ASSESSMENT OF HEALTH INFORMATION SEEKING, ACQUISITION AND ADULTS' PARTICIPATION IN MALARIA CONTROL TOWARDS ACHIEVING MALARIA FREE ZONE IN OGUN STATE

Elizabeth Abosede ADEWUYI
Department of Adult & Non-Formal Education
School of Early Childhood, Primary, Adult and Non Formal Education
Federal College of Education, Abeokuta, Ogun State
Elizadewuyi@gmail.com

Abstract
Malaria remains a life threatening disease responsible for over 600,000 death each year among children, pregnant women and adults with low immunity being mostly affected. The relationship between community prevalence of malaria and health information seeking ability of adults in eliminating the disease is poorly defined. This study therefore investigated the effects of health information seeking and acquisition ability of adults on participation in malaria control in Ogun State, Nigeria. The study employed Health Belief Model using descriptive survey research design of ex-post facto type. Multi-stage sampling technique was used to collect data from 1800 valid questionnaire while those with incomplete responses were discarded. At the first stage, Ogun State was stratified into three strata in line with its Senatorial district Ogun West, Ogun East and Ogun Central. Two local government areas (LGAs) were selected from each stratum with the aid of purposive sampling making a total of 6 LGAs. Simple random sampling technique was finally adopted to select a sample of one thousand, nine hundred and fifty male and female adults from the population (Odeda-350, Abeokuta South-500,Yewa South-400,Imeko Afon-250, Remo North-150 and Odogbolu-300).Instruments used for data collection were Health Information Seeking Ability (r=0.72) Participation in Malaria Control (0.86);Secondary data were also collected from the publications of World Health Organization and National Malaria Elimination Programme. Quantitative data were analyzed using descriptive statistics and chi-square (x^2) analysis. The result showed that health information seeking ability had significant contribution to malaria control (=2073.3; df=5,p<0.05).The frequency of malaria control information acquisition was found to be low as majority (46.2%) received malaria control information once in a week. The study therefore recommends among many others high frequency malaria control information dissemination on radio and television and other social media to enhance effective adults' participation in malaria elimination towards achieving malaria free zone in Nigeria. Conclusively, health education messages should be clear, realistic and reflect local language and behaviour to take care of low literacy level among adults.

Keywords: Assessment, Health information, Adults' participation, Malaria control

Introduction

Malaria is one of the major public health problems in the world. It continues to afflict the poor countries all over the world. Freedom from malaria is the basic right of humankind, yet malaria is among the top 10 killer diseases in the world (WHO, 2012). Malaria also has a devastating economic and social effect as it perpetuates poverty**.** It is both a root cause and consequence of poverty, burdening endemic countries and contributing to the cycle of poverty (Affiah, 2022). Annual estimates vary between 200 to 300 million clinical episodes of malaria and over 600,000 deaths worldwide, 90% of which occur in tropical Sahara (World Malaria Report, 2021) Outside Africa, some two-thirds of the remaining cases occur in other countries such as Brazil, and Sri Lanka. However, malaria exists in some 100 countries, (WHO, 2012). Malaria is transmitted throughout Nigeria, with 97% of the population at risk of malaria (Malaria factsheet, 2022).

Malaria is not only a health problem; it is also an economic problem. Researchers have argued that there are some indications that diseases and sicknesses such as malaria have some adverse effects on labour productivity (Ahuru, 2018). Consequently a person's physical productive ability does not only depend upon his skills but also upon his physical and mental health as well as the level of his nutritional status from which he derives his immediate energy requirements, (Okoruwa and Agunlana, 2004 cited in Adewuyi,2018; Asenso-Okyere, Chiang, Thangata and Andam, 2011).

Malaria is not just a disease commonly associated with poverty but also a cause of poverty and a major hindrance to economic development (WHO,2021) . The economic burden includes costs of health care, working days lost due to sickness; days lost in education and decreased productivity. According to World Health Organization, (2021) malaria is responsible for an annual reduction of 1.3 per cent in Africa's economic growth. In Nigeria for example, malaria is an important public health concern which has attracted the attention of both the government and international organizations. Efforts have been made to search for possible strategies for its control. This includes the use of insecticides treated nets and curtain (WHO, 2012). Malaria control efforts in Nigeria involve the mass short – term distribution of anti-malaria medicines to a target population of children under five years and pregnant women. These drugs are provided to pregnant women during antenatal care visits so as to reduce the incidence of malaria during pregnancy. Malaria control information are also being disseminated to community members through mass media for effective control.

Despite this concerted effort, achieving malaria free zone in Nigeria has been an uphill task. Available statistics has revealed that malaria accounts for 25 per cent of infant mortality, 11 per cent of maternal mortality and 30 per cent of under-5 mortality. On several occasion, pregnant women, because of low immunity, and young children under the age of five are usually affected (World Malaria Report 2017.) Malaria is so deadly that it can kill within hours but it is curable and preventable, through the effective participation in malaria control. It is against this background that this study sought to investigate the health information seeking and acquisition ability of adults and their participation in malaria control towards achieving zero episode of malaria in the study area. This study seeks to analyse the following objectives

The specific objectives of this study are to examine the types of malaria control information acquired by the adults in the study area; Determine the frequency of malaria control information acquired by adults in Ogun state, Nigeria; and to ascertain the extent to which health information seeking ability of adults influence malaria control.

Research Questions

What are the types of malaria control information acquired by adults in the study area?
What is the frequency of malaria control information acquired by adults in Ogun State, Nigeria?
To what extent does health information seeking ability of adults influence malaria control?

Research Hypothesis

There is no significant relationship between health information seeking ability of adults and participation in malaria control.

There is a significant relationship between health information seeking ability of adults and participation in malaria control.

Methodology

This study adopted health believe model while descriptive survey design was employed. Multi-stage sampling method was used for collection of data. Ogun state was divided into three strata in line with its senatorial districts (Ogun West, Ogun East and Ogun central). Purposive sampling method was used to select two Local Government Areas (LGA) from each senatorial district namely Odeda LGA, Abeokuta South LGA, Imeko-Afon LGA, Yewa South LGA, Odogbolu LGA and

Remo North LGA. Simple random sampling technique was used to select male and female adults from age 18years and above. A total of one thousand nine hundred and fifty respondents were selected as sample to give a good representation of Adults population.

The research instruments used for data collection were self-developed and pre-tested questionnaire. The instrument was divided into two sections containing demographic characteristics of the respondents while section B comprises of information on items constructed to retrieve data on health information seeking and acquisition among adults, sensitization and effective participation of adults in malaria control in the study area. Four point Likert scale was adopted to rate the questionnaire.

Instruments used to assess adult heath information seeking and ability on participation in malaria control were self-structured by the researcher and scrutinized by four Education Experts (two health educators and two adult educators) to obtain face and content validity. The reliability indices of health information seeking ability (r = 0.72) and malaria control instruments (r = 0.86) were obtained from test retest method using Cronbach Alpha. The instrument reliability was ascertained through a pilot study which was conducted on other set of respondents in another local government area who were not part of the sample selected. Four research assistants were trained to join researcher in questionnaire administration and data collection. The data obtained from valid questionnaire were analyzed with the help of simple percentage analysis and Chi-square analytical tool while the invalid ones were discarded. The results of the analysis are presented in the table below

Results

Research Question 1: What are the types of malaria control information acquired by adults in the study area?

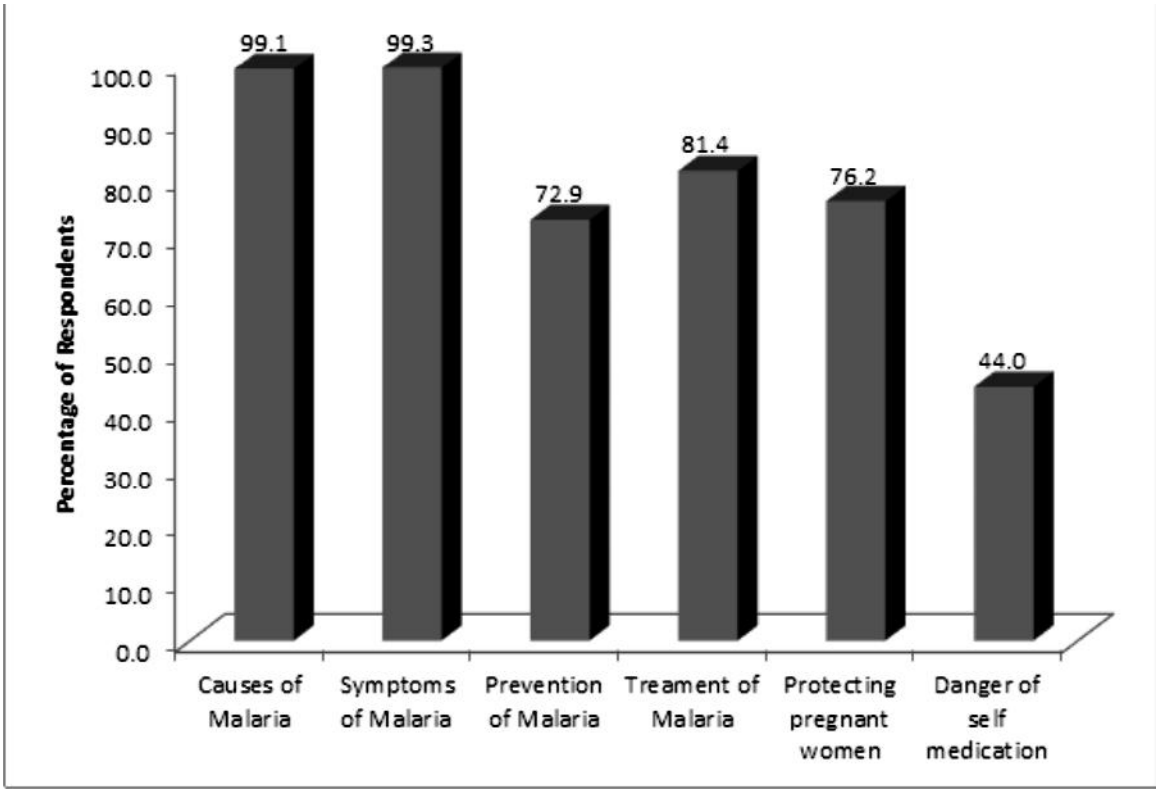

Figure 1: Types of malaria control information acquired

It has been widely acknowledged in the literature that one of the cardinal objectives of roll back malaria programme (RBM) is raising the level of awareness about malaria through a well-organised health education messages and programmes in order to entrench adequate malaria control methods and practices among the community members (Chibwana, Mathanga, Chinkhumba & Campbell, 2009; Jombo, Araoye and Akpera, 2011). This present study attempted to assess the type of malaria control information acquired by the community dwellers and the result is shown in Figure 1.

Research Question 2: What is the frequency of malaria control information acquired by adults in Ogun State, Nigeria?

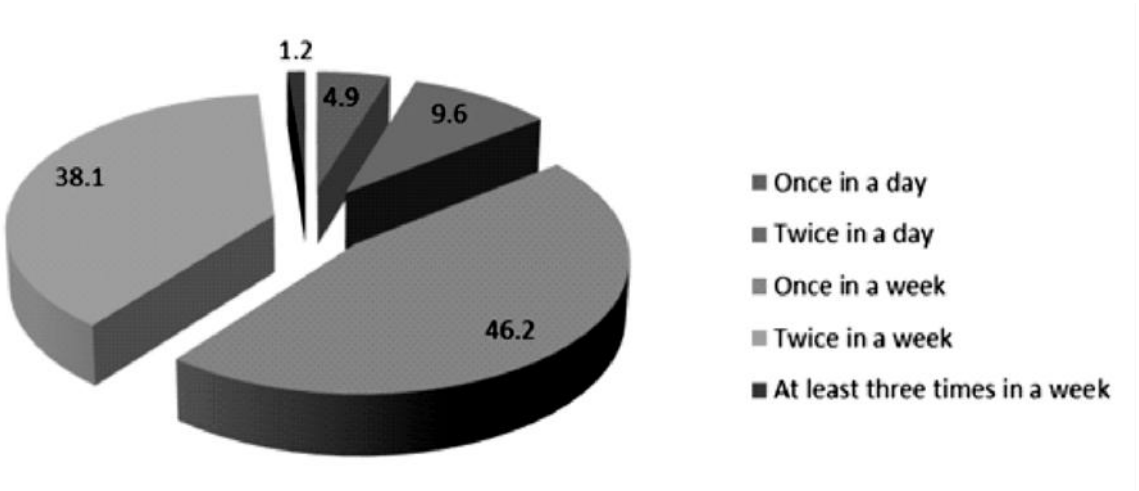

Figure 2: Frequency of Malaria Control Information Acquisition

One of the objectives of Health Education is to get people informed about different diseases, their causes and how to prevent them. Besides giving proper health information to health care consumers, it is necessary to remind them constantly so that they might be motivated to change their health seeking behaviours and life style.

Hypothesis One

Ho1: There is no significant relationship between information seeking ability of adults and participation in malaria control.

The chi-square analysis was undertaken to test null hypothesis that there is no significant relationship between information seeking ability and malaria control against the alternative that there is a significant relationship between information seeking ability and malaria control.

Table 1: X^2 contingency table showing relationship between health information seeking ability and malaria control.

Sources of Information	Observed (Expected)	Observed (Expected)	Total
Books, flyers, posters, internet.	640(1252.17)	1160(547.83333).	1800.
Government hospital	1575(1252.17)).	225(547.83333).	1800.
Private hospital	875(1252.17)	925(547.83333)	1800
Herbal sellers	sellers1401(1252.17)	399(547.83333)	1800
Protect myself and children	1591(1252.17)	209(547.83333)	1800
Medicine stores	1431(1252.17)	369(547.83333)	1800
Total	**7513**	**3287**	**10800**
X^2 cal=2073.3	X^2tab=11.07	DF=5	*p=0.05

The chi-square (X^2) contingency analysis table1 above shows the empirical result of hypothesis one on the relationship between health information seeking ability and malaria control. The result shows a statistically significant relationship between malaria control and health information seeking ability of the respondents (the X^2 calculated value = 2073.38, Df = 5, P = 0.05, X^2tab = 11.070). Since the calculated value of X^2 is greater than the critical table thus we reject the null hypothesis one above which says that there is no significant relationship between health information seeking ability and malaria control. The alternative hypothesis which says that there is a significant relationship between health information seeking ability and malaria control is hereby accepted.

Discussion of Findings

The result in figure 1 above shows that almost all the respondents 1784 (99.1%) acquired health information on causes of malaria. Similarly, 99.3% of the respondents received health information on symptoms of malaria. The implication of this is that many of them will be able to identify causes and symptoms of malaria. Moreover, finding from this study further revealed that 1313 (72.9%) of the participants had access to health information on prevention of malaria while 81.4% acquired health information on treatment of malaria concerning the protection of pregnant women and children. Furthermore, 1371 (76.2%) affirmed that health information on protecting pregnant women and children was delivered to the community members. However more than half of the participants 1008 (56%) raised their objection against receiving health information on danger of self-medication

the implication is that some of the respondents might have been practicing self-medication since they are not aware of the possible danger it can pose on their health.

The delivery of malaria control information among the community dwellers was aimed at raising the level of awareness of the community members about the prevention and treatment of malaria. They therefore educate the masses on symptoms of malaria and trauma suffered by its victims, how to adopt preventive measure and renew strategies towards probable elimination of the disease from our community. A range of explanations have been put forward as to why malaria control information is being disseminated through the media to the entire populace. Several studies point to low levels of health literacy among community members as a clog in the wheel of progress of malaria elimination programme. (Pleasant & Kuruvilla, 2008; Bostock & Steptoe, 2012). It has been widely acknowledged that effective communication helps to enhance appropriate delivery and consumption of malaria control tools among the community members (Koenker, Keating, Alilio, Aeosta, Hyndi and Nafo-Traore 2014; Wiseman, Mangham, Cundill, Achonduh, Nji & Chandler etal, 2010). This was corroborated by Olorunfemi (2013) who reported that the use of structured education initiative or programme had positive effects on increasing coverage improving treatment and increasing knowledge of providers and community members. In other words, structured education initiative or programme is a vital tool in malaria control programme. This was probably the rationale behind the development of communication strategic framework by the federal ministry of health in Nigeria in 2008 designed to raise awareness for malaria prevention and control strategies (Federal Ministry of Health 2008). The report shows further that the use of mass media, community mobilization, advocacy and other forms of communication were recommended to improve the knowledge attitude and practices on malaria.

However, the implementation of these strategies needs to be informed by an understanding of the different sources of information and types of communication channels currently used in the local context to make sure they are content appropriate and culturally acceptable (Mazumdar & Mazumdar, 2007; Koenker *et.al*, 2014).

The findings from the present study showed that the major types of health information acquired by adults ranges from health information on causes of malaria, symptoms of malaria treatment and prevention of malaria, protection of pregnant women and children to health information on danger of self-medication. This is consistent with the type of health messages identified in the

communication strategic framework development by the Federal Ministry of health federal republic of Nigeria to be used for malaria prevention and control and treatment awareness creation (Federal Ministry of Health 2008).

The frequency of malaria control information acquisition was examined and the result is presented on figure 2 above. The result shows that the frequency of malaria control information acquisition was low as 831 (46.2%) of the respondent asserted that they acquired health information on malaria control once in a week while only 22 (1.2%) of them received malaria control information at least three times in a week.

The result of this study has undoubtedly proved that the ability of an adult to analyse cost and benefit of his health decision, evaluate health information for credibility and quality to calculate dosage and interprete test result is a function of his health literacy skills. In other words, community dwellers need health information literacy skills to be able to obtain information needed to achieve a healthy and malaria free zone. This is consistent with the submission of Coldren, Prosser, Ogolia and Adungo (2006) who reported that literacy can impact health seeking behaviour directly and also serves as a marker for other socioeconomic difference between individual. The study also pointed it out that it is plausible that difference in health seeking behaviour or other socio-economic factors would affect rates of malaria infection as literacy and education are believed to be more associated with adequate use of medical care.

This finding is further confirmed by the views of Mctavish (2009) that in order to increase and maximise people's contribution to a healthy and democratic society as well as to maintain a prosperous and sustainable economy governments and industries around the world are challenging education system to focus people's attention on the literacy. The relationship between literacy and health information seeking ability was well established, for example Spero (2005, healthy people, 2010) pointed out three types of literacy which are prose literacy, document literacy and quantitative literacy. Prose literacy is the ability to read and comprehend uninterrupted or parenthetical text (patient instructions) while document literacy is defined as the ability to search, read and comprehend non continuous text (food and labels) these two skills come in to play when interpreting health information (Kutner 2006).

A review of the information seeking ability of the respondents shows that 35.5% obtained health information from books, flyers, posters and internet. Moreover, a significantly higher proportion

of the respondents (87.5%) were seeking health information on treatment of malaria from government hospital while 48.6% were seeking health care from private hospital. However, more than half of the respondents (77.83%) affirmed that they were patronizing herbal sellers in receiving adequate information and care as regards malaria treatment in the study area. Consequently, the majority (88.4%) of community dwellers confirmed that they were seeking information on how to protect themselves and their children against the attack of malaria, while 79.5% of the respondents were seeking information on how to cure malaria from medicine stores.

The findings from malaria control information seeking ability of adults showed that vast majority of the respondents (79.5%) used drugs bought directly from medicine stores instead of going to hospital for proper treatment whenever they felt sick. This is consistent with the findings of Masatu, Hugoe, Kwale & Klepp 2001; Jumbo *et.al*; 2011) that family members might have used drugs purchased from shops instead of going to health care facility to obtain adequate treatment whenever they felt ill. This is not unconnected with the fact that of the reasons for seeking modern health care; fever, headache and pain ranked high. Drugs for eliminating these symptoms are normally available in medicine stores and some of them may be procured without prescription, therefore self-medication can easily be practiced for these health conditions.

On the other hands, some people would have treated themselves with anti-malaria drugs for a suspected malaria infection before seeking treatment from hospital. In another study (Olasoji, 2005 quoted in Adewuyi; 2018) found out that many adults stored various types of drugs at home and used them for various ailment without medical supervision or doctor's prescription. He reported further that some of the health problems for which those drugs were used include headache (67.6%), fever (62.5%), pains (57.0%) and stomach ache (27.9%). These drugs were reportedly used without medical supervision or doctor's prescription. Therefore, further exploration of some factors is important if we are to fully understand the reason while people practice self-medication without considering the danger inherent in such behaviour. Some of the reasons why people practice self-medication can be further explained with the views of the respondents sampled in the course of interview as most of them pointed out factors such as affordability, accessibility, unavailability of drugs at government health facilities, of health personnel, poverty associated with low socio-economic status and convenience of drugs procurement at chemist or patent medicine shop. The large number of respondent who did not consider self-medication as a dangerous practice in the study area

constitute large population of un-informed group about the danger inherent in such practice and its damaging impact in the health status of the adults. The finding from the present study also revealed that vast majority (77.8%) of the respondents were seeking health care information from herbal sellers to cure malaria; This observation could be due to the fact that some community dwellers who might have seen poverty as a great threat against their lives were more likely to patronise herbal sellers than those who perceived it not to be a threat.

Consequently those adults who were from household of low socio economic status such as low educational level and poor economic status might likely result to the use of traditional health services than their counterpart from high socio economic status. This is not unconnected with the fact that poor respondent are more likely to seek health care from herbal sellers due to the perceived low cost of services compared to the cost expected to be incurred on conventional medical facilities. However, it should also be noted that even among respondents who were categorised as belonging to households of high socio economic status, the great majority of them had patronised herbal sellers due to the perceived convenience and fast services rendered by traditional health providers without considering the adverse effects of such herbs on their internal organs.

In view of the above findings, it is therefore expedient for malaria elimination programme to organise health education campaigns and programme to educate the adults about the dangers associated with self-medication and indiscriminate use of herbs. This should be done in a culturally acceptable ways so as to promote appropriate malaria control strategies among the community dwellers.

Conclusion

The conceptual basis of this study centered on the assessment of health information seeking and acquisition ability of adults on participation in malaria control. The result of the analysis showed that health seeking behaviour of adults significantly influenced malaria control.

Similarly, dissemination of health education messages on media had positive impact on people's participation in malaria control. Findings from the study also showed that some people will not refrain from self-medication and incomplete treatment of malaria except the right type of health education is given.

However, the scourge of malaria can be reduced to zero percent death which is the target of World Health Organization (WHO) and United Nations Development Program (UNDP) if the policy recommendations are adequately implemented.

Policy Recommendations

Based on the findings of the research, the following recommendations are made:

1. It was evident from the study that access to health information on media had a positive impact on citizen's participation in malaria control. Based on this findings effective health literacy messages on malaria prevention and treatment with higher frequency on radio, television, internet, mobile phones , posters, etc handbills is hereby recommended to track down malaria and achieve national health development goals.
2. However, there is also mounting evidence from this study that health information on danger of self-medication has not been frequently disseminated as more than half of the participants were denied access to such information. It is hereby pertinent for programme planners, health workers, malaria elimination programme and all other stake holders to include structured health information on danger of self-medication in their content of health messages to be given to community dwellers with higher frequency. Such messages should emphasise well-structured and culturally acceptable health education on danger of self-medication and indiscriminate use of unprescribed drug among members of the community. Similarly, the health education programme should be designed and implemented in a way to meet the uniqueness and peculiarity of each community. Appropriate communication channel to the culture of the community, beliefs and values should be adopted. For instance, in some communities, health workers, teachers, or the media may be the best channel to transmit health messages, while in other communities, the elders, community leaders, town criers, community health programmes such as vaccination campaigns may be more credible.
3. Also based on the above findings, literacy skills impact health seeking behaviour of adults, it is therefore recommended to promote adult literacy education as an important aspect of health literacy campaign against malaria disease.
4. The frequency of malaria control information broadcasting on radio and television was reported to be low in the study area, this is not unconnected with epileptic supply of electricity in the urban communities and non-availability of infrastructural facilities in the rural areas. It is therefore recommended that existing policies on infrastructural development in rural communities should be implemented and that regular supply of electricity in the urban areas should be enhanced by the government and relevant electricity distribution companies. Use of megaphones and public announcement through public address system can also be used to get health education

messages on malaria control across to people in the community. Posters can be displayed in public places such as institutions, hospitals, market places where people will see them. Also picture guides and flip charts can be used for demonstrations of health education messages. It is also important that the health massages should be clear and realistic and reflect local language and behaviour to cater for adults with low literacy levels.

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