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Knowledge and treatment seeking pattern of malaria infection in Abakaliki, Ebonyi State

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ABSTRACT

This survey assessed the knowledge and treatment-seeking pattern of malaria infection in Abakaliki, the capital of Ebonyi state. Three hundred and two individuals greater than 18 years old and who had malaria in the previous twelve months took part in the survey. Within the study population, 46% identified mosquitoes as the source of malaria and 73% wrongly believed that mosquitoes do not transmit malaria. Only 22% of the study population used insecticide treated bed nets (ITNs). In the treatment of last infection, 82% self medicated themselves while 18% sought the experience of a health care worker. The study revealed a poor knowledge malaria etiology and extensive use of self-treatment in malaria treatment. Interventions aimed at educating this population on home management of malaria should be explored as this will help in combating malaria.

Keyword: Malaria, knowledge, treatment-seeking-pattern, Abakaliki, Nigeria

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INTRODUCTION

Malaria, a curable disease remains a leading cause of morbidity and mortality world-wide, especially in pregnant women and children, and particularly in tropical Africa, where at least 90% of the malaria deaths occur [1]. In Malaria endemic countries in Africa, it causes around 20% of all death in children less than 5 years, 25-40% of all outpatient visits and 20-50% of hospital admissions are for malaria [2]. Malaria remains the major cause of mortality and morbidity in Nigeria [3]. Malaria has severe economic implications. It has been estimated to cause a reduction of 1.3% in the annual per capita economic growth rate of malaria endemic countries and the long term impact of this is a reduction of the GNP by more than a half [4]. This is apparent in absenteeism from school and loss of work days due to malaria infection. Of more economic consequence is the inability to farm for rural dwellers that rely solely on farming as their means of livelihood.

Malaria scourge in Nigeria is worsened by the growing resistance to antimalarial medicines and most importantly, the lack of provision of prompt and effective treatment for those in need. New international initiatives are enhancing the need for independent norms and standards [1]. These norms and standards, although guided by internationally recognized strategy have to capture the uniqueness of the locality in which it is being implemented and at the same time achieve a balance between two essential purposes; firstly that all populations at risk have access to prompt treatment with safe, good quality, effective, affordable and acceptable antimalarial drugs; and the approach should encourage rational drug use of currently available antimalarials in order to avoid unnecessary selection pressure favouring the development of drug [1].

Information on the level of knowledge and health seeking behaviour of majority of Nigerians will aid successful planning and implementation of malaria prevention policies and would be necessary to define which effective and affordable drug can be provided safely to satisfy the health care needs of the majority of Nigerians. There is therefore a need to discern the level of knowledge Nigerians have of malaria and how and where the majority seek for treatment when they have malaria in the light of their meager economic resources. This study aimed at assessing the knowledge of etiology and symptoms of malaria in a study population in Abakaliki, the capital of Ebonyi state in Nigeria. It also examined the treatment-seeking pattern of this population.

METHODS

Study area and population

The study was carried out in Abakaliki, the capital of Ebonyi State with a population of about 1.7 million people. Agriculture is the major industry in the State. Eighty five percent (85%) of the population are estimated to earn their living form agricultural activities. The city is rated as one of the zones with the highest incidence of malaria in the country. Abakaliki has two tertiary health institutions and a secondary health care centre. There are few private clinics and pharmacies. In addition, there are many patent medicine stores; drug stores managed by non-registered pharmacists.

Study design and data collection

This community-based, descriptive survey was conducted from April to September, 2008. Individuals who had previously been infected with malaria within the last twelve months were included in the study. Only adults from 18 years and above took part in the survey since they could give reliable information. The questionnaires were given out to participants who wanted to participate in three different markets in Abakaliki. Closed-ended and some open-ended questions were used in the survey instrument. It consisted of 30 questions and was divided into five sections which were; demographic characteristics, knowledge of malaria, prevention of malaria, number of previous malaria infections and treatment of last malaria infection. The items used in the questionnaire to assess some of the outcome variables were obtained form professional literature. A pilot survey with 25 individuals was conducted in March, 2005. Since the pre-testing did not result in major modification of the instrument, the results were included in the final study. The questionnaire was self-administered by the majority of the respondents. The questions were read out and explained in native language for the illiterate ones. Informed consent was obtained. An average of 20 minutes was used by each

individual to complete their questionnaire while it took close to 45 minutes to administer the questionnaire to the uneducated respondents. A total of 302 individuals took part in the study.

Data analysis

Statistical analyses were carried out using SPSS for Windows (version 10; SPSS, Chicago, IL). Data were presented in frequencies or percentages. All group means were reported with their standard deviation. The chi-square test was used to test for association among groups. Sub-group analyses were carried for gender, occupation (traders/farmers vs. teachers/civil servants) and education (primary school vs. more than primary school). A significance level of 0.05 was used.

RESULTS

Characteristics of study population

Three hundred and two individuals took part in the study. The survey questionnaire response rate was 88%. Fifteen questionnaires were excluded from the study either because their malaria infection occurred prior to the past twelve months or because they did not fill their questionnaire well. The majority of the population (50%) had completed primary school, 36% had secondary school education while 14% of the individuals were university graduates. Many of the respondents were either traders (39%) or farmers (35%). Details of the characteristics of the study population are presented in Table 1.

Knowledge of Malaria

Most of the individuals (80%) were familiar with malaria infection. Forty six percent of the respondents (46%) identified mosquitoes as the source of malaria. This was not found to vary significantly with gender, occupation and education. However, majority of the study population (73%) wrongly believed that mosquitoes do not transmit malaria from one person to another. Respondents with more than primary school education were less likely to believe in this compared those with primary school education ($p < 0.01$). Sixty two percent (62%) of the population incorrectly believed that malaria infection could be contracted by drinking dirty water. This belief was found to be dependent on level of education as individuals with more than primary school education were less likely to believe in it compared to those with only primary school formation ($p<0.001$). Out of the total population, majority (79%) asserted that they know when they have malaria. Fever (74%), headache (54%), chills (73%), rigor (59%), vomiting (50%) and body pains (39%) were commonly reported symptoms of malaria. The majority of the population (48%) believed that the best treatment for malaria is native/herbal treatment. This belief was found to be significantly associated with farmers/traders compared to teachers/civil servants ($p < 0.05$). Thirty percent (30%) of the respondent stated that antimalarial tablet was appropriate for treatment and 22% chose injections as the best remedy for malaria infection.

Among the study population, analgesics, antipyretics and vitamins were seen by the majority (64%) as necessary in the treatment of malaria while 36% of the population thought otherwise. Fifty three percent (53%) of the individuals incorrectly asserted that pregnant women should not be treated when they have malaria. Respondents with more than primary school education were less likely to believe in this compared to those with primary school education. ($p < 0.01$).

Prevention of Malaria Infection

Means employed by the respondents in preventing malaria infection were stated as; insecticide treated bed nets (22%), ordinary net (5%) and mosquito coils (38%). Thirty-five percent (35%) do not use any preventive strategy.

Treatment of Last Malaria infection

The respondents were asked to recall under one year duration, the time of their last malaria infection. The mean time since the most recent infection was 6.5 ± 4.1 months. In the treatment of last infection, 82%

self medicated themselves while 18% sought the experience of a health care worker. This was not found to vary with level of education and occupation. Out of the 45 persons (i.e. 18%) that sought health professionals for treatment, 15% went to a health centre, 4% visited a private clinic, and 8% went to a pharmacy while 14% went to patent medicine store for treatment.

Amongst the 205 individuals of the study population that employed self-medication (i.e. 82%), 11% procured their medications from a pharmacy, 20% got their medications from an open drug market, 28% from a patent medicine store, while the majority (41%) got their medications from herbal stores. In this subgroup, only 23% (47 persons) took full dose of their medications. Also 52% of the individuals (130 persons) in this subgroup stated that their medication was ineffective. Mean delay before presenting to health care among these persons was 5.9 ± 8.5 days. Forty of the individuals were not able to seek professional health care because of lack of money. Thirty-six persons stated lack of transport as the barrier for the delay. The rest (53 individuals) felt that their symptoms were mild and could manage without going to hospital.

DISCUSSION

This study revealed little knowledge of malaria etiology among the respondents. This finding is consistent with other studies in Nigeria. Amzat reports that 71.9% of market women of Bodija in Ibadan do not know how malaria is transmitted or whether it can be transmitted[5]. Another study in Nigeria observed that there are still several points of overlap in etiological attributions in Nigeria which include mosquitoes, overwork, sun exposure, dirty water, eating red palm oil, intense heat etc [6]. The manner in which malaria is perceived has an important corollary in malaria management. Perception of disease is related to a person's social role and expected behaviours which in turn shape both conduct and ability to respond to disease [7]. Inappropriate etiologic perception and elusive mode of transmission found in this study poses major setback in malaria prevention and control. These may cause delay in seeking appropriate treatment, leading to unnecessary malaria complications.

Our study population demonstrated a fair understanding of malaria symptoms, which has an obvious importance in malaria control. Majority of our respondents prefer native/herbal medicines for treatment of malaria infection. In a similar study in Guatemala, 50% of the study population was reported to prefer native/herbal treatment [8]. Also, a good number of the respondents favor the use of injections for malaria treatment. This practice is common in the country and health providers often resort to the use of antimalarial injections to satisfy patients who have misconception that injections work better than tablets. Drug control agency in Nigeria i.e. National Agency for Food and Drug Administration and Control (NAFDAC) through media campaigns is aggressively correcting this misconception.

In our study population, many people (64%) do not deem analgesics, antipyretics and vitamins as necessary in the treatment of malaria. This has important consequences especially when many people in Nigeria, employ self-treatment. More importantly is the large number of the respondents that felt that pregnant women should not be treated when they have malaria. This belief has been found to exist in many countries since the bitter taste of chloroquine is often associated with the bitterness of many traditionally used abortifacients [9]. Considering the fact that pregnant women are among the group that bears the greatest burden of malaria infection, it makes it worrisome and necessary for certain interventions to be put in place to correct this misconception.

Use of effective preventive strategies against malaria infection is not wide spread. Insecticides treated bednets (ITNs) is the major preventive measure advocated by Roll Back Malaria. Children under 5 years of age, pregnant women and people living with HIV/AIDS are special groups most in need of ITNs. Since the launch of ITN at the Abuja Roll Back Malaria Summit, its availability and utilization are still not widespread. A health survey conducted in Nigeria in 2003 reported that many have not heard of ITNs, only 12% of household reported that they own at least one net while only 2% of household reported that they own an ITN as at 2003 in Nigeria [10]. Although there seem to be a step up on ITNs distribution when the result of the present study is compared with the previous study cited above, there is still need for improvement. Effective approaches for distribution of ITNs need to be articulated and more widely promoted.

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Self-treatment was found in our study to be widely used by the study population. The result obtained in this survey compares well with some other studies. Self-treatment with antimalarial is stated to be prevalent in most malaria endemic countries. It has been estimated that more than half of the world's antimalarials are consumed outside the public health sector [11]. A review of mothers' malaria treatment seeking behaviour in rural south-western Nigeria revealed that more than 80% of malaria episodes received treatment outside of the existing government healthcare system [12,13]. Further analysis of the study population that employed self-medication in our study revealed that very few of them completed the full doses of their medication. Half of the population that employed self-treatment also experienced ineffective therapy. This might be due to wrong diagnosis or inappropriate use of antimalarials. RBM advocates home management in areas of high malaria transimission particularly rural Africa and especially for children under 5 years [14]. Home management is one of Nigeria's adopted control strategy. However, there are barriers towards proper utilization of home-management as observed in this study. These include delays in recognition of symptoms and treatment seeking, and non adherence to the drug regimen. Helping caregivers to overcome these and other barriers to prompt and effective treatment of malaria is of particular importance in Nigeria. Furthermore, innovative implementation researches exploring ways of delivering prompt treatment with effective, affordable and acceptable antimalarial drugs especially to the poorest groups in the country seems necessary.

CONCLUSION

This study revealed a poor knowledge of the etiology of malaria and extensive use of self-treatment in malaria treatment. Education on malaria prevention and home management targeted at the grassroots seem imperative.

Table 1: Characteristics of Study Population (n=250)

Characteristics			Percentages (Frequency)
1. Gender	Male		40% (100)
	Female		60% (150)
2. Age (yr)	18-40		51% (118)
	40-60		31% (73)
	60-Above		18% (42)
3. Level of Education	Primary School		50% (125)
	Secondary School		36% (90)
	Tertiary Education		14% (35)
4. Occupation	Farming		35% (88)
	Teaching		4% (10)
	Civil Servants		18% (45)
	Trading		39% (97)
	No response		4% (10)
5. Marital Status	Married		73% (183)
	Single		27% (67)
6. Income per month	Naira	*US dollars	
	0 – 5000	0 - 42	24% (60)
	5000 – 20,000	42 – 167	32% (80)
	20,000 – 50,000	167 - 417	30% (75)
	50,000 – Above	417 - Above	14% (35)

*US $1 ≈ Naira 120

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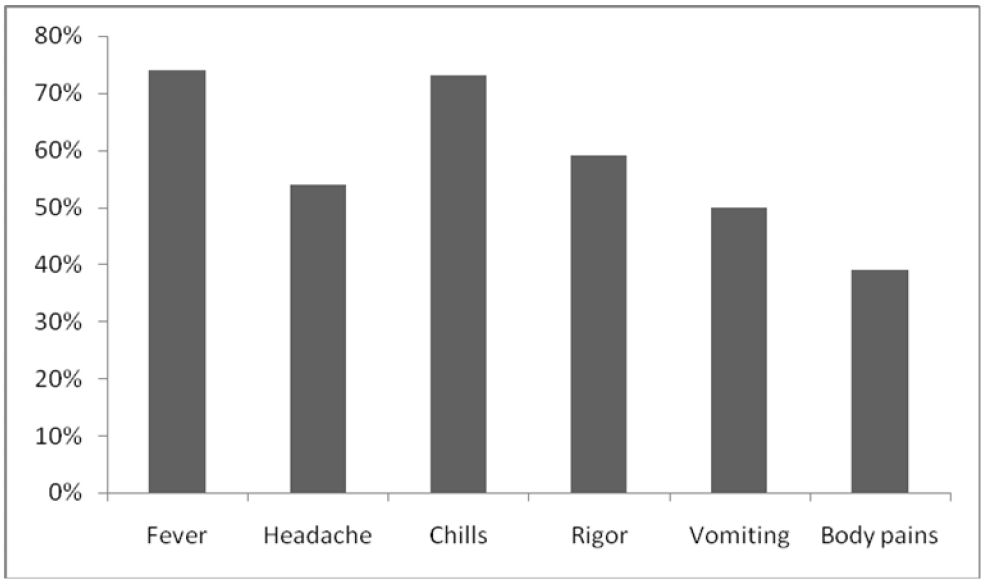
Table 2: Knowledge of Malaria (n = 250)

Characteristics	% (Frequency)
1. Mosquitoes, source of Malaria infection	46% (155)
2. Mosquitoes cannot transmit malaria from one person to another	73% (183)
4. Knowledge of malaria infection	79% (198)
5. Best treatment for malaria	
Herbs	48% (120)
Antimalarial tablet	30% (75)
Injections	22% (55)
6. Analgesics, Antipyretics and Multivitamins are not necessary for malaria treatment	36% (90)
7. Pregnant women should not be treated	53% (133)

Figure 1: Symptoms of malaria as reported by respondents (n = 250)



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