



Knowledge And Use Of Insecticide Treated Nets Among University Staffs In Rivers State

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ABSTRACT

The use of long lasting insecticide treated net has been recognized as one of the most effective tools for the prevention of malaria but, one cannot use was he/she does not know. This study investigated the knowledge and use of insecticide treated nets among University staffs in Rivers State. A descriptive survey research design was used for this study with a population size comprising of 6,983 staff in the three known Universities in Rivers State. A multi-stage sampling procedure was used to select a sample size of 450 staff for the study. A structured questionnaire was used for data collection. The data collected were coded and analysed with the aid of the statistical package for social sciences (SPSS) version 23.0. Descriptive statistics such as percentage, mean, standard deviation and the Pearson correlation (r) were used to answer the research questions while hypotheses were tested with the inferential statistics such as simple regression and chi-square at 0.05 alpha level. The findings of the study showed that the mean age of the respondents was 30.4 ± 2.04 and on the average, 312(71.4%) were knowledgeable about ITN use and the level of ITNs use among University staffs in Rivers State was high ($X = 2.87 \pm 1.05$). The result shows a significant low positive relationship between knowledge of ITNs and its use ($r = 0.144$; $F = 9.186$; $p < 0.05$). The result further shows that as knowledge increases ITNs use also increases ($B = 1.908$). It was concluded that University staffs in Rivers State were knowledgeable about ITNs and its usage was high among them. It was recommended that, Healthcare professionals should not relent in their effort to raise the awareness of ITNs use through the roll back malaria campaign by consistently making it a subject of discussion at the various health facilities to ensure consistent use of ITNs among the populace.

Keywords: Knowledge, insecticide treated mosquito bednets, staff of tertiary institution.

INTRODUCTION

The utilization of insecticide treated mosquito nets is one of the strategies of the Roll Back Malaria initiative in Nigeria and it is a form of vector control measure but, there is a discordant between the knowledge of insecticide treated nets and its use. Malaria is a preventable and curable disease but, its burden remains a challenge despite the existence of effective technologies and measures for its prevention and control. The World Health Organization (2010) stated that, malaria is a life threatening disease that is transmitted to people through the bites of infected female anopheles mosquito and it is responsible for the high morbidity and mortality rates amongst children under 5years, pregnant mothers and adults. Udonwa, Gyuse and Etokidem (2010) posited that, malaria is a very common disease of the tropics and one of the leading causes of death and illness in Nigeria. It is a public health issue where it accounts for more cases of death than any other country in the world, according to United States Agency for International

Development (USAID, 2009). Furthermore, in endemic areas the disease is responsible for 60% of all out patient's visits to clinics and 30% of hospitalization among children and adults in Nigeria. Malaria remains a major problem in Nigeria which can be controlled largely by the use of insecticide treated nets. Insecticide treated nets like the name implies are nets that are treated with chemicals which repel or kills insects. Insecticide Treated Nets (ITNs) have been employed as main vector control tool for personal protection of vulnerable groups. According to Olisa (2012), insecticide treated nets are mosquito nets that are treated as recommended that maintain effective level of insecticide for at least 3 years even after repeated washing. Household Survey Indicators for Malaria Control (2013) stated that, an ITN was defined as a factory-treated net that did not require any further treatment or a net that had been soaked with insecticide within the past 12 months.

In the bid to reduce the scourge the effects of malaria, some number of program initiatives were put in place. The chief among them is Roll Back malaria (RBM) initiative introduced in 1998. This has a relief on malaria burden by 75% by the year 2015 there are other measures to accomplish this namely-prompt and adequate treatment of mosquito window nets, use of ITNs and environmental management which includes cleaning of drains and in door residual spraying of all these measure, ITNs has been related very efficacious and cost effective method of controlling malaria. There are four types of malaria parasite which infect man: plasmodium Vivax, plasmodium falciparum, plasmodium ovale, plasmodium malariae. Since malaria represents a world medical emergency, certain measures are put in place both for curative and preventive. In the curative, there are attempts in Nigeria to control malaria using anti-malaria drugs which are currently threatened by the emergence and spread of drug resistance malaria parasites, insecticide resistant vector mosquito and increasing incidence of malaria, has heightened the need for a more effective method of control of spread which is the use of insecticide treated mosquito net.

Knowledge is the fact or condition of knowing something with familiarity gained through experience or association. Knowledge can also be said to be awareness or understanding of someone or something such as facts, information, descriptions or skills which is acquired through experience or education by perceiving discovery or learnt. There has been mass campaign on the awareness knowledge and use of the ITNs (Mazigo, Obasy, Mauka, Manyiri, Zinga & Kweka, 2010). Knowledge of ITN entails awareness about it and its use. It is a fact that one cannot use what he does not know. Recently, WHO (2019) issued a new global outline on the use of ITNs extending it all the members of the community. In Rivers State, a study among 246 health workers showed that 93.3% were aware of ITNs but only 20.9% had good knowledge of ITNs and 22.5% were using it at home. Hence, the knowledge of ITN is a prerequisite for its use. Provision of insecticide treated bed net (ITNs) is universally accepted as an efficacious and essential public health services in most parts of sub-Saharan African. The most effective is the long lasting insecticide Nets (LLINS), they have been associated with sharp decrease in malaria programmes.

In the facility in Ignatius Ajuru University of Education recorded 2,241 cases in 2018, there are fatal consequences and disabilities resulting in poorly or untreated malaria infection (IAUE Health Department Record Centre, 2018). During an interaction the researcher had with 24 year old staff on admission with plasmodiasis, she admitted that she had no knowledge of ITNs, a lady in outpatient clinic declared that she had little knowledge of it but doubt if it is effective. Hence the emergence of treated bed nets with insecticide distributed to endemic regions in Africa of which Nigeria is one. Having known the efficacy of ITNs as a core intervention to prevent malaria, so many researches have been coined out in countries to assess the level of knowledge and use of ITNs. However, there are variations hence, this study investigated the knowledge and use of ITNs among University staffs in Rivers State.

Research Questions

The following research questions were raised to guide this study based on the specific purpose:

1. What is the knowledge of use of ITNs among University staffs in River State?
2. What is the extent of ITNs utilization among University staffs in Rivers State?

Hypothesis

The hypothesis postulated was tested at 0.05 alpha level:

1. There is no significant relationship between knowledge of ITNs and its utilization among University staffs in Rivers State.

METHODOLOGY

Research Design: A descriptive survey research design was used for this study.

Population for the Study: The population for this study comprised of six thousand, nine hundred and eighty-three (6,983) staff in the three Universities in Rivers State (University of Port Harcourt = 4,289, Ignatius Ajuru University of Education = 969 and Rivers State University = 1,715).

Sample and Sampling Technique: The sample size for the study was 450 which was determined using the Taro Yamane formula, $n = N/1+N(e)^2$. A multi-stage sampling procedure was used in selecting the 450 study subjects. This involves cluster sampling, simple random and systematic sampling methods. A simple random sampling technique was used to select three (3) tertiary institutions (University of Port Harcourt, Rivers State University and Ignatius Ajuru University of Education) and each institution then formed a cluster. Subjects were selected from each cluster thoroughly. The systematic random sampling was used to select the respondents in each unit.

Instrument for Data Collection: A researcher designed questionnaire tagged “Knowledge and Use of Insecticide Impregnated Mosquito Bed Nets among Staff of Tertiary Institutions Questionnaire (KUITNSTIQ)” was used to gather data for the study. The questionnaire was divided into section A and B. Section A was focused on knowledge use, while section B consists of information on the use of ITNs.

Validity of the Instrument: To validate the instrument, two experts in department of Human Kinetic Health and Safety including the supervisor reviewed the instrument and make their input, corrections were made and after which the instrument was considered valid and suitable for the study.

Reliability of the Instrument: The split half method was used to ascertain the reliability of the instrument to ensure it measures what is designed to measure with consistency and accuracy. The instrument was administered to staff in a homogenous tertiary institution and was subjected to the Cronbach alpha statistics for testing the internal consistency of an instrument, a reliability coefficient of 0.71 was obtained. This certified that the instrument was reliable for use.

Method of Data Collection: The researcher collected a letter of introduction from the Head of the Department of Human Kinetics for recognition, easy access and to get permission from the Head of the Department of the sampled tertiary institutions to carry out the study. After which copies of the questionnaire were administered directly to the respondents by the researcher. Instructions guiding the filling of the questionnaire were provided to the respondents, and after which completed questionnaire were collected on the spot.

Method of Data Analysis: The data collected were coded and analysed with the aid of the Statistical Package for Social Sciences (SPSS) version 23.0. Descriptive statistics such as percentage, mean, standard deviation and linear regression.

RESULTS

The results of the study were presented below in Table 1-3:

Table 1: Knowledge of use of ITNs among staff tertiary institutions of River State

SN	Items	Responses	
		Correct F(%)	Incorrect F(%)
1	Insecticide Treated Nets (ITNs) use prevent mosquito bites	419(95.9)	18(4.1)
2	ITNs is a bed net treated with insecticide for the purpose of killing and repelling mosquitoes	305(69.8)	132(30.2)
3	ITNs when in use protect against mosquito bite	422(96.6)	15(3.4)
4	Long lasting insecticide treated net protect against other insect bite	360(82.4)	77(17.6)
5	ITNs prevent malaria when used consistently	378(86.5)	59(13.5)
6	Any bed net that is not treated with an insecticide is not an ITN	74(16.9)	363(83.1)
7	ITNs can be washed if dirty and be re-used	377(86.3)	60(13.7)
8	Someone can get malaria while sleeping under ITNs	179(41.0)	258(59.0)
9	ITNs can protect someone from dust/dirt	193(44.2)	244(55.8)
10	Mosquitoes can find their way into the net if not well placed on the bed	411(94.1)	26(5.9)
	Average	312(71.4)	125(28.6)

Table 1 shows the knowledge of ITNs among staff in tertiary institutions in Rivers State. The result shows that on the average, 312(71.4%) were knowledgeable about ITN use while 125(28.6%) were not. Specifically, 419(95.9%) knew that Insecticide Treated Nets (ITNs) use prevent mosquito bites, 305(69.8%) knew that ITNs is a bed net treated with insecticide for the purpose of killing and repelling mosquitoes, 422(96.6%) knew that ITNs when in use protect against mosquito bite, 378(86.5%) knew that Long lasting insecticide treated net protect against other insect bite, also, 312(71.4%) knew that mosquitoes can find their way into the net if not well placed on the bed.

Table 2: Utilization of ITN among University staffs in Rivers State

SN	Items	\bar{X}	SD
1	I use the net on my bed	3.10	1.030
2	I sleep under the mosquito net	2.97	1.034
3	I use the net to prevent malaria	2.97	1.099
4	I used the net during the midnight to keep myself warm	2.03	1.065
5	I use the net as a partition in my room	3.31	1.038
	Grand mean	2.87	1.05

Criterion mean = 2.50

Table 4.3 shows the utilization of ITN among University staffs in Rivers State. The result shows that the grand mean 2.87 ± 1.05 is greater than the criterion mean = 2.50 indicating a high level of ITNs use. Thus, the level of ITNs use among University staffs in Rivers State was high.

Table 3: Regression analysis showing the relationship between knowledge of ITNs and its use among University staffs in Rivers State

Model	R	R square	F	P	B	Decision
	0.144	0.021	9.186	0.003	1.908	Significant

Table 3 shows the regression analysis of the relationship between knowledge of ITNs and its use among University staffs in Rivers State. The result shows a significant low positive relationship between knowledge of ITNs and its use ($r = 0.144$; $F=9.186$; $p<0.05$). The result further shows that as knowledge increases ITNs use also increases ($B = 1.908$). Therefore, the null hypothesis which states that there is no

significant relationship between the knowledge of ITNs and its use among University staffs in Rivers State was rejected.

DISCUSSION OF FINDINGS

The result shows that on the average, 312(71.4%) were knowledgeable about ITN use while 125(28.6%) were not. This finding is expected thus, not surprising because, due to the high prevalence of malaria in the country, several health organizations were committed to the campaign about ITNs and also, the Roll Back Malaria initiative in Nigeria must have helped to fill the gap in knowledge of ITNs use as found in this study. Also, recently the World Health Organization (2019) issued a new global outline on the use of ITNs extending it all the member countries, this also would have helped to heighten the level of knowledge on ITNs use among the populace. Moreover, the study was carried out among staff in tertiary institutions which is believed to be a citadel of learning and expected to disseminate information and create awareness about several subjects including ITNs use, this also would have been implicated for the good knowledge found in this study.

Specifically, 419(95.9%) knew that, Insecticide Treated Nets (ITNs) use prevent mosquito bites, 305(69.8%) knew that ITNs is a bed net treated with insecticide for the purpose of killing and repelling mosquitoes. This finding is similar to that of Olisa (2012) where it was stated that insecticide treated nets are mosquito nets that are treated as recommended that maintain effective level of insecticide for at least 3 years even after repeated washing. The finding of this study is also in with the Household Survey Indicators for Malaria Control (2013) which report viewed ITNs as a net treated with insecticide that did not require any further treatment.

The result shows that the grand mean 2.87 ± 1.05 is greater than the criterion mean = 2.5 indicating a high level of ITNs use. Thus, the level of ITNs use among University staffs in Rivers State was high. This finding is also encouraging because in recent times, the use of long lasting insecticide treated net has been recognized as one of the most effective tools for the prevention of malaria, which is a life threatening disease that is transmitted to people through the bites of infected female anopheles mosquito and it is responsible for the high morbidity and mortality rates. The finding of this study is in keeping with that of Giming (2011) who noted that, in the control of malaria, one of the most effective tools for malaria prevention is the use of long lasting insecticide treated mosquito net (LLITMN). The finding of this study also gives credence to that of the Centre for Disease Control and Prevention (2010) which showed that, if more than 80% of inhabitants in an area sleep under long lasting insecticide treated mosquito net, malaria transmission will be significantly reduced, which cannot benefit people who do not used long lasting insecticide mosquito net themselves.

The finding of this study is in line with that of Orji, Onyire, Chapp-Jumbo, Anyanwu and Eke (2018) which showed that 52.4% of the respondents always use the ITN. The finding of this study is in consonance with that of Kanmiki, Awoonor-Williams, Phillips, Kachur, Achana and Bawah (2019) where more than half of the respondents utilized insecticide treated net. The similarity found between the previous study and the present study might be due to the similarity in the characteristics of the study respondents, that is, the both studies were carried out among mothers. The finding of this study is dissimilar to that of Axame, Kweku, Sodofia, Kye-duedo, Agboli and Agbemafle (2016) who reported that, the utilization was very low. The findings of this study is different from that of Konlang, Japiong, Konlan, Afaya, Salia and Kombat (2019) where a lower level of utilization was reported. This variation might be due to the variation in the study location and the population studied. The previous studies were focused on children and women whereas the present study was focused on staff in tertiary institutions, this might have been implicated for the variations found between the different studies.

CONCLUSION

Based on the findings of the study, it was concluded that University staffs in Rivers State were knowledgeable about ITNs and its usage was high among them. There was a significant relationship between the knowledge of ITNs and its usage among the staff.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

1. Healthcare professionals should not relent in their effort to raise the awareness of ITNs use through the roll back malaria campaign by consistently making it a subject of discussion at the various health facilities to ensure consistent use of ITNs among the populace.
2. The government of the day should not also relent in the free distribution of ITNs by making it a continuous process in the different health facilities where any one can go and get it at any time, this will help to sustain the high level of use of ITNs.
3. The healthcare workers who are positioned for the free distribution of the ITNs in the various health facilities should an even distribution of the ITNs by not discriminating based on demographic profiles of individuals.

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