



Full Length Research Paper

Knowledge, Attitude and Management Practices on Malaria: A Case Study of Amansea, Awka North Local Government Area of Anambra State, Nigeria

¹Iwueze, M. O., ^{*1}Ezugbo-Nwobi, I. K., ¹Umeanaeto, P. U., ¹Egbuche, C. M. and ²Anaso, C. I.

¹Dept. of Parasitology and Entomology, Nnamdi Azikiwe University, Awka, Nigeria.

²Dept. of Applied Microbiology and Brewing, Nnamdi Azikiwe University, Awka, Nigeria.

*Corresponding author: ifeomaezugbonwobi@yahoo.com

ABSTRACT

A cross-sectional study on the knowledge, attitude and management practices (KAP) of malaria in Amansea, Awka North Local Government Area was undertaken between the months of May and June, 2010. A total of 372 pre-tested questionnaires were self or researcher administered to community members. Knowledge on the cause of malaria included overwork, sunlight, oily food, malaria parasite and unhygienic environment for 6.5%, 4.3%, 12.9%, 57% and 19.4% of the respondents respectively. Another proportion 102 (27.4%) of the sampled population admitted symptoms of malaria attack to be fever, chills, stomach upset, vomiting, bodyache and headache. Two hundred and sixty respondents (69.9%) acknowledged that infected female *Anopheles* mosquitoes transmit malaria. The use of insecticide-treated bed nets was accepted (40.9%) as the best preventive measure. One hundred and forty-nine respondents (40.1%) visited the hospital while 17.7% went to herbalists and 9.7% went to prayer houses for treatment. On the choice of drugs, 50.9% used Artemisinin-based Combination Therapies. A proportion of the respondents (40.9%) made use of the local herb, *Azadirachta indica*. It is evidenced that knowledge, attitude and management practices of malaria need to be improved. We suggest that malaria public enlightenment efforts should be intensified, effective malaria preventive methods be made affordable and that support be provided to make malaria treatments at public hospitals free.

Key words: Knowledge, Attitude, Practice, Malaria, Anambra

INTRODUCTION

Malaria, one of the most important causes of morbidity in the world is a vector-borne infectious disease caused by a eukaryotic protist of the genus *Plasmodium*. The disease is transmitted by female *Anopheles* mosquitoes which carry infective sporozoite stage of *Plasmodium* parasite in their salivary glands (Okwa, 2012). The infection accounts for approximately 250 million cases and nearly one million deaths each year (Corradin and Kajava, 2010). Malaria morbidity and mortality rate vary from region to region in sub-saharan Africa. About 90% of deaths in Africa are mainly

due to malaria and this is more prevalent in children below 5 years of age (WHO, 2002). Pregnant women have an increased risk of the disease and death, as well as adverse impacts to their unborn babies (Geetryden *et al.*, 2004).

Despite the effort of the government in controlling malaria burden through chemotherapy and Roll Back malaria (RBM) initiatives, malaria continues to be on the increase due to poor community perception relating to causation, transmission, prevention and treatment. The success of malaria control programmes relies heavily on community perception and

practices in the prevention, treatment and control of the disease. Incorrect beliefs or inappropriate behavior can interfere with the effectiveness of a control measure such as vector control or chemotherapy. For the participation of the community to be meaningful, the views of the community should be sought and incorporated into any control measures.

Studies done on community knowledge and perception in malaria management in Amansea, Awka North LGA, Anambra State are scarce. Therefore, this study was undertaken to assess the knowledge, attitude and management practices of people and residents of Amansea on malaria management.

MATERIALS AND METHODS

Study Area

The study was carried out in Amansea in Awka North LGA of Anambra State, Nigeria. Awka is in the tropical rainforest region and is located between latitude 6°12'N and longitude 7°06'E. The climate is humid with average daily relative humidity of 79.4%, annual rainfall of 2000-3000mm and average daily maximum and minimum air temperatures of 32.2°C and 23.3°C respectively. Awka area consists of low-lying plains of agricultural land. It has derived savanna vegetation resulting from human activities. The people are mainly farmers, itinerant traders, craftsmen and civil servants. Agricultural crops include yam, cocoyam, cassava, maize, fruits and vegetables. Palm produce, coconut and kolanuts are their main cash crop. They also combine crop cultivation with animal rearing especially goat, sheep and cattle. Awka community is an urban town in southeastern Nigeria. It has an estimated population of about 176,858. Awka community has many satellite villages that are linked by a poor road network. For the

most part, villages have poorly developed infrastructures, though often with access to electricity but no pipe-borne water. Awka community has two Local Government Areas; Awka North and Awka South. Amansea is in Awka North LGA and it consists of five villages namely: Orebe, Amaowelle, Umuokpala, Ebeagu and Okeukwa.

Study Design and Sampling Procedures

The study was a community based cross-sectional survey conducted between May and June, 2010 in the five villages. Sample selection involved the use of a two-stage cluster random sampling procedure at the village level to select sub villages from where the study sample could be drawn. In each village, the area was broken down to sub villages from which three zones were selected based on population. Within the selected zones, households were randomly numbered, and houses assigned 'odd number' were selected into the final sample. A total of 372 households were eligible for the study.

Data Collection

A structured, pre-tested questionnaire was administered to the 372 eligible participants in a face to face interview approach. The questionnaire sought from the respondents, information on their knowledge about symptoms and causes of malaria, knowledge and attitude about preventive methods of malaria and practices about the treatment of malaria. A key decision-maker respondent (male or female) for each household was interviewed. All the three hundred and seventy two questionnaires were properly filled under supervision and returned.

Data analysis

The data collected were sorted into related groups or categories and analysed using Chi-square test.

RESULTS

A total of three hundred and seventy-two respondents were sampled. Out of this number, two hundred and four (204) were males and one hundred and sixty eight (168) were females.

Table 1: The respondents' knowledge about causes of malaria

Causes of Malaria	Male Respondents (%)	Female Respondents (%)	Total number of Respondents (%)
Over work	16 (7.8)	8 (4.8)	24 (6.5)
Sunlight	12 (5.9)	4 (2.4)	16 (4.3)
Oily food	16 (7.8)	32 (19.0)	48 (12.9)
Malaria parasite	128 (62.7)	84 (50)	212 (57.0)
Unhygienic surrounding	32 (15.7)	40 (23.8)	72 (19.4)
Total	204 (54.8)	168 (45.2)	372 (100.0)

Of the 372 respondents, 57% averred that malaria parasite transmitted by the female *Anopheles* mosquito caused malaria. Exactly 19.4% claimed it was caused by unhygienic surrounding, 12.9% attributed it to oily food while 6.5% and 4.3% implicated overwork and sunlight respectively. There is a significant difference between male and female respondents based on their knowledge on the cause of malaria (P<0.05).

Table 2: The Respondents' knowledge of the signs and symptoms of malaria

Symptoms of malaria	Male respondents (%)	Female respondents (%)	Total No. of respondents (%)
Fever and chills	32 (15.7)	20 (11.9)	52 (13.98)
Fever, chills and stomach upset	12 (5.9)	32 (19.0)	44 (11.8.)
Fever, chills and vomiting	36 (17.6)	40 (23.8)	76 (20.43)
Fever, chills, body ache and headache	60 (29.4)	38 (22.6)	98 (26.34)
All the above	64 (31.4)	38 (22.6)	102 (27.41)
Total	204 (54.8)	168 (45.2)	372 (100.0)

Of the 372 respondents, 100 (26.9%) know the signs and symptoms of malaria to be fever and chills. Another 26.9% of the respondents acknowledged the signs to be

fever, chills, stomach upset, headache, bodyache and vomiting while 20.43% of the population says it is fever, chills and vomiting. Exactly 14% of the respondents know the signs and symptoms to be fever, chills and stomach upset. There is a significant difference between the male and females respondents based on their knowledge of the symptoms of malaria (P<0.05).

Table 3: The Respondents' knowledge about the transmission of malaria

Mode of transmission	Male respondents (%)	Female respondents (%)	Total number of respondents (%)
Mosquito bite	156 (76.5)	104 (61.9)	260 (69.90)
Flies and cockroaches	16 (7.8)	24 (14.3)	40 (10.75)
Bad water	24 (11.8)	36 (21.4)	60 (16.13)
Witchcraft	8 (3.9)	4 (2.4)	12 (3.23)
Total	204 (54.8)	168 (45.2)	372 (100.0)

About 69.9% of the respondents accredited the natural mode of transmission of malaria to mosquito bite while 16.3% of the respondents attributed it to drinking bad water. 10.75% implicated flies and cockroaches while 3.23% of the respondents said it was as a result of witchcraft. There is a significant difference between the male and female respondents based on their knowledge on the mode of transmission of malaria (p<0.05).

Table 4: The respondents' preventive measures against mosquito bites

Practice	Male respondents (%)	Female respondents (%)	Total No. of respondents (%)
Wearing of long trousers and shirts at night	32 (15.7)	32 (19.0)	64 (17.2)
Use of insecticide treated bed nets	92 (45.1)	60 (35.7)	152 (40.9)
Putting herbs on window	40 (19.6)	32 (19.00)	72 (19.4)
Killing mosquitoes with brooms	12 (5.9)	4 (2.4)	16 (4.3)
Use of mosquito	28 (13.70)	40 (23.8)	68 (18.3)

nets			
Total	204 (54.8)	168 (45.2)	372 (100.0)

About 40.9% of the study population use insecticide-treated bednets as a preventive measure against malaria while 19.4% acknowledged putting herbs on windows as a preventive measure. Use of mosquito repellants and wearing of long trousers and shirts at night were acknowledged by 18.3% and 17.2% of the population respectively while 4.3% admitted killing mosquitoes with brooms as the best preventive measure. There is a significant difference between the male and female respondents based on their personal measures of preventing mosquito bites ($p < 0.05$)

Table 5: The treatment of malaria amongst the respondents

Treatment method	Male respondents (%)	Female respondents (%)	Total no. of respondents (%)
Orthodox medicine			
Artemisinin-based combination therapy	64 (53.3)	48 (48.0)	112 (50.9)
Sulfadoxine-pyrimethamine	32 (26.7)	24 (24.0)	56 (25.5)
Chloroquine	24 (20.0)	28 (28.0)	52 (23.6)
Analgesics	-	-	-
Total	120 (54.05)	100 (45.5)	220 (100)
Alternative medicine			
Dogonyaro- <i>Azadirachta indica</i>	60 (41.7)	48 (40.0)	108 (40.9)
Bitter leaf- <i>Veronia amygdaline</i>	4 (2.8)	-	4 (1.5)
Guava- <i>Psidium guajava</i>	-	4 (3.3)	4 (1.5)
Bitterkola - <i>Cola spp</i>	12 (8.3)	4 (3.3)	16 (6.1)
Utazi leaves	12 (8.3)	-	12 (4.6)
Mango leaves- <i>Magnifera indica</i>	12 (8.3)	8 (6.7)	20 (7.6)
Lemon grass- <i>Cymbopogon citrates</i>	8 (5.6)	24 (20.0)	32 (12.1)

Ginger- <i>Zingiber officinate</i>	12 (8.3)	4 (3.3)	16 (6.1)
Total	144 (54.5)	120 (45.5)	264 (100.0)

Of the 220 respondents that admitted using orthodox medicine 50.9% agreed Artemisinin-based combination therapies (ACTs) is the best orthodox drug while 25.5% acknowledge Sulfadoxine-pyrimethamine and 23.6% admitted Chloroquine as their drug of choice. There is no significant difference between the male and female respondents on their drug of choice using orthodox medication ($p > 0.05$). About 40% of the 152 respondents used herbal home remedy; Neem plant-*Azadirachta indica* while 13.4% of them Cashew bark and 12.1% used lemon grass-*Cymbopogon citrates*. Twenty respondents (7.6%) used mango leaves and 6.1% each, used bitter leaf, scent leaf and Ginger while 4.6% used Utazi leaves and 1.5% each, used bitter leaf and guava. Some of the respondents combined two or more herbs. There is a significant difference between the male and female respondents on their choice of herbal home remedies ($P < 0.05$).

Table 6: Management Practices of Malaria amongst the respondents

Practices	Male Respondents (%)	Female Respondents (%)	Total Respondents (%)
Hospital	87 (42.6)	62 (36.9)	149 (40.1)
Prayer House	16 (7.8)	20 (11.9)	36 (9.7)
Self-medication	28 (13.7)	25 (14.9)	53 (14.2)
Herbalists	40 (19.6)	26 (15.5)	66 (17.7)
Patent medicine stores	33 (16.2)	35 (20.8)	68 (18.3)
Total	204 (54.8)	168 (45.2)	372 (100)

Of the 372 respondents, 40.1% visited the hospital, 18.3% of them visited patent medicine stores and 17.7% of them went to herbalist. Fifty-three respondents (14.2%) practiced self-medication and 9.7%

visited the prayer houses. There was a significant difference between the male and female respondents on their management practice option ($P < 0.05$).

DISCUSSION

Malaria intervention goals in endemic areas should be to prevent mortality and reduce morbidity as well as associated socio-economic losses. This requires the progressive creation of capacities for assessing local malaria situation and the selection of appropriate control measures. The study highlights respondents' knowledge about the causes of malaria to be high. The respondents in Amansea have demonstrated a good understanding of malaria causes (57%). Similar prevalence was also observed in other reports from Bangladesh, Swaziland, Ghana and Sudan (Ahmed *et al.*, 1994; Hlongwana *et al.*, 2009; Cruz *et al.*, 2006; Adam *et al.*, 2008). With respect to the signs and symptoms of malaria, all of the study subjects had knowledge of at least one classical symptom. Like elsewhere in Ghana, the study community identified malaria mainly on the basis of the symptoms of fever/high body temperature and general body weakness, fever with rigors and fever with sweating (Dunyo *et al.*, 2000).

Majority of the respondents (69.9%) associated mosquito bites with malaria transmission. This is a common observation in malaria endemic areas where people suffer frequently from the disease (Ahmed *et al.*, 2009; Hlongwana *et al.*, 2009; Cruz *et al.*, 2006; Adam *et al.*, 2008).

Bednets was the most recognized method of personal protection against mosquito bites and many studies have reported the benefits of Insecticide-treated nets (Cheng *et al.*, 1995; Binka *et al.*, 1996). This could be due to the Roll Back Malaria programme done yearly in which most of the residents were

issued Insecticide-treated Nets (ITNs). Most of the study subjects drain their gutters and clean their environment as a means of family protection.

With regards to the management practices of malaria among the respondents, majority (41%) visited the hospital. This agrees with findings of Mazigo *et al.*, 2010 on the knowledge, attitude and practices about malaria and its control in rural Northwest Tanzania. Among the respondents, Artemisinin-based Combination Therapies (ACTs) was recognized as the best orthodox treatment for malaria. This concurs with the study done by Ajayi *et al.*, (2008) in southwest Nigeria. Some of the respondents still mentioned local herbs as their first treatment for malaria. This is similar to the findings in previous studies here in Nigeria and in Ghana (Ukaga *et al.*, 2006; Ahorlu *et al.*, 1997).

The findings of the study indicate that the respondents in Amansea, Awka North LGA have high knowledge on malaria transmission, symptoms, preventive measures and treatment options. Health workers at different levels of the healthcare delivery system should disseminate relevant information about malaria and mosquito vector within the community. They also need to encourage stronger linkages between communities with a view to extend management measures beyond treatment to other environmental management and use of ITNs.

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