Home Management of Malaria in Rural Communities in Okigwe Zone, Imo State, Nigeria

E. A. Nwoke[1], S. N. O. Ibe[2], U. M. Chukwuocha[3], B. O. Nworuh[4] and C. I. C. Ebirim [5]

[1-5]Federal University of Technology Owerri, Imo State, Nigeria.

ABSTRACT---- ***This Study was designed to access the pattern of home management of malaria in rural communities in Okigwe Zone, Imo State, Nigeria. The objectives were to determine the rural communities' knowledge about the transmission of malaria, spread of malaria, frequent bite time of mosquito and how malaria is prevented at home as well as patterns of home management of malaria in the rural communities. A descriptive survey design was used and sample size was 963. A structured, validated and reliable questionnaire (r = 0.77) was used as instrument for data collection. The results showed that out of 963 respondents, 512(53.2%) reported that malaria is not transmissible while 441(45.8%) reported that malaria is transmissible. 847(88%) noted that malaria spreads through mosquito bite while insignificant number, 7(0.7%) said malaria spreads through drinking dirty water and eating unhygienic food. Majority of the respondents 767(79.6%) had no idea about the frequent biting time while 91(9.4%) said it is in the night. In terms of preventive measures practiced by respondents, the majority 423(22.8%) used mosquito mat, coils, liquid and vaporizer, 314(16.9%) respondents used mosquito net (ITN/LLTN) while the minority 68(3.7%) used firewood smoke to drive mosquito away. Diagnosis is made by 268(27.8%) respondents using fever, loss of appetite and weakness. In the multiple response measures used in the home management of malaria, 565 (30.1%) said they used chloroquine, amodiaquine and quinine in the treatment of malaria. 290(15.5%) used a special herb, Azadirachta Indica (dogonyaro/Akum shut up leaf), 197(10.5%) used artemisinin-based combination therapy (ACT), 117(6,2%) indicated that they used prayer, 92(4.9%) used plant roots, while 54(2.9%) used more than one in succession. Based on the above results, the rural communities still require enlightenment campaign and health education on home management of malaria.***

***Keywords*---** Home Management, Malaria, Rural Communities

1. INTRODUCTION

Malaria is a life threatening parasitic disease transmitted through the bite of infected female anopheles Mosquitoes. It remains a major public health problem in Nigeria being the most common cause of hospital attendance in all age groups in all parts of the country [1]. [2] Also stated that malaria remains an important public health Problem and a principal cause of childhood mortality. It is estimated that at least ten percent of all childhood deaths are due to malaria. Poor knowledge about the transmission and spread of the disease have hindered adequate care at home in most endemic areas. In Benin republic for example, over exposure to the sun and over groundnut consumption were perceived to cause malaria [3] while in parts of South-West , Nigeria, overwork, excessive sunlight, excessive sex, as well as witchcraft were thought to cause the disease. In rural parts of South Eastern Nigeria where these perceptions are also largely the same, the type of care given at home is usually informed by the perceived cause of the illness episode [4].

Mortality is highest among children under five years of age who do not receive prompt and appropriate treatment [2]. Despite the fact that the main strategy for reducing childhood morbidity and mortality is presumptive treatment of all fevers with anti malaria drugs [5], the greatest challenge of malaria treatment still occurs as many are treated at home and diagnosis are made based on recognized symptoms like constant fever, headache, cough, pain, loss of appetite etc [1, 4 & 6].

Home based management of malaria is the process by which clinical cases of malaria can be recognized and treated at home by care givers, sometimes assisted by community health workers or medicine distributors [7]. It is the care at home with what is available at hand (herbs, drugs from shops and tepid sponging) and then shifted to the health workers if there is no response or if the situation has worsened (WHO, 2007). Most episodes of malaria are treated outside the formal health sector; inappropriate use of over the counter drugs at home becomes a serious problem due to inadequate quality and inappropriate dosages. Also malaria home care practices are highly variable in different situations and there is limited programme experience to influence good practice [8]. Working in an unregulated (private) market and with informal health providers of variable educational background needs carefully tested and monitored strategies. A wide variety of anti-malaria drugs are available to treat malaria. In the last five years, treatment of malaria caused by *Plasmodium falciparium* infections in endemic countries has been transformed by the use of combinations of drugs

containing an artemisinin derivative. Severe malaria is treated with intravenous or intra muscular quinine or increasingly, the artemisinin derivative artesunate [9].

It is therefore necessary to access the pattern of home management of malaria being practiced among caregivers in rural communities in Okigwe zone. Variables considered are rural communities' knowledge about the transmission and spread of malaria; frequent bite time of mosquito, how malaria is prevented at home and patterns of home management of malaria in the rural communities.

2. MATERIALS AND METHODS

A survey design was used and approval was given by research ethical committee of Federal University of Technology Owerri, Imo State, Nigeria. Consent was also got from the traditional rulers and participants before the commencement of the study. The study population involved male and female adults within the age range of 20 to 70 years who were resident in the rural communities of Okigwe zone. A multistage sampling method was used. Okigwe has six local Government areas (LGA) and two LGAs were randomly sampled (Ehime Mbano and Onuimo LGAs) and from each of the LGAs, two communities were randomly sampled giving a total of four communities. The next stage was the cluster sampling method where every head of household within the age of 20 to 70years who was present on the day of investigation in the selected community was interviewed (based on the questionnaire) in the language he/she understands best by twelve trained field assistants. A total of 963 adults were interviewed. The instruments used were the validated questionnaire and focus group discussion. Each focus group was made up of six adults at a time and information extracted from them, both consensus and divergent views were used in the discussion. Section A of the questionnaire sought information on socio-demographic characteristics of the respondents; Section B, sought information on respondents knowledge on transmission and spread of malaria, frequent bite time of malaria, preventive measures and patterns of home management of malaria in the rural communities .

There was a trial test of the instrument on 20 adults from one community which was not included in the main study. The Cronbach's Alpha reliability technique was adopted in testing the reliability of the instrument. The Cronbach's Coefficient Alpha of r = 0.77 was got indicating that the instrument was reliable. The administration of the instruments (questionnaire and focus group discussion) lasted for three months and data analysis done using percentages and data presented in tables and charts. For the focused group discussions, the issues canvassed focused on five main areas such as the rural communities' knowledge about the transmission and spread of malaria; frequent bite time of mosquito, how malaria is prevented at home and patterns of home management in the rural communities.

3. RESULTS

The result in table 1 showed that five hundred and twelve (53.2%) respondents were of the view that malaria is not transmissible, 441(45.8%) said it is transmissible while 10(1.0%) had no idea. In table 2 result, eight hundred and forty-seven (88.0%) opined that mosquito bite spreads malaria, 58 (6.0%) said they had no idea, 29 (3.0%) said is fly bite, 22(2.3%) and 7(0.7%) respectively said it is drinking dirty water and eating unhygienic food.

Also in table 3, 551(57.2%) were unable to name the vector that transmit malaria parasite, 305(31.7%) said it is female anopheles, 76 (7.9%) reported that it is aedes mosquito, 18(1.9%) said it is male anopheles, while 13(1.3%) said it is culex. Furthermore, in table 4, the most common breeding site of mosquito is reported by 537(55.8%) respondents to be stagnant dirty water, 144(15.0%) said it is plants/flowers/bushes, 143(14.8%) said it is running dirty water, 66(6.9%) had no idea while 38(3.9%) and 15(1.6%) respectively said it is garbage/trash and running clean water.

The result in table 5 showed that 767 (79.6%) respondents had no idea about the frequent bite time of mosquito, 91(9.4%) said it was in the night, 78(8.1%) and 27(2.8%) respectively said it was in the morning and afternoon while the result in table 6 showed in terms of preventive measures practiced by respondents, that 423(22.8%) used mosquito mat, coils, liquid and vaporizer, 314(16.9%) respondents used mosquito net (ITN/LLTN), 287(15.5%) practiced the mosquito spray, 160(8.6%) practiced cleaning of the house, 151(8.1%) used covering of the body while 148(8.0%) tried to prevent stagnation of water. Also 104(5.6%) made sure containers were covered, 102(5.5%) used fan, 91(4.9%) changed water in storage tank, 68(3.7%) used smoke from firewood to drive mosquito away, 4(0.2%) used other un-indicated methods and 2(0.1%) had no idea.

In figure 1, diagnosis is made by 268(27.8%) respondents using fever plus loss of appetite plus weakness, 122(12.7%) used fever plus 3 or more other symptoms, 115(11.9%) and 115(11.9%) used fever and fever plus vomiting plus loss of appetite respectively. Furthermore, 95(9.9%) used loss of appetite plus weakness, 77(8.0%) used fever plus loss of appetite, 74(7.7%) used vomiting plus headache, 50(5.2%) used fever and weakness, 30(3.1%) used fever and vomiting while 17(1.8%) had no idea.

Finally, the multiple response measures used in the home management of malaria in figure 2, showed that 565 (30.1%) said they use chloroquine, amodiaquine and quinine in the treatment of malaria. 290(15.5%) used dogonyaro/Akum shut

up leaf, 197(10.5%) used artemisinin-based combination therapy (ACT), 185(9.9%) said they use artesunate/paludrine, 118(6.3%) used sulfadoxine-pyrimethamein in treatment of malaria. 117(6,2%) indicated that they use prayer, 92(4.9%) used plant roots, 69(3.7%) said they used seven leaves, 61(3.3%) used application of local ointment/lotion while 54(2.9%) used more than one in succession. 51(2.7%) used steam inhalation, 39(2.1%) used tepid sponging, 36(1.9%) used sun tanning and 1(0.1%) said he did nothing.

4. DISCUSSION

Findings from the present study showed that the majority of the respondents 512 (53.2%) were of the view that malaria is not transmissible while 441(45.8%) said it is transmissible. Majority 847 (88.0%) reported that mosquito bite spreads malaria and 22(2.3%) and 7(0.7%) respectively said it is drinking dirty water and eating unhygienic food. Also majority of the respondents 551 (57.2%) were unable to name the vector that transmit malaria parasite. These views could be attributed to the level of education and understanding of the people in the rural areas as most people had no formal education and some limited education. This is in line with the study of [3&4] where some people had poor perception of the cause, transmission and spread of malaria. Furthermore, 537 (55.8%) and 114 (15.0%) respondents had good knowledge of the breeding sites of mosquito as they reported stagnant dirty water and plants/flowers/bushes.

The result showed that majority had no idea about the frequent bite time of mosquitoes. The result in table 6 showed various preventive measures practiced by the people in the rural communities such as use of mosquito mat, coils, liquid and vaporizer, use of mosquito net (ITN/LLTN), mosquito spray, cleaning of the house, covering of the body, prevention of water stagnation, covering of containers, use of fan and smoke to drive mosquito away. Knowledge of these preventive measures helps in reducing mosquito bite and consequently reduces the occurrence of malaria.
Diagnosis of malaria at home was made by recognizing symptoms like fever, loss of appetite, weakness, headache, vomiting etcetera. This agrees with the study of [1, 4 & 6]. People diagnosed malaria based on the clinical manifestations personally experienced and these give rise to prompt treatment.

Finally, in the multiple response measures used in the home management of malaria, majority 565 (30.1%) used chloroquine, amodiaquine and quinine in the treatment of malaria. 290(15.5%) used dogonyaro/Akum shut up leaf (Azadirachta Indica), 197(10.5%) used artemisinin-based combination therapy (ACT), 185(9.9%) used artesunate/paludrine, 118(6.3%) used sulfadoxine-pyrimethamine in the treatment of malaria. 117(6,2%) used prayer, 92(4.9%) used plant roots, 69(3.7%) said they used seven leaves, 61(3.3%) used application of local ointment/lotion while 54(2.9%) used more than one in succession. 51(2.7%) used steam inhalation, 39(2.1%) used tepid sponging, 36(1.9%) used sun tanning. Most of the respondents used more than one option. Antimalaria drug treatment pattern showed that chloroquine, amodiaquine and quinine were mostly used in the treatment of malaria and the use of artemisinin-based combination therapy (ACT) was also high. This indicates that some of the respondents were adopting the conventional antimalaria drug policies and probably aware of the resistance being posed by the previously used drugs.

The use of plant roots, seven leaves, prayer and local ointment/lotion in home management of malaria in these communities calls for concern and education in home management of malaria. There should be emphasis on prompt treatment and distribution of pre-packaged antimalaria drugs which are the strengths of home management of malaria, a strategy proposed by World Health Organization in an effort to improve prompt access to treatment [10]. This is predicated on the observation that the majority of fevers especially in children in sub-Saharan Africa are due to malaria [11]. The need to reduce morbidity and mortality through the improvement of home management of malaria has led to a number of community based initiatives, including the training of mothers, community health workers or shop keepers in diagnosis, appropriate anti-malarial use and referral [12].

5. FOCUS GROUP DISCUSSION (FGDS)

Focus group discussion (FGD) is a form of qualitative research and a good way to gather together people from similar backgrounds or experiences to discuss a specific topic of interest. The group of participants is guided by a moderator (or group facilitator) who introduces topics for discussion and helps the group to participate in a lively and natural discussion amongst themselves. In the social sciences and urban planning, focus group allows interviewers to study the people in a more natural conversation pattern [13].The strength of FGD relies on allowing the participants to agree or disagree with each other so that it provides an insight into how a group thinks about an issue, about the range of

opinion and ideas, and the inconsistencies and variation that exists in a particular community in terms of beliefs and their experiences and practices. FGDs can be used to explore the meanings of survey findings that cannot be explained statistically, the range of opinions/views on a topic of interest and to collect a wide variety of local terms. In bridging research and policy, FGD can be useful in providing an insight into different opinions among different parties involved in the change process, thus enabling the process to be managed more smoothly. It is also a good method to employ prior to designing questionnaires.

Four qualitative FGDs were conducted, one in each community to ascertain the enabling and hindering factors associated with the two major areas explored, the preventive measures and home management of malaria. The participants were six adults (3 males and 3 females) in each focus group. Summary of the results from focus group discussion FGD3 indicated that those who used smoke to drive away mosquito did so because they had no access to other preventive measures. FGD1&2 reported that some had nets but did not use them due to hot weather as they had no cooling system. Participants agreed that parts of the problems faced in the control of malaria at home are ignorance, belief, financial constraint and limited knowledge on how to manage malaria. FGD1 noted that it was difficult to convince any one who has been using herbs to change to the conventional home management pattern. FGD4 noted that lack of money and distance from health center compel people to patronize quacks which give rise to wrong diagnosis, fake drugs and complications of malaria. FGD 4 also noted that some people who were knowledgeable and had the money used conventional home management of malaria.

6. CONCLUSION

Malaria is a major public health problem in Nigeria despite all efforts to control and manage it. The findings showed that in the rural communities of Okigwe zone, some people lack finance or access to health facilities and as such unable to properly manage malaria at home. Many people die of malaria due to barriers to home management of malaria. Home management of malaria is a veritable tool and an important strategy in the management of malaria and as such scaling up home management of malaria to reach the majority of the populations in the rural communities is very necessary. Efforts should be geared towards the prevention of the barriers to proper and effective home management of malaria in the rural communities considering their perculiar handicap. This in a great way will reduce malaria morbidity and mortality.

7. LIMITATIONS OF THE STUDY

Not all the respondents consented to the interview for no obvious reason and inadequate fund and time were also limitations.

Table 1: Is Malaria Transmissible

Options	Frequency	Percentage (%)
Yes	441	45.8
No	512	53.2
No idea	10	1.0
Total	963	100.0

Table 2: How do Malaria Spread

Options	Frequency	Percentage (%)
Mosquito bite	847	88.0
Fly bite	29	3.0
Drinking dirty water	22	2.3
Eating un hygienic food	7	.7
No idea	58	6.0
Total	963	100.0

Table 3: Name the Vector that Transmit Malaria Parasite

Options	Frequency	Percentage (%)
Female anopheles	305	31.7
Male anopheles	18	1.9
Culex	13	1.3
Aedes Mosquito	76	7.9
No idea	551	57.2
Total	963	100.0

Table 4: What is the most common breading site of mosquito

Options	Frequency	Percentage (%)
Running dirty water	143	14.8
Garbage/trash	38	3.9
Standing clean water	20	2.1
Stagnant dirty water	537	55.8
Running clean water	15	1.6
Plants/flowers/bushes	144	15.0
No idea	66	6.9
Total	963	100.0

Table 5: What is the frequent bite time of mosquito

Options	Frequency	Percentage (%)
Morning	78	8.1
Night	91	9.4
Noon	27	2.8
No idea	767	79.6
Total	963	100.0

Table 6: Preventive measures for Malaria Practiced by respondents

Preventive measures Practiced	Frequency	Percentage (%)
Use of smoke from firewood to drive away mosquito	68	3.7
Use of mosquito mat, coils, liquid, Vaporizer	423	22.8
Use of mosquito spray (insecticide)	287	15.5
Use of fan	102	5.5
Covering of body with clothes	151	8.1
Use of mosquito net (ITN/LLTN)	314	16.9
Cleaning house	160	8.6
Prevent water stagnation	148	8.0
Covering container	104	5.6
Changing water in storage tanks	91	4.9
Others	4	.2
No idea	2	.1
Total	1854	100.0

8. HOME MANAGEMENT OF MALARIA BY RESPONDENTS

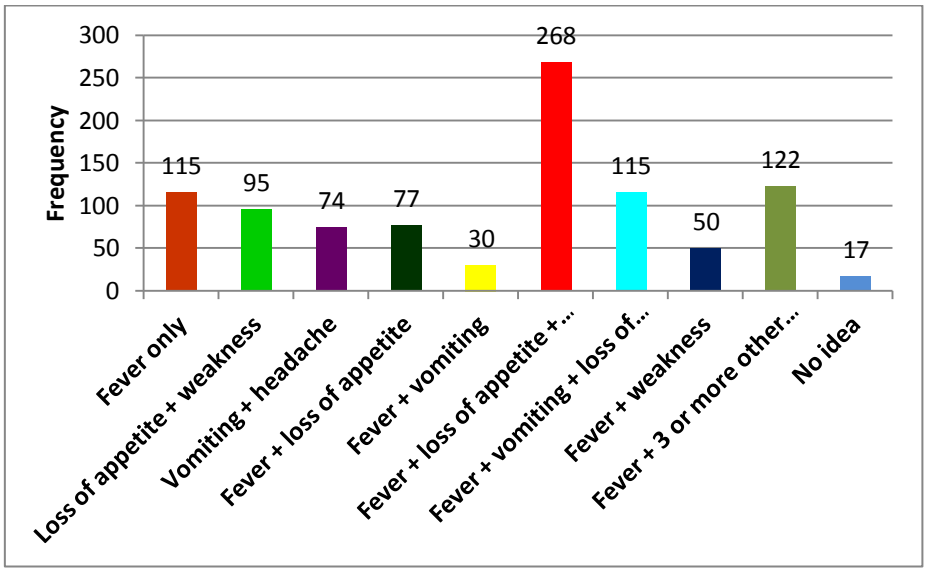

Figure 1: Symptoms used by respondents to diagnose malaria at home

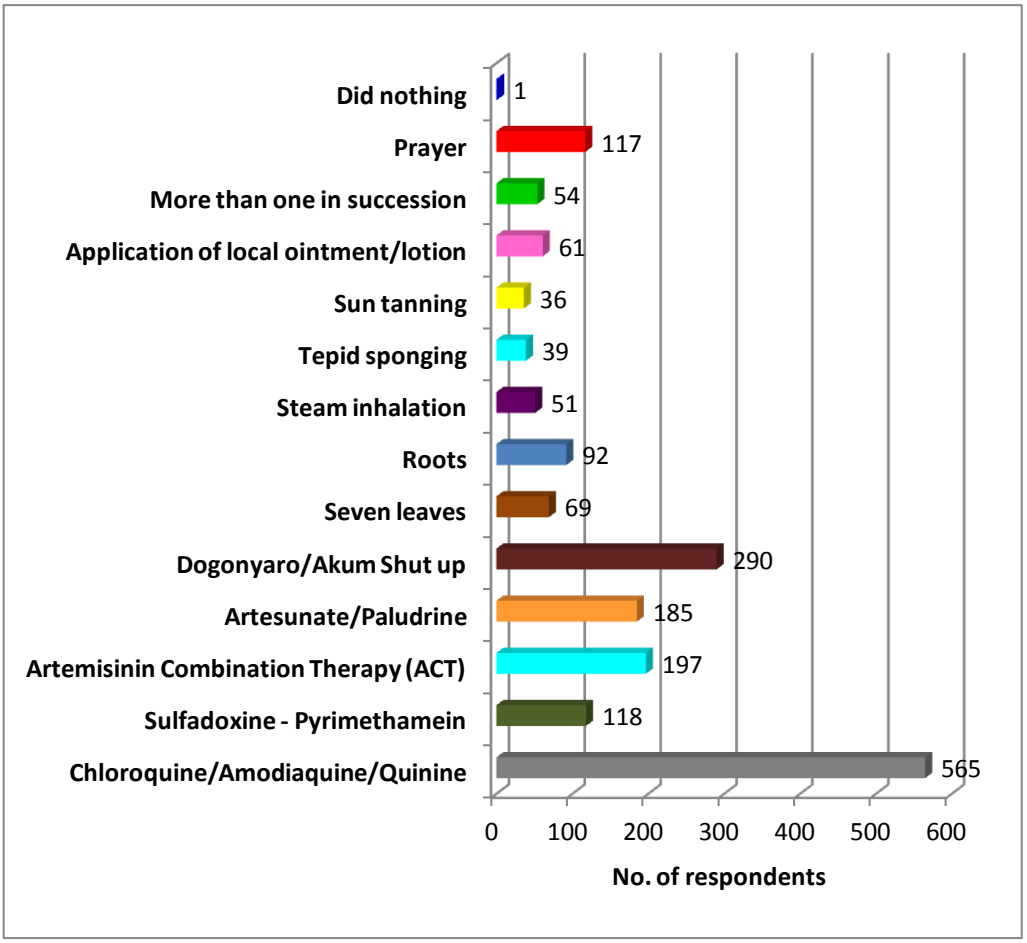

Figure 2: Home management of malaria practiced by respondents

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