
**Attitudinal and Behavioural Patterns Towards Malaria Attack and Treatment
Among The Selected People In Irun-Akoko, Ondo State Nigeria**

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Abstract

The negative impacts of malaria attack remain a major public health issue in the world which is commonly transmitted through a bite from an infected female Anopheles mosquito. However, the attitudes, perceptions and behaviours of people towards malaria attack and treatment in the rural communities still remain a serious challenge especially in the developing countries such as Nigeria. The general objective was to examine the attitudes and behavioural patterns towards malaria attack and treatment among rural community dwellers in Irun-Akoko North West, Ondo state. Survey research was conducted among the selected rural community dwellers to elicit information about the burden of malaria in the study area. It was a cross-sectional descriptive study. From the analysis of the study, about 48.7% of the respondents believed that malaria incidence is very serious in their areas. Majority (78.1%) believed that malaria is deadly if it is not treated on time. Meanwhile, from the period of a week ago to over a year, majority (73.0%) of the respondents mentioned they have experienced sickness (malaria). About 43.8% experienced the symptoms less than a week before adequate treatment was sought. Medical treatment (drugs and injection) and self-medication (herbal medicine and drugs at chemist) with 46.9% and 41.9% are the major treatment methods adopted respectively. Majority (74.4%) recovered from malaria sickness at their first treatment. It is evident that the belief-systems and attitudes of people about malaria attack are crucial factors in determining their health-related behaviours and health-seeking behaviour.

Keywords: Malaria attack, Beliefs, Perception, Malaria Prevention, Rural Dwellers

1. Introduction

Attitudes and behaviours of people to malaria control and management still remains a serious issue in the world particularly in the rural communities. However, Africa remains the region that has the greatest burden of malaria cases and deaths in the world (World Malaria Report, 2005). According to WHO estimates, there were about 219 million cases of malaria in 2010 and an estimated 660 000 deaths making Africa the most affected continent where about 90% of all malaria deaths occur

(World Health Organisation, 2012). Similarly, six countries - Nigeria, the Democratic Republic of Congo, Burkina Faso, Mozambique, Cote d'Ivoire and Mali - account for 60%, or 390,000, of malaria deaths (World Health Organisation, 2011). The data from the regional profile for malaria in West Africa showed that 355 million people at risk for malaria in 2015; 297 million at high risk and no countries were able to eliminate malaria since 2010. In the region, Nigeria had 55% share of malaria cases in 2015 (World Health Organisation, 2016). Nigeria, the continent's most populous country, accounted for 27% of malaria cases and 24% of malaria deaths globally in 2016 (World Health Organisation, 2018). This is quite alarming. Moreover, out of the five species of the parasite that cause malaria; *Plasmodium falciparum* is most prevalent on the African continent, and is responsible for most deaths from malaria (World Health Organisation, 2014).

However, despite the alarming situation of malaria incidence and prevalence in the world especially in African continent including Nigeria, little emphasis have been placed on specifically examining the attitudes, perceptions and behaviours of people living in the rural areas in relation to malaria attack and treatment. It still remains a serious challenge especially in the developing countries such as Nigeria. In an attempt to address this gap, the general objective was to examine the attitudes and behavioural patterns towards malaria attack and treatment among the selected rural community dwellers in Irun-Akoko, Ondo state. Thus, this may go a long way in correcting some misconceptions about malaria attack among the rural people.

Moreover, some studies have been reported about some misconceptions toward malaria scourge which occur as a result of attitudinal and behavioural patterns of people towards malaria attack. So, correcting misconceptions in cultural beliefs about the cause of malaria has been reported to be a crucial factor for effective malaria control and management (Okafor and Amzat, 2007; Okeke and Okafor, 2008; Padonou, Gbédjissi, Bankolé, Noukpo, Yadouléton *et al.*, 2011; Abate, Degarege and Erko, 2013; Omeire & Omeire 2016). Misconceptions regarding the cause of malaria,

self-medication, traditional medicine or drugs purchased from drug sellers which are often administered inappropriately are still high among people. It is only when home treatment fails that the patient is taken to a health centre (Padonou, Gbédjissi, Bankolé, Noukpo, Yadouléton *et al.*, 2011). Major barriers to prevention include a lack of understanding of the cause and transmission of malaria, the belief that malaria cannot be prevented, and the use of ineffective prevention measures. The belief that a child with convulsions could die if given an injection or taken to hospital is also one of the specific barriers to childhood malaria treatment (Maslove, Mnyusiwalla, Mills, McGowan, Attaran *et al.*, 2009). Eventually, the misconceptions make it impossible for people sometimes to associate malaria epidemic with its transmission (Sumari, Dillip, Ndume, Mugasa and Gwakisa, 2016). The implication of misconceptions about the sign/symptom of malaria is that such people will be taking inappropriate steps in both the prevention and treatment of malaria out of ignorance (Adeneye, Jegede, Mafe and Nwokocha, 2013).

All forms of misconceptions in cultural beliefs about malaria should be addressed through proper behavioural changes in attitudes particularly in rural areas. Communities need to be taught in local languages all the social and biomedical correlates in the prevalence of malaria (Okafor and Amzat, 2007; Omeire, 2018). Thus, cultural factors play important role in disease or illness's conceptualisation, perception and interpretation which of course incorporates belief-systems in societies (Erinosho, 2006).

Also, the Community medicine distributors (CMDs) may appear to be trusted by the community dwellers. This is because of their voluntary services, ease of access and perceived effectiveness of the anti-malarial drugs they use (Mukanga, Tibenderana, Kiguli, Pariyo, Waiswa *et al.*, 2010). Likewise, increasing access to health care services is considered central to improving the health of the people (Kizito, Kayendeke, Nabirye, Staedke and Chandler, 2012) and early anti-malarial treatment prevent severe malaria in children. Therefore, there is need to prevent mosquito bites

and to scale up prompt treatment and community-based interventions to reduce the incidence of severe malaria in children (Byakika-Kibwika, Ndeezi and Kanya, 2009) and even among adults. Recognition of malaria symptoms is very important in determining the use of antimalarial drugs rather than the result of a malaria test (Ezeoke, Ezumah, Chandler, Mangham-Jefferies, Onwujekwe *et al.*, 2012). Also, the change in people attitudes towards malaria test results is very crucial aspect of intervention to promote appropriate malaria treatment (Ezeoke, Ezumah, Chandler, Mangham-Jefferies, Onwujekwe *et al.*, 2012). Therefore, some of these misconceptions about malaria attack are manifested and acted out in people's attitudes and behaviours. Thus, the proper understanding of this in people living in rural areas would be beneficial to their health status and improving their well-beings.

Materials and Methods

Survey instrument (questionnaire) was used to get information the respondents. One hundred and sixty (160) questionnaires were administered to rural community dwellers including male and female, literate and non-educated which involved closed-ended and open-ended questions to elicit information on malaria issue in the study area. It was a cross-sectional study. The method allowed a face-to-face situation in which the researcher extracted verbal responses from the respondents and got a better understanding of the respondents' actual knowledge, beliefs, attitudes and behaviours about malaria attack and management. Regarding ethical consideration, informed consent was sought and confidentiality of data/information duly observed.

Results

1. Socio-demographic characteristics of the respondents

Key variables: Age, Sex, Marital status, Occupation, Religion and Education

From the analysis of the socio-demographic profile in *table: 1 below*, it is evident that half (55.0%) of the respondents fell within age bracket 20-39 and 18.1% of the respondents were within age of 40-59. The largest percentage of the respondents both

male and female that constituted the age group bracket 20-39 did not indicate that malaria incidence was more prevalent in this age group. However, 56.9% of the respondents had gotten married and 43.1% of the respondents were single. The difference between the percentage of the married and single is not that much.

Moreover, students and traders had the highest percentage with 33.7% and 30.0% respectively. It was followed by farmers with 19.4%. The high percentage of the students as occupation did not indicate that the whole community is majorly composed of students. This was because of the availability of the respondents that were ready for interviews at the time of conducting the study. This could be also explained as a result of the easy accessibility of students for interviews. Some of the farmers were not around perhaps busy working in their farms and thereby not being interviewed. However, more than half (65.0%) of the respondents were Christians, 30.0% as Muslims and Traditional worshippers as 5.0%. Western education and civilization might explain the high number of Christians and the drastic reduction in the percentage of traditional worshipping.

Furthermore, 36.8% of the respondents had secondary education, 25.6% had tertiary education level, while 18.8% each of the respondents had no education and primary education respectively. What it means is that majority of the respondents are semi-literate. However, the reason for that could also be explained in terms of the nature of their occupations such as farming, trading and students especially those who are seeking for further education or who could not go beyond secondary school.

Table 1: Socio-demographic characteristics of respondents

| Variable | Frequency (%) N= 160 | |
|---|---------------------------------------|--------|
| Age (in years) | | |
| Below 20 | 19 | (11.9) |
| 20-39 | | (55.0) |
| 40-59 | | (18.1) |
| 60 and above | 88 | (15.0) |
| | 29 | |
| | 24 | |
| Sex | | |
| Male | 80 | (50.0) |
| Female | 80 | (50.0) |
| Marital status | | |
| Single | 69 | (43.1) |
| Married | 91 | (56.9) |
| Occupation | | |
| Students | 54 | (33.7) |
| Traders | 48 | (30.0) |
| Farmers | 31 | (19.4) |
| Teachers | 11 | (6.90) |
| Drivers/motor cyclists (<i>Okada riders</i>) | 9 | (5.60) |
| Professionals (doctors, nurses, lawyers and bankers etc.) | 7 | (4.40) |
| Religion | | |
| Christian | 104 | (65.0) |
| Islam | 48 | (30.0) |
| African Traditional Practice (ATP) | 8 | (5.00) |
| Education | | |
| No education | 30 | (18.8) |
| Primary | 30 | (18.8) |
| Secondary | 59 | (36.8) |
| Tertiary (college, polytechnic and university) | 41 | (25.6) |

Source: Author's Computation (Field Survey), 2007

The result in *table: 2 below* showed that many (48.7%) of the respondents claimed that malaria incidence is very serious in their areas and this is not unconnected with the environment they live and their general attitudes towards malaria. Majority

(78.1%) of the respondents claimed that malaria is deadly if it is not treated on time. Rapid loss of blood and weight, loss of appetite, destruction of the cells in the body; and easy and instant killing through series of complications have been mentioned as what make malaria deadly. On the contrary, some (21.9%) of the respondents believed that malaria is not deadly on the basis that it can be treated and become better and healthy again, one would recover when treated; it is a curable disease if appropriate treatment is given at the right time. One respondent was even quoted to have said “*I have never seen someone that dies of malaria*”, probably because the respondent is ignorant of malaria complications.

However, the result showed that majority (66.8%) of the respondents believed that malaria is quite different from any other disease. The reason is that, to them, malaria is more common than any other disease and can be easily prevented if detected early. While, 26.3% of the respondents believed that malaria is not different from other diseases on the basis that malaria and other diseases can cause damage to the body and at the same time can kill; and 6.9% of the respondents did not know whether malaria is like any other disease or not probably because of their inadequate knowledge of malaria complications.

Table 2: Perception of respondents towards malaria prevention and control

| Variable | Category | Frequency (%) | |
|------------------------------------|-------------------------------|---------------|--------|
| | | N= 160 | |
| Perceived threat of malaria | Very serious | 78 | (48.7) |
| | Serious | 28 | (17.5) |
| | Not serious | 34 | (21.3) |
| | Normal | 20 | (12.5) |
| How do you view malaria | Deadly | 125 | (78.1) |
| | Not deadly | 35 | (21.9) |
| Malaria attack with other diseases | Different from other diseases | 107 | (66.8) |
| | Same with other diseases | 42 | (26.3) |
| | Don't know | 11 | (6.90) |

Source: Author's Computation (Field Survey), 2007

The result in *table: 3 below* showed that few (8.10%) presently sick with malaria at the time of carrying out the study. Meanwhile, from the period of a week ago to over a year, majority - over half (73.0%) of the respondents believed they have experienced sickness (malaria). Also, some (33.8%) of the respondents experienced the symptom less than a week before adequate treatment was sought; 23.8% could not remember how long it took before treatment sought; 16.3% sought treatment immediately after detected; 11.8% claimed after a week and 4.3% mentioned after two weeks of the symptoms, probably because they were under self-medication and later sought treatment for their severe sickness. Another result showed that some (46.9%) and (41.9%) of the respondents mentioned medical treatment in the hospital and self-medication through herbal medicine (Agbo) and un-prescribed drugs at chemist shops respectively as the major methods adopted when they fell sick last; while 11.2% of the respondents could not remember methods used for treatment while they were sick last.

Furthermore, some (41.3%) of the respondents mentioned hospital as their place of treatment probably because of the health institutions in the community and availability of health workers who may offer them information on where to get the best treatment for their sickness; 28.8% of the respondents said at home and 18.1% of the respondents mentioned chemist as their first place of treatment and 11.8% of the respondents could not remember the first place of their treatment. In addition, another result showed that majority (74.4%) of the respondents recovered from malaria sickness at their first treatment probably because of the medical treatment they sought for; while the condition of few (11.8%) remained the same but the second treatment restored normality and 4.4% said their condition worsened because it was too late before they sought for treatment.

Table 3: Behavioural patterns towards malaria experience and treatment among the respondents

| Variable | Category | Frequency (%) N= 160 | |
|--------------------------------------|--|-------------------------|--------|
| When last fallen sick | Presently sick | 13 | (8.10) |
| | A week ago | 26 | (16.3) |
| | Under one year | 54 | (33.8) |
| | Over a year | 36 | (22.5) |
| | Long time/I can't remember | 31 | (19.3) |
| Duration of symptom before treatment | Immediately | 26 | (16.3) |
| | Less than a week | 70 | (43.8) |
| | A week after | 19 | (11.8) |
| | Two weeks beyond | 7 | (4.30) |
| | Can't remember | 38 | (23.8) |
| Method of treatment adopted | Self-medication (herbal medicine and drugs at chemist) | 67 | (41.9) |
| | Medical treatment (drugs and injection) | 75 | (46.9) |
| | Can't remember | 18 | (11.2) |
| First place of treatment | Hospital | 66 | (41.3) |
| | Chemist | 29 | (18.1) |
| | Home | 46 | (28.8) |
| | Can't remember | 19 | (11.8) |
| Outcomes of first treatment | Recovered | 119 | (74.4) |
| | Condition same | 19 | (11.8) |
| | Condition worsened | 7 | (4.40) |
| | No answer | 15 | (9.40) |

Source: Author's Computation (Field Survey), 2007

Discussion

Socio-demographic characteristics of respondents

From the analysis of the socio-demographic profile, it is evident that more than half (55%) of the respondents fall within age bracket 20-39 years. This is similar to (Bamidele *et al.*, 2012)'s work where majority of the respondents (65.0%) were found within the age groups of 20-39 years; to them, this age group falls within the agile population. This age group may be targeted in the long run for active and

effective community participation in malaria control; while, 18.1% of the respondents are within age of 40-59 years. The largest percentage of the respondents both male and female that constituted the age group bracket 20-39 years did not indicate that malaria incidence was more prevalent in this age group. The percentage of the respondents between single and married is not much. The high percentage of the students as occupation did not indicate that the whole community is majorly composed of students. This is as a result of the availability of the respondents that were ready for interviews at the time of conducting the study. Some of the farmers were not around perhaps busy working in their farms and thereby not being interviewed. Western education and civilization might explain the high number of Christians and the drastic reduction in the percentage of traditional worshipping. Furthermore, majority of the respondents are semi-literate.

However, the reason for that could also be explained in terms of the nature of their occupations such as farming, trading and students especially those who are seeking for further education or who could not go beyond secondary school. This is in line with (Bamidele *et al.*, 2012)'s work where majority of the respondents had at least attended primary school. Moreover, being literate has a positive effect on community participation in malaria control as it helped them to have better understanding about the cause of malaria, mode of transmission, symptoms, prevention and control (Bamidele *et al.*, 2012).

Perception of respondents towards malaria attack

Some respondents (48.7%) perceived threat of malaria as very serious; very few believed it is serious, not serious and normal (17.5%; 21.3% and 21.9%) respectively. Moreover, majority (78.1%) of respondents viewed malaria as deadly and few (21.9%) did not see it as deadly. Also, majority (66.8%) of respondents believed that malaria attack is quite different from other diseases. Few (26.3%) viewed it as same with other diseases and very few did not know whether it is different or not. About less than half of the respondents perceived malaria to be very serious, though,

majority believed malaria is deadly and also, majority believed malaria is quite different from other diseases. These findings further show that there may be some misconceptions about malaria attack. This is because; less than half of the respondents believed that malaria is very serious.

Though, a study has showed that malaria is preventable and treatable, and history shows that it can be eliminated (Agbo *et al.*, 2014). The issue of a disease or an illness is determined by culture which of course incorporates belief-systems, in turn, the basis of the perception and interpretation of a disease or an illness in societies (Erinosho, 2006; Omeire, 2018). Misconceptions about the burden of malaria remain very important in other studies which have a lot to do with the perceptions of people towards malaria attack and treatment. In corroborating these findings, many studies have dwelled so much on the need to correct some misconceptions about malaria attack. Thus, correcting misconceptions in cultural beliefs about the cause of malaria attack has been reported to be a crucial factor for effective malaria control and management (Okafor and Amzat, 2007; Okeke and Okafor, 2008; Abate, Degarege and Erko, 2013; Omeire & Omeire 2016); including misconceptions about the cause of malaria, self-medication, the use of traditional medicine etc. also, drugs purchased from drug sellers which are often administered inappropriately are still high among people. It is only when home treatment fails that the patient is taken to a health centre (Padonou, Gbédjissi, Bankolé, Noukpo, Yadouléton *et al.*, 2011). Eventually, the misconceptions make it impossible for people sometimes to associate malaria epidemic with its transmission (Sumari, Dillip, Ndume, Mugasa and Gwakisa, 2016).

The implication of misconceptions about the sign/symptom of malaria is that such people will be taking inappropriate steps in both the prevention and treatment of malaria out of ignorance (Adeneye, Jegede, Mafe and Nwokocha, 2013). These misconceptions can become major barriers to malaria prevention which include a lack of understanding of the cause and transmission of malaria, the belief that malaria cannot be prevented and the use of ineffective prevention measures. Also, the belief

that a child with convulsions could die if given an injection or taken to hospital is also one of the specific barriers childhood malaria treatment (Maslove, Mnyusiwalla, Mills, McGowan, Attaran *et al.*, 2009).

This may be one of the reasons why it is only when home treatment fails that the patient is taken to a health centre (Padonou, Gbédjissi, Bankolé, Noukpo, Yadouléton *et al.*, 2011). One respondent was quoted to have said *“I have never seen someone that dies of malaria”*. This kind of statement shows more of belief-system’s challenge. This is line with Okafor and Amzat (2007)’s work that there is still misconceptions in cultural beliefs about malaria among people. Thus, the change in people attitudes towards malaria test results is very crucial aspect of intervention to promote appropriate malaria treatment (Ezeoke, Ezumah, Chandler, Mangham-Jefferies, Onwujekwe *et al.*, 2012). In line with the reports above, the misconceptions regarding malaria attack and treatment could have been part of the major reasons why less than half of the respondents believed that malaria is very serious. Similarly, the beliefs that, *“ITN can kill persons through the process of applying chemical to it”*. *“ITN is poisonous and increases death rate respectively”*. *“Frequent use of ITNs can harm people through the poisonous chemical in it”*. This kind of responses could be termed as misconceptions regarding malaria attack and treatment among the study population.

Behavioural patterns towards malaria experience and treatment patterns among the respondents

At the time of conducting this survey, a question about “when last fallen sick”- few 8.10% of respondents presently sick; week ago 16.3%; under one year 33.8%; over a year 22.5%; long time/i can’t remember 19.3%. A question on the duration of symptom before treatment- few (16.3%) of respondents sought immediate treatment; 43.8% sought treatment less than a week; a week after, 11.8% sought treatment; two weeks beyond, 4.30% sought treatment and 23.8% could not remember when they sought treatment for malaria.

Medical treatment (drugs and injection) 46.9% and self-medication (herbal medicine and drugs at chemist) 41.9% remained the major methods of treatment adopted for malaria treatment. About 11.2% could not remember the method adopted. This may be an indication that self-medication is still common among people. This is because; there is slight difference in the proportion of self-medication and medical treatment respectively. The above findings corroborate Padonou *et al.*, 2011's work that self-medication, traditional medicine such as "Agbo" or drugs purchased from drug sellers are often administered inappropriately and it is only when home treatment fails that the patient is taken to a health centre.

Similarly in another study, about half of the respondents did not receive malaria treatment in a standard health facility making the high patronage of chemist, patient medicine vendor and shop raises health concern because of the likelihood of overmedication and wrong prescription of drug (Fayehun and Salami, 2014). Hospital 41.3%; chemist 18.1%; home 28.8% were mentioned as the first place of treatment. About 11.8% could not remember their first place of treatment. About the outcomes of first treatment, majority (74.4%) of respondents recovered; 11.8% of respondents stated their condition remained the same; about 4.40% reported that their condition became worse and 9.40% did not answer. Thus, accessibility and affordability of health care is also pertinent for effective use of health care facility among people (Fayehun and Salami, 2014).

In overall, the study has showed that few (8.10%) of respondents were presently sick with malaria at the time of carrying out the study. Meanwhile, from the period of a week ago to over a year, majority - over half (73.0%) of the respondents believed they have experienced sickness (malaria) and self-medication is still high. This is very serious. Thus, increasing access to health care services is considered central to improving the health of populations (Kizito, Kayendeke, Nabirye, Staedke and Chandler, 2012) and early anti-malarial treatment prevent severe malaria in children and among adults too. Therefore, there is need to prevent mosquito bites and to scale

up prompt treatment and community-based interventions to reduce the incidence of severe malaria in children (Byakika-Kibwika, Ndeezi and Kanya, 2009) and even among adults. This is critical to designing effective malaria prevention, control and management. More importantly, there is need to improving people' health-seeking behaviours and treatment-seeking behaviours/ practices to malaria attack in the societies.

In addition, the study has been able to examine and given insights into the attitudinal and behavioural patterns towards malaria attack and treatment among the selected rural community dwellers in the study area. Thus, it has contributed to the body of knowledge about malaria discourse in the world particularly in the rural areas. In contrast, there are some limitations to this study. The study was cross-sectional in nature where the data were collected at a single point in time. Also, the study relied solely on survey method (questionnaire with open-ended and closed-ended questions) making it impossible to make any causal conclusions. The longitudinal approach may be utilised in conjunction with cross-sectional approach for future research purpose in data collection. This could further examine and determine the exact malaria prevalent rate in the study area.

Conclusion

From the results of this study, some of the respondents believed that malaria incidence is very serious in their areas while few believed it is normal. Also, the majority believed that malaria is deadly if it is not treated on time and few of them presently sick with malaria at the time of carrying out the study. Meanwhile, from the period of a week ago to over a year, majority believed they have experienced malaria attack. Some of them experienced the symptoms less than a week before adequate treatment was sought. Medical treatment (drugs and injection) and self-medication (herbal medicine and drugs at chemist) remained the major methods adopted. Also, some mentioned hospital as their place of treatment; and few mentioned home and chemist as their first place of treatment respectively. Majority recovered from malaria

sickness at their first treatment. Some current studies about misconceptions towards malaria reviewed in this study have also confirmed the fact that people still have very poor attitudes and behaviours towards malaria attack and treatment methods.

It is important to note that the belief-systems and attitudes of people towards malaria issues are crucial factors in determining their health-related behaviour and health-seeking behaviours. It holds that health behaviour is a function of both knowledge and attitudes. Positive change in people' belief-systems and perceptions through constant awareness creation are likely to manifest positive behavioural patterns in people towards malaria attack, control and treatment in the society. This will go a long way in minimising some misconceptions about malaria attack which are directly or indirectly influencing people's perceptions and behaviours towards malaria scourge across rural areas in the world especially in the developing countries like Nigeria.

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