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Survey on Mosquito Prevention Methods Adopted By Rural Households in Rivers State, Nigeria

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Abstract: Malaria can kill by infecting and destroying red blood cell (anaemia) and by clogging the capillaries that carry blood to the brain (cerebral malaria) or other vital organs. The real cause of malaria, a one-cell parasite called Plasmodium that is transmitted from person to person through the bite of a female Anopheles Mosquito. Different types of methods were adopted by people to repel mosquitoes from biting them. The study focused on mosquito prevention methods adopted by rural households in Rivers State. It was carried out in Ahoada- East and Opobo/Nkoro Local Government Areas (LGAs) of Rivers State. Structured interview schedule was used to elicit information from 200 households from ten communities. Data collected were analysed using descriptive statistics. Findings revealed that majority (57%) were male, married (50%), were between the ages of 30 and 40 (70%) years and had secondary school certificate (39%).The mosquito preventing materials available in the study area include: insecticides treated nets and local insecticides drops. The methods adopted by rural households to prevent mosquito bites are use of insecticides treated nets (m=2.76); use of local mosquito drops (m=2.86) and use of wrapper to cover when sleeping (m=2.52).
Keywords: Mosquito Preventing Materials, Methods Adopted

INTRODUCTION

According to the World Health Organization WHO [1], malaria is a life-threatening parasitic disease transmitted by mosquitoes. It was once thought that the disease came from fetid marshes, hence the name Malaria (bad air). In 1880, scientists discovered the real cause of malaria, a one-cell parasite called Plasmodium. Later they discovered that the parasite is transmitted from person to person through the bite of a female Anopheles Mosquito, which requires blood to nurture her eggs. Today malaria is found throughout the tropical and sub-tropical regions of the world and causes more than 300 million acute illness and at least one million deaths annually.

The malaria parasite enters the human host when an infected Anopheles mosquito takes a blood meal. Inside the human host, the parasite undergoes a series of changes as part of its complex life-cycle. Its various stages allow plasmodia to evade the immune system, infect the liver and red blood cells, and finally develop into a form that is able to infect a mosquito again when it bites an infected person. Inside the mosquito, the parasite matures until it reaches the sexual stage where it can again infect a human host when the mosquito takes her next blood meal, 10 to 14 or more days later WHO [2]. Malaria symptoms appear about 9–14 days after the infectious mosquito bite, although this varies with different plasmodium species. Typically, malaria produces fever, headache, vomiting and other flu-like symptoms. Malaria can kill by infecting and destroying red blood cell (anaemia) and by clogging the capillaries that carry blood to the brain (cerebral malaria) or other vital organs [3].

About ninety percent of deaths due to malaria occur in Africa South of the Sahara and they are mostly among young children [4]. Malaria kills an African child every 30 seconds. Many children who survive an episode of severe malaria may suffer from learning impairments or brain damage. Pregnant women and their unborn children are also particularly vulnerable to malaria, which is a major cause of prenatal mortality, low birth weight and maternal anaemia. Most malaria carrying mosquitoes' bite at night, when people are fast asleep and are in their unconscious state. Different types of methods were adopted by rural people to repel mosquitoes from biting them. Mosquito nets, if properly used and maintained can provide a physical barrier to hungry mosquitoes. Curtis [7] stated that all mosquito nets act as a physical barrier, preventing access by vector mosquitoes and thus providing personal protection against malaria to the individual(s) using the nets. A mosquito net if treated with insecticide, the effectiveness of the net will be greatly improved, generating a chemical halo that extends beyond the mosquito net itself.

There are two categories of nets: Conventionally treated nets and long-lasting insecticide treated nets

(ITN). A conventionally treated net is a mosquito net that has been treated by dipping in a WHO recommended insecticide. To ensure its continued insecticidal effect, the net should be re-treated after three washes, or at least once a year. While a long-lasting insecticidal net is a factory-treated mosquito net made with netting material that has insecticidal incorporated within or bound around the fibers. The net must retain its effective biological activity without re-treatment, for at least 2years [4]. The insecticide kills the malaria vectors that come into contact with the ITN. The use of insecticide treated bed net is promoted as simple and safe malaria preventive methods that can be used effectively even at primary health care level. It is a low technology and relatively low cost measure that many countries can afford to implement and sustain at all levels of their development. The insecticide treated bed nets is not like the traditional untreated bed nets which was in common use in Nigeria in the latter half of the 20th century.

These ITN are given to households' in the rural areas with little or no monetary value attached to it. Rural areas are characterized with poor sanitation, poverty, poor health delivery among others. Other commonly used methods to repel mosquitoes bite include mosquito coils and insecticides spray. Mosquito coil is cheap but has its disadvantage. It gives catarrh and accelerates the attack on difficulty in breathing to people who have problems with their respiratory tract. Also the discomfort associated with insecticides spray, have repel some people from using it. Some complained that they find it difficult to wait after spaying. This has necessitated the need for this study to examine the methods adopted by rural dwellers to prevent malaria in the rural areas. Specifically, the study was designed to: determine the socio-economic characteristics of the respondents; identify the types of mosquito preventing methods in the study area and ascertain the methods adopted by rural households to prevent mosquitoes in the study area. Insecticides treated nets, local insecticides drops and insecticides spray were the common mosquito preventing materials available in the study area.

METHODOLOGY

The study was carried out in Rivers State, Nigeria. Rivers state is one of the most industrialized of the 36 states in Nigeria and also one of the country's largest producers of oil and gas. Two Local Government Areas (LGAs) were randomly selected from the two senatorial districts of Rivers State namely Ahoada - East and Opobo/Nkoro LGAs. Secondly, five communities were randomly selected from each of the selected LGAs, giving a total of 10 communities. While twenty households' heads were randomly selected from each of the selected 10 communities, giving a total of 200 respondents that were used for the survey. Data for the study were obtained primarily using structured interview schedule to collect information relevant to the stated objectives. Data collected were analysed using mean scores. Objective 1 and two were presented with frequency and percentages; objective 3 was achieved using mean scores. A four point Lekert – type scale with options; highly agree=4, agree=3, disagree=2, and high disagree=1were use to determine mosquito preventing methods adoption by rural dwellers in the study areas.

RESULTS AND DISCUSSION

Socio- Economic Characteristics of respondents

Table1 established that, 43% were female while 57% were male. This implies that male dominated the study. This was expected as male are usually the heeds of family in the traditional set of the African continent. Furthermore, 50% of the respondents were married, 36% were single, 9% of them were divorced while only 5% were widowed. This implies that the respondents are responsible men and women and so have the responsibility of providing food and clothing for their households according to Albert and Igbokwe [6]. Majority (70%) of the respondents were between the ages of 30 and 40 years. This means the respondents are active vibrant youths who are still in their productive stage and 39% had secondary and tertiary school certificate which implies that the respondents are literate. Since they can read and write, they are aware of the effects of mosquito bites on human and the consequences of been infected with malaria. Education helps in increases the knowledge of man on events, environment and society [5].

A higher percent (28%) of the respondents were civil servants, 38% earning was between N20000 and N30000 per month, and 58% had a household size between 5 to 8 persons. This implies that respondents have source of livelihood but with a fairly large household size. Also, 56% of the respondents live in an environment with fair sanitation implying that there is the need for them to use ITN as the environment will host mosquitoes.

Types of mosquito preventing materials available in the rural areas

Majority (51%) of the respondents were of the view that insecticides treated nets were the most available mosquito preventing material in the study area followed by 30% and 14% of the respondents who accepted that local insecticides drops and insecticides spray, respectively. This implies insecticides treated nets, local insecticides drops and insecticides spray were the common mosquito preventing materials available in the study area. However, fixing of nets at windows and doors, mosquito coil, dropping of kerosene on the floor where other available methods in the study area.

Methods used by rural households to prevent mosquitoes in the study area

Table 3 established that the major methods used by rural dwellers in the study area to prevent mosquito bites were: use of insecticides treated nets (m=2.76), use of insecticides drops (m-2.86) and use of wrapper to cover when sleeping (m=2.52). This implies that the insecticides treated nets is very much accepted by rural dwellers. It confirms the findings of Albert, Isife and Jaja [8] who observed that the rural dwellers were aware of insecticides treated nets and they have adopted to use it.

Table-1: Socio – Economic characteristics of respondent

RESPONDENT'S DEMOGRAPHICS					
Sex					
Female			Male		
124 (43%)			166 (57%)		
Marital Status					
Single	Married		Divorced		Widowed
105 (36%)	145 (50%)		15 (5%)		25 (9%)
Age					
Below 30 years	30 – 40 years		40 – 50 years	50 – 60 Years	60 Years and above
4 (1%)	201 (70%)		58 (20%)	18 (6%)	9 (3%)
Occupation					
Farmer	Fisher folk	Civil Servant	Private Sector Employee	Self Employed	Unemployed
20 (7%)	42 (14%)	81 (28%)	37 (13%)	70 (24%)	40 (14%)
Educational Level					
Primary		Secondary	Tertiary		None
36 (13%)		114 (39%)	114 (39%)		26 (9%)
HOUSE HOLD Size					
1-4 Persons		5-8 Persons		9 Persons & Above	
81 (28%)		168 (58%)		41 (14%)	
Accommodation Type					
One Room	Two Rooms	One Bedroom Flat	Two Bedroom	Three Bedroom Bungalow and above	
38 (13%)	55 (19%)	54 (19%)	78 (27%)	65 (22%)	
Households With Children Under 5 Years					
One Child	Two Children	Three Children	Four Children	NONE	
74 (26%)	58 (20%)	34 (12%)	28 (10%)	96 (33%)	

Table-2: Types of malaria preventing methods in the rural areas

Methods	**Frequency**	**Percentage**
Mosquito Coils	21	10.5
Fixing of nets at windows and doors	25	12.5
Insecticides Spray	28	14.0
Kerosene to drop on the floor	18	9.0
Insecticides treated nets	102	51.0
Local insecticides drops	60	30.0
Wrapper to cover while sleeping	20	10.0
Dropping bleach in drainages	10	5.0
Clean of environment	8	4.0

Multiple Responses

Table-3: Mean distribution of mosquito prevention methods used by rural dwellers in the study area

Methods	Always use (4)	Sometimes Use (3)	Rarely use (2)	Never Use (1)	Total Score	Mean x	Remarks
Use of Mosquito Coils	40	35	36	10	347	1.74	Reject
Fixing of nets at windows and doors	25	31	40	49	322	1.61	Reject
Use of Insecticides Spray	45	37	35	12	373	1.87	Reject
Use of Kerosene to drop on the floor	25	26	20	10	228	1.14	Reject
Use of insecticides treated nets	65	60	45	25	555	2.76	Accept
Use of local insecticides drops	67	61	47	27	572	2.86	Accept
Use of wrapper to cover while sleeping	57	60	40	15	503	2.52	Accept
Dropping bleach in drainages	25	38	37	50	338	1.70	Reject
Maintaining good sanitation habit	18	24	21	8	182	1.82	Reject

CONCLUSION

Mosquitoes are everywhere including the rural areas which are characterized by stagnant water and dirty environment. Thereby allowing or making it comfortable for mosquito to breed in their millions. To this effect rural people used the methods available and cheap, ranging from free insecticides treated nets to cheap local made insecticides drops. Those who do not have the free ITN and could not afford the local drops, use wrapper to cover themselves. The most important thing is that they are aware of the effects of mosquito bite and they are preventing it.

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