Available online at http://www.journalijdr.com

IJDR

International Journal of
DEVELOPMENT RESEARCH

ISSN: 2230-9926

International Journal of Development Research
Vol. 4, Issue, 11, pp. 2330-2333, November, 2014

Full Length Research Article

AWARENESS AND UTILIZATION OF INSECTICIDE TREATED NETS FOR MALARIA PREVENTION IN IGBOMOTORU COMMUNITY IN SOUTHERN IJAW LOCAL GOVERNMENT AREA OF BAYELSA STATE, NIGERIA

***Dotimi, Doris Atibinye, Daniel Ayibapiriye Harvest, Gloria Okeke, Akpe Anthony Bibowei, Rejoice Igbans Obele and Mercy Uzere**

Department of Community Health Sciences, Bayelsa State College of Health Technology, Otuogidi, Ogbia

ARTICLE INFO

Article History:
Received 18th August, 2014
Received in revised form
23rd September, 2014
Accepted 03rd October, 2014
Published online 18th November, 2014

Key words:
Insecticide Treated Nets,
Malaria,
Igbomotoru Community.

ABSTRACT

Background: The research work was to investigate the level of awareness and utilization of Insecticide Treated Nets (ITNs) for malaria prevention in Igbomotoru Community in Southern Ijaw LGA of Bayelsa State, Nigeria. Five research objectives include to investigate the level of awareness on ITN as a preventive measure for malaria, investigate the number of homes in possession of ITN, investigate the level of utilization of ITN for malaria prevention, and investigate reasons for non-utilization if any.

Method: A descriptive survey design was adopted with a self-structured questionnaire on the utilization of Insecticide Treated Nets for Malaria prevention for data collection. 400 respondents from 15years and above comprising of 160 males and 240 females were selected for the study through a simple random sampling technique. Data were analyzed with frequency and simple percentages.

Result: The study revealed that 262 (65.5%) respondents are aware of ITN as a malaria preventive measure; out of 300 participants who possess ITN in their homes only 100 (33.3%) use ITN while sleeping in the night, 100 (33.3%) use it for fishing and others found it inconveniencing to use ITNs to sleep.

Conclusion: There is a need for public health personnel to organize programs that will create awareness on the purpose and utilization of ITN as a malaria preventive measure in Igbomotoru community. All stakeholders should be responsible for the provision of ITNs to individuals most especially in the pregnant women and children in Riverine areas of Bayelsa State.

INTRODUCTION

Insecticide Treated Net is defined as a net with insecticide (Pyrethroid) that repels, disables and/ or kill mosquitoes as they come in contact with the net (World Health Organization, 2005). The nets are treated with the available pyrethroid (emulsifiable concentrate of permethrin and lambdacyhalothrin) which is long acting, resistant to sunlight and safe for humans and environment (Ordinioha, 2006). Adults, more especially pregnant women and children are advised to sleep under the ITN for the prevention of malaria (World Health Organization, 2005). Insecticide Treated Net is one of the effective malaria preventive measures in highly endemic areas like countries in West Africa (Ayalew and Amsalu, 2009). It is proven to be effective against all vectors involved in the transmission of diseases such as leishmaniasis, Japanese encephalitis, lymphatic filariasis and Chagas disease (Hill *et al.,* 2006). Although the ITNs are recommended by World Health Organization and other donor Agencies, the levels of utilization in these countries are still in doubt. Matovu and Colleagues in Njau *et al.* (2009) opined that in Tanga district of Tarzana 50% of the children in the rural communities do not sleep under the bed net protection. Except this is addressed most African children will die of malaria which can be prevented by the use of ITNs, because ITNs is considered the most effective malaria preventive tool (Ordinioha, 2006). Malaria is deadly, it is one of the leading causes of morbidity and mortality in Sub-Sahara African with a rate of 919/100,000 (World Health Organization, 2010). Studies also indicated that 30% and 11% of children and women die yearly due to malaria in Nigeria and malaria has an economic burden of about 132 billion (National Malaria Control Program, 2006; Abebe *et al*., 2003). This was indeed

****Corresponding author: Dotimi, Doris Atibinye,***
Department of Community Health Sciences, Bayelsa State College of Health Technology, Otuogidi, Ogbia.

an alarming discovery that should call for attention. Other studies have been conducted on the utilization of ITN in the prevention of malaria in other parts of Nigeria. Runsewe *et al.* (2012) conducted a cross-sectional study in the Western part of Nigeria on the awareness and knowledge about insecticide treated nets amongst pregnant mothers in Ogun, the study indicated that out of the 514 participants only 247 (48.9%) had knowledge of the existence of Insecticide Treated Net. Ukibe, Mbanugo *et al.* (2013) also conducted a similar study in the Eastern part of Nigeria to assess the level of awareness, ownership and use of insecticide treated bed nets (ITNs) by pregnant women attending antenatal clinics in Anambra state, South Eastern Nigeria. The study indicated that out of the 700 volunteered participants, 651(93%) are aware of the ITN, 420(60%) have it in their homes and only 308 (46%) made use of it in their homes. This reveals that the level of utilization of the ITN was very poor; indicating the need for continues education.

There has been no study on the awareness and utilization of ITN in Igbomotoru community in Bayelsa State located in the Southern part of Nigeria. By investigating the level of awareness and utilization of ITN in Igbomotoru community the participants stand the chance of being sensitized on the importance and utilization of the ITN for the prevention of malaria and there would be increased awareness among agencies and the government on the need to provide ITN for every home in Igbomotoru community.

MATERIALS AND METHODS

This was a descriptive survey carried out in Igbomotoru Community in Southern Ijaw LGA of Bayelsa State of Nigeria. Igbomotoru Community comprise of three sub-sections: Buo, Kolo, and Obuu; which constitute six villages-Opu-angakiri, Kala-angakiri, Ofoingbene, Baberegbene, Lasukugbene and Kala-Igbomo-ama. Southern Ijaw Local Government is one of the eight Local Governments created in 1996 when Bayelsa State was created. Bayelsa State is located in the oil and gas rich Niger Delta of the Southern Nigeria (Bayelsa State, 2013). Most of the Communities in Bayelsa State are surrounded by water which makes transportation of goods and services difficult and expensive. Majority of the people in Bayelsa State are poor and live in the rural part of the state where there are lack of essential amenities, health facilities and services.

The study was conducted to investigate the level of awareness and utilization of Insecticide Treated Nets (ITNs) for malaria prevention in Igbomotoru Community in Southern Ijaw LGA of Bayelsa State from December, 2012 to April, 2013. The target population was all adults living in Igbomotoru Community and the sample size was 400 participants between the ages of 18 and above. Multistage sampling technique was used to stratify the village into four strata and simple random sampling technique was used to select 100 participants from each strata. Close ended questionnaire was adopted as a method of data collection and the questions bordered on awareness on the use of ITNs for malaria prevention, use of ITN while sleeping to prevent malaria, sources of awareness of the use of ITNs, knowledge of utilization, and level of usage. The inclusion criteria was 15 years and above, and must live in Igbomotoru community. The Institutional Review Board of Bayelsa State College of Health Technology and Southern Ijaw Local Government gave ethical approval for the study. Data were analyzed and presented in frequency and simple percentages.

RESULTS

A total of 400 participants participated in the study. Demographic data indicated that 30% were within the age group of 15-30. 25% were between 31-45 years of age, 28.75% were aged 46-60 years and 16.25 were aged 61 years and above. 40% of the respondents were males and 60% were females. 23% were house wives, 11.25% were civil servants, 18.75% were laborers, 20.75% were students, 5% were lumber men, 22.5% were traders, 17.5% were fishermen, 5% were carvers and 10% were farmers. 20.5% were single, 51% were married, 13.75% were divorced, 12.25% were co-habiting and 2.5% were widows/widowers. 90% were Christians, none were Muslims, and 10% believed in African traditional religion. 10% had no formal education, 26.5% had primary education, 56% had secondary education, and 7.5% had tertiary education (Table 1).

Table 1. Respondents' Demographic Data

S.No	Variables	Frequency	%
1.	Age in years		
	15-30	120	30
	31-45	100	25
	46-60	115	29
	61 & above	65	16
	Total	400	100
2	Sex		
	Male	160	40
	Female	240	60
	Total	400	100
3	Occupation		
	House wife	22	5.5
	Civil Servant	45	11.25
	Laborers	80	20
	Students	83	20.75
	Lumber men	20	5
	Trader	20	5
	Fishermen	70	17.5
	Carvers	20	5
	Farmers	40	10
	Total	400	100
4	Marital Status		
	Single	82	20.5
	Married	204	51
	Divorced	55	13.75
	Co-habiting	49	12.25
	Widow/widowers	10	2.5
	Total	400	100
5	Religion		
	Christianity	360	90
	Islam	Nil	Nil
	African Traditional Religion	40	10
	Total	400	100
6.	Educational Background		
	No formal education	40	10
	Primary Education	106	27
	Secondary education	224	56
	Tertiary Education	30	8
	Total	400	100

Table 2 shows participants awareness on the use of Insecticide treated nets for malaria prevention. 65.5% of respondents were aware that the use of Insecticide Treated Net prevents malaria and 34.5% were not aware that the use of ITN prevents malaria

Table 2. Awareness on the use of Insecticide Treated Nets for malaria prevention

Awareness	Frequency	Percentages
Yes	262	65.5
No	138	34.5
Total	400	100

Out of the 262 participants who were aware that the use of ITNs prevents malaria, 22.9% got the awareness from the health facilities, 68.7% got the awareness from the mass media, 0.76% got the awareness from Neighbours/Friends and 7.6% got the awareness from other sources (Table 3).

Table 3. Source of awareness of the use of ITNs

Source of Awareness	Frequency	Percentages
Health Centre/Hospital	60	22.9
Radio/Television	180	68.7
Neighbours/Friends	2	0.76
Others	20	7.6

On the number of ITNs possessed by participants, 25% indicated that they do not possess ITN, 62.5% possessed 1-2 ITNs, 0.25% possessed 3-4 and none possessed 4 and above (Table 4).

Table 4. Number of ITNs possessed by Participants

Number of Nets possessed	Frequency	Percentages
None	100	25
1-2	250	62.5
3-4	50	0.25
More than 4	Nil	Nil

Out of the 300 participants who possessed ITN only 33.3% (100) use ITN to sleep and 66.7% do not use ITN to sleep (Table 4).

Table 4. Use of ITNs to sleep

ITN Usage	Frequency	Percentage
Yes	100	33.3
No	200	66.7%
Total	300	100

Table 5 shows that out of the 300 participants who do not use ITN to sleep, 33.33% use ITN for fishing, 10% feel hot sleeping under ITN, 23.33% finds it inconveniencing, 10% cannot afford due to cost and 11.66% do not know where to get it.

Table 5. Reasons for not using ITNs

Reasons for not using ITN	Frequency	Percentage
Use for fishing	100	33.33
Feel hot sleeping under ITN	30	10
Inconvenience	70	23.33
Cannot afford due to cost	30	10
Do not know where to get it	35	11.66

Table 6 shows that 47.75% (135) of participants had high knowledge on the use of ITN, 10% (40) had moderate knowledge on the use of ITNs and 56.25% (225) had low knowledge on the use of ITN.

Table 6. Knowledge on utilization of ITNs among the Igbomotoru Community

Level of Knowledge on Utilization of ITN	Frequency	Percentage
High	135	33.75
Moderate	40	10
Low	225	56.25

DISCUSSION

Our study indicated that there was high awareness on the use of Insecticide Treated Nets for malaria prevention in Igbomotoru Community because more than 50% (65.5%) of participants were aware that ITNs prevents malaria and more than 50% of the respondents got the awareness through the mass media. This confirms the assertion of Edelu *et al.* (2010) in their study that there was high awareness of ITNs as a malaria preventive measure. However there was low level of usage because 66.25% of respondents of Igbomotoru community do not use ITNs despite the level of awareness. This confirms the assertion of other authors that the high awareness level of the ITNs as preventive measure does not influence the usage (Ugwu *et al*., 2013; Edelu *et al.,* 2010).

Still on the utilization rate, Ayalew and Amsalu (2009) had a contrary view that the utilization rate in Arbaminch Village in Ethiopia was on the high side because 77.3% of the respondents used ITNs for the prevention of malaria. The participants who do not use ITNs as a malaria preventive measure indicated many reasons for not using it, but the reason with the highest frequency/percentage were that they used it for fishing (37.7%). This means that there are some people in the Igbomotoru community who have ITN but use it for a different purpose. The study also indicated that knowledge on appropriate use of the ITNs was very low because more than 50% (56.2%) of the participants had low level of knowledge of utilization. The low level knowledge of utilization indicated that awareness, possession and appropriate utilization do not automatically go hand-in-hand (Runsewe-Abiodun *et al.,* 2012).

Conclusion

The awareness of ITNs as a preventive measure for malaria is high but the level of utilization of ITNs for the prevention of malaria in Igbomotoru Community was low because majority use it for fishing, others found it expensive and inconveniencing.

Limitation of the study

Transportation to the area of study was cost intensive due to the number of days researchers had to do the study and challenging because it is located in a riverine area.

Authors Contribution

All authors participated in the study design, collection, and analysis of data and writing of the manuscript.

Conflict of interest: None

Funding: None

REFERENCES

Abebe, E., Mosanya, M.E., Amajoh, C., Otsemobor, O., Ezedinachi, E.N. and Afolabi, B.M, *et al*. 2003. Nigeria roll back malaria consultative mission: Essential actions to support the attainment of the Abuja targets. Retrieved from http://www.rollbackmalaria.org/partnership/country/docs/WAfrica/reaping_nigeria.pdf

Ayalew, A. and Amsalu, F. 2009. Utilization of insecticide treated nets in Arbaminch Town and the Malarious Villages of Arbaminch Zuria District, Southern Ethiopia. *Ethiopian Journal of Health Development* 23(3):206-213. Retrieved from http://www.researchgate.net/publication/228616017_Utilization_of_insecticide_treated_nets_in_Arbaminch_Town_and_the_malarious_villages_of_Arbaminch_Zuria_District_Southern_Ethiopia

Bayelsa State. Available at http://en.wikipedia.org/Bayelsa-state.Accessed 10th May 2013.

Edelu, B.O, Ikefuna, A.N. and Adimora, G.N. 2010. Awareness and use of insecticide-treated bed nets among children attending outpatient clinic at UNTH, Enugu - the need for an effective mobilization process. Afr Health Sci. Jun 2010; 10(2): 117–119. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2956296/

Hill, J., Lines, J. and Rowland, M. 2006. Insecticide Treated Nets. *Advances in Parasitology* 2006(61)77-128.

National Malaria Control Program, 2006. A road map for impact on malaria in Nigeria. Abuja: Federal Ministry of Health, National Malaria Programme

Njau, R.J.A., Savigny, D., Gilson, L., Mwageni, E. and Mosha, F.A. 2009. Implementation of an Insecticide Treated Net subsidy scheme under a public- private partnership for malaria control in Tanzania-challenges in implementation. *Malaria Journal,* 2009 (8): 201. doi:10.1186/1475-2875-8-201

Ordinioha, B. 2006. *Principles and Practice of Environmental Health in Nigeria.* Port Harcourt. Health Forum.

Runsewe-Abiodun T. I., Iyaniwura A. C., and Sotimehin S. A., 2012. Awareness and knowledge about insecticide treated nets (ITNs) amongst pregnant mothers in Ogun State, Western Nigeria: A descriptive cross sectional study. *Educational Research Journal,* 2(5):138-145. Retrieved from http://www.resjournals.com/ERJ/Pdf/2012/May/Runsewe-Abiodun%20et%20al.pdf

Ugwu, E.O., Ezechukwu, P.C., Obi, S.N., Ugwu, A.O. and Okeke, T.C. 2013. Utilization of insecticide treated nets among pregnant women in Enugu, South Eastern Nigeria. *Nigerian Journal of Clinical Practice,* 16 (3) 292-296. DOI: 10.4103/1119-3077.113449

Ukibe S. N, Mbanugo J. I., Ukibe N. R., and Ikeakor L. C. 2013. Level of awareness and use of insecticide treated bed nets among pregnant women attending antenatal clinics in Anambra State, South Eastern Nigeria. *Journal of Public Health and Epidemiology,* 5(9):391-396. Doi:10.5897/JPHE2013.0551

Western–Nigeria: A Descriptive Cross-sectional study. *Education Research Journal,* 2(5): 138- 145, Retrieved from http://resjournals.com/ERJ/Pdf/2012/May/Runsewe-Abiodun%20et%20al.pdf

World Health Organization, 2005. Roll Back section 1: Global malaria situation. *World Malaria Report.* Retrieved from http://rbn.whoint/wmr2005/html/1.1.htm

****