Factors Associated With Acceptability and Use of Insecticide-Treated Bed Nets among Women of Reproductive Age in Andoni Local Government Area, Rivers State, Nigeria

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Abstract

This study investigated 'factors associated with acceptability and use of insecticide-treated bed nets (ITNs) among women of reproductive age (WRA) in Andoni LGA of Rivers State, Nigeria. It was aimed at identifying the influence of social class and prevailing price on, along with belief system hindering, ITN acceptability and utilization. The study also determined the relationship between ITN availability and its utilization together with proportions of utilization in wet and dry seasons as well as the human population group most preferably protected against malaria using ITNs. It was a cross-sectional study design and multistage sampling procedure was applied. Structured questionnaire, investigators' direct observations of ITNs with their application and oral interview of key informants were used to obtain data. The acceptability of free ITNs was very high (94.8%) whereas utilization was quite low (10.7%). These WRA could give preference to the most vulnerable group (36.9%) in protection against malaria using ITNs. Some factors noted as affecting ITN acceptability and utilization include scarcity, high cost, belief system, lower social class, low income and unawareness. A social marketing of ITNs should be embarked upon by the appropriate Government Agencies and non-governmental organizations on the use and importance of ITN especially at the rural areas. The ITN instrument should be made readily available for and accessible to the rural populace with augmentation of existing level of distribution. The prices of ITNs should be made affordable for these lower socio-economic class most of whom dwell in the interior localities. International donors should step-up their assistance for malaria prevention and control.

KEYWORDS: Factors, acceptability, utilization, ITN, WRA, prevention, malaria, Andoni LGA.

INTRODUCTION

Mlaria is a parasitic, protozoan infection of man caused mainly by the *Plasmodium species* viz *P. falciparum*, *P. vivax*, *P. malariae* and *P. ovale*. These are transmitted through the bite of infective female anopheline mosquito while taking a blood meal[1-3]. Malaria is a disease of public health importance with a worldwide distribution.[4]

It has been reported that malaria remains one of the most prevalent and serious diseases in the world with endemic transmission occurring in 102 countries that together contain half of the world's population.[2,5] These authors added that this endemic disease is found in parts of Africa (including Nigeria), Asia, Central and South America, where environmental factors like temperature, humidity and standing waters support the breeding of mosquitoes and where there is close contact between mosquito

and man. According to the Federal Ministry of Health (FMOH) the level of endemicity in Nigeria is commonly and clearly classified as holoendemic and stable since it is intensely and perennially transmitted in all parts of the country although with greater intensity in the wet than dry seasons.[6]

The effect malaria exerts on any population is largely governed by its epidemiological pattern of either stable or unstable malaria.[5] Kabore reports that malaria still remains one of the general challenges in parasitic disease both in terms of prevalence and in the amount of morbidity and mortality it causes.[7] It has been estimated that 300 —500 million clinical cases of malaria occur globally each year with 2—3 million deaths annually mostly among children under five years old. Furthermore, 90% of the deaths comes from tropical Africa where one in five young children who died, die yearly from direct or indirect effect of malaria infection.[2,6-11] In the same vein, malaria burden has been associated with low productivity, underdevelopment and poverty.

Following drastic increase of malaria infection in recent decades, the roll back malaria (RBM) campaign was launched in 1998 in Africa.[12] RBM aims at reducing malaria morbidity and mortality as well as its other debilitating effects to half by the year 2010 and further ensuring that by 2030 malaria will neither be a major contributor to mortality and morbidity nor of adverse socio-economic consequences in Africa and Nigeria in particular.[7] On 14th May, 2003 Nigeria launched a series of RBM interventions including the insecticide-treated nets massive promotion and awareness campaign (IMPAC), use of pre-paid drugs (PPD) and intermittent preventive treatment (IPT) of malaria in pregnancy.[13] Therefore, the use of insecticide-treated bed nets (ITNs) with appropriate re-treatment, and improved, proper environmental management constitute a panacea to reducing malaria burden.[14]

SUBJECTS AND METHODS

This study has a target population of 7,365 women of reproductive age (WRA)[15] from the study area, Andoni LGA two communities of Ngo Town and Oyorokotor Fishing Port. The study design applied is a cross-sectional survey. A sample size of 400 was taken; and the variable on focus is 'ITN acceptability and utilization'.[16,17] Multistage sampling procedure was applied and a 26-item structured questionnaire was the instrument for data collection. The data obtained in 2004 were analysed including use of simple proportion.

RESULTS

The majority (41.6%) of our subjects (respondents) earned annual income of N21,000 – N90,000 while 46.7% of them were without formal education. The respondents' preference for best method of malaria prevention include use of ITNs (21.7%) and prophylactic anti-malaria drug intake (21.4%), both choices being quite close.

The higher social classes IV & III were noted to have increased willingness to buy ITN (48.2%). We also observed that the acceptability of regular-sized ITN at prevailing price of N600 – N900 was positive from 53.1% of our subjects. Low income status did not out-rightly prevent ITN acceptability as 279 (69.2%) respondents are in support.

Similarly, acceptability of free ITN was overwhelming (94.8%). But 5.2% of our subjects would refuse free ITN based on 'belief system'. In the same vein, 22 out of 346 subjects that could not use ITN took such decision based on 'belief system'.

The use of ITNs by our respondents (10.7%) was quite low. Reasons for non-utilization of ITNs are as shown in Fig. 1 below. Considering seasonal application of ITN revealed that 78.8% of our subjects would do so in wet than dry seasons. Conversely, respondents using ITNs strictly frequent (47.3%) and occasional (46.6%) were approximately at same level. The research showed that 0-4 years vulnerable group (44.7%) was most preferred for protection against malaria using ITNs. See Fig. 2.

DISCUSSION

The closeness of prophylactic drugs to use of ITNs for prevention of malaria is not unconnected with the usual view of the populace using drugs to solve any health problems. The WRA in our study identifying ITN utilization as the best method of malaria disagrees with the report of Kello-Ogojo[18] in Uganda which showed low level (4.1%) of awareness about insecticide-treated materials and their use as malaria preventive measure.

Our subjects' high acceptability of free ITNs (94.8%) supports Alaii et al study on "perceptions of bed nets and malaria prevention by mothers" at Asembo in Western Kenya who also observed a high acceptability of free ITNs. In this study we observed that the acceptability of ITNs at prevailing price of N600—900 for regular-size type reduced to 53.1%. This is related to our finding that

higher social classes IV & III have more willingness to buy ITNs (48.2%) compared lower social classes II & I (17.2%). Nevertheless, low income did not prevent acceptability of ITNs as 279 (69.2%) of respondents affirmed.

On the other hand, the use of ITNs by our subjects was very low (10.7%). This low level agrees with FMOH study[12] in which the level of use of ITNs was also low (0—22%). Similarly, Korenromp et al in their work on "mosquito net coverage for malaria control in Africa" observed that use was often lower than possession of nets.[20] The 346 (86.5%) of our subjects not using ITNs allude to some factors as the reasons. These include hot weather, dirty product, high cost, scarcity, belief system, 'not seen ITN yet' and "not heard of ITN before".

Our subjects who used ITNs frequently or strictly daily were in support of Alaii et al view emphasizing that ITNs be used every night all year-round for maximum protection against malaria. It is noteworthy that the vulnerable population group most preferred by these respondents for protection against malaria using ITNs was the 0—4 years.

CONCLUSION AND RECOMMENDATIONS

Malaria still remains a leading killer disease developing African countries like Nigeria. Applying ITN advantages for prevention shall reduce the devastating toll of the disease. This study determined a high acceptability but low utilization of ITNs among women of reproductive age in Andoni LGA. The major reasons affecting acceptability and use of ITNs adversely include non-availability, high cost, and

unawareness of, as well as belief system about, insecticide-treated bed nets.

A vigorous health education on use and maintenance of ITNs should be stepped-up. The ITNs should be made readily available and accessible to all stakeholders. The product should be affordable so that the lower socio-economic persons could obtain it for use. International donors should continue on their partnership with African countries to control malaria. Efforts should be made to ensure that the existing channels of ITN distribution to the vulnerable groups are strictly maintained and adequately monitored to avoid adulteration of the product or chemical for re-treatment.

DECLARATION

We hereby attest to the fact that this research, "Factors associated with acceptability and use of insecticide-treated bed nets among women of reproductive age in Andoni Local Government Area, Rivers State, Nigeria" is an original work carried out by us. We also declare that at the time of this study in 2004 at the south-eastern Niger Delta there was no similar work from the area neither nor such study seen in any known publication.

ACKNOWLEDGEMENT

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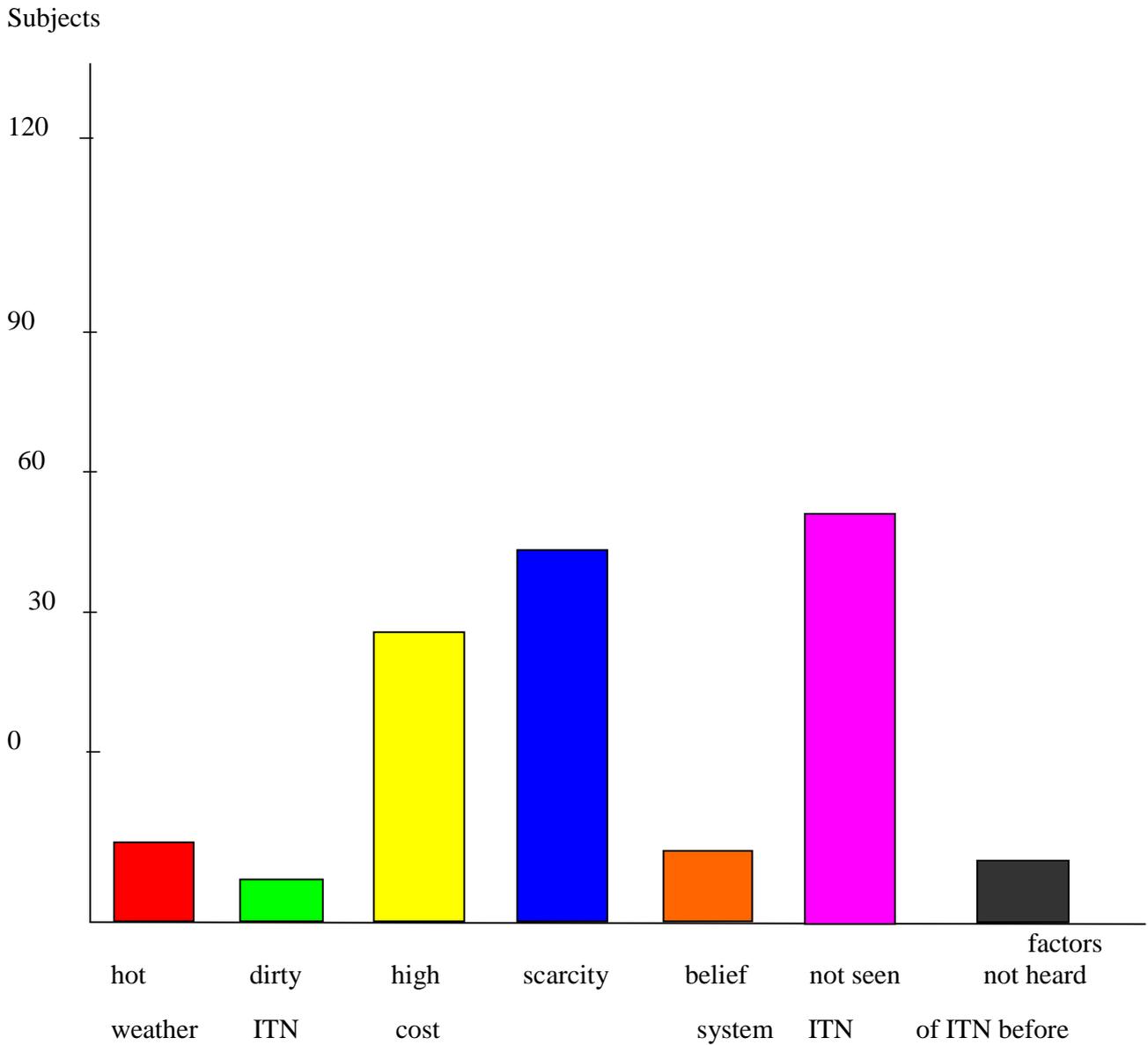
Fig. 1: Factors affecting non-ITN utilization in Andoni LGA, 2004.
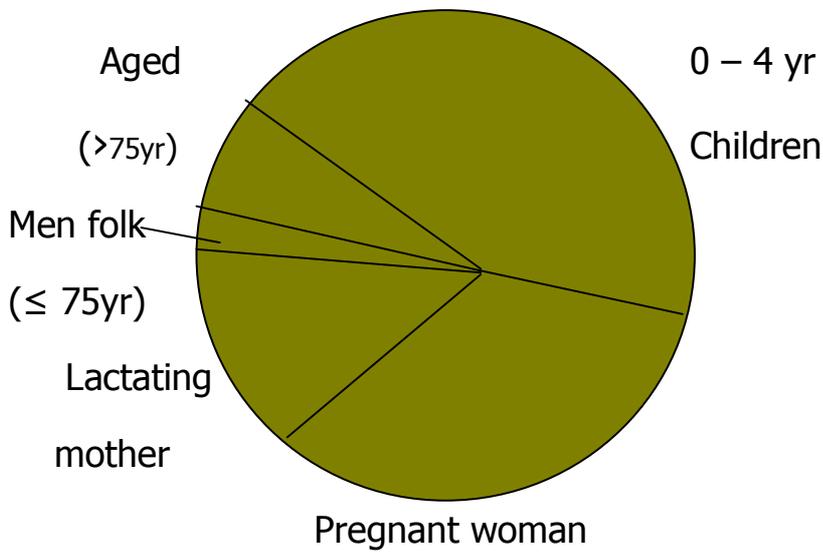
Fig.2: Respondents' opinion on groups most protected against malaria using ITNs in Andoni LGA, 2004.