

## PERCEIVED CAUSES OF MALARIA AMONG MARKET WOMEN IN IBADAN, NIGERIA

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### ABSTRACT

*Malaria is a major public health problem in sub-Saharan Africa. About 300 million cases occur each year resulting in, at least, one million deaths in Africa. A life threatening parasitic disease transmitted from person to person through female Anopheles mosquito bite is responsible for up to 50% of outpatients' attendance and 40% admission in Nigeria. One major problem facing prevention and control of malaria in Nigeria is delay in health seeking due to wrong perception of the disease among others. This study therefore examined how people perceive the cause of malaria. Both qualitative and quantitative data were collected among Bodija market women in Ibadan. A total of 501 questionnaires were administered to randomly selected market women and 10 in-depth interviews were conducted among selected nursing mothers. Data showed that certain misconceptions exist about causes of malaria as less than half of the respondents could link malaria to mosquito. Majority of the respondents did not know the category of people who are vulnerable to malaria while 13.8% were of the view that fair complexioned people are more vulnerable. Headache was considered as a major symptom of malaria. Level of education influenced how respondents defined malaria. Qualitative data revealed that Malaria could result from too much exposure to sun and close interaction with Malaria infected person especially among children. It is, therefore, concluded that negative perception of malaria disease still exist and this has major implication for health seeking behaviour in society where home remedy is the basic source of therapy.*

### INTRODUCTION

Malaria scourge is a major public health problem in Sub-Saharan Africa. It is a life-threatening parasitic disease transmitted through the bite of a female Anopheles mosquito (Wellcome, 2002). More than 300 million cases of malaria occur annually and are responsible for at least a million deaths with the greatest toll on Africa accounting more than 90 percent of the cases (Wellcome, 2002). People at risk include pregnant women,

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children, non-immune travellers, refugees, displaced persons or labour forces entering into malaria endemic area. Lack of accessibility to health care services especially in the rural areas aggravates the burden of the disease in Africa. Approximately 10% – 15% of hospital admissions and 20% – 40% of outpatient consultations in Africa are due to malaria (Abdulkareem, 2001). A disease that usually strikes at harvest time, affects productivity, leading to food shortage and low productive capacity. Its impact on the economy is evident as it costs Africa more than US \$ 12 billion annually. As a poor family in Africa may spend up to 25% of its income on malaria prevention and treatment (WHO, 2000), and therefore play significant roles among other reasons slowing down economic growth. In Nigeria, over 50% of outpatients and 40% of hospital admission were due to malaria (Mosanya, 2000). It is also responsible for 30% of child mortality and 10% of maternal mortality in Nigeria (Abdulkareem, 2001). These figures may not be accurate yet they provide an insight to the extent of the disease in Nigeria, where documentation practice is a poor.

Illness recognition, definition and management procedures depend on the general axiom of health and illness within a people's culture (Kleinman, 1981). In a study among 883 mothers in Kilifi, Kenya, Mwenesi *et al* (1995) observed that majority of the mothers spontaneously mentioned malaria as a childhood illness that presents with fever. For them malaria is a mild illness, inevitable and transients in nature, caused by natural processes; not preventable but treatable with herbal remedies. This has implication for prevention since mothers viewed it as mainly curable. The situation may even get worse if the disease is localised. For instance, in Guatemala, it was found that in some areas malaria is recognized as a distinct disease, and knowledge of symptoms and transmission through mosquito bites was high (Reubush *et al*, 1992).

In many cultures, there is no general term or definition that approximates malaria. An illness with symptoms like malaria might be subsumed under a general term. Among the Dangla of Ghana, for instance, 'asra' is a general concept of illness as it can also be attributed to other illness conditions (Mc Combie, 1996). Therefore, to identify the 'true' cause of malaria in survey research is difficult due to lack of clear symptom analysis, cultural and individual perception and interpretation of signs and symptoms of the disease.

In a study in Kenya on symptoms of malaria, Spencer *et al* (1987), found out that 90% of women interviewed mentioned that headache, fever, vomiting, lack of appetite and death as the cause of malaria. Also Nwenesi *et al* (1995) found that 75% of the respondents described correctly some of the symptoms associated with Malaria. Generally, perception and definition is the first step in disease prevention and treatment. Disease outcome is a function of proper diagnosis. Malaria being a common disease in Nigeria sharing common symptoms with other diseases suggests need for proper investigation at the community level where most people engage in self-medication. Therefore, this study is important because as part of the primary health care programme, voluntary health workers (VHWs) were trained to provide minimum care services in the market places and community level treating minor diseases including malaria. Hence, this paper examines how market women view and interpret malaria.

## **METHODS**

### Setting

Bodija market is located in the city of Ibadan, which is still the largest truly indigenous urban center in Africa South of the Sahara (Udo, 1994). The result of the last census (NPC, 1991) stipulated the population of Ibadan to be 1,991,367 million. Ibadan is located near the forest grassland boundary of South Western Nigeria. Ibadan consists of Yoruba speaking people of Nigeria, who are by far the most urbanized group of indigenous people in Africa South of Sahara (Udo, 1994) Ibadan has a large farming population. Bodija market derives its names from its location. It was established on 3<sup>rd</sup> October, 1987 as a measure of emergency (Olaoba, 1999) as it branched out of over-populated Orita merin market.

### Participants

One-fifth of the respondents (19.8%) age 15 – 24 years old, 38.9% of the respondents aged 25-35 years, 78 respondents (15.5%) aged 35 – 44 years, 72 respondents (14.4%) aged 45 – 54 years and 57 respondents (11.4%) aged 50 years and above. This implies that majority of the respondents were within the reproductive age range of 25-34 years and labour force. Majority (490) of the respondents (97.8%) were Yorubas while a substantial minority 2.2% constitute other ethnic groups. About

one-third of the respondents (28.1%) were Christians while 71.9% were Muslim.

About one-fifth (22.2%) of the respondents were single, 3 respondents (0.6%) were divorced, 15 (3.0%) respondents have separated from their spouse while 18 (3.6%) respondents were widowed. In all, 5 of the respondents (1%) had Qoranic education, 40 (8%) did not complete primary education, 125 (25%) completed primary education, 99 (19.8%) did not complete secondary education while 102 (20.4%) completed secondary education and 127 respondents (25.3%) had no formal education. Only 191 (38.1%) respondents had access to radio at their shops compared with 310 (61.9%) who did not have access to radio at their shops. On the other hand, 479 respondents 95.4% claimed to have functional radio at home compared with 4.4% who did not have functional radio at home. Also 485 respondents (96.8%) claimed to have functional TV at home. Furthermore, 146 respondents (29.1%) had attended meetings where health matters were discussed while 355 respondents (70.9%) claimed that they have never attended health related meetings.

#### Sampling Technique

In the selection of 501 women (who constituted the population of the study), a systematic random sampling method was employed. The population of the study occupied different stalls, which were numbered. The stalls as numbered constituted the sample frame. There were 1,825 stalls. The use of nth method was used to select each of the sample units.

#### Research Design

The study is a survey research and focussed on women particular market where people of different and large population visit both from the within and outside the city. It considered market women perception about causes of malaria using triangulation approach for corroborative purpose.

#### Instrument

Two main methods of data collection were employed, namely questionnaire and in-depth interview. The questionnaires were administered in a face-to-face interaction with the respondents. Questions were asked in the local language of the respondents and there was interpretation for those who could not speak and understand Yoruba the local language. Also 10

nursing mothers were considered for in-depth interview to facilitate adequate understanding on issues relating to childhood malaria since infant/child health is a major indicator.

### Procedure for Data Analysis

Both quantitative and qualitative methods of data analyses were employed. Special Package for Social Sciences (SPSS) was used to analyse quantitative data. The package helped in the area of descriptive statistics, use of simple percentage and frequency distribution in data presentation and interpretations and chi-square to relate variables. Content analysis was used in analyzing the qualitative responses. Verbal quotations were made from the respondents.

## RESULTS

Over all, 501 market women were identified and responded to questionnaire. While asked about the perceived cause of malaria, majority 204 (40.7%) mentioned mosquito bite as a major cause of malaria. This was followed by 61 (12.2%) respondents who said that exposure to sun cause malaria. 29 (5.8%) respondents claimed that too much stress predisposes people to malaria. Other perceived causes of malaria, as shown in table 1 include exposure to dust (8.5%) and living in dirty environment (3.2%). Table 1 also indicates that 3.8% each of the respondents said that drinking bad water and suffering from too much headache results in malaria.

TABLE 1: PERCEIVED CAUSES OF MALARIA

CAUSES	FREQUENCY	PERCENTAGE
Sun	61	12.2
Stress	29	5.8
Pain	10	2.0
Dust	43	8.5
Bad water	19	3.8
Dirty environment	16	3.2
Mosquitoes bites	204	40.7
Headache	19	3.8
Don't know	100	20.0
Total	501	100%

Qualitative responses revealed that environmental conditions are responsible for malaria for instance, a nursing mother stated: I know that when a child stays too much in the sun he/she can have malaria. Another woman revealed, "If you feed a child with bad water the first thing that will happen is that he/she will stool and have high body temperature". Also in an in-depth interview it was stated that predisposition to dust causes malaria, "when the government was grading the road inside the market here, dust was everywhere, later many people became sick with malaria". Malaria as resultant from too much work was exemplified in a response that "Whenever I do much work, I always get home tired and sick. The next day I would discover that I have malaria. The nature of our work demands that we stay inside the sun for a long time inviting and attending to consumers so staying inside sun causes malaria for many of us".

TABLE 2: PERCEIVED VULNERABLE GROUPS TO MALARIA

Perceived vulnerability	GROUP	FREQUENCY	PERCENTAGE
	Children	43	8.6
	Old people	10	2.0
	White complexioned people	69	13.8
	A A Genotype	14	2.8
	S S Genotype	43	8.5
	Dirty people	19	3.8
	Traders	25	5.0
	Everyone	109	21.8
	Don't know	169	33.7
	Total	501	100

Questions were asked to assess respondents' knowledge about vulnerable groups as level of knowledge about a particular disease predisposes individuals to adopt preventive behaviours. A total of 43 (8.6%) respondents identified children as a vulnerable group to malaria, 2% mentioned old people and 13.8% said fair complexioned people. Few respondents (2.8%) mentioned that people with AA genotype are highly susceptible to malaria, while 8.5% respondents said people with SS genotype are susceptible. 19 (3.8%) respondents mentioned dirty people

and another 25 (5%) respondents said traders are more susceptible and therefore form a vulnerable group. 109 (21.8%) respondents considered everybody in an endemic area as vulnerable. In all, 169 (33.7%) did not mention any group as being vulnerable to malaria. Qualitative data revealed that malaria is the disease of children and fair complexioned people. For instance, a woman said "malaria is common among children especially the early ages". Another woman stated that, "It is the disease of the fair-complexioned people. they are the ones that normally get sick of malaria"

### PERCIEVED MODES OF TRANSMISSION OF MALARIA

Respondents were also asked questions about perceived mode of transmission of malaria. The data gathered is presented in the form of pie chart in figure 1.

Figure1: Pie Chart showing perceived mode of transmission of malaria

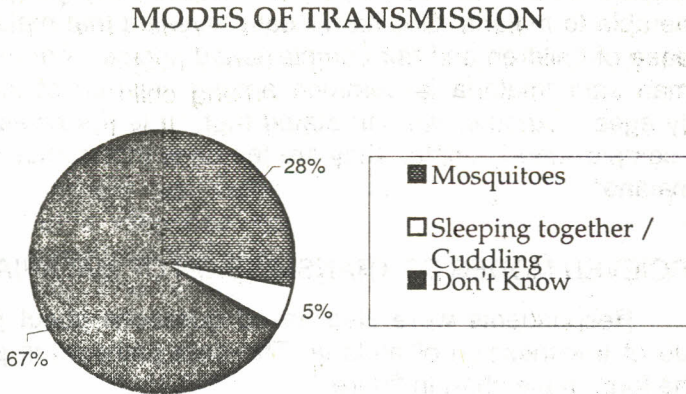


Figure 1 shows that 141 respondents (28.1%) claimed that mosquitoes are transmission agents of malaria and 25 respondents (5%) mentioned sleeping or cuddling someone suffering from malaria. Majority of the respondents, 335 respondents (66.9%) indicated that they did not know how malaria is transmitted. Evidence from the in-depth interview also buttresses these findings. For instance, a 33year old woman revealed that: *Whenever I have malaria, I don't carry my baby if I do, the malaria will be transmitted to her. The next day I will just discover that both of us are down with malaria.* Another woman aged 48 indicated that: *Even if you sleep with your husband when he is having malaria, one will also have malaria.* One thing that is not clear is whether education will influence perception of the cause of malaria. This is demonstrated in the table below.

Table 3: PERCEIVED MODES OF TRANSMISSION OF MALARIA AND

LEVEL OF EDUCATION OF RESPONDENTS

Level of education	Mosquito Bites	Sleeping together / cuddling	Don't know	Total
No Formal Education	14	9	104	127(25.3)



<i>Qoranic Education</i>	-	1	4	5 (1%)
<i>Primary*</i>	51	6	108	165 (33.0%)
<i>Secondary*</i>	74	9	118	201 (40.1%)
<i>Post Secondary</i>	2	-	1	3 (0.6%)
<i>Total</i>	141	25(5%)	335(5%)	501 (28.1%)

$\chi^2 = 66.3$  2df  $p > 0.5$

- *These include those with and completed*

Table 3 above shows that there is no significant relationship between education and knowledge of mode of transmission of malaria although data showed that more highly educated respondents than lowly ones associated mosquito with malaria. On the other hand, more respondents with low level of education than high level of education associated sleeping together/cuddling with malaria. Data show that generally few proportions of the respondents could mention one cause or the other with majority saying "I don't know what causes the disease".

TABLE 4: PERCEIVED SYMPTOMS/SIGNS OF MALARIA

PERCEIVED SYMPTOMS	FREQUENCY	PERCENTAGE
<i>Cold</i>	167	33.3
<i>Headache</i>	281	56.1
<i>Fatigue</i>	133	26.5
<i>Loss of Appetite</i>	31	6.2
<i>Fever</i>	87	17.4
<i>Irritation</i>	18	3.6
<i>Stomach ache</i>	127	8.4
<i>Others</i>	10	2.0

Table 4 above shows that 167 Respondents (33.3%) identified cold as a sign of malaria, 281 respondents (56.1%) identified headache, 133 respondents (26.5%) said fatigue, 6.2% mentioned loss of appetite, 87 (17.4) respondents, said high temperature or fever while 18 respondents (3.6%) mentioned irritation. Stomach ache was another symptom identified by 127 (8.4%) respondents and 10 % mentioned other signs including

vomiting, convulsion and so on. Qualitative data support the findings as a 36 years old woman stated that: *When a child loses appetite, his/her body is hot and he/she is restless, crying, these are specific symptoms of malaria. It is better to seek for malaria treatment.*

Also a woman identified loss of appetite, restlessness (crying) and high temperature as major sign of malaria in children. Another woman aged 35 added: *I always know that I have malaria when I am generally tired, have headache and pain in the joints. Whenever I notice these signs, I usually treat myself for malaria. Then I will recover.*

## DISCUSSION

The study examined how people define and diagnose malaria. Certain variables including causes, symptoms, and mode of transmission of malaria will assist in understanding how market women view the disease for preventive purpose. Though majority of the respondents (40.9%) perceived mosquito bite as the cause of malaria, a considerable proportion hold certain misconceptions about the actual cause of malaria as some of them mentioned other causes including exposure to too much sun, stress, dust, dirty water, while a good number of the respondents didn't know what really cause the disease. Evidence from the survey shows that more than half of the respondents (59.1%) did not really know the correct cause of malaria. This is similar to the findings of Nwenesi *et al*, (1995) and Reuben *et al* (1992) who also found that majority of their respondents did not understand the aetiology of malaria but perceived it to be caused by some natural processes. However, Nwenesi *et al* (1995) documented that half of the respondents in their study mentioned mosquito as a cause of malaria. This means that majority of the respondents may not likely utilize modern health care services for malaria as home remedy is a common choice of therapy. In terms of prevention, the use of insecticide treated bed-net (ITN) may not be acceptable to many people especially those who could not link it to mosquito bite.

Perception or recognition of symptoms of malaria is another measure used to understand the market women's knowledge of malaria. It was also observed that there are no universal symptoms of malaria because it manifests in different ways in different people. Meanwhile, some of the mentioned symptoms include headache, fever, and lack of appetite, fatigue, irritation, cold and so on. This, therefore, suggests multiple causations which are a major problem in disease diagnosis,

hence, the importance of a professional care provider, the physician.

Knowledge of transmission of malaria is also very vital for prevention purpose. Data showed that even though some people identified mosquito bite as the cause of malaria, many did not know that malaria could be transmitted from one person to the other through mosquito bites. Table 3 shows that 66.9% (335) respondents claimed that they don't know whether or not malaria parasite can be transmitted from person to person. This confirms the assertion that perception/knowledge of mode of transmission of malaria is still elusive among a considerable proportion of the population. The elusiveness of the mode of transmission of malaria parasite among the respondents has implications for prevention and management of the disease. Nwenesi *et al* (1995), Reuben *et al* (1992) and McCombie (1996) affirmed that majority of the people still hold misconceptions about the aetiology and mode of transmission of malaria. Nwenesi *et al* (1995) specifically mentioned that only 10% of the respondents in a study conducted among 883 mothers in Kenya understood the mode of transmission of malaria. Therefore, mothers in that category may not seek appropriate preventive and treatment measures.

Although education has significant influence on the health of a population, data (Elo, 1992) has showed that there is no significant relationship between level of education and perceived mode of transmission of malaria. Majority of those who completed post secondary education, have appropriate knowledge of mode of transmission of malaria compared with those who did not. This means that formal education can foster adequate knowledge of health problem and promote public health. This study does not demonstrate the importance of formal education as far as malaria concern. This may be due to the nature of the disease since most people have learnt to live by it over the years. It may also be due to inability of modern medicine (due to drug resistance) to eradicate it completely in Africa and Asia as it is with health problems in history.

On perceived vulnerability, it is assumed that those who perceive themselves vulnerable are likely to take appropriate measures towards prevention. Some of the respondents claimed that malaria is the disease of the fair-complexioned people. Other groups (like children, old people, and traders) were also identified. Meanwhile, majority of the respondents claimed that everyone is

susceptible / vulnerable to malaria. In a related research, Nwenesi *et al* (1995) claimed that mothers did not understand communicability and age specificity in malaria vulnerability. In a similar study, Spencer *et al* (1987) claimed that 90% of the women interviewed associated headache, fever, vomiting, lack of appetite and death to malaria. It is therefore important to note the difficulties involved in perception of malaria due to lack of clear symptom analysis and individual understanding of its causes. Generally, this is not independent of the cultural background of the people and socialization process they have undergone over the years. Even though they know some symptoms of malaria these can also be symptoms of other diseases hence this is dangerous in society where home remedy is the first step in health seeking.

## CONCLUSION

Certain misconceptions about causes and modes of transmission of malaria still exist. These findings are important for predicting the health seeking behavior of the market women with respect to malaria. Due to misconceptions about malaria there is, therefore, the need for more public enlightenment, education and efficient dissemination of information in a friendly manner about the disease especially at the community level. Community-Based Programs should consider work place intervention and should be put in place where they are not presently available especially at market places. Work group/association like the market women association could be targeted and recruited to participate in knowledge and behaviour change intervention activities.

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