

Community Beliefs, Knowledge and Attitudes: Missing Link in Malaria Control

By Rosana Eric Masese. School of Arts and Social Sciences, Moi University.
P.O. Box 3900, 30100 Eldoret, Kenya

Abstract

Malaria is one of the most prevalent and deadly diseases in the world. Every year about 300 to 500 million related clinical cases occur world wide. In Africa, the death toll from malaria is estimated to be between one and two million people per year. Most of these deaths occur among children under five years of age. Though a preventable and curable disease, malaria has continued to be a major health problem globally necessitating many countries to wholly or partially incorporate malaria control programmes into health establishments. However, most of these malaria control programmes have neglected the socio-cultural and ecological conditions of the affected communities. Instead they have concentrated too much on malaria as a disease, the mosquito and the parasite. This negation of socio-cultural factors of the affected communities has rendered most malaria control programmes especially biomedical malaria control methods ineffective. This paper therefore argues that people's culture, knowledge and attitude towards malaria are important in the treatment and prevention of Malaria.

Introduction

Malaria is a devastating disease of the tropics with immense socio-economic implications. In Sub-Saharan Africa the disease is responsible for more than a million deaths mostly in children aged below five years and it leads to more than 200 million episodes of clinical malaria (Snow, et al, 1990). In Kenya, Malaria accounts for 30% of all outpatient cases and it causes deaths in over 70% under 5 year olds each day, and has negative effects on other sectors of the national economy as well (Oyediran, et al, 1999).

The increase in malaria cases in the tropics is linked to a host of factors related to environmental change, change in vector biology and change in the biology of the parasites. Traditionally, studies have concentrated mostly on the prevalence and incidences of the disease in a particular region (MOH, 1992). These negates two other important factors in the epidemiological studies namely; the environmental factors which can either be physical or social and the characteristics of the human host like gender, age, occupation and level of formal education (Coe, 1978). These later factors are not only important in epidemiological studies of malaria but also in malaria control programmes in a particular community as they play a big role in people's health seeking behaviour (Munguti, 1998). This paper therefore, examines the influence of peoples' knowledge, attitudes and cultural beliefs on malaria control.

Malaria Epidemiology in Kenya

Malaria is one of the leading parasitic diseases causing high rates of morbidity and mortality in developing countries (Munguti, 1998). In 1995, for example, malaria was the leading cause of morbidity in Kenya accounting for 29% of all new diagnoses in almost all health facilities, thus making it an important public concern. Malaria is transmitted by the female anopheles mosquito. The disease occurs when mosquito infected with the plasmodium parasite bites susceptible human beings. For the parasite lifecycle to be sustained and malaria transmission to occur, it is necessary that an infected human and a susceptible one be accessible to the infectious mosquito.

According to Ongore (1985) there are four different malaria parasites namely: *Plasmodium falciparum*, *Plasmodium malariae*, *Plasmodium vivax* and *Plasmodium ovale*. Of these malaria parasites, *Plasmodium falciparum* is the most dangerous as many parasites clot together in the blood capillaries and block oxygen and blood to vital body organs of human beings. In Kenya, this is the most common type of malaria.

Despite the widespread knowledge gains regarding malaria and the association of mosquitoes with the disease, lay people also link malaria to several other causes (Agyepong, 1992; Mwenesi, *et al*, 1995; Munguti, 1998). In Ghana, "Asra", a disease with similar symptoms as malaria is believed to be a result of prolonged contact with heat (Agyepong, 1992). Similarly, cerebral malaria is regarded as resulting from several causes in addition to mosquitoes. In Kilifi on the Kenya Coast, Mwenesi, *et al* (1995) have reported that mothers regard cerebral malaria to be a result of invasion of spirits that enter the brain to affect the victim.

These beliefs on malaria aetiology (Mwenesi, *et al*. 1995; Agyepong, 1992) may limit the acceptance of measures aimed at the treatment and prevention of the disease (Munguti, 1998). Therefore it is important to understand a particular community's cultural beliefs, knowledge or perceptions on disease causation and synthesise them with the biomedical practices. This is essential because incorporation of the socio-cultural metaphors and analogues and maximising the congruence between popular health concepts and biomedical facts will help in facilitating the adoption of new health behaviour in a particular community.

Clinically, malaria infections manifest with a wide range of symptoms. The first manifestation can be vague bouts of fever, body aches, slight dizziness and general feeling of malaise, shaking chills followed by rapid headache, high fever and profuse sweating. Other common indications include gastro-intestinal symptoms like frequent blood stained stool, diarrhoea and muscle cramps (Mpora, 1990). Malaria may be diagnosed in several ways. These include clinical diagnoses, where presenting symptoms suggest malaria, therapeutic diagnosis, where patients' complaints respond to malaria treatment, and laboratory diagnosis, where malaria parasites are seen in bloodstains after tests have been done. The laboratory tests are however, the surest way of making diagnosis but it is not practical in high malarious areas because of lack of facilities (Owaga, 1981).

The treatment of malaria is achieved by giving the patient essential anti-malaria drugs like *Malaratab*, *Chloroquine* and *Metakelfin*. However, social and cultural forces shape both the distribution and use of these essential drugs. According to Geest (1990), essential drugs mostly undergo cultural reinterpretation when they are fitted into locally existing frame of understanding; they move from one context of meaning to another. In this case, pharmaceuticals, which are mostly developed according to scientific paradigms, are separated from their biomedical context and integrated into cultural specific mode of understanding with pre-existing concepts of treatment that forms a basis for the cognitive appropriation of the drug. Therefore it is important to note that when an essential drug is "freed" from the control of professional health workers, through the process of *commodification*, it is essential to understand a particular community's popular belief that mostly guide self medication on essential drugs.

In a study by Hardon (*cit. in* Geest 1990), in two poor quarters of metro-Manila, Philippines, it was observed that people were often directed by the idea that medicine must often "suit" them. In this case she found out that people believed that a drug, which is effective for one person, could be ineffective to another. So if people come into conclusion that a particular medicine is not effective for them, they will refuse to take it, even if the drug "seems essential" from biomedical point of view. For the same reason they may decide to take medicine which is "ineffective" according to the doctor. Despite the fact that most essential drugs are understood in local terms, those terms are also constantly being revised. This has two major implications for any essential drug programme in the treatment of malaria. First, if

education about drug use is to be relevant to lay people in a particular community, it needs to be tailored to local conceptions and practices that are embedded in their socio-cultural environment. Second, providing information about essential drugs is appropriate because people are always open to new ideas. In most cases people are always observing, experimenting and seeking information from any source available to them.

In Kenya, malaria is endemic with varying degrees of endemicity both geographically and ecologically. This variation in endemicity influences the choice of malaria intervention programmes in many parts of the country. Endemicity refers to the degree of natural malaria transmission within an area. The degree of endemicity is measured by the rate of spleen enlargement in children between the age of two and nine years. In this case the spleen enlargement is 75% and over in haloendemic areas, 50%-70% in hyperendemic areas, 10-45% in mesoendemic areas and less than 10% in hypodemic areas (Abdullah, 1984). However, the pattern of malaria endemicity in recent years has drastically changed. This change in endemicity is attributed to the development of drug resistance to malaria parasites and due to cultural, social and environmental factors like population trends, urbanization, political and economic pressure and global warming (Okeyo, 1994).

Malaria Control Strategies

The fact that malaria remains a major health problem in the world and particularly in the tropics (WHO, 1996) is not at all due to failure to fight the disease. Actually, many efforts aimed at controlling the disease both locally and globally have been in existence for many years. Globally, malaria has been subjected to a lot of research and control efforts since the discovery by Lavern in 1889 that the parasite was the root cause of malaria, and the demonstration by Ross in 1897 that the mosquito was the biological vector responsible for transmitting the diseases (WHO, 1992). Since the middle of the 20th century the World Health Organisation has pursued a global campaign to eradicate the disease. The initial step towards this goal was the adoption of a malaria eradication programme of the Eighth World Assembly in 1955. The malaria eradication efforts initiated in the 1960s and 1970s received considerable success on the U.S.A, most of Europe, Israel and Cyprus. However, in other parts like South East Asia, India, South America and Africa, little impact was realised (WHO, 1999).

The global campaign for total eradication of malaria by 1970s however, encountered numerous obstacles. For instance, while in the late 1960s there was a sharp decline in the global malaria situation, the 1970s witnessed the threat of resurgent malaria globally. The failure of the eradication campaign was blamed on; the abandonment of anti-malaria control efforts by various nations, the diminished frequency of the disease in some areas, the transfer of control services to general health services which were ill-equipped for the task, lack of skilled personnel and funds and 'technical' obstacles such as mosquito resistance to drugs and human population movement (WHO, 1993). However, nothing was said about the knowledge and perceptions of people towards such control efforts in different ecological and cultural settings. It was not perceived that malaria control efforts could be hindered by behavioural responses.

With the recurrence of the disease in the late 1970s, global scientific interest shifted from the call for total eradication to that of control efforts. The same threat of resurgent malaria is still recognised today (WHO, 1993). Therefore in 1992, World Health Organisation brought together health officials and policy makers from 107 countries in Amsterdam to adopt global malaria control strategies. Advocacy of malaria control rather than eradication encouraged the mobilisation of local resources to fight mosquitoes. Similarly, other malaria control activities advocated that human beings should learn to live with the mosquito but avoid its effects (Harrison, 1978). In this case human beings should be made to accept and understand the

relevance of any malaria control efforts. This was to be attained by understanding local people's beliefs and perceptions and incorporating them with the biomedical factors by maximizing the congruence in both cases.

In Kenya, historically, malaria control has been an active component of the government's health programmes. Prior to the 1950s, substantial efforts were maintained to limit urban malaria with environmental measures, house screening, entomological surveillance and vector control (MOH, 1992). These programmes emphasised vector control and environmental management designed to achieve malaria eradication. According to Butengwa (1987), the importance of control of communicable diseases such as malaria was long recognised by the colonial government in Kenya when in September 1921, the public Health Act was enacted. Under the Act, Public health officers were required to combat communicable disease by various methods through the medical department of the government and local authorities. Part XII of the Act, which addressed itself to the prevention, and destruction of mosquitoes also required everybody to participate in the exercise of preventing mosquitoes. Penal sanctions were attached to these obligations. However, the provision of the Act relied on the enforcement of the public health authorities. To date, this Act has continued to be in operation as chapter 242 of the laws of Kenya.

Owing to the severity of malaria in relation to other diseases in Kenya, malaria was singled out from other communicable diseases in July 1929, when the malaria prevention Act was enacted. This Act was enacted to enable public health authorities to deal with malaria even better. Under this Act, health authorities, that is the ministry of health and the various municipal councils were empowered to construct and maintain drainage systems and take any action like the removal of water under their jurisdiction in order to destroy breeding areas of mosquitoes. Destruction of the breeding grounds was seen in the Act as the best measure for malaria control. This piece of legislation has also continued with little or no amendment as an Act of parliament of independent Kenya as chapter 246 of the country's laws. The existence of two Acts in the laws of Kenya since the 1920s indicates the seriousness with which malaria is viewed by the Legislature. However, rules of law cannot obviously be applied against the mosquitoes; instead, the government must seek to eliminate malaria by controlling, influencing and directing human behaviour into patterns which, make it impossible for mosquitoes to survive.

Despite the existence of two Acts in the laws of Kenya dealing with malaria control, the government for many years lacked a policy document on malaria (WHO, 1996). However, in 1992, the government launched a 5-year plan of action for malaria called "Roll Back Malaria" (MOH, 1992). The main goal of this policy was to prevent mortality and reduce morbidity and socio-economic loss due to malaria infection. To achieve this goal, the government emphasized the creation and staffing of malaria control unit, the encouragement of donor and NGO activities geared towards malaria control, increasing financial allocation to malaria control efforts, development of a national guideline for better case management at all levels and implementation of the Bamako-Initiative (that is a community-based health care programme).

Malaria control programmes in Kenya have revolved around vector control strategies and parasite control strategies (Zaneca Public Health, 1994). In vector control strategies, the main aim is to prevent transmission by eradicating or limiting the population of infectious mosquitoes from contact with potential victims. On the other hand, parasite control entails chemoprophylaxis or the administration of drugs like *chloroquine tablets*, for protection against malaria and thermo therapy or administration of drugs or treatment of malaria. Empirical studies done in various non-western communities indicate, however, that in controlling malaria, people do not solely rely on the use of the conventional methods (Glik, et al. 1989; Abdullah, 1984; Lipowsky, et al. 1992). Instead, these non western communities use both traditional methods

like burning of local plants and substances that produce scent capable of chasing mosquitoes away and modern scientific methods like use of impregnated bed nets.

The existence of pluralistic medical system in these non-western communities in the control of malaria influences the use and success of particular biomedical malaria control method in a particular community (Dressler, 1980). It is therefore, important to understand local people's knowledge and perception towards a particular malaria control method and incorporate them into biomedical methods. This is important because it will help local people to easily adapt to the newly introduced malaria control methods.

Since the inception of malaria control strategies globally in 1955, Gome and Litsios (1993) note that little attention has been paid to social behaviour and cultural factors. According to Dunn (1979) this has been found by malariologists to be unsatisfactory not only because of the cost involved in the formulation and operations, but their excessive focus on the mosquito and the parasite thus negating man's socio-cultural environment, which influences his health seeking behaviour. This negation of man's socio-cultural environment has made most of malaria control strategies ineffective. This alone has increased disillusionment with the current malaria strategies, as there is a steady upsurge of the disease.

Furthermore, most of these conventional malaria control strategies are based on the use of modern medicine, which classifies a disease in terms of single universal categories (Mishler, 1981). Thus a recognized disease retains its identity whenever it occurs regardless of its socio-cultural context. In this case, a disease is identified, diagnosed, treated and prevented in the same way by the use of same drugs everywhere. This vector-parasite approach to malaria control views malaria scientifically in terms of causation, transmission, treatment and prevention regardless of factors like culture, knowledge, attitudes of the a people which influences an individual's health seeking behaviour (Steketee *et al*, 1994; Abdullah 1984).

Despite limited understanding of the socio-cultural environment of the people whom malaria control programme are meant for, the failure of malaria control programmes has been largely blamed on the structural factors of health care system like inadequate logistic backing, insufficient training for health- oriented personnel to deal with malaria situation and administration and operational problems (WHO 1993).

Health Seeking Behaviour in Malaria Control

Health seeking behaviour, which incorporates both health behaviour and illness behaviour, is quite an elusive concept. It incorporates many variables both at macro and micro level (Hill, 1996). At macro level it comprises society's beliefs, attitudes, knowledge and perceptions, while at micro level it includes individual factors like age, sex and level of formal education. This duo-identity may persuade or discourage an individual to seek health attention, as each category has its own criteria of defining health behaviour in accordance to life style values, ambitions and goals. The adoption of general standard in regard to health seeking behaviour would therefore be subject to the degree of exposure of particular stratum to such health standards. This would further be dictated by the environmental viability in their implementation (La Place, 1976). The diversity in socio-cultural conditions may therefore be treated as major variables to the attitude, perceptions, knowledge and health behaviour elicited in different regions.

Elissen (1991) notes that socio-economic (like level of formal education, occupation and income) and cultural factors have a major impact upon the pattern of health and diseases in any community. This is because they play a big role in both the aetiology of most diseases and the organization and utilization of both modern and traditional medical care. This shows that any preventive and Promotive health programmes in a particular community must incorporate people's social, cultural and economic factors for them to be successful. In each

community, explanatory models on malaria explain the aetiology, symptomatology, curability and treatment of the disease. On this basis people choose what seems to be most appropriate action in either preventing or treating this disease. In a study by Yemeneh, *et al* (1993) in Ethiopia they found that although the respondents knew how malaria is transmitted, they nevertheless perceived transmission of the disease as not preventable. This finding by Yemeneh, *et al*, (1993) shows the importance of understanding a particular community's socio-cultural perception towards malaria as it will help in suggesting an appropriate health strategy for control intervention.

People's shared knowledge about malaria in a particular community has a great influence on malaria treatment methods. According to a study by Mwenesi (1993) in Kilifi district on mother's knowledge about malaria, it was found that mothers of young children conceptualised malaria as two separate illnesses, which correspond to simple and complicated form of the disease. The simple kind was seen as a natural occurrence of fever and was treated by purchasing drugs from the nearest shop. The second one was seen as life threatening and was characterized by fever with convulsions. This was considered to be caused by spirit possession or other non-natural intervention and was therefore referred to traditional healers. An understanding of the knowledge and perception of the population affected by malaria is therefore of great advantage to programme planners and implementers. This is because new health habits can be successfully introduced after ascertaining the function and meaning of existing habits and practices towards malaria control.

Within a particular community, however, local cultures mediate between people and their environment in such a way that differences are found between people regarding perceptions of health and illness (Anderson, 1996). These differences in knowledge and perception within a community influence the knowledge and utilisation of control strategies having biomedical components. According to a study conducted in Dar es-Salaam Tanzania by Mnyika, *et al*, (1995), women with high knowledge of malaria were found to use prophylaxis than those with low knowledge of malaria. However, no significant association was found between the knowledge of malaria and perceived effectiveness of various strategies of malaria control.

People's attitudes towards malaria in terms of seriousness, curability and preventability have a major bearing on people's health behaviour. In a study by Ortega and Bink (1994) in rural Ghana, caretakers of children who considered malaria symptoms as non-serious, 83% treated it at home, while only 12% were treated at hospital. However, those treated at home were treated after an average of 1½ days, while the average duration for those treated at a health facility was 4.7 days. Those symptoms of "hot body" which were considered serious mostly prompted caretakers to take a child to a health facility and those who experienced convulsions were treated by traditional healers. Malaria control strategies, which demand consistent and proper use of available control methods such as use of mosquito nets and anti-malarial drugs, may also be affected by attitudes held by people towards such technologies. Studies by Silva (1991) and Snow *et al* (1992) indicate low utilization of mosquito nets among the population in highly endemic areas due to negative attitudes towards such technology.

Other studies by Glik *et al* (1989) in Guinea found, in respect to anti-malarial drugs, mothers in the study community held positive attitudes towards them. However, contrary to what was expected, their low utilization of anti-malaria drugs in treatment of malaria was found to be due to limited access to health services where they could obtain these drugs.

Nyamwaya (1995) also notes that in most non-Western communities' disease causation is classified as either personalistic or naturalistic. In personalistic category the belief is that diseases are due to the active purposeful intervention of an agent usually a human being. On the other hand in naturalistic category, disease is believed to stem from natural forces or

conditions such as cold or heat. In both categories, personalistic and naturalistic, no mention is made of any disease that is known to stem from vectors like mosquitoes. Therefore, in most non-western communities it becomes hard to comprehend control methods used for malaria as they differ from the social theory.

The perception, knowledge and attitudes of malaria as a health risk vary from place to place, from one person to another (Steketee, *et al*, 1994; Ojiambo, 1986). These differences are due to the difference in socio-cultural and environmental implications of malaria transmission. Therefore, there can be no universal strategy for malaria control for all communities affected by Malaria. Due to this, an understanding of knowledge and attitude of the affected population will enable programme implementers in coming up with a suitable malaria control strategy for each community. This is because an integrated malaria control programme would require an understanding of complex natural systems within each community, which are embedded in the socio-cultural environment that will either motivate or discourage them from using such malaria control technologies.

In non-Western communities, beliefs and practices related to any disease are mostly the product of indigenous cultural development and are not derived from the conceptual framework of modern medicine (Hughes, 1985). Studies by Abdullah (1984) and Foster (1995) indicate that the traditional healing and preventive practices are usually employed beside modern medicine. In this case there is a continuous interaction between folk treatment practices and professional (biomedical) treatment. In most cases, however, people in these non-western societies tend to evaluate new services and treatment on the basis of the knowledge acquired in their ethno medical practices. As such, people who have such concept of prevention in their health care system may readily accept new preventive measures. Therefore, the responses by people to malaria in a particular community are guided by already existing knowledge. The utilisation of malaria control methods may be affected by the availability of home remedies. In most cases, before seeking treatment outside the home situation, self-medication is used (Abdullah, 1984). This may be a substitute or an addition to professional care. The severity, specificity and duration of symptoms after trying home remedies dictate the direction of health behaviour. In the case of malaria, proper treatment may be postponed or ignored due to the use of self-prescribed biomedical or ethno medical remedies (Nyamwaya, 1995).

A search for the knowledge, attitude and meaning of a particular illness in the life of the individual community and their social, cultural and economic environment is, therefore, important in any illness intervention programmes. In this case, how the society regard malaria and how individuals explain and respond to it is important for any health programme. Further, malaria being a medical issue as well as a cultural and socio-economic one, medicine alone cannot deal with the socio-cultural and ecological factors associated with the epidemiology of the disease. Hence the socio-cultural variables must be considered when dealing with malaria in any particular community.

Conclusion

In conclusion, the occurrence of malaria among various communities can ultimately be traced to their prevailing cultural practices and beliefs, socio-economic characteristics and forms of interactions with the environment. Therefore to design and implement an effective malaria control in particular community, a multidisciplinary approach which integrates peoples' cultural beliefs, knowledge and attitudes becomes of great importance.

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