiary health institution in North eastern part of Nigeria. Ethical approval for this study was obtained from the ethical review committed federal medical centre Jalingo before the commencement of the study. The study participant consented to be part of the study.

The study employed simple random sampling method for recruiting participants who are attending ante-natal clinic in Federal Medical Centre Jalingo in their reproductive age of (15-49 years) who are residents of jalingo metropolis sample size was calculated using Snedor and

Cochran formular (1989) at 5% level of sig marginal error 10%.

A semi structured questionnaire, subjected to a pilot study for validation before the main study reviewed by research expert for more scientific impart correct or yes item was scored “1” and incorrect or NO was scored “0”. The media score was used as the cut off to classify knowledge level as either poor or good. Individual who scored less than the median was classified as having poor knowledge while scoring except median cut-off and above were classified as having good knowledge. The variable and measurement collected included

socio demographic data, economic status. Question assessing the participant knowledge of malaria infection and prevention. Data analysis was done using SPSS 21 Association between variables were tested using chi square and analysis of variance was carried out. All results were set at 0.05 level of significant.

Result

Out of 210 [two hundred and ten] semi structured questionnaire, 204 [two hundred and four] with valid response was obtained representing 97% response.

Table 1. Socio-demographic characteristics of the respondent and Association between respondent socio-demographic characteristics and preventive seeking behaviour towards malaria

Characteristics	Frequency (N0.)	Percentage (%)	Preventive seeking behaviour Poor (%)	Preventive Seeking Behaviour Good (%)	Chi square	P value
<20	12	5.7	5	7	15.061	0.222
20-29	109	53.4	76	33		
30-39	74	36.5	35	39		
40 above	9	4.4	3	6		
	Total 204					

Characteristics Marital status	Frequency (N0.)	Percentage (%)	Preventive seeking behaviour Poor (%)	Preventive seeking behaviour Good (%)	Chi square	P value
Single	49	24	30 (60.8)	19 (39.2)	17.436	0.001
Married	149	73.1	39 (26)	110 (74)		
Divorce	6	2.9	1 (17.8)	5 (82.2)		

Characteristics Educational status	Frequency (N0.)	Percentage (%)	Preventive seeking behaviour Poor (%)	Preventive seeking behaviour Good (%)	Chi square	P value
No Formal Education	18	8.9	10 (58.9)	8 (41.1)	23.145	0.001
Primary Education	67	32.6	43 (63.6)	24 (36.4)		
Secondary Education	89	43.6	53 (60)	39 (40)		
Tertiary Education	30	14.9	11 (35.1)	19 (64.9)		

Characteristics Employment status	Frequency (N0.)	Percentage (%)	Preventive seeking behaviour Poor (%)	Preventive seeking behavior Good (%)	Chi square	P value
Business	123	60.2	75 (61.1)	48 (38.9)	10.813	0.013
Farmer	25	12.4	8 (30.8)	17 (69.2)		
Civil Servant	5	2.4	0	5 (100)		
House wife	51	25	32 (63.7)	19 (36.3)		

	Frequency (N0.) Socio- Economic Status	Percentage (%)	Preventive seeking behaviour Poor (%) Good (%)		Chi square	P Value
					10.813	0.013
Lower class	35	17.2	21 (61)	14 (39)		
Lower-middle class	30	14.6	17 (56.1)	13 (43.9)		
Lower-upper class	123	60.4	49 (39.7)	76 (60.3)		
Upper class	16	7.7	7(43.6)	9(54.4)		

Table 1 present the socio demographic characteristics of respondents in which a total of 204 pregnant women were interviewed. The mean age of the respondent was 27.6 +- 6.2 years while 53.4% of the respondents are between 20-29 years. 8.9% of the respondent do not have any formal education, 2.4% are civil servant. The least predominant socio-economic

class among the pregnant women was the upper class 7.7% of the respondent, 2.9% of the respondent are divorces. Then respondent between the ages of 30-34 years, respondent that are civil servants, those that falls in the lower upper-class economic status and those with higher educational status has good preventive seeking behaviour towards malaria ($p < 0.05$).

Table 2. Respondent Awareness of Malaria Infection

Awareness	Frequency (N)	Percentage (%)
YES	190	93
NO	14	7

Table 2 reveals that out of 204 respondents 190 (one hundred and ninety) respondent have awareness about malaria infection.

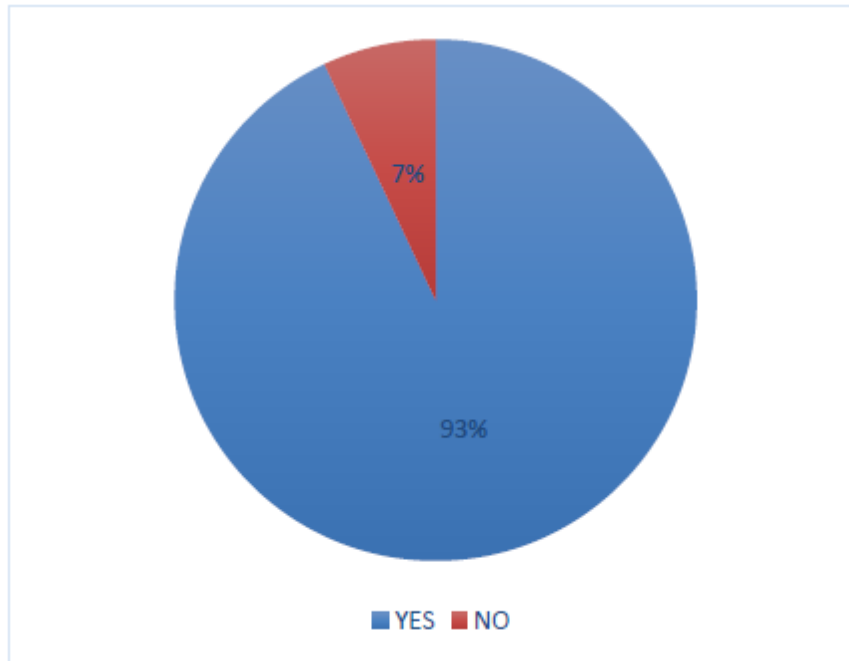


Figure 1. Reveals the respondent awareness of malaria infection

Table 3. Respondent Knowledge about Malaria Infection

Causes of Malaria	Frequency YES (%)	Frequency NO (%)
Mosquito bite	174(85.2)	34(24.8)
Contaminated food	2(1.0)	202(99)
Living in dirty environment	9(4.2)	195(95.8)
Too much heat and sunlight	1(0.5)	203(99.5)
Stress	2(1.0)	202(99.0)
Don't know	17(8.1)	187(91.9)

Symptoms of Malaria	Frequency NO (%)	Percentage (%)
Cold	70(34.5)	127(65.5)
Fever	92(45.1)	112(54.9)
Headache	87(42.8)	117(57.2)
Vomiting	19(9.2)	185(80.8)
Weakness	42(20.4)	162(79.6)
Dizziness	9(4.4)	195(95.6)
Nausea	1(0.7)	203(99.3)
Loss of appetite	10(5.1)	194(94.9)
Bitter mouth	14(6.8)	190(93.2)
Convulsion	2(0.9)	202(99.1)
Diarrhoea	1(0.7)	203(99.3)
Joint pain	13(6.3)	191(93.7)

Table 3 shows the distribution of variable related to the knowledge about malaria infection. Majority of the respondent did not have good knowledge as regards the causes of

malaria while a few among the respondent are able to identify at least 3 symptoms of malaria correctly.

Table 4. Respondent Knowledge on the Sypmtoms of Malaria

Knowledge of symptoms	Frequency (no)	Percentage (%)
Good knowledge	108	48.2
Poor Knowledge	116	51.8



Figure 2. Reveals the respondents' knowledge on symptoms of malaria.

Table 5. Preventive Seeking Behaviour of Malaria Among Respondents

Preventive Method	Yes (%)	No (%)
Spraying of insecticide	137 (67.3)	67 (32.7)
Chemoprophylaxis	168 (82.3)	36 (17.7)
Using insecticide treated net	11 (5.4)	193 (94.6)
Drinking traditional concoction	153 (75.0)	51 (25)
Keeping environment clean	157 (76.9)	47 (23.1)
Clearing of bushes around	167 (81.8)	37 (18.2)

Table 5 shows that only 5.4% of the respondent use of insecticide treated net as a preventive method for prevention of mosquito

while 75% of the respondent drink traditional concoction as a method of malaria prevention.

Table 6. Respondent Knowledge of Preventive Seeking Behaviour of Malaria

Knowledge of Preventive seeking behaviour	Frequency (n)	Percentage (%)
Good knowledge	123	60.4
Poor knowledge	81	39.6

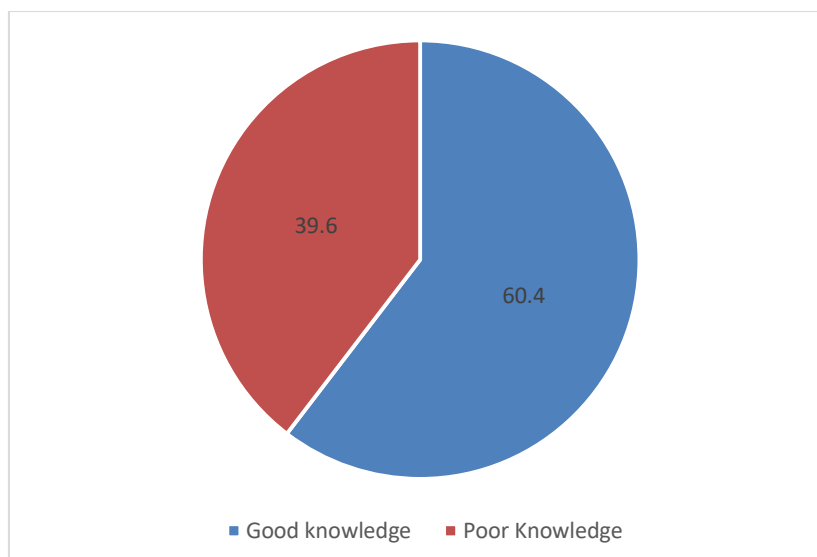


Figure reveals the respondents' preventive seeking behaviour towards malaria

Discussion

This study is mainly concern with the assessment of the knowledge of malaria infection and preventive seeking behaviour among pregnant women towards malaria because malaria is one of the causes of maternal morbidity and mortality rate in which Nigeria contributes the highest global burden of 25% of global malaria cases with 24% of global malaria death [Kelechi E O et- al 2019].

This study revealed that majority of the respondent, 93% are aware of malaria infection which is agreement with [Ayodeji M et al 2015]. 85.2% respondent as revealed by this study accepted that mosquito bite is the major causes of malaria infection which was contrary to some studies in Nigeria which reported that the causes of malaria include living in a dirty environment, too much staying in the sun [Kelechi E O et al 2019]. 60.4% of the respondent seek preventive behaviour towards malaria in which only 5.4% of the respondent uses insecticide treated net as a preventive method which most of the respondent adopt the use, chemoprophylaxis keeping the environment clean, clearing of bushes around and method of prevention of malaria.

The preventive seeking behaviour towards malaria is good compared with previous study carried out in southwest Nigeria i.e. rural communities [Fawole A O et- al 2008]. The difference in the preventive seeking behaviour toward malaria might be due to better exposure to health education messages regarding malaria prevention.

The respondent socio demographic characteristics such as the educational status, employment status, marital stats, socio economic status were found to be statistically significantly associated with the preventive seeking behaviour towards malaria as supported by ^[15] ($p < 0.05$) but age of the respondent was also found to be statistically not significantly associated preventive seeking behaviour towards malaria ($p > 0.05$).

Conclusion

The knowledge of malaria infection and preventive seeking behaviour among pregnant women in this study setting is good. However, a considerable percentage/number of respondents still demonstrate poor knowledge about malaria infection and preventive seeking behaviour such as to intensify in the educating pregnant women on the use of insecticide treated net and to avoid the use of traditional concoction as a preventive method which is highly dangerous and can result into Teratogen. However, socio demographic characteristics affect the knowledge of malaria infection and preventive seeking behaviour towards malaria among pregnant women.

Recommendation

Consequent to the finding in this study, effort should be made to improve on the utilization of health promoting strategies and health education on malaria infection and prevention by steering up health educational intervention to upstage the knowledge of urban dwellers about malaria and its prevention with emphasis on the use of

insecticide treated net and the discouragement of drinking traditional concoction and also providing information by relevant health organization are needed to reduce incidence of malaria in the society which will serve as a catalyst to attain 2030 malaria goals.

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