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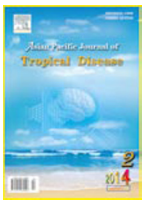

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Community knowledge and practices as regards malaria in Ilorin City: implications for the elimination plan of the National Malaria Elimination Program

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ABSTRACT

Objective: To examine malaria-related knowledge and practices among residents in Ilorin City to guide forthcoming malaria elimination action of the recently restructured Nigerian National Malaria Elimination Program.

Methods: Community-wide cross-sectional study was conducted in June 2012 using pretested structured questionnaire and interview schedule to collect information on perception, prevention and treatment of malaria among the residents.

Results: Majority of the respondents attributed malaria to mosquito bites and prevented the disease through multiple means including the use of long-lasting insecticidal nets (60%), insecticide sprays (54%) and mosquito coils (48%) alternatively. All the respondents spraying insecticides in the bedrooms shortly before bed time stayed outdoors during night hours. Fifty three percent of the respondents treated the last malaria episode at the hospital/clinic, and the remaining (47%) employed self-medication. Only 6.1% of those who engaged in self-medication used artemisinin combination therapy drugs.

Conclusions: Combined use of long-lasting insecticidal nets and insecticide sprays call for investigation of behavioural and physiological insecticide resistance in the mosquitoes present in this area. Night time outdoor staying behaviour mandated by spraying of insecticides and possible switch of the vectors to bite outdoor at early night hour also necessitate incorporation of outdoor mosquito control into the malaria elimination plan for this locality. Likewise, observation of self-medication in spite of high literacy levels implies that campaigns against such practice may not yield the desired result unless quality healthcare service is made affordable and accessible to all.

1. Introduction

Recent fall of malaria mortality rates by 33% in the World Health Organization African Region has been encouraging various anti-malaria programs and may have prompted the current efforts towards elimination of the disease around the world[1]. In Nigeria for instance, malaria control efforts of the Federal Government and its partners are now been followed-up upon by the recently renamed and restructured Federal Ministry of Health's anti-malaria program to attain malaria elimination.

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However, realization and sustenance of malaria elimination can only be achieved through sound community understanding of the disease given that it requires great focus on malaria transmission foci at a local level[2]. Also, the continued failure to consider community malaria-related socio-cultural factors which may be at variance with standard control measures accounts for the sustained prevalence of malaria in Africa[3]. Phenomenal outcomes such as dramatic reduction of malaria prevalence in Zanzibar from 40% in 2005 to 0.2%-0.5% in 2011/2012 (Tanzanian Health Ministry Information System, 2012 unpublished report) were achieved through understanding and redirection of residents' behavioural patterns as a strong support for the control measures administered[4]. It follows that malaria control measures need to revolve around the study of malaria-related knowledge and practices of each

target community to achieve malaria elimination. Proper understanding of how the people prefer to prevent and treat malaria is required to determine the appropriate measures for malaria elimination in the community. Besides, reports of malaria-related knowledge, attitudes and practices of members of a whole Nigerian community are scanty in literature compared to those regarding only a certain category of people in such communities[5-12].

This study therefore investigated the knowledge and practices of residents in Ilorin, a north central Nigerian City, as regards malaria prevention and treatment in order to fill the existing information gap and also provide baseline information for the forthcoming malaria elimination program.

2. Materials and methods

2.1. Study area

Ilorin is located in north central region of Nigeria (8°30′ N and 4°35′ E). It serves as the capital city of Kwara State, covering an area of about 150 km^2 with an estimated population of 766 000 people[13,14]. The city is traditional in its entirety because of the domineering culture of its people that place core traditions, religion and old historical traits over every aspects of life[15]. Ilorin metropolis was considered as a community for this survey.

2.2. Study design and data collection

Descriptive cross-sectional survey approach was adopted for the study. Two hundred and eighty households in a total of 103 areas within the metropolis were randomly selected in June 2012.

Details of sample size determination are available elsewhere[16]. The sample unit for the study was the household and the head or his representative was requested to respond to a structured questionnaire administered by a team of pre-trained interviewers. The respondents were asked about their socio-demographic characteristics, knowledge and perception of malaria, malaria symptoms, the cause of malaria, period of last malaria episode, frequency of malaria occurrence, household method of malaria prevention, access to malaria education messages, knowledge of the source of mosquitoes and treatment seeking behavior.

2.3. Data analysis

Descriptive analysis was applied while Pearson *Chi*-square was used to determine the statistical significance of key observations and differences seen in cross tabulated variables using EPI Info 2007. Level of statistical significance was set at $P<0.05$.

2.4. Ethical consideration

The study was approved by the Nigerian Institute of Medical Research Institutional Review Board. Informed consent of each household head was obtained before they were enlisted in the study. The team of interviewers requested the household heads to be the respondent. In situations that the heads were not available, an adult representative who gives the informed consent also served as the respondent.

3. Results

3.1. Socio-demographic characteristics of respondents

Two hundred and fifty eight questionnaires were finally selected for analysis (7.8% non-response rate). In the 258 respondents, in terms of age, 136 (53%) were 30 years old and above, 103 (40%) were 25-29 years old and 19 (7%) were 18-25 years old. Most of the respondents were males [160 (62%)], while some others 98 (38%) were females. A total of 155 (60%) of the respondents were married while a sizeable number [91 (35%)] were single. Two hundred and three respondents (78%) had acquired tertiary education and only two people did not acquire formal education. Most of the respondents were engaged in formal jobs (48%) while a good number were students (23%), traders (13%) and skilled self employed workers (9%). Two religious denominations, Muslims (60%) and Christians (40%) were observed among the respondents while majority (62%) of the households was within the size range of 5-9 (Table 1).

Table 1
Socio-demographic profile of respondents.

Variables		*n*	%
Sex	Male	160	62
	Female	98	38
Age	18-25	19	7
	25-29	103	40
	30 and above	136	53
Household size	1-4	66	26
	5-9	159	62
	⩾10	33	13
Marital status	Single	91	35
	Married	155	60
	Divorced	2	1
	Widowed	7	3
	Separated	3	1
Education	Illiterates	2	1
	Primary	2	1
	Secondary	51	20
	Tertiary	203	78
Occupation	Formal jobs	124	48
	Student	60	23
	Trader	34	13
	Self-employed	23	9
	Farmer	7	3
	Others	10	4
Religion	Muslims	154	60
	Christians	104	40

3.2. Cause of malaria, breeding sites of mosquitoes and malaria preventive measures

Two hundred and fourty respondents (93%) attributed the cause of malaria to mosquito bites while some others mentioned cold weather (6%) and bad drinking water (9%)