

An Appraisal of the Use of Treated Mosquito Bed Nets as a Safer and Cheaper Control Measure of Human Malaria in Jalingo, Taraba State; Nigeria

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ABSTRACT

An investigation was conducted in Jalingo and its surrounding (June,2005),to ascertain the extent insecticide treated mosquito bed nets have achieved as a malaria control measure. The questionnaire was the main instrument used for data collection.1500 questionnaires were distributed randomly at five designated areas. The results revealed that malaria is the most dreaded disease in the area. The findings further pointed out that the preferred way of preventing malaria attacks in the area studied, is the use of treated mosquito nets. The chi-square value showed there was no correlation($P>0.01$) between awareness on the use of the treated mosquito nets and its actual usage. Some of the respondents attributed the low usage to poor publicity, inadequate supply of the nets and the prohibitive cost of the nets. It is therefore, necessary that governments at various levels and NGOS should improve the publicity, increase supply and subsidize the cost so that a greater proportion of the low-income citizens can afford its usage. This will greatly reduce the incidence of malaria in the area.

Date of Submission: 23 August 2013



Date of Acceptance: 5 March-2014

I. INTRODUCTION:

Malaria remains a global health problem. Though a world-wide effort is underway to develop a vaccine that will protect the people against the disease. In the meantime, according to Encarta(2009) research by the WHO has found that sleeping under bed nets treated with insecticide can greatly reduce deaths from malaria, especially among children and pregnant women. According to Curtis(1997),insecticide treated bed nets have been proven to be one of the most effective malaria prevention strategies. The WHO distributed bed nets to families with children under age of five in several African countries and found that the death rates from malaria dropped by 50% to 60% among children in these countries. However, although the nets are inexpensive, their modest cost is beyond the means of many families in developing countries.In Nigeria, according to Mbanugo and Ejims(2000), malaria infection has a tendency of intense transmission throughout the year. Okoh(2001) states that malaria is widespread in Nigeria, and it remains a leading cause of infant and child illness and death. That it is responsible for more than 25-30% mortality of children under five years of age in Nigeria.

On the necessity for alternative control measures aside chemotherapy, Okoyeh(1992) stated that the consequences of anti-malarial drugs failure in the prevention and treatment of malaria in pregnant women calls for other cheaper and safer control measures possibly the use of treated mosquito bed nets. The use of mosquito nets was introduced in Nigeria by the colonial administration. Today it is reasonable to estimate that less than 5% of Nigerians use mosquito nets for obvious reasons. However, in the face of plasmodium drug resistance, presence of mosquito resistant strains, presence of safe and photo-stable synthetic pyrethroids , it is now appropriate to use the treated mosquito nets for malaria control. Okoh(2001) clearly pointed out that appropriate use of the treated mosquito nets can reduce mortality among children aged 1-4years by 17 to 33% depending on the site. Helena(1997) in the report of her field trials have shown that these nets are associated with reductions in mortality of 17% in Ghana and 33% in Kenya. Onyido et.al(2001) also noted that malaria prevalence dropped significantly from the baseline prevalence rate of 28-36% to 3.4-5.0% in their study. They concluded that treated nets are a cost effective measure with an increasingly important place in community-based malaria control activities in many countries particularly in sub-saharan Africa.This investigation assessed the public health status of malaria; the peoples' acceptance of the use of treated mosquito bed nets and the effectiveness of treated mosquito bed nets in the control of malaria infection in Jalingo metropolis.

II. METHODOLOGY

Data were collected from the public at five designated areas of Jalingo metropolis. These were, COE, Mile-Six, Sabon-gari, Magami/Mayogwei and Central Market area. In each of the areas 300 questionnaires were randomly distributed to youths and adults. A total of 1500 questionnaires were given out and all collected back.

Research Questionnaire:

Instruction: Tick/Fill-in the blank spaces as applicable.

Age----- Sex: Male() Female()
 Educational Status: Primary() Secondary() Tertiary() Others(specify)-----
 Are you aware of the presence of malaria in Jalingo? Yes() No()
 Which of these groups of persons are more prone to malaria attack? Children() Pregnant Women() Teenagers() Old people() Others(specify)-----
 Rank malaria among the major diseases in Jalingo. 1st() 2nd() 3rd() Others(specify)-----
 Which of these methods do you consider cheapest and safest in preventing malaria attack? Bush clearing() Use of Anti-malarias() Use of Mosquito nets() Use of Traditional Medicine() Others(specify)-----

 Are you aware of the use of treated mosquito bed nets for the control of mosquito related diseases?
 Yes() No()
 For how long have you been aware? Six months() One year() Two years() Three years() Over three years()
 Do you use the treated mosquito bed nets? Yes() No()
 For how long have you used the treated mosquito bed nets?-----
 Do you find it more useful than the untreated mosquito bed nets? Yes() No()
 Have you noticed any change in the rate of malaria attack since you started using the treated mosquito bed nets?
 Yes(comment)-----
 No(comment)-----
 Any other information -----

III. RESULTS:

Table1.Awareness On the Presence of Malaria In Jalingo Metropolis.

Response	Frequency	Percentage(%)
Yes	1395	92.3
No	115	7.7
Total	1500	100.00

Table.1 shows an overwhelming proportion(92.3%) of the population sampled is quite aware of the impact of malaria attacks in Jalingo metropolis.

Table2. Public Health Status of Malaria in Jalingo Metropolis.

Position	Frequency	Percentage(%)
First	960	64.0
Second	420	28.0
Third	87	5.8
Others	33	2.2
Total	1500	100.00

Malaria ranks highest(1st position-64%) as a disease of public health impact in Jalingo metropolis.

Table3.Persons More Vulnerable To Malaria Attack.

Group	Frequency	Percentage(%)
Children	1308	87.2
Pregnant Women	51	3.4
Teenagers	105	7.0
Old people	36	2.4

Total	1500	100.00
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This table shows that children have the highest(87.2%) rate of malaria attack, while the least(2.4%) malaria attack is experienced by older persons. There is a significant difference($P<0.01$) in the rate of malaria attacks among the various groups of persons.

Table 4. Preferred Ways Of Preventing Malaria Attacks.

Measures	Frequency	Percentage(%)
Bush Clearing	366	24.4
Use of Anti-malaria	228	15.2
Use of Mosquito nets	801	53.4
Traditional Medicine	69	4.6
Others	36	2.4
Total	1500	100.00

This table shows that the most preferred measure for preventing malaria attack in the population surveyed is the use of mosquito nets(53.4%).

Table 5. Awareness of the Presence and Usage of the Treated Mosquito Nets.

Response	Treated Mosquito Bed Nets Presence		Usage	
	Number	Percentage(%)	Number	Percentage(%)
Yes	1239	82.6	627	41.8
No	261	17.4	873	58.2
Total	1500	100.00	1500	100.00

Table5 shows that though a very high proportion of the population sampled(86.2%) is aware of the presence of treated mosquito bed nets, less than half the population sampled (41.8%) uses the nets.

Table6.Relationship Between The Duration of Awareness and Usage of treated Mosquito Bed Nets.

Duration	Number Aware	Number Using
6months	487	312
1year	487	87
2years	202	87
3years	240	87
>3years	84	48
Total	1500	611

The table shows high awareness in the first 12months but the usage was high only in the last six months; however, in the remaining period under investigation both the awareness and usage were very low. The table shows a significant difference($P<0.01$) between awareness and usage of the treated mosquito bed nets.

Table 7. Age-Groups, Awareness and Usage of Mosquito Bed Nets in Jalingo.

Age group(years)	Awareness	Usage
11-15	(188)30	25
16-20	(188)112	108
21-25	(188)18	07
26-30	(188)30	13
31-35	(187)71	24
36-40	(187)89	18
41-45	(187)53	14
>45	(187)12	00
Total	(1500)415	209(50.36%)

Figures in parentheses are the number of questionnaires distributed to each age-group. The percentage(50.36) shown in parentheses is the percentage of the number aware that uses the treated nets. The table further shows that the age-group 16-20 years has high degree of awareness as well as high usage of the nets. The older age-groups however, have lower rates both in awareness and usage. There is no correlation ($P>0.05$) between the age-groups awareness and the degree of usage of the treated nets.

III. DISCUSSION:

The main aim of this study was to establish the acceptance of the treated mosquito bed nets as a safe and cheap measure for the control of malaria in Jalingo town. The study also attempted to establish whether there was an increase in the usage of the treated nets since its inception in the area. The cosmopolitan nature of malaria cannot be disputed. In this investigation too, from the population sampled; 93% were of the opinion that the impact of malaria is highly noticeable. This finding is in line with several workers (Mbanugo and Ejims, 2000; Okoh, 2001; FMOH, 1991; WHO, 1991; Cowper, 1963; etc.) that malaria is endemic in most parts of Nigeria. It is not surprising therefore, that malaria is ranked first among the major diseases in Jalingo metropolis. This implies that malaria is a great public health problem in the area. Research has shown that certain groups of persons are more prone to malaria attack than others; e.g. children under five years of age and pregnant women (Carter, 1997; Okoyeh, 1992; etc). This work also observed that children had the highest rate of malaria attack but differed in the case of pregnant women as the investigation placed them in the second position even after the teenagers. This might be because a good number of the respondents had no medical training. However, in the case of children, it is easy to detect malaria attack at home or in school by simply feeling their hot body or seeing them shivering and sweating.

On the preferred measures of preventing malaria attacks, more than half the respondents were in support of the use of mosquito nets. They consider the measure as the safest and cheapest. However, from personal interviews others detested the use of bed nets on the basis of inadequate aeration and the fear of appearing as corpse inside the nets. This is because certain communities in Nigeria use the bed nets in warding off insects from attacking human corpses. However, the use of treated bed nets is inevitable in the control of the malaria menace. Nebe et al. (2002), observed in an investigation that where treated mosquito bed nets are used extensively, overall child mortality has been known to reduce considerably. They however, noted as it is also the case in this study that only a few respondents use the nets. In this study the low usage could be attributable to poor publicity, inadequacy of the nets and the prohibitive cost of the nets. In Jalingo, from this investigation the use of these nets is at its infancy; since it is in the last six months that 50% of those surveyed have started using them. It is hoped that as Okoh (2001) puts it, the usage will be continued so as to harvest the attendant benefits. e.g. reduction of infant mortality aged between 1-4 years by 17-33% depending on the degree of endemicity.

IV. CONCLUSION:

From the foregoing, it has become pertinent to make the following remarks; That malaria infection is a major public health problem in Jalingo metropolis. That residents of the area are aware of the use of insecticide treated mosquito bed nets in the control of malaria. That however, very few of the residents use the treated nets in their homes. That their reasons include; low supply of nets and the exorbitant cost of the nets. That there is recently an increasing consideration in the usage of the treated nets. That the government and other stakeholders in the communities could enhance the availability and affordability of the commodity to especially the most vulnerable groups; viz: pregnant women and children.

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