

PERCEPTION AND HOME MANAGEMENT OF MALARIA IN RURAL COMMUNITIES IN IMO STATE, NIGERIA.

Abstract

The Study was on perception and home management of malaria in rural communities in Imo State, Nigeria. The objectives were to determine the rural communities' knowledge on cause, transmission, spread of malaria, breeding sites of mosquitoes, signs and symptoms, health seeking behaviour of respondents, preventive measures and patterns of home management of malaria in the rural communities in Imo State. A descriptive survey design was used and sample size was 2674. A structured, validated and reliable questionnaire ($r = 0.81$) and focus group discussion were used as instruments for data collection. The result showed that out of 2674 respondents, 1683(62.9%) reported that malaria is transmissible while 976(36.5%) reported that malaria is not transmissible. Majority 2262(84.6%) noted that malaria spreads through mosquito bite while insignificant number said malaria spreads through drinking dirty water and eating unhygienic food. 1501(56.1%) noted that stagnant dirty water is a common breeding site for mosquitoes. Most of the respondents had good knowledge of the signs and symptoms of malaria which was used in prompt diagnosis. Majority 41% first patronized medicine stores followed by 38.5% that visited hospital and health centers. In terms of preventive measures practiced by respondents, the majority 1049 and 1028 used mosquito bed nets and insecticide spray respectively while 237 used firewood smoke to drive mosquitoes away. In the pattern of home management of malaria, 62.3% used anti-malaria drugs, 10.5% used a special herb, *azadirachta indica* (*dogonyaro/Akum shut up leaf*), 6.9% used combination of seven leaves (*Pawpaw, mango, guava, Nchuanwu (Occimum Basilicum), and awolowo leaf (chromolaena odorata), orange and lemon grass*) While 6.0% used prayers to God. Based on the above results and to keep abreast with the conventional practice, the rural communities require health education on home management of malaria.

Key words: Perception, Home management, Malaria, Rural communities, Imo State.

INTRODUCTION

Home management of malaria is the care of malaria that is done at the patients' home through family participation within available resources sometimes in collaboration with health care workers. 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 [1]. Many episodes of malaria are currently treated outside the formal health system, often with inappropriate or incorrectly used

drugs. Most household care givers begin treatment of malaria with anti-malarial drugs which are usually purchased over the counter from drug sellers without prescription and usually without appropriate doses. This is particularly common in rural and remote populations where the right perceptions about the disease are low and contributes both to worsening morbidity patterns and increased drug resistance [2].

Malaria has continued to be a major public health problem being responsible for an estimated 400 to 900 million episodes of fever occurring yearly in African children, resulting in over one million deaths. According to annual report on National Malaria Control Committee Programme in Nigeria [3], the financial loss due to malaria is estimated to be 132 billion naira in form of treatment cost, prevention and loss of man hours. Furthermore, the report of [4] on the African summit on Roll Back Malaria, Abuja, Nigeria, estimated 25%-30% of mortality in children under five, or 300,000 deaths each year due to malaria in Nigeria.

A wide variety of anti-malaria drugs are available to treat malaria. In the last five years, treatment of malaria caused by *Plasmodium falciparum* infections in endemic countries has been transformed by the use of combinations of drugs containing an artemisinin derivative (ACT). Severe malaria is treated with intravenous or intramuscular quinine or increasingly, the artemisinin derivative artesunate [5].

Prompt treatment with effective antimalarial therapy is essential and African leaders were committed to ensuring that 80% of malaria episodes are adequately treated within 24 hours of onset of symptoms by 2010. But 3 years after the situation remains largely the same. Treatment of malaria is challenged by factors which include inadequate health-care

infrastructure in many parts of Africa. Health facilities are often resource-limited, and access to care may be limited by distance, fees, inadequate staffing, and lack of essential medicines. The direct and especially indirect costs of seeking health care from formal facilities may be substantial, providing a major barrier for many households. These have led to febrile illnesses being commonly treated at home, frequently with drugs purchased from drug shops. According to [6], it is estimated that fewer than 20% of children with malaria in endemic areas are treated in formal health-care settings. Lastly, poor perceptions about the disease have hindered adequate care at home in most endemic areas. In Benin republic for example, over exposure to the sun and groundnut consumption are perceived to cause malaria [7] while in parts of South-West , Nigeria, overwork, sunlight, excessive sex, noise as well as witchcraft are 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[8].

Therefore to improve prompt and effective management of malaria, the World Health Organization (WHO) is promoting home-based management of malaria (HMM) as a major strategy for Africa. This strategy ensures correct and early recognition of the illness as well as prompt and proper administration of the recommended drugs. Community distributors are also involved in providing medications and educating primary caregivers about correct recognition of malaria, prompt treatment with recommended anti-malarial drugs, and recognition of severe illness. Emphasis on prompt treatment and distribution of pre-packaged anti-malarial drugs are strengths of the HMM strategy. However, there are potential downsides to presumptive treatment at home. Use

of anti-malarial drugs to treat all febrile episodes, even if administered correctly, may delay treatment of other illnesses. In addition, unnecessary over-treatment with anti-malarial drugs could promote drug resistance and is likely to have substantial economic consequences [9].

The effectiveness of home treatment and management of malaria will therefore depend upon health education towards correct perceptions about malaria for early diagnosis by mothers and caregivers. Also it requires that mothers and caregivers obtain drugs promptly for early commencement of appropriate treatment which will ensure better outcome and prevent the progression to severe malaria. Furthermore the need to recognize when there is no improvement in treatment and need to seek immediate help at the health facility is important.

It therefore becomes necessary to determine the level of awareness and recommended ways of managing malaria at home among women especially those in the rural areas in Imo State. This will be an evidence based data that will help in better planning of education aimed at improving home management of malaria strategy. The researchers accessed the level of perceptions and pattern of home management of malaria in rural communities in Imo State, Nigeria.

Methodology

A survey design was used and approval was given by research ethical committee of Federal University of Technology Owerri, Imo State, Nigeria. The traditional rulers of the study communities and participants also gave their consent for the study. The study population involved adults resident in the rural communities of Imo State. A multistage sampling method was used. Imo state has three senatorial zones comprising of Orlu

105 [twelve (12) local government areas (LGAs)], Owerri [Nine (9) local government areas],
106 and Okigwe [six (6) local government areas]. These zones formed the clusters from
107 which proportionate sample of LGAs were drawn by simple random sampling technique.
108 Four LGAs (33.3%), three LGAs (33.3%) and two LGAs (33.3%) were randomly sampled
109 from each zone respectively. Two communities were subsequently selected through
110 simple random sampling method from each LGA giving a total of eighteen communities.
111 Thereafter every household in the selected communities were included for the study.
112 All the heads of households who were present on the day of investigation responded to
113 the questionnaire in their preferred language. A total of two thousand six hundred and
114 seventy four (2,674) adults responded to the questionnaire. The instruments used were
115 the validated and reliable questionnaire as well as the focus group discussion. Each
116 focus group was made up of six adults at a time and information extracted from them,
117 both consensus and divergent views were used in discussion. Section A of the
118 questionnaire sought information on socio-demographic characteristics of the
119 respondents; Section B, sought information on respondents' perception and pattern of
120 home management of malaria in the rural communities of Imo State, Nigeria.

121 There was a trial test of the instrument on 20 adults from one community which was
122 not included in the main study. The split half reliability technique was adopted in
123 establishing the reliability of the instrument. The Correlation Coefficient of $r = 0.81$ was
124 got indicating that the instrument was reliable. The administration of the instruments
125 (questionnaire and focus group discussion) lasted for three months and data analysis
126 done using percentages and charts.

For the focused group discussions, the issues canvassed focused on the rural communities' knowledge on cause, breeding site of mosquitoes, and spread of malaria, signs and symptoms, health seeking behaviour, preventive measures and patterns of home management in the rural communities.

RESULTS

A total of 2,674 complete records of respondents were available for analysis, 963 (36.0%) from Orlu, 881 (33.0%) from Owerri and 830 (31.0%) from Okigwe geopolitical zones of Imo State. The socio-demographic characteristics of the respondents are shown in Table 1. One thousand six hundred and fifty (61.7%) respondents were males while 1,024 (38.3%) were females. The mean age of the respondents was 45.7 ± 16.4 years, with a majority of 639 (23.9%) in the age group of 31 – 40 years. A Majority of 2,043 (76.4%) were married at the time of this study while 286 (10.7%) were widowed. Also majority of 1,239 (46.3%) of the respondents attained secondary level of education, 304 (11.4%) had no formal education, while 422 (15.8%) were literate at tertiary level of education. Distribution of respondents by occupation revealed that trading (n=625, 23.4%) was the major occupation of rural dwellers in Imo State, followed by farming 497 (18.6%), while 342 (12.8%) were housewives. The result also indicated that majority of 1,356 (50.7%) lived on an average income of 18,000 Naira and below monthly while only 326 (12.2%) lived on an average income of 50,000 naira and above monthly. An average of 8 people made up a household in Imo rural communities with 1,100 (41.1%) respondents having 5-6 persons in a household.

148 In terms of knowledge on breeding site, cause and spread of malaria, the results on table
149 2 showed that a total of 2,542 (95.1%) of rural dwellers in Imo State have heard of
150 malaria. Only about 976 (36.5%) of the respondents knew malaria is transmissible,
151 however 2,262 (84.6%) reported malaria is spread through mosquito bite. Furthermore;
152 only 812 (30.4%) correctly indicated that female *Anopheles* mosquito transmits malaria.
153 Majority of 1,501 (56.1%) respondents reported that stagnant dirty water is the most
154 common breeding site of mosquito.

155 The findings on knowledge of signs and symptoms of malaria indicated that fever
156 (38.8%) was the most common symptom of malaria identified by the respondents,
157 followed by headache (29.2%) and body aches (15.3%), the least reported symptom was
158 nausea (3.4%); as shown in Figure 1. Further investigation as shown in figure 2 on the
159 symptoms utilized by respondents in making diagnosis of malaria at home revealed that a
160 combination of fever + loss of appetite + weakness ($n = 733$, 27.4%) was the major signs
161 & symptoms utilized by respondents to diagnose malaria, 12.4 percent utilized only
162 having fever to diagnose malaria at home, fever + vomiting + loss of appetite was utilized
163 by 9.2 percent of the respondents while 8.9 percent utilized fever + more than 3
164 symptoms.

165 Health seeking behavior of respondents when they suspect malaria as documented on
166 Figure 3 below, revealed that majority, 41 percent patronize patent medicine
167 stores/chemist, also 38.5 percent visits health centre/hospital. It is also indicated that 5.9
168 percent consult family member/friends/ neighbor for help. The results on malaria
169 preventive measures adopted by respondents were shown in Figure 4, it indicated that use
170 of mosquito bed net (22.3%) and mosquito spray (21.8%) were the most practiced

measures utilized in preventing malaria, this is followed by the use of mosquito mat, mosquito repellent/coils, liquid and vapourizer (14.8%). While 6.8 percent prefer covering their body with protective clothing to prevent malaria bite.

Malaria management methods practiced in rural communities of Imo state as shown in figure 5, revealed that majority of 62.3 percent adopted the use of anti-malaria drugs in the treatment of malaria at home, 10.5 percent utilized a locally found leave (*dogonyaro/Akum shut up*) botanically known as *azadirachta indica*. It is used in managing malaria at home because of its identified potency in curing malaria. Also 6.1 percent used a combination of seven different leaves (Pawpaw, mango, guava, Nchuanwu (*Occimum Basilicum*), and awolowo leaf (*chromolaena odorata*), orange and lemon grass) in managing malaria at home. Roots of herb were used by 6.1 percent of the respondents while 6.0 percent visited prayer houses for spiritual relief of the illness. Further investigation on the type of anti-malaria drug utilized in managing malaria at home indicated that 25.8 percent of the respondents used Chloroquine/Quinine, 20.8 percent used an Artemisinin-based Combination Therapy (ACT), and 6.3 percent used Sulphadoxine/Pyrimethamine based therapy, while 9.4 used Artesunate/Amodiaquine based therapy.

Discussion

In this study, majority of the respondents 95.1% have heard of malaria but only 976(36.5%) knew that it is transmissible and majority, 84.6% reported that malaria is spread through mosquito bite. About 30.4% indicated correctly that female anopheles mosquito transmits malaria while 56.1% reported that dirty stagnant water. The result showed that most people in the rural communities are still not clear about transmission of

194 malaria and various breeding sites of mosquitoes which invariably affect the preventive
195 and treatment measures at home. This is in line with the study of [8,2 &7]. The most
196 common symptom of malaria as indicated by respondents is fever and is used in
197 diagnosis at home in combination with other symptoms like loss of appetite, headache,
198 vomiting and weakness.

199 In terms of health seeking behaviour when malaria is suspected, majority patronize patent
200 medicine stores/chemist, visit health centers/hospital, consult family
201 members/friends/neighbour, visit herbalists and prayer house. Similar study was reported
202 by [10 & 11]. The results on malaria preventive measures adopted by respondents
203 revealed that the use of mosquito bed net and mosquito spray were the most practiced
204 measures utilized in preventing malaria, this is followed by the use of mosquito mat,
205 coils, liquid and vapourizer . While some prefer covering their body with protective
206 clothing. Some preferred other measures to bed net because they do not have access to
207 the net.

208 Malaria management methods practiced at home in rural communities of Imo state
209 revealed that majority 62.3 percent adopted the use of anti-malaria drug in the treatment
210 of malaria at home, 10.5 percent utilized a locally found leave Dogonyaro (Akum shut
211 up) known as Azadirachta Indica, for its locally identified potency in curing malaria.
212 Furthermore, some used a combination of seven different leaves (Pawpaw, mango,
213 guava, Nchuanwu (Occimum Basilicum), and awolowo leaf (chromolaena odorata),
214 orange and lemon grass) in managing malaria at home. Roots of herb were used while
215 some visited prayer houses for spiritual relief of the illness. Study by [12 & 13]
216 confirmed the use of herbs in home management of Malaria. Further investigation on the

type of anti-malaria drug utilized in managing malaria at home indicated that 25.8 percent of the respondents used Chloroquine/Quinine, 20.8 percent used an Artemisinin-based Combination Therapy (ACT), and 6.3 percent used Sulphadoxine/Pyrimethamine based therapy, while 9.4 percent used Artesunate/Amodiaquine based therapy. A similar study by [14 & 8], used drug combinations in home management of malaria.

Focus Group Discussion (FGD)

Eight qualitative FGDs were conducted, three in Orlu zone, three in Owerri zone and two in Okigwe zone. The areas explored were knowledge of causes, transmission, spread, preventive measures and home management of malaria. The participants were six adults in each focus group. Summary of the results from focus group discussion indicated that majority were aware that mosquito bites transmit and cause malaria while some said that oily, fatty food and excessive exposure to sun shine equally increase the occurrence of malaria. Various preventive measures were practiced but they acknowledged that the use treated bed nets were more effective but not always available. Those who used smoke to drive away mosquito did so because they had no access to other preventive measures. They also reported that some had nets but did not use them due to hot weather as they had no cooling system. Participants reported 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. Some noted that it was difficult to convince any one who has been using herbs to change to the conventional home management pattern. Participants also 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.

239 **Conclusion**

240 This study explored the perception and home management of malaria in rural
 241 communities in Imo State. Some had good knowledge of causes, transmission spread,
 242 breeding sites, signs and symptoms of malaria. Majority visited medicine stores first
 243 before going to hospital/health centers when they feel they were not having expected
 244 result while some visited the hospital first. Herbalists and prayer houses were equally
 245 visited. Various patterns were used in home management and mostly used were anti-
 246 malaria drugs including drug combination therapy and use of herbs. There is need for
 247 health education on conventional pattern of home management of malaria in rural
 248 communities in Imo State, Nigeria.

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Table 1: Socio-demographic characteristics of the respondents

Socio-demographic characteristics	Frequency (N = 2674)	Percentage (%)
Gender		
Male	1024	38.3
Female	1650	61.7
Age group (years)		
< 21	66	2.5
21 - 30	504	18.8
31 - 40	639	23.9
41 - 50	526	19.7
51 - 60	399	14.9
61 - 70	317	11.9
71 +	223	8.3
Marital status		
Single	228	8.5
Married	2043	76.4
Divorced	117	4.4
Widowed	286	10.7
Level of education		
No Formal Education	304	11.4
Primary	709	26.5
Secondary	1239	46.3
Tertiary	422	15.8
Occupation		
Housewife	342	12.8
Student	219	8.2
Artisan	281	10.5
Farmer	497	18.6
Trader	625	23.4
Business tycoon	59	2.2
Civil servant	236	8.8
Professional (Lawyer, Engineer, Lecturer etc)	151	5.6
Others (labourer, bricklayer, driver etc)	264	9.9
Average monthly income		
<18,000	1356	50.7
18,000 - 29,000	598	22.4
30,000 - 49,000	394	14.7
50,000 - 99,000	209	7.8
100,000 and above	117	4.4
Number of persons in household		
1 – 2	48	1.8
3 - 4	307	11.5
5 - 6	1100	41.1
7 - 8	570	21.3
9 - 10	321	12.0
> 10	328	12.3

Table 2: Respondents knowledge on cause, breeding site and spread of malaria

Variable	Frequency (N = 2674)	Percentage (%)
Have you heard of malaria		
Yes	2542	95.1
No	132	4.9
Is malaria transmissible		
Yes	1683	62.9
No	976	36.5
No idea	15	0.6
How do malaria spread		
Mosquito bite	2262	84.6
Fly bite	110	4.1
Drinking dirty water	75	2.8
Eating unhygienic food	53	2.0
No idea	174	6.5
Name the vector that transmits malaria parasite		
Female Anopheles mosquito	812	30.4
Male Anopheles mosquito	105	3.9
Culex mosquito	52	1.9
Aedes mosquito	337	12.6
No idea	1368	51.2
What is the common breeding site of mosquito		
Running dirty water	289	10.8
Garbage/trash	179	6.7
Standing clean water	64	2.4
Stagnant dirty water	1501	56.1
Running clean water	73	2.7
Plants/flowers/bushes	421	15.7
No idea	147	5.5
What is the frequent bite time of mosquito		
Morning	289	10.8
Evening/Night	148	5.5
Noon	113	4.2
No idea	2124	79.5

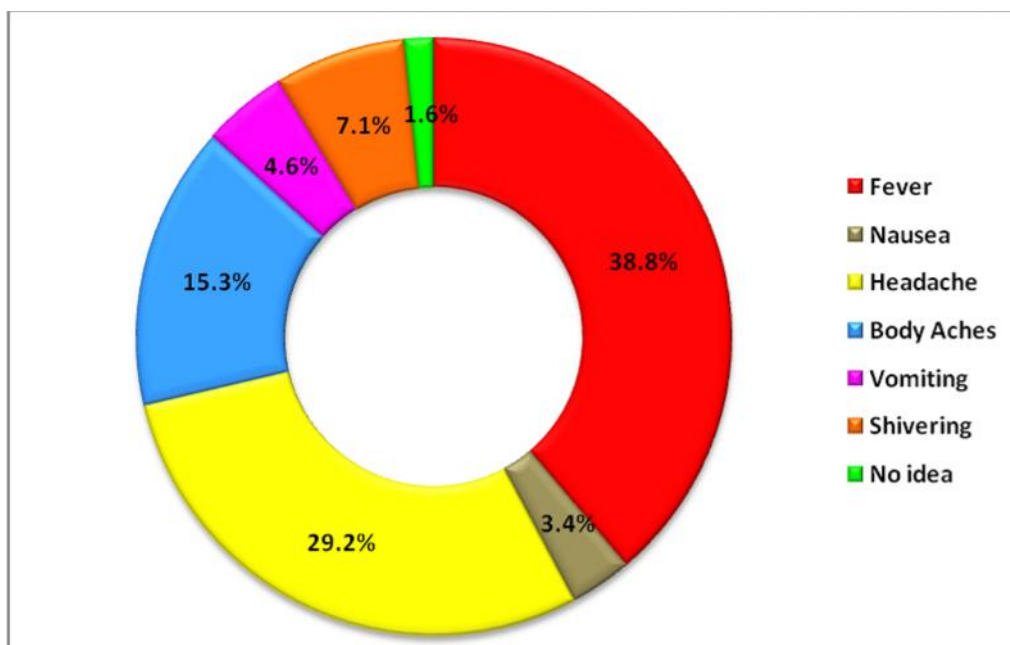


Figure 1; knowledge of signs and symptoms of malaria as reported by respondents

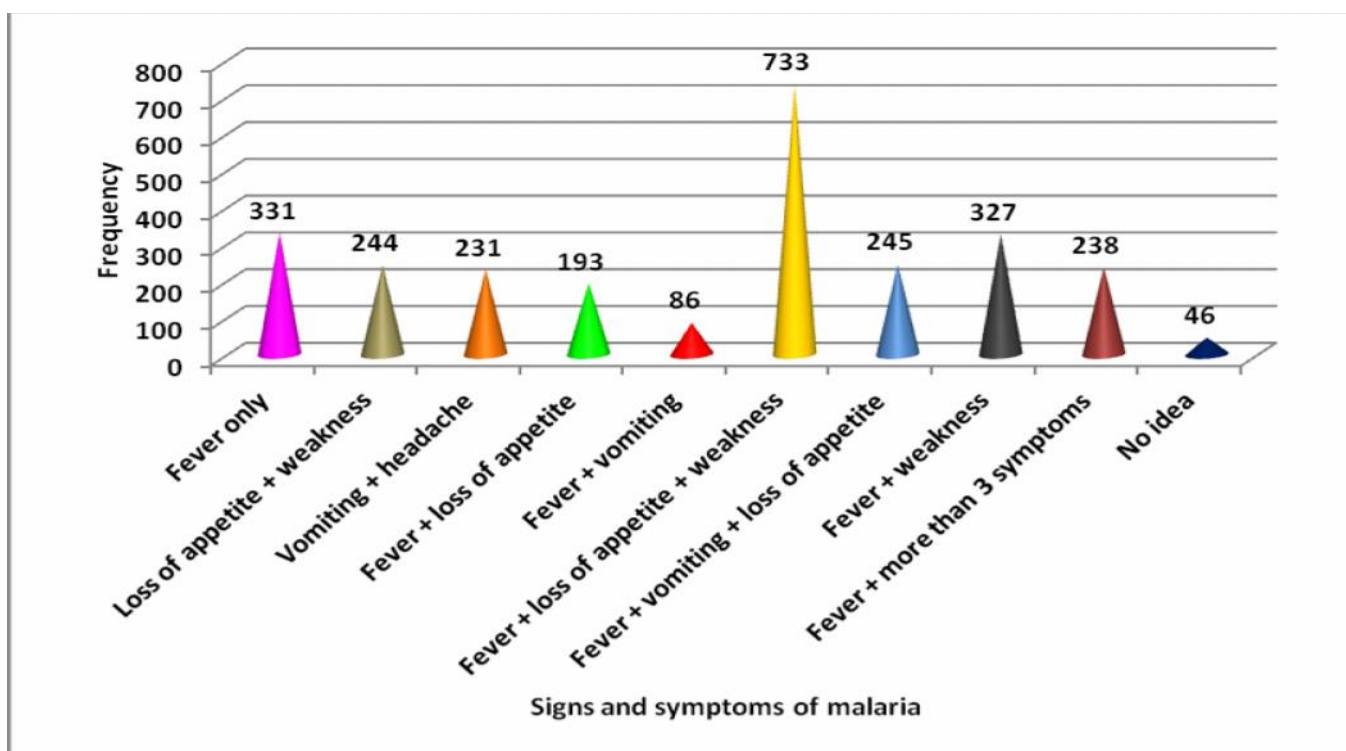
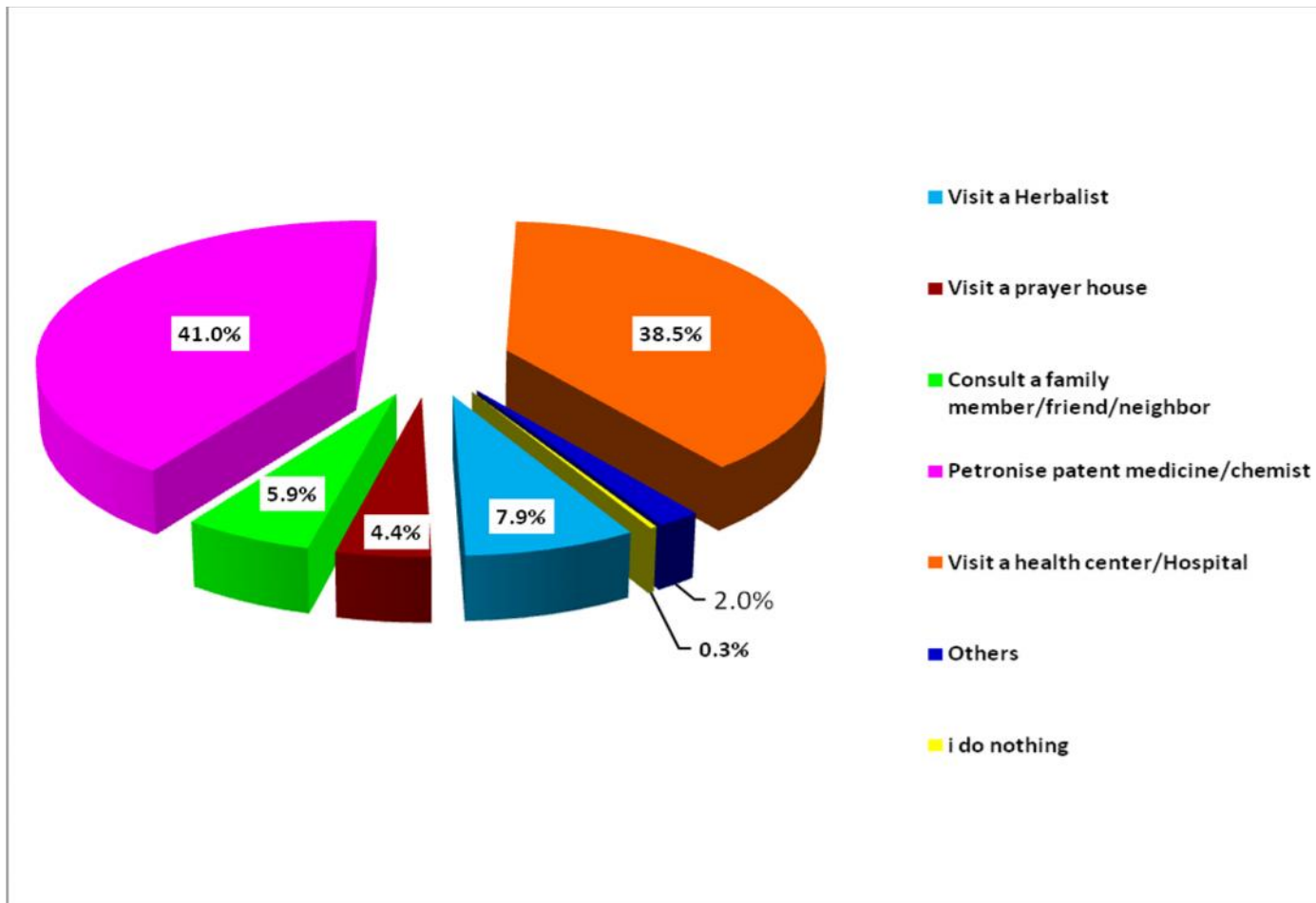


Figure 2; Signs and symptoms utilized by respondent in diagnosing malaria at home

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319 **Figure 3; Health seeking behavior of respondents when malaria is suspected**

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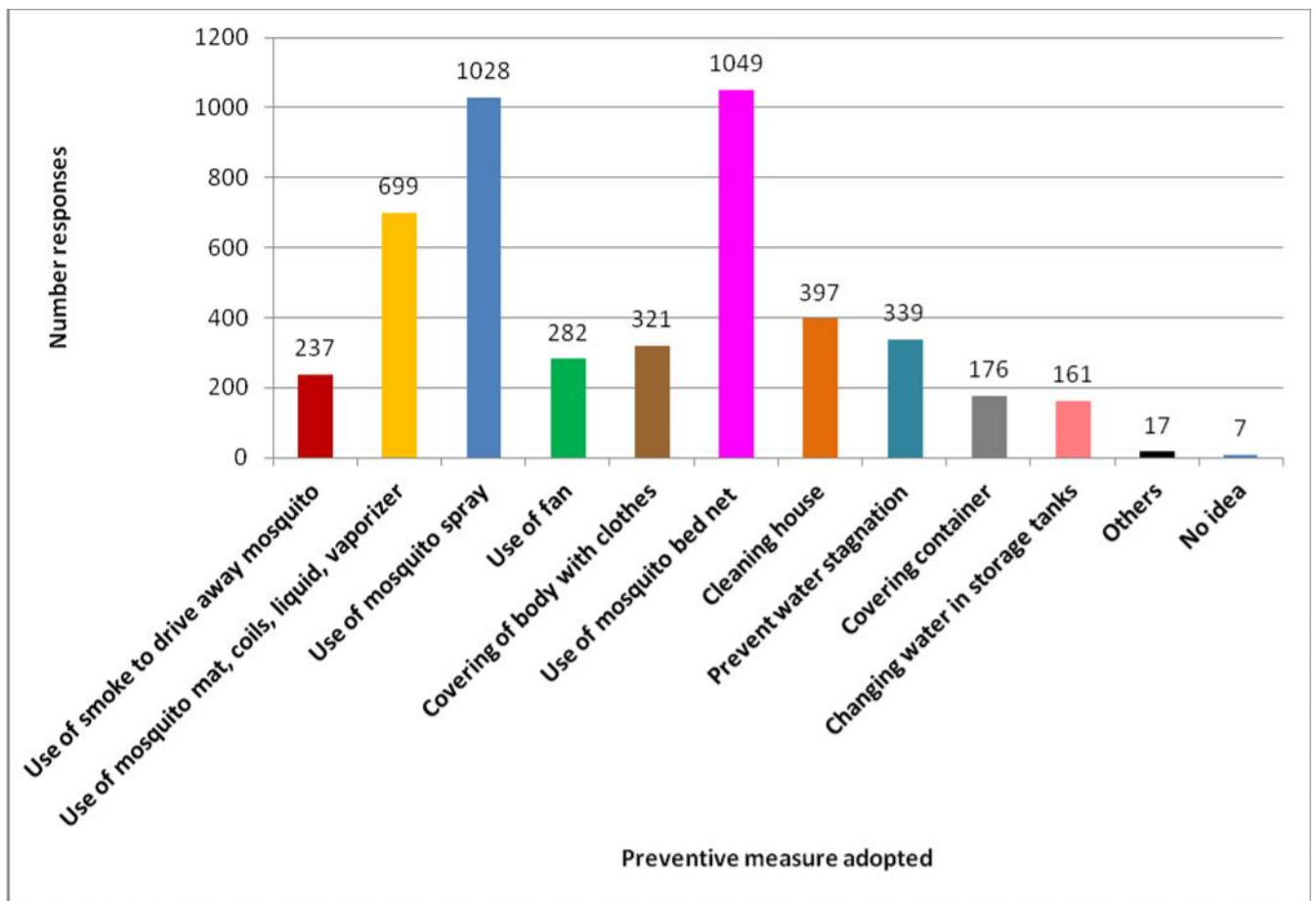


Figure 4; Malaria preventive measures adopted by respondents

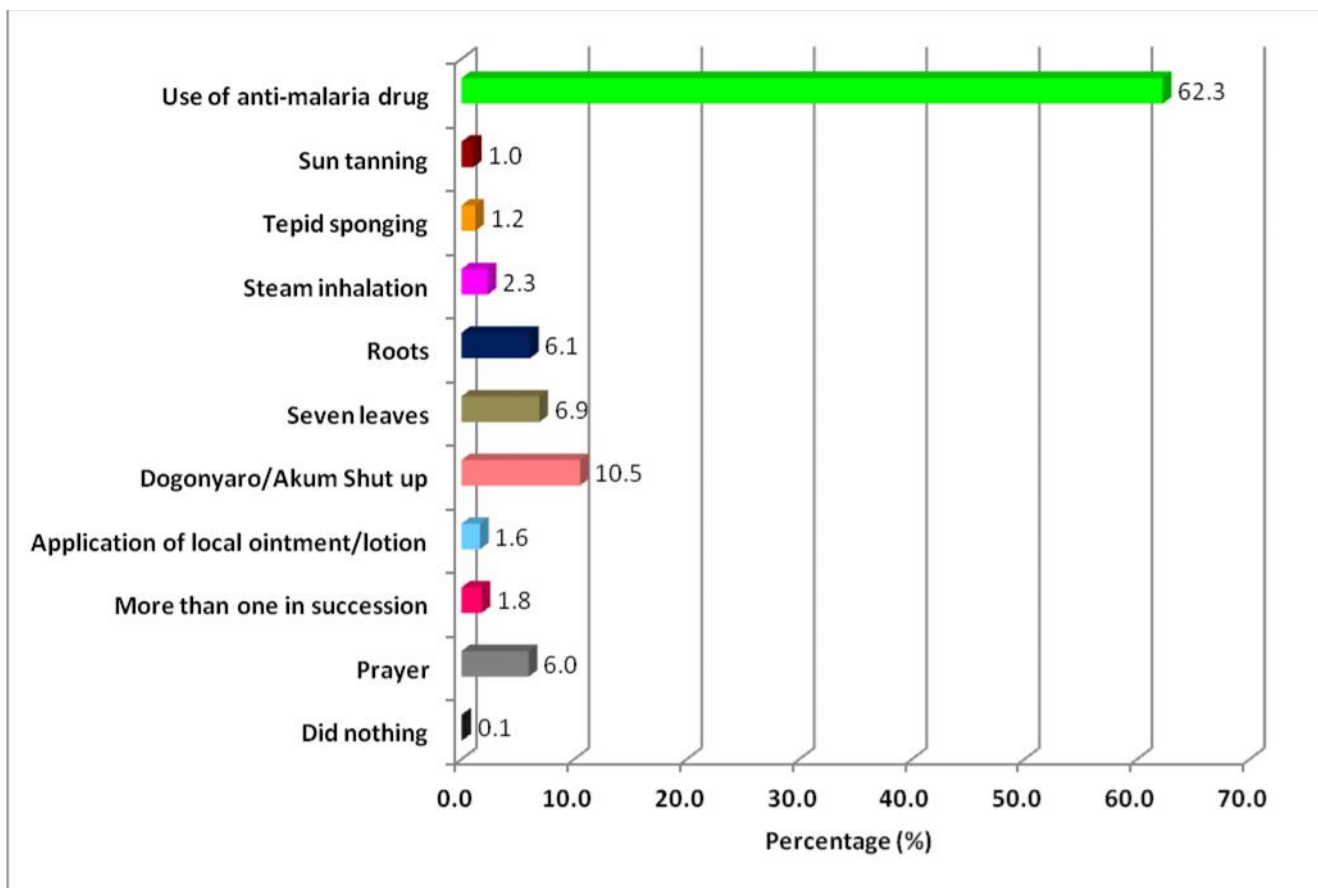


Figure 5; Home management of malaria in rural communities in Imo State