

Awareness on the use of insecticide-treated nets among women attending antenatal clinic in a tertiary health facility in South-South Nigeria

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ABSTRACT

Background: This study aimed to assess the level of awareness and use of insecticide-treated mosquito nets (ITNs) by pregnant women attending antenatal care in a tertiary health facility in Delta State in South-South Nigeria. **Materials and Methods:** This was a questionnaire-based cross-sectional study of awareness and use of ITN among pregnant women attending the antenatal clinics (ANC) of the Federal Medical Centre (FMC) Asaba, Delta State, Nigeria. **Results:** A total of 201 pregnant women were interviewed. Their mean age was 30.2 ± 5.4 years; 150 (74.6%) of the women were in the age group 25 – 34 years. Majority, 191(95%) were married, 150 (74.6%) had attained tertiary education and 137 (68.2%) were multigravidae. One hundred and seventy-eight (88.6%) women were aware that ITNs could prevent malaria in pregnancy, but only less than half 91 (45.3%) of them were using ITNs. Their major source of information about ITNs was at the ANC. There was no statistically significant association between their age group ($p = 0.974$), occupation ($p = 0.855$), marital status ($p = 0.731$), parity ($p = 0.538$), level of education ($p = 0.269$) and their usage of ITNs. **Conclusions:** Although there was a high awareness about ITNs among pregnant women, their use of ITNs was low. Massive scale-up public enlightenment and free distribution of ITNs may encourage the use of ITNs among pregnant women.

KEY WORDS: Pregnant women, malaria, Insecticide treated nets, Nigeria.

INTRODUCTION

Malaria infestation during pregnancy is a major public health problem in the tropical and sub-tropical regions of the world.¹ Every year, about 30 million women in Africa become pregnant and most of them in areas of relatively stable malaria transmission.² *Plasmodium falciparum* is the main cause of malaria burden in pregnancy. The symptoms and complications of malaria during pregnancy depends on the intensity of Plasmodium load and the level of immunity of the pregnant woman.³ Malaria is dangerous during pregnancy because it could lead to abortion, low birth weight and stillbirth, especially following repeated infestations.⁴

The World Health Organization (WHO)'s Roll Back Malaria (RBM) initiative launched in 1998 is targeted at the prevention and management of malaria during pregnancy by

using insecticide treated malaria nets (ITNs), among other measures.⁵ The use of ITNs during pregnancy in areas of stable malaria transmission reduces the overall risk of morbidity and mortality among pregnant women and their infants.⁶ Compliance with the use of ITNs has been a difficult task in sub-Saharan Africa.⁷⁻¹¹ Only a few studies from Kenya and Tanzania recorded a high rate of utilization of ITNs, largely due to massive social mobilization and awareness campaign by their respective health authorities^{12,13}. In Nigeria, the situation is different as the 2008 demographic and health survey revealed that only 5% of pregnant women utilize ITNs.¹⁴ This is despite the adopted national guideline and strategies for malaria prevention and control during pregnancy which stipulated that ITNs should be provided to all pregnant women either through the antenatal clinics or other systems in the public and private sectors.¹⁵ Studies in Nigeria and other parts of sub-Saharan Africa showed that the reasons for non compliance with the use of ITNs included poor awareness, poverty, and

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indifference.^{16,17}

The aim of this study was to assess the level of awareness and usage of ITNs among pregnant women attending an ANC facility in a State in the South-South part of Nigeria.

MATERIALS AND METHODS

This was a questionnaire-based cross-sectional study on the level of awareness and use of ITN among pregnant women attending the antenatal clinics (ANC) of the Federal Medical Centre (FMC) in Asaba, Delta State, Nigeria, between January and March 2006. FMC Asaba is a tertiary health facility which provides health care to the people of the State and neighbouring states in the southern part of Nigeria. Asaba region is made up of both urban and semi-urban areas, with a total population of 149, 603.¹⁸

The study was approved by the hospital's Human Research Ethics Committee and informed consent was obtained from the patients. The sample size used was based on a simple proportion and a prevalence of 13% from a previous study⁷. Data were collected on a pre-tested researcher-administered structured questionnaire and analysed using SPSS version 16 statistical software. Information collected included their socio-demographic data, level of awareness and usage of ITNs. Descriptive statistics was obtained for quantitative variables while frequencies and percentages were used to present categorical variables. Chi Square statistical test were carried out where applicable with the level of significance set at $p < 0.05$.

RESULTS

A total of 201 pregnant women were interviewed. The socio-demographic characteristics of the respondents are shown in Table 1. The mean age of the respondents was 30.2 ± 5.4 years with majority, 150 (74.6%), in the age group 25 – 34 years. Majority, 191 (95.0%), were married. About 75% (150) of the respondents were literate at tertiary education level. Ninety-nine (49.3%) women were civil/public servants, 53 (26.4%) were traders, while 33 (16.4%) were housewives. Majority, 137 (68.2%), of the women were multigravidae, while 64 (31.8) were primigravidae.

Ninety five percent of the respondents knew

that it was possible to prevent malaria during pregnancy. Over 88% (178) of the women knew about ITNs as a preventive measure for malaria in pregnancy, although less than half, 91 (45.3%), were actually using ITN (Fig. 1). Their main sources of information about ITNs were the ANC, 124 (69.7%), and the mass media, 28 (15.7%) [Table 2].

The association between some demographic characteristics of the respondents and their usage of ITNs is shown in Table 3. There was no statistically significant association between the age group ($X^2 = 0.22$, $df = 3$, $p = 0.974$), occupation ($X^2 = 0.78$, $df = 3$, $p = 0.855$), marital status ($X^2 = 0.12$, $df = 1$, $p = 0.731$), parity ($X^2 = 0.38$, $df = 1$, $p = 0.538$), the level of education ($X^2 = 4.03$, $df = 3$, $p = 0.258$) of the respondents and their usage of ITNs.

Table 1: Socio-demographic characteristics of the respondents

Variable	Frequency (N = 201)	Percent
Age group in years		
15 – 24	29	14.4
25 – 34	150	74.6
35 – 44	20	10.0
45 and above	2	1.0
Marital status		
Single	6	3.0
Married	191	95.0
Widowed	2	1.0
Divorced	2	1.0
Level of education		
None	4	2.0
Primary	8	4.0
Secondary	39	19.4
Tertiary	150	74.6
Parity		
Primigravidae	64	31.8
Multigravidae	137	68.2
Occupation		
Student	16	7.9
Housewife	33	16.4
Trader	53	26.4
Civil/Public Servant	99	49.3

Mean age 30.2 ± 5.4 years.

Figure 1: Respondents' awareness and usage of ITNs.

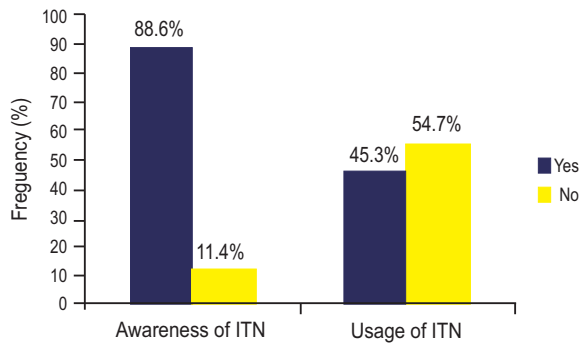


Table 2: Source of information about ITNs (N = 178).

Source	Frequency	Percent
Antenatal clinic	124	69.7
Mass media	28	15.7
Community Health workers	12	6.7
Posters	9	5.1
Internet	5	2.8
Total	178	100.0

Table 3: Some characteristics of the respondents and their usage of ITNs

Variable	Usage of ITNs Frequency (%)		χ^2	p value
	Yes	No		
Age group in years.				
15 – 24	12 (41.4)	16 (58.6)	0.36	0.945
25 – 34	67 (44.7)	83 (55.3)		
35 – 44	10 (50.0)	10 (50.0)		
45 and above	1(50.0)	1 (50.0)		
Occupation				
Student	8 (50.0)	8 (50.0)	0.78	0.855
Housewife	15 (45.5)	18 (54.5)		
Trader	26 (49.1)	27 (50.9)		
Civil/Public servant	42 (42.4)	57 (57.6)		
Marital Status				
Married	87 (95.6)	104 (94.5)	0.12	0.731
Others*	4 (4.4)	6 (5.5)		
Parity				
Primigravidae	31 (48.4)	33 (51.6)	0.38	0.538
Multigravidae	60 (43.8)	77 (56.2)		
Level of education				
None	0 (0.0)	4 (100.0)	4.03	0.258
Primary	3 (37.5)	5 (62.5)		
Secondary	16 (41.0)	23 (59.0)		
Tertiary	71 (47.3)	79 (52.7)		

*Others include single, widowed and divorced.

DISCUSSION

Many women in this study were aware that it was possible to prevent malaria during pregnancy, especially with the use ITNs. This awareness could be attributed to the high literacy rate among the women on the one hand, and the health education they received during their antenatal visits on the other hand. However, the high level of awareness did not translate into utilization of ITNs since only 91 (45.3%) were sleeping under ITN cover. This low usage of ITNs by pregnant women is consistent with other findings from others parts of the country and sub-Saharan Africa.⁷⁻¹¹

Uneven distribution of ITNs could be a possible reason for the low usage. The free distribution of ITNs in Nigeria is concentrated at the Primary Health Care (PHC) centres at the Local Government Areas (LGAs), leaving out the huge population of pregnant women in the urban areas. Although high cost of the ITNs, lack of knowledge of where to buy the ITNs from and indifferences are known to militate against the use of ITN,^{16,17,19} it is expected that since the majority of the respondents in this study were either civil/public servants or traders, they should have been able to afford an ITN, Thus the low usage of ITN is unlikely to be due to poverty but rather to carelessness or indifference. Therefore, it is pertinent that in addition to the health education given to pregnant women during their ANC visits, efforts should be made by relevant health authorities to include pregnant women attending ANC in tertiary health facilities in their free ITNs distribution list. This is because studies in Kenya and Democratic Republic of Congo showed that access to free ITNs by pregnant women increased the usage of ITNs by both the mothers and their newborn children.^{20,21}

Also in this study, the use of ITNs increased as the age and level of education of the respondents increased and, more primigravidae and married women used ITNs than their counterparts. These findings are consistent with other studies which demonstrated that higher educational attainment^{8,22,23}, marital status and parity^{8,9} were highly associated with the use of ITNs. The finding of a higher proportion of the women with both secondary and tertiary education not using an ITN, is worrisome because if the urban dwellers and the educated women population do not use ITNs, the situation

is likely to be worse in the rural areas where the women may be uneducated. Also, the low usage of ITN among the married women underscored the role of their spouses in the promotion of use of ITN in particular and family health in general.

In conclusion, there was a high level of awareness of the use of ITNs as preventive measure against malaria in pregnancy among the pregnant women attending ANC in the Federal Medical Centre, Asaba, but the use of ITNs was low. It is recommended that there should be massive scale-up of free distribution of ITNs to pregnant women by relevant health authorities if the target of the RBM is to be achieved. Mechanisms to evaluate the utilisation of ITNs also need to be put in place, especially at the level of the community.

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