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KNOWLEDGE AND MANAGEMENT PRACTICES AGAINST MALARIA IN ISULO COMMUNITY, ORUMBA SOUTH L.G.A ANAMBRA STATE, NIGERIA.

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Abstract: -

A study to determine the knowledge of, and management practices against malaria among the people of Isulo community in Orumba South Local Government Area of Anambra State, Nigeria, was carried out between April and June 2014. Structured questionnaires were issued to 500 individuals in the community. Personal data including age, sex, educational status, marital status and occupation were collected with the questionnaire. Educational attainment of the participants were Primary education 100(20.0%), Secondary education 60(12.0%), tertiary education 45(9.0%), and non-formal education 250(50.0%). All the respondents, 500(100%), were aware of the malaria disease. All the respondents, 500(100%) mentioned body weakness, headache and fever as the common symptoms of malaria. 480(96.0%) respondents attributed malaria to mosquito bites, 290(58.0%) attributed it to consumption of too much of oil, 320(64.0%) attributed it to drinking dirty water. On protective measures against mosquito bites, 500(100%) reported putting of nets on the windows and doors and 485(97.0%) believed on spraying insecticide inside houses and sleeping under insecticide-treated nets could prevent mosquito bites. Most of the respondents 490(98.0%) believed that malaria needs to be treated while 10(2.0%) said that it was a disease that heals on its own without treatment. Malaria treatment methods of the people included visit to health centres or hospital 410(82.0%), buying drugs from chemist shops 195(39.5%), visiting prayer and healing homes 170(34.0%), use of herbs 415(83.0%), avoidance of oily foods 325(69.0%), self-medication 165(33.0%) and no treatment 30(6.0%). There is need to empower them with information about the causes of malaria and proper management practices.

Keywords: - *Malaria, Knowledge, Management, Practices, Isulo-Community.*

I. INTRODUCTION

Malaria is implicated globally as one of the main causes of human suffering and socio-economic burden. It is widespread in tropical and sub-tropical regions of the world. In Nigeria, malaria is holoendemic with intense transmission all year round, more especially in the wet season and about 50% of the population experience at least one episode of malaria each year [1]. Malaria is a mosquito-borne infectious disease caused by a protozoan parasite of the genus *Plasmodium*. The disease results from the multiplication of malaria parasites within the red blood cells, causing symptoms that typically include fever and headache which in severe cases progresses to coma and death. The effect of malaria is more in children under the age of five years and women in their first pregnancy [2] . Severe malaria is characterized by one or more complications. These include anaemia, cerebral malaria characterized by convulsions, very high fever, drowsiness, coma and early death and febrile malaria including fever, chills, haemolysis, gastrointestinal and pulmonary type of malaria with symptoms resembling that of influenza. In children, the most common complications are severe anaemia and cerebral malaria while in pregnant women the complications include increased risk of abortion, still birth, premature delivery and low birth weight of their infants.

Malaria is transmitted through the bites of infected female anopheles mosquitoes which breed in quiescent water pools around our homes. Malaria can be reduced by preventing mosquito bites through the distribution of inexpensive insecticide treated mosquito nets and insect repellents or by mosquito control measures such as spraying insecticides inside the houses and draining standing water where mosquito lay their eggs. Early treatment which is one of the cornerstones of malaria control in sub-Sahara, Africa depends upon prompt recognition of symptoms and signs at the home level. The management practices of some communities was found to include the use of traditional medicines from local healers, the buying of anti-malaria drugs from drug shops without the prescription of a physician and attendance to hospital. In West Africa, the community awareness on the causes of malaria is generally poor. Staying long under the sun and groundnut consumption were believed to cause malaria in the Benin-Republic [3] while excessive alcohol consumption, heat, fatigue, flies and unsafe water were some perceived causes in Ghana[4]. In some parts of Southern Nigeria, excessive heat, over work, over indulgence in sexual activities, sunlight, certain foods and drinks, noise, heredity and witchcraft and other superstitions were thought to be responsible for malaria ([5], [6], [7]). Wrong perception of the causes of the disease or inappropriate behaviour can interfere with effectiveness of a control measure such as sleeping under insecticide-treated nets and indoor residual sprays. Therefore the community perception relating to causation, transmission, prevention and treatment are the main socio-cultural factors necessary to achieve effective control.

Presently there has not been any study done on the community knowledge and management practices in Isulo rural community, Orumba South Local Government Area, Southeastern Nigeria. This study was aimed at investigating the knowledge of, and management practices (prevention, treatment and control) against malaria among the people of Isulo community. The specific objectives were to determine the people's knowledge of malaria, their knowledge of transmission methods, their protective and preventive measures, treatment of cases and control measures.

II. Materials And Methods

A. Study Area

This study was carried out in Isulo community in Orumba South Local Government Area, Anambra State, Nigeria. Isulo is a rural community located between latitude 5^0 and 6^0N of equator and 70°E of the Greenwich Meridian. According to census figure of 2006, it was noted that Isulo town has a population of 37,120 individuals. It has four villages namely; Obuluhu, Alaohia, Uhuala, and Akata. It has a lot of modern houses and a few mud houses. They have one health centre managed by five nurses and three non- medical staff and a consultant. Isulo community has two primary schools, one secondary school and also a school for less privileged and handicapped people called Basden Memorial School Isulo. The main markets are Eke Isulo and Ezi John markets which are evening markets for selling of farm produce. Most residents however go to transact their business at a larger market, Nkwo Umunze in a neighboring town. The main occupation of Isulo people is farming and their farm products are maize, yam, cocoyam and cassava. The land is not fertile for cereal crops like rice, millet, and vegetable because it is not water- logged.

There is a very good access road to Isulo community that is constructed by the Federal Government of Nigeria which gives a free and easy access to the community. There are four streams in the community called Nwa-Ogbigbo, Osu-Obuluhu, Osu-Alaohia and Osu-Basden. These streams were named according to their locations in the community. There are two bore-holes built by the community and a few private boreholes which provide the people with water for both drinking and domestic uses. Isulo community is located in the tropical rainforest zone with two distinct seasons; a rainy season (April-October) and a dry season (November-March), with average annual rainfall of about 2,000mm. They have a humid climate with average temperature of about 30.6^0C (87^0F). Most of the inhabitants are Christians with a few practicing other religions. Isulo is surrounded by towns like Nawfija, Eziagu, Ezira and Umunze.

III.Ethical Considerations

Advocacy visit to the traditional ruler of Isulo community and his cabinet with a letter of introduction from the Head of Department of Parasitology and Entomology, Nnamdi Azikiwe University helped, to obtain permission and the consent of the people. The community was mobilized for the study through town criers, churches and schools. All the individuals involved in this study were properly informed on the purpose and procedures of the study before they were asked to complete the questionnaires. Participation was entirely voluntary and individuals were totally free to fill the questionnaire or leave it.

IV. Distribution Of Questionnaires

House to house visits was used to distribute questionnaires. Some literate individuals responded well, but for those who could not read and write, the questionnaires were interpreted to them and their responses recorded. Precaution was taken to ensure that the interpretations did not bias their responses. The interactions during the study made the work interesting and the responses more reliable. All the questionnaires were self delivered and collected.

V. Results

A total of 500 people (table 1.) participated in the study among whom 195(39.0%) were males and 305(610%) were females. Of the 500 participants, 90(18.0%) had primary education, 100(20.0%) had secondary education, 60 (12.0%) had tertiary education and 250(50.0%) had non-formal education. The occupations of the people were farming 201(40.2%), trading 96(19.2%), civil service 35(70.0%) and pensioners 9(1.8%). The main religion of the people of Isulo is Christianity 494(98.8%) and non-christians 6(1.2%).The participants from different age groups were 10-20years.10(2.0%), 21-30 years 50(10.0%), 31- 40 years 95(19.0%), 41-50 years 300(60.0%), 51-60 years 32(6.4%), 61-70years 8(1.6%),71-80years
3(0.6%) and 81 years and above 2(0.4%).

All the 500 respondents were aware of the disease called malaria and the local name "iba" with which it is known in their dialect (Table 2). 495(99.0%) claimed to have suffered from the disease while 5(1.0%) have not. 165(33.0%) recognised malaria attack by personal feelings and assumptions, 265(53.0%) went to established medical laboratory while 70(14.0%) went to hospital for diagnosis, 55(11.0%) used dreams to diagnose malaria and 75(15.0%) diagnosed by appearance of pale yellow eyes.

On the people's knowledge of the transmission methods of malaria (table 3), 480(96.0%) said mosquito bites, 370(74.0%) said stagnant water around homes, 340(68.0%) said staying in dirty environment, 320(64.0%) said drinking of dirty water and 290(58.0%) said consuming too much of palm oil. Others said, by working long hours in the hot sun or staying in wet and cold conditions, having too much of bad blood in the body or by being beaten by rains for long hours, 170(34.0%) said by eating raw food, and 135(27.0%) said they do not know.125(25.0%) claimed malaria is caused by eating too much fatty food and meat,105(21.0%) said by poor feeding, 90(18.0%) said it is by evil spirit or witchcraft and 25(5.0%) said it is hereditary.

On the people's knowledge of the symptoms of malaria (table 4), all the participants, 500(100%) mentioned body weakness, headache and fever or high body temperatures. Other symptoms mentioned in order of importance include loss of appetite, bitterness of the mouth and shivering 415(83%) each, reduction in weight 395(79%), yellowish eyes 330(77%), joint pains 375(75%), body pains 370(74%), dull appearance 365(73%), funny dreams 355(71%), weakness of the mouth 350(70%), rashes around the corners of the mouth 340(68%), coldness of the body 335(67%), yellowish eyes 330(66.0%), vomiting 325(65.0%), cracking of lips 280(56.0%) and crying in children 250(50%). The least mentioned symptoms were oily face after sleep 65(13.0%), stomach ache 43(8.6%) while 9(1.81%) of the participants did not know any symptoms of malaria.

The malaria preventive measures of the people are shown in table 5. All the respondents 500(100%) believed that malaria could be prevented by putting long lasting insecticide-treated nets on their windows and doors, or through clean environment and removing stagnant waters while 485(97.0%) said it could be prevented by spraying insecticides inside houses, or sleeping under insecticide treated net. Also 370(74.0%) believed that avoiding oily food prevents malaria attack, 415(83.0%) said that it could be prevented by drinking clean water, 405(81.0%) believed that eating balanced diet protects against, malaria attack, 440(88.0%) claimed that covering water containers protects against malaria attack, 435(87.0%) claimed that closing the doors and windows in the evenings prevents mosquito from entering inside houses, 415(83.0%) said that wearing protective clothing prevents mosquito bites, 370(74.0%) said filling potholes around their homes, 320(64.0%) believed that personal prayers can help protect malaria attack, 435(87.0%) said clearing of bushes around our homes while 350(70.0%) said placing herbs on the windows prevent mosquito bites.

Table 6 shows the malaria treatment practices of the people. 195(39.0%) bought drugs from vendors in the market, 355(71.0%) bought drugs from patent medicine shops, 415(83.0%) used herbs, 450(90.0%) visited medical doctors, 325(65.0%) avoided eating oily foods, 330(66.09%) took fruits as a treatment therapy while 230(46.0%) used prepared local concoctions for the treatment of malaria while 30(6.0%) do not treat malaria.

Table 1: Biodata of the study participants at Isulo community, Orumba South LGA, Anambra State, Nigeria. April – June 2014

Personal data	Number Involved	Percentage
Age		
10-20	10	2
1-30	50	10
31-40	95	19
41-50	300	60
51-60	32	6.4
61-70	8	1.6
71-80	3	0.6
81 and above	2	0.4
Total	500	100
Gender		
Male	195	39.0
Female	305	61.0
Total	500	100
Educational Status		
Primary education	90	18.0
Secondary education	100	20.0
Tertiary education	60	12.0
Non-formal education	250	50.0
Total	500	100
Occupation		
Traders	96	19.2
Students	90	18
Artistans	69	13.8
Farmers	201	40.2
Civil servants	35	7.0
Pensioners	9	1.8
Total	500	100
Religion		
Christian	494	98.8
Other religions	6	1.2
Total	500	100

Table 2: The peoples knowledge of the disease malaria at Isulo community, Orumba South LGA, Anambra State, Nigeria.
April-June 2014.

Personal knowledge	Number of responses	percentage
Are you aware of the malaria disease?		
Yes	500	100
No	0	0
With what name is it known in your dialect?		
"Iba"	500	100
Ukwara	0	0
Have you suffered from malaria before?		
Yes	495	99.0
No	5	1.0
How do you know You have malaria disease?		
A personal feelings and assumptions	165	33.0
Laboratory test	265	53.0
Body weakness	70	14.0
By dreaming	55	11.0
Yellowish eyes	75	15.0

Table 3: The peoples knowledge of malaria transmission in Isulo community, Orumba South Local Government Area, Anambra State, Nigeria.
April-June 2014.

Knowledge of malaria	Number of responses	percentage
Heredity	25	5.0
Mosquito bite	480	96.0
Drinking dirty water	320	64.0
Eating too much of oil	290	58.0
Fatty food and meat	125	25.0
Staying in dirty environment	340	68.0
Stagnant water around homes	370	74.0
Poor feeding	105	21.0
Working long hours under hot sun	195	39.0
Evil spirit/Witchcraft/ Demons	90	18.0
Too much of bad blood	180	36.0
Wet and cold conditions	195	39.0
Working under heavy rain	180	36.0
Eating raw food	170	34.0
Don't know	135	27.0

Table 4: The peoples knowledge of the symptoms of malaria, in Isulo community, Orumba South LGA, Anambra State, Nigeria.
April-June 2014.

Symptoms of malaria	Number of responses	percentages
Body weakness	500	100
Headache	500	100
Hotness of the body/fever/high temperature	500	100
Stomach ache	43	8.6
Yellowish eyes	330	66.0
Joint pains	375	75.0
Yellowish urine	385	77.0
Loss of appetite	415	83.0
Vomiting	325	65.0
Body pains	370	74.0
Coldness of the body	335	67.0
Bitterness in the Mouth	415	83.0
Weakness of the Mouth	350	70.0
Oil in the face after Sleep	65	13.0
Shivering	415	83.0
Funny dreams	355	71.0
Dull appearance	365	73.0
Crying among Children	250	50.0
Reduction in weight	395	79.0
Rashes around the comer of the mouth	340	68.0
Cracking/tearing of Lips	280	56.0
Don't know	9	1.8

Table 5: The preventive methods against malaria used in Isulo community, Orumba South LGA, Anambra State, Nigeria.
April-June 2014.

Preventive methods used by the people against malaria	No	%
Net on windows and doors	500	100
Clean environment removing stagnant waters	500	100
Spraying insecticides inside houses	485	97.0
Sleeping under insecticide treated nets	485	97.0
Avoiding oily foods	370	74.0
Drinking clean water	415	83.0
Eating balanced diets	405	81.0
Clearing of gutters	450	90.0
Covering of water containers in and around homes	440	88.0
Closing doors in the evening	435	87.0
Wearing of protective clothing	415	83.0
Filling pot holes around homes	370	74.0
Personal prayers	320	64.0
Clearing of bushes around our homes	435	87.0
Placing of herbs on the windows	350	70.0

Table 6: Malaria treatment methods practiced in Isulo community, Orumba South LGA, Anambra State, Nigeria.
April-June 2014.

Treatment methods of malaria	Number	percentages
Buying drugs from vendors in the market	195	39.0
Buying drugs from patent medicine shops	355	71.0
Using herbs	415	83.0
Seeing a medical doctor	450	90.0
Avoiding oily foods	325	65.0
Taking lots of fruits	330	66.0
Using local concoctions	230	46.0
Do nothing	30	6.0

VI. Discussion

All the 500 participants were aware of the disease malaria and rightly gave the local name of malaria in the Igbo language as “Iba”. The unanimous knowledge of the name of malaria in their local dialect as “Iba” is an indication of the commonness (endemicity) of the disease in the area. In Igbo language the word “Iba” literally means feverish disease. This properly shows that the people have knowledge of malaria [8]. Of the 500 participants interviewed on their knowledge on malaria transmission, 480(96.0%) knew that it is transmitted through mosquito bites while 20(4.0%) had different views. The result is in agreement with the findings among the residents of the Atlantic Ocean Coast in Lagos [9]. The high percentage (96%) of the Isulo residents who were aware that malaria is spread through mosquito bites compared favourably to 90% awareness observed in Guatemala by [10]. The increased knowledge of malaria and its method of transmission could be a product of many intervention programmes. The Roll back malaria which in addition to distribution of long-lasting insecticide-treated bed nets, also involved indoor residual sprays in most communities of Anambra State [11]. However, the respondents who did not know that malaria is transmitted through mosquito bites were of the opinion that the disease is caused by drinking dirty water, eating too much of oily food, fatty food and meat, staying in dirty environment, stagnant water around homes, poor feeding, working long hours under hot sun, witchcraft, too much of bad blood, wet and cold conditions, staying long under rains, eating raw food, or even through hereditary.

Of the 500 participants, 265(53.0%) diagnose malaria through laboratory test, 165(33.0%) through personal assumptions, 70(14.0%) body weakness, 55(11.0%), by having dreams and 75(15.0%) by having yellowish eyes. This suggests that different participants have varying beliefs and ways of diagnosing the disease. Thus only a few undergo medical laboratory test which is the standard procedure of diagnosing the malaria disease.

All the 500(100%) participants mentioned that body weakness, headache and fever are all symptoms of the malaria disease. However, some participants included stomach ache, yellowish eyes and joint pains, yellowish urine, loss of appetite and vomiting. Other varying opinions from other participants included bitterness in the mouth, oily face, reduction in weight and rashes around the corner of the mouth. [12] noted that symptoms of malaria usually appear

seven days or more, after the infective mosquito bite, and that such symptoms include fever, headache, chills and vomiting. However individual body response to the infection may be according to the immunocompetence of the individual and time of reporting.

500(100%) of the participants prevent mosquito bites by putting malaria vector barrier nets on their doors and windows and by cleaning their environment off stagnant water which serves as the vectors breeding sites. Door and windows screening with nets as well as source reduction through removal or draining of stagnant water around homes are universally recognized measures for protecting people from mosquito bites and thus reduction of disease transmission [13]. 485(97.0%) spray insecticides inside houses and sleep under insecticide treated nets. [11] noted that sleeping under the Long Lasting Insecticide Treated nets (LLINs) at night reduces human-vector contact by physically excluding vector mosquitoes. It can kill them if they land on it. It can repel them by driving them from the vicinity of sleepers because of its insecticidal content. Other participants employ other measures such as covering of water containers in around homes, closing doors in the evening and wearing protective clothing against the malaria vectors. These later measures are aimed at preventing man-vector contact and thus prevent malaria transmission.

Of the 500(100%) participants, 165(22.1%) treat malaria at home by self medication, 410(55.0%) treat it in the health centre while 170(22.8%) visited 'healing homes'. Self-medication with anti-malaria has been reported by [14] to be a common practice in many endemic areas worldwide. The study shows that the majority of the people in Isulo community have the knowledge of the malaria disease, yet more health education about the disease vector and the disease control and prevention measures is important in other to curtail malaria disease.

References

[1].H.A.B Coker, C.M Chukwuani, H.D Ifudu and B.A. Ama (2001). "The malaria scourge. Concepts in disease management*".Niger. J. Pharm 32:19-48.*

[2].WHO (1995), Action Plan in Malaria control preventive action and intensification of the struggle against malaria control,*mimeograph.who/htm/mat 1995.1102*.

[3].M. Kombila (1994).Focus on recent discoveries concerning the epidemiology of malaria in African Religion. *Malaria and infectious diseases in Africa, 1*:10-13.

[4].W.A Okyere (1994). Socio-economic factors in malaria control. *World Health Forum 15*:265-268.

[5].W.R Brieger, N. Nwankwo, O.J Ekkanem and T. Robinson (1997).Social and Behavioural baselines for guiding implementation of an efficient trial of insecticide treated bed-nets for malaria control at *Nsukka, Nigeria. International Quarterly Journal of Community Health Education,* 16:47-61.

[6].O.J Nebe , G.O Adeoye, P.D Agoma and M.E Mosanya (2002).Malaria in a coastal area of Lagos State, Nigeria. A survey of perceptions and practices among the mothers/care givers of children under five years old. *Nigerian Journal of Parasitology, 23*:68-80.

[7].N.A Ozumba, and U.C Ozumba (2004).Some local beliefs on the causes of malaria, in three rural areas of Enugu State, South eastern Nigeria. *Nigerian Journal of Parasitology* 25:45-49.

[8].D.N Aribodor, O.O Njoku., C.I Eneanya , and I.O Onyali (2003). Studies on the prevalence of malaria and management practices of Azia community, Ihiala L.G.A, Anambra State, Nigeria. *Nigeria Journal of Parasitology*.24:33-38.

[9].B.M Afolabi (2011): Knowledge, attitude and Practice of Malaria in an isolated community on the Atlantic West of Lagos (serial online) 1996(cited 2007 Mar 13); 4:6-13. Available from; *http://www.chez.com/04htm*.

[10]. R.E. Klein, T.K Ruebush, and S.C. Weller (1992). "Knowledge and beliefs about malaria on the pacific coastal plain of Guatemala". *AMJ Trop Med Hyg (46):*45 1-459.

[11]. D.N Aribodor (2012). Mosquitoes, Malaria and Man: A compendium. Rex Charles and Patrick Ltd, Nimo, Anambra State, Nigeria (7): 66-67.

[12]. R.W Snow, C.A Guerra, A.M Nor,N.Y Myint and S.I Hay, (2005) The Global Distribution of Clinical Episodes of *Plasmodium falciparum* malaria. *Nature.* 434:214-217.

[13]. M.W Service (1980). *A Guide to Medical Entomology*. MacMillan International College Edition. MacMillan Press Ltd.London.pp.1-44.

[14]. S. Foster (1995) Treatment of malaria outside the formal health services. *J trop med* hyg;98(1):29-34.