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Original Article

The Determinants of Utilization of Insecticide Treated Nets Among Pregnant Women Attending Antenatal Clinic at University of Ilorin Teaching Hospital, Ilorin, Nigeria.

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ABSTRACT

Background and Objective: Malaria remains a disease of public health importance in the developing countries. The purpose of this study was to determine factors influencing the utilization of ITNs among pregnant women attending antenatal clinic at the UITH, Ilorin. Materials and Methods: This study was a cross-sectional survey of pregnant women carried out in the antenatal clinic of UITH. The subjects were selected at booking and administered questionnaire. Data were analyzed using Epi-Info software version 3.4.1 of computer. Results: The findings were that 85.2% knew about ITNs and 29.6% did not know where to obtain ITNs. About 74% did not know the cost of ITNs, and 81.5% and 79.8% were of the opinion that ITNs are used to protect against mosquito bites and effective in prevention of malaria respectively. One third (33.7%) of respondents had ever used ITNs. The reasons for non-utilization of ITNs were among others, lack of knowledge, lack of interest, unavailability and use of other methods of prevention. About half of ITNs users used it every day and only 7.9% have been using it for over three years. Statistical analysis showed that marital status, parity, and education had significant influence on utilization of ITNs, where as age and gestational age at booking did not. Conclusion: ITNs coverage is abysmally low among the most vulnerable group. There is need for government to increase enlightenment campaign and intensify advertisement on media that would inform and educate individuals about the usefulness of ITNs.

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1. Introduction

The World Health Organization (WHO) advocates a three-pronged approach to malaria control in pregnancy that includes the use of insecticide treated bed nets (ITNs), intermittent preventive treatment (IPT), and case management (treatment) [1]. In areas of stable malaria transmission in sub-Saharan Africa, ITNs are highly effective in reducing childhood mortality and morbidity from malaria [2].

Consistent use of ITNs can reduce malaria transmission by up to 90% and avert as much as 44% of all cause mortality among children under five [3]. Use of ITNs among pregnant women is associated with lower prevalence of malaria infection, fewer premature births and significant reduction in all cause maternal anaemia [4]. Even untreated nets provide protection, though ITNs are approximately twice as effective as untreated nets [5].

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Although insecticide-treated nets (ITNs) are a proven effective intervention for reducing child morbidity and mortality, coverage is still low across sub-Saharan Africa [6]. There is a recognized need to scale-up coverage of ITNs and other proven intervention in order to reach the Millennium Development Goal (MDG) of reducing child mortality by 50% by 2015 [7]. ITNs have also proven to have a beneficial impact on pregnancy outcome in malaria endemic regions of sub-Saharan Africa [8]. A recent review on community acceptance of bed nets has shown that various factors influence the use of bed nets, including cultural, behavioural and demographic factors, ethnicity, accessibility, gender relations and seasonality of Malaria [9]. Several authors have concluded that although ITNs are effective, local perceptions, acceptance and use of ITNs, as well as use of other mosquito methods, are invaluable in malaria control programmes [10].

This study was carried out to identify the determinants of utilization of ITNs among pregnant women attending antenatal clinic at UITH, Ilorin. It is hoped that the findings of this study will enable us suggest measures that will enable pregnant women in our environment to adequately protect themselves from malarial infection.

2. Materials and Methods :

The study was conducted at the maternity wing of the University of Ilorin Teaching Hospital over 4 months (April and August 2009). It is a cross-sectional study among pregnant women who attended booking clinic of the Hospital. Pregnant women with or without symptoms of malaria and irrespective of gestational age and parity were recruited to participate in the study. Interviewer administered questionnaire was used to collect data on. age, parity, LMP, educational status, gestational age estimation at booking, knowledge about ITNs, source of information about ITNs, re-treatment of ITNs, where ITNs can be obtained, cost of ITNs and its utilization. Informed consent was obtained from the respondents and they were counseled about the study.

Data obtained were entered into the computer and analysed using EPI-INFO software. The result was expressed as percentages and means with standard deviation. The level of significance using student t-test and chi-square was p-values of 0.05. The ethical approval for the study was obtained from the ethical committee of University of Ilorin Teaching hospital.

3.Results

Four hundred and six, women were selected at their first antenatal visit at the University of Ilorin Teaching Hospital maternity wing. The mean age at booking for all the study subjects was 29.0 years ± 4.8. Most of the women were in the age group 25-29 years accounting for 35.5% of the study participants while the primigravidae group formed 36.9% of the participants.

The mean gestational age at booking was 19.3weeks ± 7.0., and 59.1% booked in the second trimester. Most (60.3%) of the participants had tertiary school education, and 95.8% of the women were married.

Table 1 showed the comparison between being aware of ITN and not being aware of ITN in relation to socio-demographic variables. Awareness of ITNs in this study was 85.2% (n=346). Awareness of ITNs was highest among age group, 30-34 years. There were no significant differences between ITNs awareness or not and marital status (p=0.99), parity (p=0.68), social class (p=0.08), educational attainment (p=0.84) and gestational age at booking (p=0.88).

Table 2 presented the utilization of ITNs in relation to socio-demographics characteristics. Utilization of ITNs was 33.7% (n=137) among the study participants. ITNs utilization was higher among age group, 30-34 years in this study, there is no evidence that gestational age at booking (p=0.86) affected utilisation of ITN. Conversely, marital status (p=0.01), parity (p=0.01), and educational attainment (p=0.01) were found to be significantly related to ITNs utilization. ITNs utilization was more among respondents in their second pregnancies (46.9%). There was significant association between gravidity and utilization of ITNs (p=0.01). Among ITNs users in this study, only 51.8% used it everyday and only 7.9% have been using it for over three years.

Table 1: Relationship Between Awareness And No Awareness Of Itn In Relation To Socio-demographic Characteristics

Parameters	N	Awareness of ITNs Yes	No	X^2 and p-value
Age group				
14-19	8 (2.0)	7 (87.5)	1 (12.5)	p=0.19
20-24	59 (14.5)	45 (76.3)	14 (23.7)	
25-29	144 (35.5)	121 (84.0)	23 (16.0)	
30-34	143 (35.2)	128 (89.5)	15 (10.5)	
>34	52 (12.8)	45 (86.5)	7 (13.5)	
Marital Status				
Single	17 (4.2)	14(82.4)	3 (17.6)	p=0.99
Married	389 (95.8)	332 (85.3)	57 (14.7)	
Parity				
Primigravidae	150 (36.9)	120 (80.0)	30 (20.0)	
Secondigravidae	113 (27.8)	100 (88.5)	13 (11.5)	p=0.68
Multigravidae	143 (35.2)	126 (88.1)	17 (11.9)	
Education				
Primary	48(11.8)	40 (83.3)	8 (16.7)	
Secondary	107(26.4)	89 (83.2)	18 (16.8)	
Tertiary	245(60.3)	212(86.5)	33 (13.5)	p=0.84
No Formal	6 (1.5)	5 (83.3)	1 (16.7)	
Trimester				
1st	98(24.1)	82 (83.7)	16 (16.3)	
2nd	240(59.1)	206 (85.5)	34 (14.2)	p=0.88
3rd	68(16.7)	58 (85.3)	10 (14.7)	

Table 2: Relationship Between Awareness And No Awareness Of Itn In Relation To Socio-demographic Characteristics

Parameters	N	Utilization of Itns		X^2 and p-value
		Yes	No	
Age group				
14-19	8 (2.0)	1 (12.5)	7 (87.5)	p=0.21
20-24	59 (14.5)	15 (25.4)	44 (74.6)	
25-29	144 (35.5)	50 (34.7)	94 (65.3)	
30-34	143 (35.2)	53 (37.1)	90 (62.9)	
>34	52 (12.8)	18 (34.6)	34 (65.4)	
Marital Status				
Single	17 (4.2)	0 (0)	17 (100)	p=0.01
Married	389 (95.8)	137 (35.2)	252 (64.8)	
Parity				
Primigravidae	150 (36.9)	42 (28.0)	108 (72.0)	
Secondigravidae	113 (27.8)	53 (46.9)	60 (53.1)	p=0.01
Multigravidae	143 (35.2)	42 (29.4)	101 (70.6)	
Education				
Primary	48 (11.8)	12 (25.0)	36 (75.0)	
Secondary	107 (26.4)	27 (25.2)	80 (74.8)	p=0.01
Tertiary	245 (60.3)	98 (40.0)	147 (60.0)	
No Formal	6 (1.5)	0 (0)	6 (100)	
Trimester				
1st	98 (24.1)	31(31.6)	67 (68.4)	
2nd	240 (59.1)	82(34.2)	158 (65.8)	p=0.86
3rd	68 (16.7)	24(35.3)	44 (64.7)	

4. Discussion

Majority of the respondents (85.2%) were aware of ITNs. This is in consonance with 86.9% reported in Kilifi district, Kenya [11]; but is slightly higher than 76.4% and 61.8% obtained in Uyo and Ogun in Nigeria respectively [12, 13]. However, it is far higher than 36% obtained at primary Health Care centers' facilities within the same geo-political zone [14]. This is probably because malaria including its causes, effects and prevention which is supposed to be discussed by midwives while giving health talks in the antenatal clinic of the hospital may not be adequately going on in the rural areas. In addition following the Roll back malaria initiative (RBM) in 1998 and the United Nations Millennium declaration and Abuja declaration in 2000, there has been a lot of public enlightenment particularly concerning adverse effects of malaria in children and pregnant women, particularly in the urban areas.

Though majority of the respondents had heard of ITNs, disappointingly only 33.7% of them had ever used them. This is however similar to findings obtained in other Nigerian studies [12, 14, 15]. On the contrary, Abebe and Teshome et al [16] reported overall ITN distribution and utilization of 97.6% and 81.6%, respectively in Ethiopia. Also, Ngoroge et al [14] reported ITNs utilization of 70.5% in Kenya.

The most common reasons for non-utilization of ITNs were unavailability, lack of interest, high cost and lack of knowledge. This is similar to reports from other African studies [11-14, 17]. Hence in-order to ensure that most pregnant women have access to and consistently use ITNs which currently cost about $16-$21 in Nigeria, Government and other stakeholders including those in the private sector should collaborate effectively and ensure ITNs are available and distributed free of charge or at highly subsidized rates to pregnant women in all antenatal clinic outlets.

In this study, socio-demographic variables had no influence on awareness of ITNs. This has been reported in a similar study with in the same region [14]. However, positive correlations between awareness of ITNs and literacy level have been demonstrated in Kenya study [11]. Also, marital status, parity, and literacy level were strongly related to ITNs utilization. On the contrary, age and gestational age at booking had no influence on ITNs utilization. This is similar to findings of Musa and Salaudeen et al [14] from the same region.

From this study, among ITNs users only 51.8% used it everyday and only 7.9% have been using it for over three years. This result is disturbing considering the fact that adequate malaria prevention entails regular use of ITNs. Irregular use of ITNs could encourage the development of resistant mosquitoes' strains.

5. Conclusion

These results suggest that socio-demographic characteristics of pregnant women at booking have variable influences on ITNs awareness and utilization. Also, despite high level of awareness of ITNs, utilization is very low. To stem this tide, there is need to involve the mass media in community enlightenment programs particularly at the grass root level. Government and other stakeholders should strive and ensure ITNs are distributed at no cost or at highly subsidized rates to pregnant women in all antenatal clinic outlets. Respective organizations involved in malaria prevention should ensure health staffs involved in maternity care have regular updates on the current trends in malaria prevention strategies. Health workers should also reinforce health education messages on the importance of ITNs during antenatal clinic.

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