Malaria and Antimalarial Therapy: Knowledge, Attitude and Practice in a Rural-urban Community in South-South Nigeria

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Abstract

Globally, malaria disease is a widespread occurrence especially in many parts of Africa. The goal of therapy for malaria is to lessen morbidity and mortality and encourage rational drug use to prevent or repress the emergence of resistance to antimalarial drugs. Communal awareness through proper education by healthcare professionals is key in the total eradication of malaria. We aimed at evaluating the knowledge, attitude and practice of rural-urban dwellers of Abraka community, Delta State, Nigeria towards antimalarial therapy. A community-based cross-sectional survey was carried out using questionnaires among 600 dwellers of Abraka community from February to April 2019, and the data obtained was presented as percentage using descriptive statistics. The distribution showed that majority of the respondents were students 378 (63%), between the ages of 18-25; 33% were males while 67% were females and 81% of all respondents had tertiary education. All respondents reported to have heard about malarial and knew the common protection methods against malaria. About 97% use drugs in the treatment of malaria, especially the antimalarial drugs combination therapy. In summary, this study reveals that there is a high knowledge of malaria infection and a positive attitude towards malaria treatment by ruralurban dwellers of Abraka community, Delta State, Nigeria.

Keywords: Malaria, Treatment, Attitude, Rural-urban Dwellers, Abraka

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Introduction

Malaria is a parasitic disease caused by Plasmodium parasites which is specifically transmitted by female Anopheles mosquitoes.¹ Although, not a pandemic, malaria is alarmingly reputed as infectious endemic disease in some regions and has remain a main cause of morbidity and mortality across part of the globe.² Despite robust scientific efforts and resources being expended to significantly lessen the incidence and mortality of this disease over the years, especially through collaborations and utilization of advanced technologies based on improved knowledge on the molecular mechanisms underlying the disease pathologies in 21st Century technological age, global malaria burden still remains, with Africa highly rated as the epicenter of the disease prevalence.^{3,4} In fact, evidence-based documentations indicate that Nigeria, the most populous nation in the Sub-Saharan African region is still ravaged with a high prevalence of malaria infections, accounting for about 25% of worldwide malaria cases.4-6

Currently, therapeutic approach in the management of malaria infections depend majorly on orthodox medicines (especially the artemisinin-based combination therapy - ACT).⁷⁻⁹ However, there is strong evidence that herbal decoctions mainly of medicinal plant origin are traditionally employed among indigenous natives of the sub-Saharan African tribe to curb the disease infection.^{10,11} Despite all of these attempts, total eradication of malaria disease is still largely elusive and one major attributable factor is opined on poor perception, knowledge, attitude and practice toward the disease spread majorly at communal level, one of the most vulnerable population of the epidemic. Communal awareness through proper education by healthcare professionals is key in the total eradication of malaria in Africa and the world at large.¹² Ascertaining the level of knowledge of malaria and attitude towards its treatment at the community level have been favorably recommended to be highly beneficial in the eradication process of malaria.^{13,14} Also, understanding the knowledge and behavior of patients, and their usage pattern will aid in devising strategies to increase the correct use and efficacy of these antimalarial drugs.¹⁵

In the present context, dearth in documented information about the knowledge of malaria and attitudinal approach to its therapy in the population of Abraka, a rural-urban community in South-South Nigeria has necessitated the need for this study. Therefore, the objective of this study is to evaluate the level of knowledge of malaria, attitude and the pattern of antimalarial drug use in the treatment of malaria, thus, providing information that can be useful in improving the approach of patients within communal settings as well as the general public towards malarial therapy.

Materials and Methods

This study is a cross-sectional descriptive study carried out to assess the approach to malaria and use of antimalarial drugs among rural-urban dwellers in Abraka, Delta State of the South-South region of Nigeria between February and April 2019. The sample size for the study was randomly selected using the simple random sampling technique with a total of 600 respondents. Ethical approval was obtained from the 'Ethical Committee' of the Faculty of Basic Medical Sciences, Delta State University, Abraka, Nigeria. Informed oral consent was obtained from individual respondent as they willingly filled out well-structured questionnaires which were used as the instrument for data collection. The questionnaire comprised of information on socio-demographic characteristics, knowledge and attitude of patients to malaria and antimalarial drug use. The purpose of the study and the confidentiality of the information collected were explained to the respondents. Children and persons with deformities were excluded from the study. Data

was analysed using SPSS version 20 (SPSS Inc., Chicago, IL, USA) and presented as percentage (%) using descriptive statistics.

Results

The socio-demographic characteristics of respondents is presented in Table 1. A greater proportion of the respondents were within the age range of 18-25 (61%). Majority of the respondents were female 402 (67%), most respondents were single 378 (63%), most respondents had tertiary education 486 (81%), while most respondents were students (63%) with 10% each being either farmers or traders.

Table 2 describes the depth of respondent's knowledge on malaria infection. All respondents (100%) claimed to have heard of malaria. Fifty-eight percent (58%) of the respondents stated that plasmodium is the cause of malaria, while the rest 42% opined on mosquito. Of the total study respondents, 66% pointed fever accompanied by shivering as the most common symptoms of malaria; similar percentage (66%) indicated the use of insecticide-treated mosquito nets as most common prevention practice against malaria. Additionally, while majority of the respondents (90%) claim to visit the hospital once they are infected with malaria, 58% believe that free mosquito nets should be provided for everyone and not limited to pregnant women and children only.

The attitude and practice of respondents towards antimalarial therapy is depicted in Table 3. Majority of respondents (60%) claim to use drugs

Table 1: Socio-Demographic Data of Respondents			
variable	Response		
	Frequency (N=600)	Percentage (%)	
Age	2.44	(10)	
18-25	366	61%	
26-35	108	18%	
35 above	126	21%	
Gender			
Male	198	33%	
Female	402	67%	
Marital status			
Single	378	63%	
Married	186	31%	
Divorced	36	6%	
Educational background			
Informal	15	2.5%	
Primary	36	6%	
Secondary	63	10.5%	
Tertiary	486	81%	
Occupation			
Student	378	63%	
Farmer	60	10%	
Trader	60	10%	
Working Class	102	17%	
	41		

Table 2: Knowledge of malaria infection		
Statement	Response (%)	
Have you heard of malaria?		
Yes	600 (100%)	
No	0 (0%)	
What is the cause of malaria?		
Mosquito	252 (42%)	
Plasmodium	348 (58%)	
Trypanosome	0 (0%)	
What is the most common symptoms of malaria?		
Fatigue	126 (21%)	
Fever with shivering	396 (66%)	
Vomiting	24 (4%)	
Lack of appetite	24 (4%)	
Restlessness	30 (5%)	
What is the most common protective method against		
malaria?		
Insecticide-treated mosquito nets	396 (66%)	
Mosquito coil	24 (4%)	
Clearing of bushes around the house	84 (14%)	
Drainage of stagnant water	96 (16%)	
When infected with malaria, what do you do?		
Go to the hospital for treatment	540 (90%)	
Drink or cook herbs	54 (9%)	
Use mosquito nets	0 (0%)	
Use mosquito coils	6 (1%)	
Who is/are eligible to receive free mosquito nets available		
at health facilities		
Pregnant women and children	252 (42%)	
Everybody	348 (58%)	

Table 2. Vnowladge of malaria infection

(orthodox) as first approach to malaria treatment while 20% affirmed the use herbal medicine, although 78% of the respondents preferred orthodox drugs to use of herbs, and 97% had used drugs at one point in time. Of the 582 respondents that claimed to have used drug(s) in malaria therapy, most (252) (43.3%) affirmed they used artemether/lumefantrine; 132 (22.7%) artesunate; 92 (15.8%) chloroquine; 78 (13.4%) primaguine and 28 (4.8%) quinine. According to study respondents on treatment patterns, most common drug dosing was twice daily (80.4%); most frequent route of administration was oral (98%) and common treatment duration was three consecutive days (61.9%). Majority of the respondents (77.3%) indicated that the drugs were very effective, and 70.1% reported the common side effects of antimalarial drug therapy as weakness and dizziness.

Discussion

This study was targeted at evaluating the

approach to malaria treatment by rural and urban dwellers in Abraka community, Delta State, in Southern Nigeria. The data indicate that the community dwellers 'in perspective' have a high knowledge and positive attitude towards malaria infection and treatment.

All respondents of the study reported to have heard of malaria and knew about the cause, symptoms, and prevention of malaria (plasmodium parasite through mosquito bite). The respondents knew the common symptoms of malaria which they indicated as fatigue, fever accompanied by shivering, vomiting, loss of appetite, and restlessness, although they pointed fever as the most common. This is consistent with reports from other studies which revealed the use of insecticide-treated mosquito nets and insecticide (mosquito coil), as well as proper sanitation practices (such as clearing of bushes, and drainage of stagnant water) as protective methods against malaria.¹⁶⁻¹⁸ They opined that insecticide-treated mosquito nets, whose

Statement	Response (%)		
What is your first approach to treatment of malaria?			
Sanitation	120 (20%)		
Drugs (orthodox)	360 (60%)		
Herbs or traditional medicine	120 (20%)		
Do you prefer herbal medicine to orthodox drugs?			
Yes	132 (22%)		
No	468 (78%)		
Have you ever used drugs in the treatment of malaria?			
Yes	582 (97%)		
No	18 (3%)		
Which drug did you use? (n=582)			
Artesunate	132 (22.7%)		
Artemether/Lumefantrine	252 (43.3%)		
Chloroquine	92 (15.8%)		
Primaquine	78 (13.4%)		
Quinine	28 (4.8%)		
How many time was the drugs taken? (n=582)			
Once daily	42 (7.2%)		
Twice daily	468 (80.4%)		
Thrice daily	72 (12.4%)		
What was the route of administration? (n=582)			
Oral	570 (98%)		
Intravenous	6 (1%)		
Intramuscular	6 (1%)		
Transdermal	0 (0%)		
Sublingual	0 (0%)		
How effective was the drug? (n=582)			
Very effective	450 (77.3%)		
Not effective	12 (2.1%)		
Less effective	120 (20.6%)		
How long was the drug taken? (n=582)			
One day	36 (6.2%)		
Two days	42 (7.2%)		
Three days	360 (61.9%)		
Five days	138 (23.7%)		
Seven days	6 (1%)		
What was the side effect of the drug (n=582)			
Weakness and dizziness	408 (70.1%)		
Slight headache	120 (20.6%)		
Others	54 (9.3%)		

Table 3: Attitude and treatment patterns towards antimalarial therapy

usage was reported in this study as the best preventive measure against malaria infection, should be made available at health facilities to everyone and not only to including pregnant women and children. Over the years, there have been advocacy that the use of insecticide-treated mosquito nets be paramount in the fight against malaria in Africa.¹⁹⁻²² Furthermore, as seen from the study, a larger number of the respondents (90%) visit the hospital to seek medical advice and treatment following malaria infection, while a few resort to cooking and drinking of herbs to combat the ailment. The high advocacy to use hospitals and

orthodox medicines for malaria treatment is similar to recommendations in previous studies.^{18,23}

The high knowledge of malaria among the rural-urban dwellers is an indication of a wide malaria awareness programme setup by the community and the government possibly through mass media campaign and health education by health workers and schools' health teachers. In concordance with previous studies,²³⁻²⁵ such robust level of knowledge about malaria infection displayed by respondents in the present study can be attributed to high level of education in the community as majority (81%) claimed

E.G. Moke et al/ The Tropical Journal of Health Sciences Vol 28 No 4 (October, 2021)

to have had tertiary education exposure.

The results of this study also show that the community dwellers possess a positive attitude towards antimalarial therapies. They treated the malaria using either drugs (orthodox) or herbs, while improving sanitary measures around the home. The study shows that majority prefer the use of orthodox drugs to herbal medicine. This high preference for orthodox drugs over herbal medicine corroborates strongly with findings presented in other studies.^{11,26-28} This may in part, be associated to poor information correspondence on the efficacy/safety profile of most medicinal herbs.^{29,30}Artemether/lumefantrine drug combinations were the most used for drug treatment of malaria, perhaps, because of its effectiveness as an antimalarial combination therapy over the monotherapy regimens.^{31,32} Side effects observed were weakness and dizziness, and slight headaches, all of which are common side effects with antimalarial usage.33,34

Interestingly, the encouraging attitudes towards antimalarial therapy shown in this study is consistent with studies on the knowledge, attitudes and practices about malaria reported earlier.^{35,36} However, significant gaps have been reported to persist in appropriate malaria preventive practices in deeprooted rural communities of (though not limited to) Northern Nigeria.¹²

Conclusion

Taken together, there seem to be a high knowledge of malaria and a positive attitude towards malaria treatment among residents of Abraka, Delta State, a rural-urban community in South-South, Nigeria. However, more awareness should be made to the public on malaria treatment and use of preventive measure, as it will improve the fight against malaria in Nigeria and Africa at large. There is also the need to improve service delivery at public health facilities and provision of free or subsidized insecticide-treated mosquito nets to rural dwellers of all age groups and gender.

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