EXTENDED ABSTRACT

BARRIERS TO INSETICIDE TREATED NETS UTILIZATION AMONG UNDER-FIVE CHILDREN IN NIGERIA

[1]Abatan S. Matthew, [1]Ntoimo L.F.C, Shittu S.B. &[1]Shittu R. Olusola
Federal University Oye-Ekiti, Ekiti State, Nigeria
[1]sunday.abatan@fuoye.edu.ng, [1]ntoimof@yahoo.com, sarafa.shittu@fuoye.edu.ng
[1]ridwanolusola55@gmail.com
08066066473, 08037672580, & 08145764332

1. INTRODUCTION

The immense malaria consequence in African communities call for special attention as the world struggles to realize a better life for the less privileged (Global Goals, 2015, Millennium Project, 2005 and Okwa, 2013). Malaria is a parasitic disease that is common in tropical and subtropical area in developing countries especially in Sub-Saharan Africa. It has been identified by different scholars to cause about a million deaths every year, mainly among young children and pregnant women living in that region (Okonko *et al*., 2012; Olasunkanmi *et al*., 2013; Gerry et.al, 2007). Despite massive and regular distribution of Insecticide-Treated Net (ITN) in Nigeria, malaria remains a major public health problem. Malaria poses a risk for 97% of the population in Nigeria, and accounts for 60% of outpatient hospital visits for the vulnerable population (pregnant women and children <5years) as well as the non-vulnerable population.

It has been identified by different scholars that malaria causes about a million deaths every year, mainly among young children and pregnant women living in different regions. (Okonko *et al*., 2012; Olasunkanmi et. al., 2013; Killen, et. al, 2007). In fact it kills more death than HIV.

Malaria is derived from Italian word "**Mal 'aria** which means "**bad air",** it has been in existence from ages even some Egyptian mummies show signs of malaria. Many world leaders had it as Abraham Lincoln had it, a professors can have it also a cleaner can be affected. This tells how terrible the disease in the country. If there is a mosquito bite and went on untreated, malaria can lead **to severe anemia, respiratory distress, brain infection, liver failure, sock and the likes.**

The use of Insecticide Treated Nets (ITN) has been pin pointed as a primary saving way out to reduce deaths from malaria, and a way of preventing childhood malaria in Africa by protecting children from mosquitoes, Killeen et al (2007)& Lim (2011). Consequently, the RBM Partnership, the UN Sustainable Development Goals signed by different world leaders in 2015 has the global target of least 80% use of ITNs by young children and pregnant women for total eradication of malaria and other communicable diseases by 2030 (Killeen, 2007). But this is almost five year into the SGDs there are a lot of inequalities in the utilization of ITNs Sub-Sahara African Countries.

For instance, malaria control in southern Africa (South Africa, Mozambique, and Swaziland) began in the 1980s and has shown substantial, lasting declines linked to scale-up of specific interventions (O'Meara,et al, 2010).

Surveys conducted in Nigeria show some improvement in the use of ITN by children but the prevalence is still low compare to other countries. DHS reports shows that there is an increase in the ITN usage by under-five children from 1.2% in 2003 to 16.6% in 2013 while malaria indicator survey (MIS) in 2010 -2015 reported that ITN utilization increases from 28.9% to 43.6% among children.

1.2 RESEARCH QUESTIONS AND OBJECTIVES OF THE STUDY

The study answers this question;

- What are the factors associated with ITN non-utilizations among under-five children in Nigeria?
- Thus, it will examine factors associated with non-use and provide recommendations to addressing the barriers to ITN utilization in Nigeria.

2. THEORETICAL FRAMEWORK

The HBM contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include perceived susceptibility, seriousness, benefits and barriers to a behavior and cues to action, (Janz& Marshall, 1984). This was used to explain behavioural concepts behind non-utlization of ITNs in Nigeria.

3. METHODOLOGY

This paper adopted a mixed method approach. This study merged People Recode (PR) and Kid Recode (KR) obtained from NDHS, 2013. The study population comprised children under-five whose mother were selected for interview. After pooling the dataset from PR from KR 27,642 children were eligible out of 31, 482. And Key informant Interview with 20 mothers with under-five children subjected to prepared interviewed guide. The data was subject to three level of analysis namely: Frequency table, Bivariate (Chi-Square) & Multivariate Analysis (Binary Logistics regression)

4. RESULTS

This study identified some factors –such as age of child, sex of child, mother's religion, mother's level of education, household wealth index, occupation of mother, marital status, place of residence

Table 1:Under-five children Characteristics and Non-use of ITN by the under-five

Background Characteristics	Who slept under ITN(%)	Who do not sleep under ITN(%)	Statistics
All	18.4	81.6	(n=27642)
Age of Child			
<1	25.3	21.5	
1	22.3	20.4	$X^2(4) = 91.58$
2	19.7	18.6	Pr = 0.000
3	17.3	20	
4	15.3	19.5	
Sex of Child			
Male	49.5	50.4	$X^2(1) = 1.40$
Female	50.5	49.6	Pr = 0.3267
Mother's Level of Education			
No Education	39.1	50.5	
Primary	21.8	18.6	$X^2(3)= 249.69$
Secondary	30.4	25.6	Pr = 0.0000
Higher	8.8	5.4	
Wealth Index			
Poor	39.6	46.7	$X^2(2)= 98.82$
Middle	22.7	18.1	Pr = 0.0006
Rich	37.8	35.1	

Mother's Religion			
Christian	**46.4**	**35.2**	**X2(2)= 225.37**
Islam	**52.6**	**64.0**	**Pr = 0.0000**
Traditional	**1.04**	**0.88**	
Decision on Health Care			
Mother	**5.9**	**4.7**	
Father	**35.3**	**30.0**	**X2(2)= 74.31**
Both	**58.8**	**65.3**	**Pr = 0.0001**
Parent's Marriage Type			
Monogamy	**73.1**	**66.7**	**X2(1)= 74.62**
Polygamy	**26.9**	**33.3**	**Pr = 0.0000**
Place of Residence			
Urban	**35.26**	**39.75%**	**X2(1)= 35.52**
Rural	**64.74**	**60.3%**	**Pr = 0.032**

Source: Authors Work adapted from NDHS, 2013.

Percentage distribution of under-fie children's characteristics and ITN utilization revealed that non-utilization of ITN was substantially high in Nigeria accounting for 81% non-use leaving approximately 19% for those using, among evenly distributed among under-five children of all ages; however, the prevalence rate and use of ITN declined as age increases. Which shows that children under age 1 mostly sleep under ITNs.

The Results from Qualitative Data which summarized the key reasons of non-use of ITNs among under-five children as reported by the mother show a new dimension to ITNs utilization in Nigeria. The environmental condition was identified as major constraints to sleeping under ITNs. Nigeria has a tropical climate with wet and dry seasons associated with the movement of the inter-tropical convergence zone north and south of the equator. Its climate is influenced by the rain-bearing southwesterly winds and the cold, dry, and dusty northeasterly winds. Weathering condition has serious hot conditions that encouraged breading of mosquitoes ditto untidy environments. A mother reported that she collected nets but couldn't use it because of fear of suffocation due to weather condition at night.

> *I have collected this net many times, but I do not like to use it because it is usually too hot even at night and I prefer using it to cover door and windows". (**Educated Mother age 38years with 3 nets received during ANC and household/street distribution**).*

> *Yes, the nets was given to me during my antenatal visits, and the nurse said I and my baby should be sleeping under it to prevent mosquito bite but I can only allowed my baby to sleep under it for the first three months, when I saw the heat I stopped it, I suffered to have this child and I do not want him to die"* (**uneducated Mother, Age 29 years old**)".

Some of the mothers of under-five children seek alternative means to prevent mosquito bite. Some of them prefer spraying their rooms with insecticide to sleeping under ITNs:

> *"I prefer spraying my room with insecticide to sleeping under the nets, I can't bear the heat"* (**Household head, Age 49 years old in a family of 4 under-five children**)".

Table 2: Logistics Regression

ITNU	ODD.RATIO	CONF.INTERV LOWER LIMIT
AGE OF CHILD		
<1 (RC)	1.00	
1	1.05	(0.96-1.15)
2	1.11*	(1.01-1.21)
3	1.27***	(1.15-1.39)
4	1.42***	(1.28-1.57)
RELIGION		
CHRISTAINITY (RC)	1.00	
ISLAM	1.33***	(1.22-1.44)
TRADITIONAL(others)	1.23	(0.90-1.70)
EDUCATION		
NO EDU (RC)	1.00	
PRIMARY	0.78***	(0.71-0.86)
SECONDARY	0.84***	(0.75-0.93)
HIGHER	0.61***	(0.53-0.71)
WEALTH		
POOR (RC)	1.00	
MIDDLE	0.81***	(0.74-0.88)
RICH	1.18*	(1.07-1.31)
MARRIAGE		
MONOGAMY (RC)	1.00	
POLYGAMY	1.17***	(1.09-1.26)
OCCUPATION		
UNPAID (RC)	1.00	
PAID	0.89**	(0.83-0.96)
PLACE OF RESIDENCE		
URBAN (RC)	1.00	
RURAL	1.10*	(1.02-1.19)

Source: Authors Work adapted from NDHS, 2013.

CONCLUSION AND RECOMMENDATIONS

Factors such as age of child, parental wealth index, religion, marriage type, education, place of residence and who decides the health care service of child in the household are found to be significantly associated with the non-use of ITNs among under five children in Nigeria. Fear of suffocation, excessive heat, and preference for in-door spraying, door and window net were also reasons for non-use of ITN by parents for under-5 children.

To achieve a significant increase in the number of under-five children who sleep under ITN, the factors associated with ITN non-use as revealed in this study should be taking into consideration in planning programmes to increase ITN use and eliminate malaria in Nigeria.