

Factors Impeding Effective Malaria Prevention in Akoko South-East Local Government Area of Ondo State

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Abstract

This study investigated the factors impeding effective malaria prevention in Akoko South East Local Government Area of Ondo State. Descriptive survey research design was used for the study. Population comprised the people of the local government area from which 210 respondents were randomly selected as sample. Self constructed and validated questionnaire, with reliability index of 0.71 was used for data collection. Simple percentage and chi-square statistics were applied for analysis. The findings revealed that drugs resistant strains of parasites; poverty; suitable environments for mosquitoes to breed; lifestyle of the people; and migrant nature of the peoples occupation impeded malaria prevention in Akoko South Local Government Area of Ondo State. Consequent upon these findings, it was recommended, among others, that public health education be carried out, particularly, in the rural communities, and that poverty alleviation programmes be vigorously implemented throughout the country.

Keywords: Poverty, Resistant Strains, Lifestyle, Breeding Environment, Migrant Occupation, Malaria

1 Introduction

Malaria is a disease of endemic proportion in Nigeria, afflicting people, irrespective of age, sex or social status. Malaria occurs when plasmodium parasite is transmitted into human body. There are four species of such parasites that infect man; these are plasmodium Vivax; P. Malariae; P. Ovale; and P. Falciparum, the most dangerous of them all (Lucas and Gilles, 2003). Plasmodium parasites are carried and transmitted by the

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female anopheles mosquito, the most common route of transmission in Akoko South East Local Government Area of Ondo State. But transmission may also occur through blood transfusion; congenital from mother to foetus; sharing needles and syringes among drug addicts; accidental among health workers through needle and instrument puncture; and plasmapheresis and organ transplantation (Lucas and Gilles, 2003; Nordberg, 1999; Brannon and Feist, 2007; and Insel and Roth, 2006).

The burden of disease malaria cause is considerable, amounting to 300 – 500 million clinical cases per year, 80% of which occur in Africa. It is responsible for 1 million deaths per year – virtually all due to *P. falciparum*, and 90% of which are in Africa (Lucas and Gilles, 2003; and Nordberg, 1999). The mortality and morbidity rates caused by malaria is highest among children, particularly, among under – 5 in Nigeria. The percentage breakdown of under – 5 mortality and morbidity by reported causes in 1999 survey showed 30% mortality rate and 41% morbidity rate due to malaria (NHMIS, 1999).

Clinically, malaria is characterized, by fever, hepatomegaly, splenomegaly, anaemia and other conditions resulting from the involvement of individual organs. So multiorgan failure is common during infection, and this, coupled with anemia, usually lead to death, usually, among children 6months to 2 years.

There is huge problem in totally eradicating malaria in Nigeria for now. Therefore, malaria prevention and management are the available options. But prevention is better, considering the high mortality and morbidity rates; high cost of treatment; dearth of effective drugs; development of drugs resistant strains; and other dreadful consequences of this endemic disease. Against this background, this paper investigated the factors that are likely to impede effective prevention of malaria in Akoko south East Local Government Area of Ondo State.

The local government area consist of rural communities inhabited by peasant and migrant farmers. Petty traders, artisans, very few primary and secondary school teachers; and many unemployed people. In the light of this, this paper investigated whether drugs resistant strains of parasite; poverty; suitable environment for mosquitoes to breed; lifestyle of the people; and the migrant nature of their occupation would impede malaria prevention.

The emergence of drugs resistant strains of plasmodium parasites is a serious problem to contend with in malaria prevention. For example, around 60% of all malaria episodes in Sub-Saharan Africa are initially treated by private providers, mainly through the purchase of drugs from shops and drug peddlers (Deming, Gayibar, Murphy, Jones, Karsa, 1989; Ejezie, Ezedinachi, Usanga, Gemade, Ikpatt and Alaribe, 1990; Nwabu, 1986; Snow 1992; Mnyika, Killewo, Kabalimu 1995). When failure develops, and perhaps resistance had developed, recourse to multiple providers is common and patients often begin with self treatment using drugs purchased through commercial sector, and then seek care from health providers (McCombie, 1996).

Also, widespread use of traditional mixtures of medicine for malaria has been reported. Indeed, there is evidence from various parts of Africa of greater recourse to traditional healers for severe malaria (Mwenesi, Harpham, Snow, 1975; Baume, Macwan'gi, 199998; Hausmann, Muela, 2000). Furthermore, inappropriate prescription and consumption are common, along with underdosing which have been argued to have contributed to the emergence and spread of resistant parasites, among other health problems (Bloland 1993; tenHam, 1992).

Another problem impeding malaria prevention is poverty. Access to health insurance and medical care are not the only factors that make poverty a health risk, indeed, the health risk associated with poverty begin before birth. Poor mothers, especially teen mothers, are more likely to deliver low-birth-weight babies, who are more likely than normal-birth-weight infant to succumb to malaria and other infection and die (NCHS, 2004). Poverty also play a powerful role in determining who will seek health care. People who lack monetary resources, insurance, or both are less likely to seek help when they are sick or disabled.

Poverty may also lead to the use of more informal but closer sources of care where quality may be compromised. Another reason for the high level of use of shopkeepers is that they are more likely to sell an incomplete dose of antimalaria drugs, when cash is not available to buy a full course of treatment (Van der Geest 1987), even though, the price per tablet they pay may be higher (Deming, Gaybor, Murphy, Jones and Karsa 1989). Inadequate doses increase the risk of parasite recrudescence.

Moreover, suitable environment and climatic condition is essential for ample breeding of mosquitoes and for the survival and development of plasmodium parasite inside the female Anopheles Mosquitoes. Temperature, humidity, rainfall and attitude all affect the transmission of malaria. During rainfall, water accumulates in discarded broken calabashes, broken pots, tins, cans and unused vehicle tyres where mosquitoes breed. Mosquitoes also breed in ponds, trenches and stagnant water. Other factors that have a direct impact on breeding site include house structures that permits water to accumulate, and rubbish dugs. Of equal importance is the brushy environment for mosquitoes to hide and rest during he day. Also, people store water during rainfall in all kinds of containers without adequate covers, a situation which allows mosquitoes to breed right inside the house. All of which are characteristics of rural communities and under-development.

In addition, many other elements of human behaviours which profoundly effect the epidemiology of malaria, and thus provide ample opportunities for mosquitoes to bite include uncontrolled urbanization; population movement; woodgathering in the forest; and subsistence agriculture (Lucas and Gilles, 2003). Behavioural patterns emerge in different communities and are influenced by cultural, ethnic and religious backgrounds. For example, people engage in burial, marriage and naming ceremonies; religious activities and other cultural activities throughout the day, and sometimes overnight. Similarly, the introduction of electricity into rural areas has resulted in promoting late-night outdoor human activities, all of which increased the biting opportunities for mosquitoes.

Other human behaviours in relation to occupation that profoundly exposed people to malaria transmission include migrant farming; long distance traveling; over-night fishing on high seas logging in the forest; and hunting. These activities allow mosquitoes to bite and transmit malaria, and thus hinder malaria prevention efforts.

2 Methodology

Descriptive survey research design was used for the study. The population comprised all the people in Akoko south East Local Government Area of Ondo State from which 210 respondents, consisting of civil servant, self employed and peasant farmers were selected as sample through proportionate random sampling technique.

3 Instrument

Self constructed questionnaire was used for data collection. The draft questionnaire was given to a jury of three experts in Health Education who went through and offered useful corrections. The final draft was subjected to test retest reliability procedure. The reliability index was 0.71. Responses to the 31 questionnaire items followed the Likert 3 point scale of Agree, Undecided and Disagree.

4 Data Collection

With the help of two trained research assistants, the researchers went round the local government area to administer the questionnaire. All the questionnaire forms administered were retrieved, screened and coded into frequency tables. Simple percentage and chi-square statistics were used for analysis.

5 Results

Table 1: Responses on Whether Resistant Strains of Plasmodium Parasites Constitute Impediment to Malaria Prevention in Akoko South East Local Government Area of Ondo State

Responses	Frequency	Percentage	DF	Critical Value	Calculated Value
Agree	593	56.5			
Undecided	257	24.5	8	15.51	289.404
Disagree	200	19.0			
Total	1050	100			

Significant at alpha level 0.05

Table 2: Responses on Whether Poverty Constitute Impediment to Malaria Prevention in Akoko South-East Local Government Area of Ondo State

Responses	Frequency	Percentage	DF	Critical Value	Calculated Value
Agree	588	56.0			
Undecided	114	10.9	8	15.51	89.334
Disagree	348	33.1			
Total	1050	100			

Significant at alpha level 0.05

Table 3: Responses on Whether Suitable Environment for Mosquitoes to breed and Develop Constitute Impediment to Malaria Prevention in Akoko South-East Local Government Area of Ondo State

Responses	Frequency	Percentage	DF	Critical Value	Calculated Value
Agree	672	64.0			
Undecided	107	10.2	8	15.51	53.471
Disagree	271	25.8			
Total	1050	100			

Significant at alpha level 0.05

Table 4: Responses on Whether Lifestyle Constitute Impediment to Malaria Prevention in Akoko South-East Local Government Area of Ondo state

Responses	Frequency	Percentage	DF	Critical Value	Calculated Value
Agree	565	53.8			
Undecided	182	17.3	8	15.51	94.609
Disagree	303	28.9			
Total	1050	100			

Significant at alpha level 0.05

Table 5: Responses on Whether Migrant Nature of Occupation Constitute Impediment to Malaria Prevention in Akoko south East Local Government Area of Ondo State

Responses	Frequency	Percentage	DF	Critical Value	Calculated Value
Agree	858	81.7			
Undecided	98	9.3	8	15.51	21.014
Disagree	94	9.0			
Total	1050	100			

Significant at alpha level 0.05

The results of this study revealed that, in Akoko South East Local Government Area of Ondo State, resistant strains of plasmodium parasites constituted an impediment to malaria prevention (table 1); and that poverty also constituted an impediment to malaria prevention (table 2). The findings also showed that suitable environment for mosquito breeding; and the lifestyle of the people, as shown in table 3 and 4 respectively, constituted impediments to malaria prevention. The result further revealed that the migrant nature of the peoples' occupation impeded malaria prevention (table 5).

6 Discussion

This study revealed that resistant strains of malaria parasite constituted an impediment to malaria prevention in Akoko South East Local Government Area of Ondo State as indicated in table 1. This finding corroborated the researchers who observed that failure to complete drugs dosage due to ignorance; poverty and dearth of effective drugs in the country, particularly in the rural areas caused the development of drugs resistant strains of

malaria. The finding further supported Bloland et-al (1993) and tenHam, (1992) who argued that in addition to the immediate health effects of inadequate treatment, it has been found that underdosing may contribute to the emergence and spread of resistant parasites. The finding also revealed that poverty constituted an impediment to malaria prevention in Akoko South East Local Government Area of Ondo State as shown in table 2. People in this local government area are mainly petty traders, subsistent, peasant and migrant farmers, artisans, and a few of them teaching. This finding therefore supported Deming, Gayibor, Murphy, Jones and Karsa (1989), and Vander Geest, (1987) who opined that poverty hinders effective prevention and treatment of malaria. According to them, due to poverty, patients patronize shopkeepers where they are more likely to purchase expired, incomplete doses of antimalarial drugs, even though inadequate and expired doses increases the risk of parasite recrudescence.

In addition, the result of this study showed that suitable environment for mosquitoes to breed constituted an impediment to malaria prevention in Akoko South East Local Government Area of Ondo State (table 3). This finding supported Lucas and Gilles (2003) who observed that temperature, humidity, rainfall and altitude all affect the transmission of malaria. While mosquitoes require stagnant water for breeding, relatively high humidity is required for survival of adult vectors and a minimum temperature of 16^{oc} to 20^{oc} is required for plasmodium to develop in female anopheles mosquitoes. Also, the two seasons of rainy and dry seasons provides the mosquitoes with ample opportunities to breed, hide and bite thus making malaria and endemic health problem in Akoko South East Local Government Area of Ondo State and indeed, in Nigeria.

Furthermore, the finding revealed that the lifestyle of the people constituted an impediment to malaria prevention in Akoko South East Local Government Area of Ondo State (table 4). This finding supported Afolabi et-al (2002) who affirmed that despite the fact that treated nets were distributed widely across Nigeria, the use of this commodity was still very low in the Sahel Savannah region, thereby impeding malaria prevention in the area. Also, Lucas and Gilles (2003) identified many elements of human behaviours which profoundly affected the epidemiology of Malaria to include uncontrolled urbanization; population movements; religious, ethnic and cultural activities; and introduction of electricity into rural areas which had resulted in promoting late-night outdoor human activities and thus increased biting opportunities for mosquitoes.

Moreover, the finding showed that the migrant nature of occupation of people in Akoko South East Local Government Area of Ondo State impeded malaria prevention (table 5). This finding corroborated Lucas and Gilles (2003) who noted that Sub-Saharan Africans were exposed to malaria infection due to their occupation such as wood gathering in the forest; open cast mining; gem-silver and other mining; agricultural production of cotton; sugar cane, rubber, rice and subsistence agriculture. The finding further supported Prethero (1965), Dane, (2000) who affirmed that human population movement have also played a significant role in Malaria transmission and that population movement can hinder anti-malaria intervention. In addition, the researchers opined that long distance drivers and passengers; fishermen and women on high seas; migrant cattle rearers; and passengers on trains make prevention of malaria extremely difficult.

7 Conclusion and Recommendations

The result of this study showed that malaria prevention was impeded by drugs resistant strains of plasmodium parasites; poverty; availability of suitable environment for mosquitoes to breed; lifestyle of the people; and the migrant nature of occupation of the people in Akoko South East Local Government Area of Ondo State.

Consequent upon these findings, the following recommendations, among others, were made:

1. Public health education should be intensified; particularly in the rural communities. Topics to emphasis may include environmental sanitation, protection from mosquito bites; and the necessity to seek health care in the hospital.
2. Poverty alleviation programmes should be more vigorously implemented, and treated mosquito nets should be provided free of charge to all Nigerians. Mosquito net-treatment centres should be located within trekking distance from the rural communities.
3. Federal government should make available potent malaria drugs for resistant strains of parasites to be dispensed free of charge in hospitals and in patent drugs stores.

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