

## Management practices of childhood malaria among caregivers in Ojo Military Cantonment, Lagos, Nigeria: implication for child survival

OS Arulogun<sup>1</sup> and AU Gregory<sup>2</sup>

Department of Health Promotion and Education<sup>1</sup>, College of Medicine, University of Ibadan, Ibadan and Nigerian Army Medical Corps<sup>2</sup> (Training Branch), Army Cantonment, Ojo, Lagos, Nigeria

### Summary

The study explored home management practices for malaria by caregivers in the Military Cantonment, Ojo Lagos. Data was collected using pre-tested Focus Group Discussion guide and interviewer-administered questionnaire. The 400 survey respondents were selected using the systematic sampling method while the discussion participants were purposively selected. Data analysis was done using EPI Info statistical software and thematic approaches. The mean age of respondents was 29 ±15.2 years while 89.8% of respondents were biological parents of the index children. High prevalence of malaria all year round caused by mosquitoes bite was indicated by 281(70.2%) respondents, while 73 (18.3%) of the respondents reported having lost a child under 5 years old to malaria related illnesses. Preventive practices were uncoordinated while awareness and use of ITNs is low. Home management practices of childhood malaria involved the immediate treatment with medicines available in the home. Sharing of left over drugs and herbs were common practices. Home treatment was preferred because of high costs 250(62.5%), unfriendly attitude of workers 195(48.8%) and long waiting time 194(48.5%) in the health facilities. Based on the findings there is the need to institute an awareness programme aimed at improving prompt home management of malaria in the barracks.

**Keywords:** *Malaria, caregivers, home management, children under 5 years old, military cantonment*

### Résumé

L'étude explorait les soins à domicile du paludisme par les donneurs de soins au canton militaire d'Ojo à Lagos. Les données étaient collectées utilisant un

guide de discussion et un questionnaire prétesté était administré. Les 400 participants étaient sélectionnés utilisant la méthode d'échantillons systématique alors que la discussion avec les participants étaient objectivement sélectionnés. L'analyse des données était faite utilisant le programme statistique EPI Info et les approches thématiques. La moyenne d'âge des participants était de 29 ±15.2 ans et 89.8% des participants étaient des parents biologiques des enfants choisis. Une forte prévalence du paludisme toute l'année, causée par les piqûres des moustiques était observée chez 281(70.2%) participants, cependant 73 (18.3%) des participants rapportaient avoir perdu un enfant de moins de 5 ans suite au paludisme. Les mesures préventives étaient non coordonnées alors que la sensibilisation et l'usage des moustiquaires imprégnés restent faible. Les soins à domicile du paludisme infantile demandent un traitement immédiate avec des médicaments disponibles à domicile. Le partage du reste des médicaments ou des plantes médicinales étaient une pratique commune. Le traitement à domicile était préféré à cause du coût élevé du médicament 250(62.5%), l'attitude non amicale des traitants 195(48.8%) et le long temps d'attente 194(48.5%) dans les services de santé. En se basant sur ces résultats, il est important d'instituer de programme de sensibilisation afin de promouvoir les soins urgent au paludisme dans les cantons.

### Introduction

Malaria continues to be a public health problem of significance especially in sub-Saharan Africa. Annual worldwide cases of acute illness due to malaria are 300-500 million [1] The annual worldwide deaths due to malaria is 1.1-2.7 million and this is mostly among children under five years of age who are most vulnerable to morbidity and mortality from malaria. At least 20% of childhood death in Sub-Saharan Africa is attributed to malaria. Furthermore, *P.falciparum*, the main strain of malaria-causing organism, is resistant to multiple drugs resulting in higher treatment costs [1].

Malaria is the most significant public health problem in Nigeria [2]. It accounts for 25% of under-5 mortality and 30% childhood mortality and 11% maternal mortality. At least 50% of the population will have at least one episode of malaria annually while children that are aged below 5 years (about 24 million) will have 2 to 4 attacks of malaria annually. The disease is a major cause of poor child development [2].

Home-based management of malaria (HMM) is promoted as a major strategy to improve prompt delivery of effective malaria treatment in Africa. HMM involves presumptively treating febrile children with pre-packaged antimalarial drugs distributed by members of the community [3]. Malaria control and therapy are fraught with problems because of the magnitude of the disease; inadequate and inappropriate control measures. The treatment-seeking behaviour of caregivers of children with childhood fever is usually predicated on cultural beliefs. Thus beliefs about causes and cure for the disease often influence the choice of a treatment option [4 – 6].

In the past malaria control efforts were taken seriously within the Nigerian barracks. Sanitation exercises were regular and compulsory for everyone. Thus everywhere was kept clean, breeding grounds for mosquitoes were removed by clearing all pools of water and cutting grasses low. There were also regular competitions for the cleanest quarters or barrack lines among the companies and units. At the household level, all family members were called out every Sunday morning for the Pyrimethamine (Daraprim) parade – the so called ‘Sunday-Sunday’ medicine. The use of mosquito nets was high as these were issued free to soldiers routinely and old nets were exchanged for new ones when they became torn. Anecdotal evidence showed that these are no longer the standard practices in the barracks.

This study therefore set out to document home management practices for childhood malaria by caregivers in Ojo Military Cantonment, Lagos, Nigeria. It is believed that the application of the findings will build capacity for home based management of simple malaria and strengthen health-seeking behaviour for severe and complicated malaria which can lead to improved child survival in the barracks in Nigeria.

## Methodology

### *The study area*

The Military Cantonment, Ojo is one of the two large barracks in Lagos with 8 smaller barracks garrisoned under the 81 Division. The Ojo Military Cantonment

is situated along the Lagos /Badagry expressway about 12 kilometers from urban Lagos. Despite its closeness to Lagos, it maintains a rural setting with living blocks far separated from each other in Camps with a lot of unused spaces in between. The Cantonment occupies an area of more than 20sq kilometers, and the living area is delineated into Camps, which are clusters of living blocks.

The social infrastructures in the Cantonment include one Medical Reception Station (MRS) which is a medical facility equivalent to a community health centre with a 30-bed space mainly for observation of patients before being referred to either the Nigerian Navy Hospital Ojoo, Military Hospital Yaba or Nigerian Army reference Hospital Yaba. Six medical doctors, 16 nurses/midwives and 10 technical staff (medical record officers, pharmacy technicians, environmental officers) made up the staff composition of the MRS. There is also a ‘‘Mammy’’ market where almost all items are sold including medications. Victims are referred immediately. The estimated waiting time for cold cases is about 1 to 2 hours while for the medical, surgical and road traffic accident cases it is about 30 minutes because they are clerked and given first aid before referral. There are 3 units within the Cantonment that run a drug-revolving scheme as part of a welfare package for the officers and soldiers. These are 149 battalion, Nigerian Army Ordinance Corps (Training Branch), and the Nigerian Army Medical Corps (Training Branch).

### *Study design*

The study is an explorative household survey that seeks to document caregivers’ home management practices for children with childhood fevers/malaria.

### *Study population*

Caregivers that reside in the study area were studied. The inclusion criteria for the respondents were availability of a child under 5 years who had had at least one episode of febrile illness in the last one month before the study and physical presence of the care giver in the home at the time of visit by the interviewer. The respondents recruited include mothers, fathers, grandmothers, and aunties. Other significant persons or groups in the study area like *magajiyas* (women coordinators), patent medicine vendors, traditional healers and health personnel were purposively selected and interviewed using the key informant interview guide.

### *Method of data collection*

Five focus group discussions (FGD) were conducted with a cross section of caregivers recruited at random

from all the segments in the cantonment using 'pidgin English'. Four of these were all female groups while one was all male. The discussions were recorded on audio tapes and later transcribed into English by the trained focus group discussion moderators and note takers. Issues of interest emanating from these discussions were addressed by arranging in-depth interviews with the medical personnel in charge of the medical reception station (MRS), chemists/ patent medicine vendors (PMV) in the mammy market, sellers of traditional medicines, environmental health officer for the cantonment and the cantonment officer. Survey data were collected using interviewer administered questionnaire from the care givers. Four experienced research assistants were employed and given a two-day training on skills necessary for collection, verification and coding of responses accurately. Emphasis was placed on how to ask sensitive questions during their training.

#### *Instruments for data collection*

Three instruments (FGD guide, in-depth interview guide and semi-structured questionnaire) were developed and used to collect information among cross-section of care givers recruited for FGD, key informants and care givers in household. All the instruments for data collection were pre-tested for reliability among caregivers and key informants in Ikeja Military Cantonment where the occupants have the same demographic characteristics as in the study area. The outcome was used to modify the instrument. The quantitative instruments were scored at the end of the exercise and the observations were paired and Spearman's rank correlation coefficient was calculated ( $r = .573$ ). This was considered a strong positive correlation and a good measure of the degree of consistency of responses to the instrument.

#### *Sampling procedure*

A census of the households within the cantonment was carried out to determine the sampling frame for the study. This was done by physical enumeration to verify records obtained from the Cantonment Office after seeking permission to carry out the study. In order to allow for equal chances for caregivers in all the households to participate in the study, the participating blocks in the camp clusters as well as the starting households were randomly selected from the sampling frame which is the list of accommodation blocks obtained from the cantonment office records. Households in these selected clusters were then entered alternately. In the household entered a child or children that met the criteria for the study were identified and the caregiver, who was at home at the time of the study, was interviewed using the structured questionnaire. In the case of more than

one caregiver being present preference was given to the biological mother of the child or children identified. Where a household entered did not have at least one child with the inclusion criteria, the subsequent house was entered and where a caregiver had more than one under-five children, the one who had fever in the month preceding the study was chosen as the index child and where both had had a febrile illness, the index child was chosen using the ballot method. This sampling procedure was repeated in all the households for all the selected blocks and camps.

#### *Data management and analysis*

Questionnaires were vetted daily and verified. Those with incomplete information were returned to the interviewer in order for a repeat visit to be made. Data cleaning was, therefore, done manually and with the aid of the computer by putting checks in the data entry template. The questionnaires were sorted out and coded serially. Data were then entered into the computer using the EPI-Info 2000 statistical software to produce distribution of the relevant variables. Chi-square analysis was used to test for association between determined factors. Qualitative data were analysed using the thematic approach.

#### *Approval for the study*

Approval for the study was sought and obtained from the General Officer Commanding 81 Division, Nigerian Army. His approval was conveyed to the Cantonment Commander who then informed all the unit commanders in the cantonment of the exercise. Based on this approval temporary gate passes were issued to the research assistants to ensure their unhindered access to the cantonment and the camps.

#### *Ethical considerations*

It was explained that all information obtained for the survey can only be used for research purpose and under no condition can this be divulged to a third person. Assistants were trained to be cautious, polite and exhibit empathy particularly during verbal autopsies. Informed verbal consent was sought from the caregiver(s) in the household before being interviewed. This involved the explanation of the purpose of the research, what it would involve and asking for the caregiver to participate in the study. If a caregiver agrees to participate, he or she would be interviewed.

## **Results**

### *Socio - demographic data*

A total of 400 respondents (one in each household) were interviewed. Results indicated that 1583 children were in the households surveyed and

658(41.6%) were under five years old: The number of children in the households ranged from 1 to 18 with a mean of  $3.96(\pm 2.29)$ . The 400 respondents comprised of 221(55.3%) mothers, 137(34.3%) fathers and (10.5%) others who were care givers. Three hundred and twenty-two (80.5%) were married and 7 (1.8%) were never married. (Table 1) Religious affiliation of respondents showed that 247 (61.8%) were Christians compared to Muslims 144 (36.0%). Traditionalists and those who did not indicate their religious affiliations constituted 9 (2.3%) of the population. The respondents were aged 14 to 70 years with a mean of  $29\pm 15.2$  years. One hundred and sixty-seven (41.5%) were aged 31 - 40 years and 7 (1.7%) were 60 - 70 year age group.

**Table 1:** Socio-demographic characteristics of respondents (Type of respondents, sex, marital status religion and age)

Caregiver	Number	Percent
Father	137	34.3
Mother	221	55.3
Grandparent	22	5.5
Relation	20	5.0
Total	400	100
<i>Sex</i>		
Female	250	62.7
Male	150	37.3
Total	400	100
<i>Marital status</i>		
Married	322	80.5
Widowed	24	6.0
Divorced	6	1.5
Separated	14	3.5
Never Married	7	1.8
Non response	27	6.8
Total	400	100
<i>Religion</i>		
Christian	247	61.8
Islam	144	36.0
Non response	5	1.3
Others	4	1.0
Total	400	100
<i>Age</i>		
14-20	8	2.0
21-30	95	23.8
31-40	167	41.8
41-50	47	11.7
51-60	13	3.3
61-70	7	1.7
Non response	63	15.7
Total	400	100

An analysis of the educational level of the respondents showed that 191(47.8%) had secondary education, 120 (30.0%) tertiary education and 47 (11.8%) primary education. There were 33 (8.3%) respondents who had no formal education. On the income available to the respondents, 235 (58.8%) earned between N11, 000 to N20, 000 per month and 84 (21.0%) less than N10, 000 per month. The mean total household income was N14, 531. 00  $\pm 6549.80$ . The tribal groups were Yoruba 115 (28.8%), Hausa and Igbos 66 (16.5%) and mixed groups 151 (37.8%). These groups include the Ibibios, Idoma, Igala, Ishan, Ogoja, Tiv and Urhobo. Most of the respondents 229 (57.3%) had lived in the cantonment for a continuous period of more than 3years while only 14 (3.5%) had lived there for less than 6 months.

**Table 2:** Knowledge of common illnesses, causes and symptoms of malaria among respondents

Causes of malaria as listed by the Respondents	Frequency	
	Frequency	Percentage
Mosquitoes bite	281	70.2
Filthy environment	74	18.5
Stress/Walking in the sun	16	4.0
Dirty Water	15	3.8
Poor food/feeding	10	2.5
Others	4	1.0
Total	400	100
<i>Respondents knowledge of symptoms of malaria*</i>		
Fever	398	99.5
Head ache	391	97.7
Malaise	247	61.7
Abdominal pains	119	29.7
Joint pains	300	75.0
Loss of appetite	367	91.7
Vomiting	331	82.7
Tiredness	342	85.5
Convulsion	237	59.2
Dizziness	268	67.0
Jaundice	165	41.3

\* Multiple responses

#### *Knowledge and perception about childhood malaria by caregivers*

The common illness affecting under-fives mentioned by respondents were malaria and febrile illnesses 217(54.3%) respondents, catarrh/cough 76(19.0%) and typhoid fever 57(14.3%). [Fig.1]. About what causes malaria fever, the respondents indicated mosquito bites 281 (70.2%), filthy environment

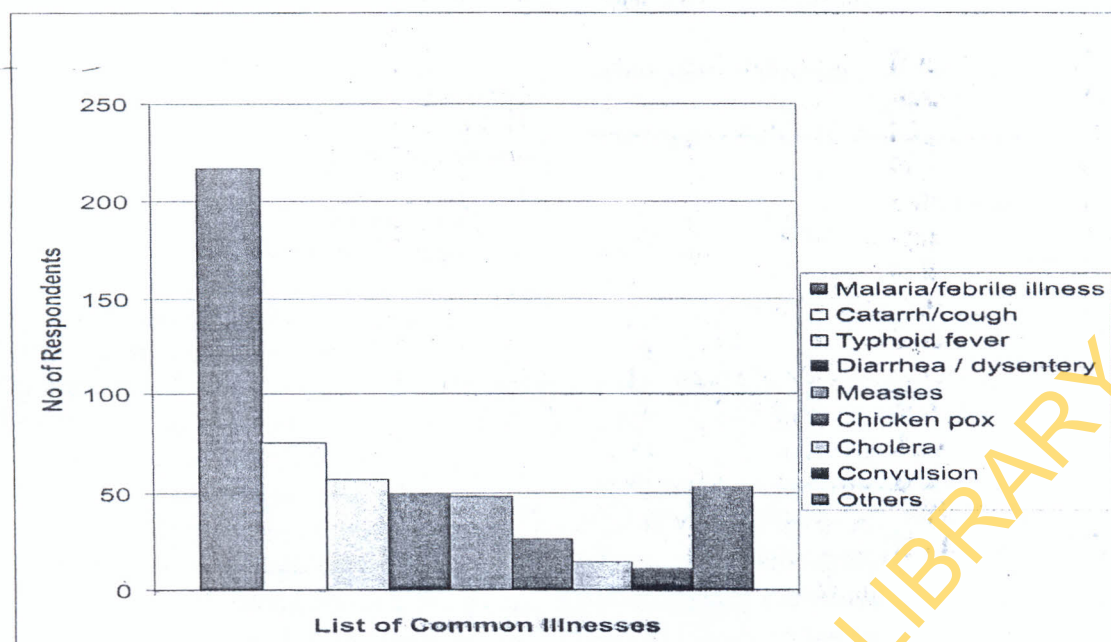


Fig. 1: Common illnesses listed by respondents

74(18.5%), dirty water 15(3.8%), stress, too much walking in the sun 16 (4.0%) and poor food/feeding 10 (2.5%) (Table 2). Findings from the focus group discussions revealed that many of the discussants mentioned mosquito bites as the sole cause of malaria. However, some other discussants said that dirty environment, walking in the sun and stress could predispose the children to malaria. Yet others believed that the presence of other febrile illnesses such as catarrh and cough, diarrhea and dysentery might only indicate that malaria was present or imminent.

The common symptoms of malaria identified by respondents include fever (99.5%), headache (97.7%) and convulsions (59.2%) as against the findings from the FGD where some participants did not see the relationship between convulsion and malaria. Most of the respondents 361 (87.0%) believed that malaria could kill and 78.0% perceived that young children were most vulnerable to malaria. Three hundred and twenty-three (80.8%) respondents believed that malaria could lead to convulsion while 361 (90.3%) believed that it could lead to anemia. Three hundred and twelve (78.0%) respondents recognized that other childhood illnesses could occur along with malaria. Catarrh and cough were indicated by 86 (21.5%) respondents as the most frequent illnesses that may occur along with malaria fever followed by measles 49 (12.3%) and convulsions 36(9.0%) which seems to contradict earlier responses that convulsion was a symptom of malaria and the notion in the FGD that it has no direct relationship with malaria.

Three hundred and fifty-eight (89.0%) respondents indicated that mosquitoes were a

menace in the cantonment. Of these, 218 (54.5%) believed that the mosquitoes are more of a menace during the raining season while 144 (36.0%) feel the situation is the same all year round. This was also reported during the FGDs where all the participants agree that mosquitoes are a source of concern in the cantonment because of high vegetation all year round and due to open drainages. The cantonment environmental officer in an in-depth interview said he was so concerned about the mosquitoes that he had to introduce a 2 –weekly sanitation exercise, which has made the place cleaner.

#### *Practices for childhood malaria prevention in the home*

Regarding actions taken to reduce mosquito contact in the cantonment 139 (34.0%) ranked the provision of netting and screens for doors and windows as the primary action followed by the use of repellants (insecticide sprays) 110 (27.5%) and smokes for example burning of coils 65 (16.3%). The use of insecticide treated bed nets (ITNs) was also rated as a preventive action by only 22 (5.5%) of the respondents (Table 6). The result is validated by participants at the FGD who agreed that the most common approach is to screen the doors and windows but that mosquitoes still find their way into the home, so it may have to be sprayed with insecticide every night. Also many of the participants agreed that preventive sanitation is a possible approach to reducing mosquito contact but its effect on the mosquitoes is not often very apparent during the raining season when the menace is greatest.

**Table 3:** List of Medicines Stocked at Home for prevention of malaria by respondents

List of medicines stocked at home for prevention of malaria	Number	Percentage
Chloroquine	183	45.8
daraprim	59	14.7
fansidar	45	11.3
Herbal preparations ( <i>Agbo</i> )	28	7.0
Others	85	21.2
Total	400	100.0

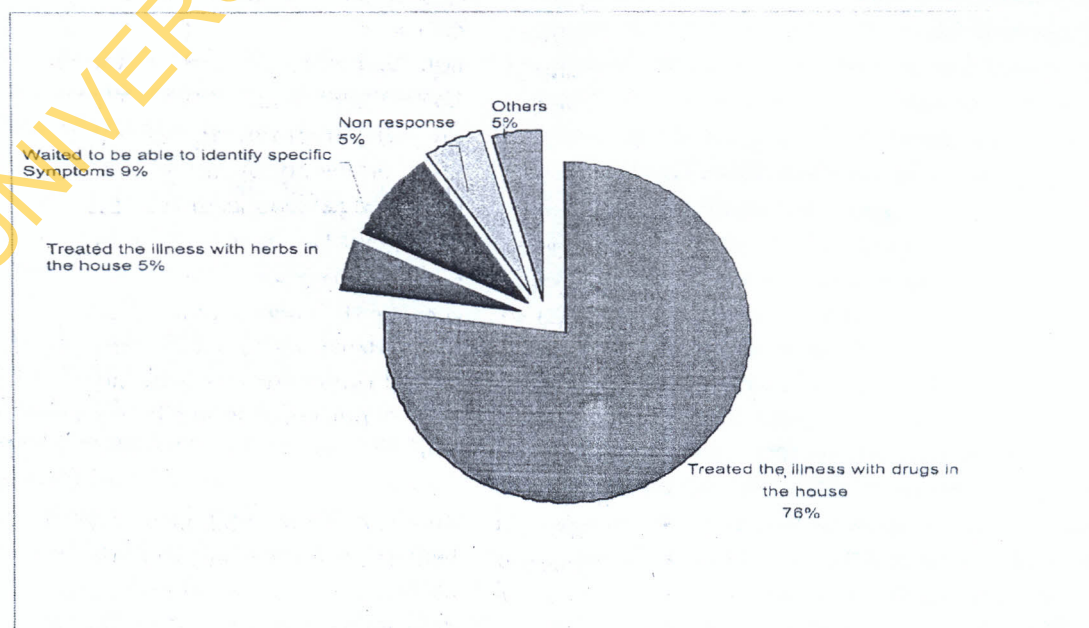
Three hundred and twenty-five (81.2%) respondents agree that malaria could be prevented by the administration of medicines. As a result of this belief, respondents maintain a stock of varied medicines such as chloroquine 183 (45.8%), pyrimethamine 59(14.7%), sulphadoxine/sulphalen pyrimethamine (Fansidar, Amalar, Maloxine etc) 45 (11.3%), and herbal preparations (*Agbo*) 28 (7.0%)(Table 3) in the home for prevention. On drug preference, 103 (25.8%) respondents preferred drugs to herbal preparation "*agbo*" while 31 (7.1%) preferred "*agbo*" to drugs and 87 (21.7%) said it depends on the illness. Similar findings were obtained from the FGD where some of the participants said that herbal preparations were mentioned as an essential first step in the prevention and treatment of fever in the children in the home. Also the in-depth interviews with traditional healers in the cantonment revealed that the traditional healers receive a good patronage from people living in the cantonment. They

said that many of their customers come to them when "medical" medicine has failed or on discharge from hospital so that the "balance of the illness can be flushed out".

Two hundred and fifty-eight (64.5%) respondents had heard about insecticide treated bednets through television 173 (43.3%) and 136 (34.0%) from the radio. One hundred and eleven (27.8%) respondents said they owned a "bed net" and 289(72.2%) did not. Fifty-four (13.5%) respondents rated the use of the net as highly convenient while 6 (1.5%) said the nets were not convenient because they sweated a lot while sleeping under them. Non-availability 225 (53.6%) and costs 145 (34.4%) were the major reasons given for not having ITNs in the home. The results are consistent with findings from the FGDs and the in-depth interviews where it was revealed that many of the participants and those interviewed were not aware of ITNs neither did they know where the nets were sold.

#### *Treatment practices during an illness episode by caregivers in the home*

Two hundred and eight-two (70.5%) respondents could recalled at least one episode of febrile illness, 75 (18.7%) recalled 2 episodes and 16 (4.0%) more than 2 episodes in the children under 5 years old in the one month preceding data collection. Fever 387(96.7%), catarrh and cough 307 (76.8%), headaches 297 (74.3%) were indicated as the most frequently occurring illnesses while abdominal pain 107 (26.7%), fast/difficult breathing 80 (20.0%) and convulsion occurred least. The responses to illnesses

**Fig. 2:** Action by caregivers on observing a child being unwell

in under-fives included immediate actions by 234 (58.5%) respondents, actions within a few hours by 63(15.8%) respondents and 52(13.0%) waited for up to a day to confirm symptoms. Of the respondents who took the first action 308 (77.0%) administered medicines available in the home as against 19 (4.8%) who used herbs (Fig. 2).

An appropriate drug was selected in 253 (82.1%) of all the drugs administered but the appropriate dosage was given only in 42 (13.6%) cases and for an appropriate duration 164 (53.2%). Decision as to what drug to use, dosage and duration was made by self in 245 (61.2%) cases, and on the advice of spouse in 87 (21.8%) cases. The outcome of this first action was that 149 (37.2%) got well completely while 218 (54.6%) did not. The respondents reported that a second action was taken in the home where the child did not recover fully from the first action or where the child got worse. In this case the most frequent action was to change to other drugs available 104 (26.0%) followed by those who continued with the former regimen 79 (19.7%) or wait to confirm more symptoms 27 (6.8%). The respondents reported that the actions were self advised 149 (60.6%) counsel from the spouse 62 (25.2%) and neighbours 28(11.4%). Childcare practices such as continuous feeding and fluid intake 256(64.0%), making the child comfortable 196 (49.0%) and temperature control by tepid sponging 177(44.3%) were reported to have been carried out in the home. Results of the second action indicated that 105 (48.2%) of the children got better while 68 (37.2%) got worse and there was no change in 45 (21.6%) of them. Many of the respondents reported that they sought help outside the home due to excessive vomiting 55(32.2%), advice from spouse or neighbour 40(23.4%) and severe illness 25(14.6%). Preference for home treatment was due to cost of treatment at the medical centres 250(62.5%), unfriendly attitude of health care workers 195(48.8%) and long waiting time 194 (48.5%). The facilities often visited outside the home include the Medical Reception Station 251(62.7%) and private clinics outside the cantonment 69 (17.2%). Ten respondents indicated that they visited herbal homes (2.5%) while only one respondent (0.3%) mentioned the church.

Seventy-three respondents (18.3%) reported that they had lost an under 5 years old child in the household. Malaria and other childhood febrile illnesses combine to account for 37(50.7%) of the losses. Many other childhood illnesses were implicated but in 13 (17.8%) cases the reasons advanced could not be bio-medically explained. (Table 4)

**Table 4:** Reported illness circumstances under which a child was lost

Illness Circumstances	Number	Percentage
Malaria and other childhood febrile Illness	37	50.7
Anaemia	1	1.4
Cholera	8	10.9
Cough	1	1.4
Jaundice	1	1.4
Measles	8	10.9
Pneumonia	1	1.4
Still birth	3	4.1
Typhoid	1	1.4
Unclear/others	12	16.4
Total	73	100.0

### Discussion

The results of the study showed that majority of the respondents were in marital union and this is in line with the 2003 NDHS [7] where more than two-thirds of women surveyed were in marital unions. The young age group recorded in the study could account for the high fertility seen in the cantonment. The implication of many children in the household as far as malaria was concerned is that a high number of episodes would be experienced and preference for home management approach would generally be the norm as it is considered less expensive and time saving.

Male dominance in decision making was evidenced in the study as some female respondents said they were not competent to discuss the health of their children and their husbands who were more educated and controlled the family resources, were often out of the home when a child or children become sick. This has brought to the fore the importance of male involvement in health care at the household level as well as the need for capacity building of female caregivers to ensure they can take prompt action in cases of child's ill health.

Literacy level among the respondents was high as only 8.0% had no formal education. This is a resource that must be tapped if there would be a paradigm shift in home care for illnesses. Tapping this would ensure that care givers seek prompt and appropriate care for their sick children either in the home or outside of it within the first 24 hours. This would contribute substantially to reducing child mortality and morbidity through effective home management practices. The finding is supported by studies in Tanzania where higher educational level was associated with health seeking and with higher knowledge about anti-malarial drugs [8].

The average available income of N14, 531.00 (\$108) in the household from all sources may not be low given the Nigerian minimum wage however, with cases of multiple malaria attacks and other family commitments it may not be adequate for the household expenditure. When this is the case, cost of health care suffers. In addition, financial constraint was also perceived to be responsible for the high patronage enjoyed by the patent medicine vendors in the cantonment because of their ability to sell medicines on credit. This agrees with some studies from Sub Saharan Africa which have shown that between 15% and 82% of the population choose to consult private medicine shops and informal providers for advice and assistance with treatment of childhood illness. In many of these studies, lack of access to the formal sector and the easy accessibility to the drug shops encourage self treatment with shop drugs [9, 10]. Patent medicine vendors therefore, play a vital role in home management practices for malaria and they should be empowered in relation to knowledge about child survival strategies, dosage of medicines and appropriate medication information to the caregivers. Malaria and other febrile illnesses were mentioned by many respondents as the most common illnesses occurring in children under 5 years old within the cantonment. This finding agrees with Afolabi [11] who found out in a study in an island in Lagos close to the study area that malaria is highly endemic and is the major cause of ill health and death. Despite the high knowledge of malaria causation, there still exist myths such as malaria being caused by dirty water was high among respondents. This shows that there are still gaps in knowledge which needs to be filled by culturally appropriate educational interventions. Fever was the first indication for home treatment for malaria among the respondents and this was in line with the findings of Nwabu [12] who found overall treatment rates of up to 90% at home prompted by fever. Divergent opinions were found among respondents on the relationship between convulsion and malaria. This was also found by Afolabi [11] in his study where his study participants perceive convulsions as a different disease entity, spiritual in origin and not responsive to orthodox medicine. This finding is important because convulsion is one of the signals of severe malaria which should prompt caregivers to seek care outside the home. Therefore there is need to enlighten care givers on the signs and symptoms of simple and severe malaria so that the delays resulting in mortality would be reduced. This agrees with observations by Snow *et al*, [13] who noted that almost 5 million clinical

episodes resembling malaria occur in endemic areas annually and those of Akogun and John [14] where childhood mortality due to malaria has been attributed to poor health service delivery systems and ignorance.

The practice of administration of drugs to children for the prevention is regarded as a promising option by WHO-UNICEF who is currently engaged in a joint project of intermittent preventive treatment in infants (IPTI). Project reports have indicated promising research findings from Tanzania where it has been demonstrated that a single dose of anti-malarial drug, sulphadoxine-pyrimethamine (SP) given to healthy infants at 2, 3 and 9 months of age, at the time of expanded program on immunization (EPI) vaccination, reduce episodes of clinical malaria by 60% and episodes of anaemia by 50%, during the first year of life [15, 16].

The tendency to provide home treatment has been observed in many studies [10, 17, 18, 19]. This action is also in line with one of the objectives of the Roll Back Malaria, RBM, which is to ensure that at least 60% of those suffering from malaria have access to prompt, appropriate and affordable treatment within 24 hours of onset of symptoms by having treatment available in the home or within the community. This behaviour should be enhanced with proper training for the care givers. This will interrupt the progression of simple uncomplicated malaria to severe malaria reducing complications that may arise from the episode.

However, a common behaviour observed was to stop giving medication when symptoms were relieved and save tablets for future attacks or friends thus the availability of medicines in the home is not unusual also as most drugs could be bought without prescription in Nigeria. This is in line with a study in Kenya where 18% of the households surveyed had antimalarials at home but none had a full course [20]. Treatment failure resulting in multiple activities suggest that drug availability in the home alone is not an effective tool to strengthen home based malaria treatment. A disadvantage of the above trial by error approach is lack of clinical evaluation of the child by trained health professionals leading to delayed appropriate treatment. A community based intervention used mother coordinators to provide home treatment of malaria that showed a 40% reduction in mortality in those aged 5 years and below [21]. This approach which is being adopted by the Oyo State Nigeria Ministry of Health could be adopted in scaling up of home management practices for malaria in the cantonment. Based on these findings



there is the need for building capacity of care givers, PMVs and service providers within the cantonment for improved management of malaria.

### Conclusion

The study was undertaken to document home management practices for childhood malaria in Ojo Military cantonment, Lagos. Findings from the study showed that the prevalence of malaria is high and preventive practices are uncoordinated and expensive. Awareness of ITNs is low and most respondents do not know where they are sold. Home management practices for childhood malaria are prompted by the presence of fever and are predicated on a home stock of medicines and herbs. The patent medicine vendor popularly called "chemist" was reported to be the main source of drugs within the cantonment. It is therefore important to review the care-seeking behaviour focusing particularly on attitudes, beliefs and practices that prevent caregivers from seeking proper medical care and the quality of care provided in the home as a vital aspect of home management of childhood malaria.

### References

1. United Nations Millennium Project. Coming to Grips with Malaria in the New Millennium. Task Force on HIV/AIDS, Malaria, TB, and Access to Essential Medicines, Working Group on Malaria. World Malaria Report 2005. Geneva. RBM/WHO/UNICEF, 2005
2. World Health Organization: Malaria report, WHO 2008. Geneva.
3. Hopkins H., Talisuna A., Whitty C.J.M. and Staedke, S.G. Impact of home-based management of malaria on health outcomes in Africa: a systematic review of the evidence. *Malaria Journal* 2007, 6:134.
4. Bledsoe C.H. and Goubaud. The Reinterpretation of Western Pharmaceuticals among the Mende of Sierra Leone. *Social Science and Medicine* 1985, 21 (3):313-322.
5. Mc Combie S.C. Self-treatment for malaria: The Evidence and the methodological issues. *Health Policy and Planning* 2002, 17 (4): 333-344.
6. Ajaiyeoba E.O., Oladepo O., Fawole O.I., Bolaji O.M., Akinboye D.O., Ogundahunsi, O.A.T., Falade C.O., Gbotoso G.O., Itiola O.A., Happi T.C., Ebong O.O., Ononiwu I.M., Osowole O.S. Oduola O.O., Ashidi A.S. and Oduola A.M.J. Cultural categorization of febrile illnesses in correlation with herbal remedies used for treatment in Southwestern Nigeria. *Journal of Ethnopharmacology* 2003 85: 179 – 185.
7. National Population Commission (NPC) [Nigeria] and ORC Macro. 2004. Nigeria Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC Macro.
8. Tarimo D.S., Minjas J.N. and Bygberg I.C. Perceptions of chloroquine efficacy and Alternative Treatments for uncomplicated malaria in Children in Halo-endemic area of Tanzania: Implications for the Change of Treatment policy. *Tropical Medicine and International Health* 2001, 6:992-997.
9. Deressa W, Ali A and Enqusellassie. Knowledge Attitude and Practice (KAP) of a rural community on malaria, the mosquito vector and anti malarial in Butajira District, Southern Ethiopia. *Bulletin of the World Health Organization* 2003, 81(4).
10. Mc Combie S.C. Treatment seeking for Malaria; A review recent research. *Social Science and Medicine* 1996, 43: 933-945.
11. Afolabi B.M. Malaria: The global scourge. *Medi-Link Journal* 2001, 2 (3): 8 – 12.
12. Mwapu G.M. Health care decisions at the household level: results of a rural health survey in Kenya. *Social Science and Medicine* 1986, 22:315-319.
13. Snow R.W., Trape J. and Marsh K. The Past, present and future of childhood mortality in Africa. *Trends in Parasitology* 2001, 17: 593-597.
14. Akogun O.B. and John K.K. Illness related practices for the management of childhood malaria among the Bwatiye People of North – Eastern Nigeria. *Malaria Journal* 2005, 4:13.
15. Murphy S.C. and Breman J.G. Gaps in the childhood malaria burden in Africa: cerebral malaria, neurological sequelae, anemia, respiratory distress, hypoglycemia, and complications of pregnancy. *Am. J. Trop. Med. Hyg.*, 2001, 64(1\_suppl): 57-67.
16. Schellenberg D, Menendez C, Kahigwa E, Aponte J, Vidal J, Tanner M, et al. Intermittent treatment for malaria and anaemia control at time of routine vaccinations in Tanzanian infants: a randomised, placebo-controlled trial. *Lancet* 2001 May 12;357(9267):1471-1477.
17. Fawole O.I. and Onadeko M.O. Knowledge and management of malaria fever by mothers and caregivers of under 5 children. *West African Journal of Medicine* 2001, 20:152-157.

18. Salako L.A., Brieger W.F., Afolabi B.M., Umeh R.E., Agomo P.U., Asa S., Adeneye A.K., Nwankwo B.O and Akinlade C. O. Treatment of Childhood Fevers and Other Illnesses in Three Rural Nigerian Communities. *Journal of Tropical Pediatrics* 2001, 47(4):230-238.
19. Hamel, M. J., Odhacha A., Roberts J. M. and Deming M. S. Malaria control in Bungoma District, Kenya: A survey of home treatment of children with fever, bednet use and attendance at antenatal clinics. *Bulletin of the World Health Organization* 2001, 79:1014-1023.
20. Mwenesi H., Harpham, T. and. Snow R. W. Child malaria treatment among mothers in Kenya. *Social Science and Medicine* 1995, 40:1271-1277.
21. Kidane G. and Morrow RH. Teaching mothers to provide home treatment of malaria in Tigray, Ethiopia: a randomised trial. *Lancet* 2000, 356:550-555.

Received: 12/09/08

Accepted: 16/02/09

UNIVERSITY OF IBADAN LIBRARY