

Living with malaria in Tanzania: an insight from a rural community of Tanga District

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Abstract: A study to investigate community perception, knowledge, experiences and ways of coping with malaria was conducted in Mwakidila village in Tanga District, north-eastern Tanzania in 2001. Data were collected through tape-recorded focus group discussions (FGDs) and in-depth interviews. Four FGDs were conducted, one each for boys, girls, men and women with nine participants in each group. Thereafter, four people, one from each focus group, participated in in-depth interviews. An in-depth interview also involved the Assistant Clinical Officer and Village Executive Officer. Epidemiological data were also collected from Mwakidila dispensary to determine the pattern of malaria in the study area. Our findings indicated that malaria was the most serious disease and the leading cause of illness and deaths in the village. Malaria affected people of all age-groups, but was more common and severe among young children. Symptoms of malaria were mentioned to include repeated fevers, loss of appetite, headache, body weakness and vomiting. Data from the dispensary showed that malaria, upper respiratory tract infection, diarrhoea, anaemia and pneumonia were the most prevalent diseases in the village. Mosquitoes were recognized as responsible for malaria transmission. Poor health service delivery, lack of clean water and unsanitary environmental conditions were incriminated as the most important pre-disposing factors to malaria transmission. The use of mosquito repellents, insecticide sprays, mosquito nets and clearing of bushes were employed by the community in the control of malaria.

Introduction

The World Health Organization singled out malaria as the most important killer disease in sub-Saharan Africa. The area has more than 90% of all malaria cases in the world. It has been estimated that about half a billion illness episodes and 1-2 million deaths due to malaria occur annually world-wide (WHO, 1999). The majority of malaria-related deaths occur among children under the age of 5 years.

In sub-Saharan Africa malaria is making a comeback in epidemic proportions (*EAIIDSNet Newsletter* No. 5, September 2002). It is re-emerging in areas where it was previously under control. Environmental and climate change, population movements and other shifts in social behaviour have helped malaria to gain new ground in many parts of the developing world (WHO, 1997; 1998). In Africa, control programmes have encountered various problems including high entomological inoculation rates and poor health delivery systems. Moreover, malaria mosquitoes and parasites are becoming resistant to insecticides and inexpensive antimalarial drugs, respectively.

Malaria is endemic in most parts of Tanzania. It is the major cause of ill health, causing enormous health and economic burden. The disease is the most important cause of morbidity, mortality and disability. Of the total Tanzanian population of 33.4 million, over

95% is at risk of malaria. Malaria is responsible for 33% of hospital attendance and 54% of hospital deaths (Ministry of Health, 2002). The extent of the problem amongst inpatients is greatest among underfives and pregnant women.

From independence in 1961 to 1993, the Government of Tanzania was the main provider of health services, and people had access to public health facilities free of charge. However, the delivery of health care services in Tanzania has since 1993 been more limited, due to the country's poorer economic performance. The declining capabilities of the government and economic decline went hand-in-hand, with an increase in the demand for health care services, caused by a rapidly increasing population.

Almost all of the available data on the public health problems of Tanzania are from Health Management Information System reports, epidemiological studies and health system research. While these are essential to track the magnitude of the public health threat and the degree of success or failure of the health system response, they are not able to address several questions that are essential to plan and launch more effective anti-malaria campaigns in communities. Prime among these unmet needs is better understanding of ordinary citizens' experience of malaria, both with regard to how it affects their daily living and how they attempt to cope with it. The design of more effective campaigns cannot, therefore, rely only on medical and public health expertise.

Community's socio-economic situation, cultural beliefs, and understanding of the disease influence search for treatment in the face of disease. One of the best ways to gain better appreciation of what it is like to live with malaria is to listen to ordinary people's descriptions of life with malaria. In this manner, the community context within which malaria control takes place may be better appreciated, leading hopefully to a better "fit" between control efforts and realities in the community.

The objectives of this study were therefore (i) to describe people's general knowledge about malaria and their strategies for coping with it; (ii) to examine people's feelings about living with malaria and assess their initiatives to prevent it in their households; (iii) to explore how people decide what to do both to prevent and to treat malaria; and, (iv) to identify strategies that people see as being the most convenient and cost effective to ease the burden of malaria.

Methodology

Study area

Tanga District in north-east Tanzania was the primary sample frame. Tanga lies on the coastal belt of the Indian Ocean between 5°7'S and 39°05'E. Most parts of the district lie at less than 40m above sea level. The rainfall pattern in the area is characterised by two peaks, the main one in April-June and another less pronounced peak in October-November. The annual rainfall averages 1340mm with a perennial high humidity. The mean annual temperature is 26°C, with cooler months between June and September and warmer months between October and May. The majority of the people are engaged in small scale farming, fishing and businesses. A proportion of the population is employed in the civil service. The district has an estimated population of 243,165 where 60,892 are children under five years of age. The study village, Mwakidila was purposively selected because of its easy accessibility. It lies along the main road five kilometres from the district capital.

Study design

A convenient sampling was used to recruit 36 people to four focus groups; one each for boys, girls, men

and women, and each had nine participants. Eighteen women and girls who had turned up for medical services at the Mwakidila dispensary volunteered to participate. The Village Executive Officer took the responsibility of recruiting male participants. The age range for youths and adults was 14-24 and ≥ 25 years, respectively.

Four people, one from each focus group, participated further in private, in-depth interviews meant to probe further some of the responses obtained in the focus groups. In addition, the Assistant Clinical Officer, who was the in-charge of the village public dispensary, was interviewed in a private, tape-recorded session. The Village Executive Officer was as well interviewed, with an emphasis on the village's programme for managing malaria. This was documented by note taking.

Data collection

The instruments for this qualitative study were pre-tested in Chogoleani village about ten kilometres from the study village. Necessary changes were made before the actual fieldwork. The exercise was aimed at improving the instruments and familiarizing the investigators with the research tool and any other issues that could arise during the study. All interviews were conducted in Kiswahili, a language understood by the communities in Tanga.

Retrospective epidemiological data (number of cases) were collected from Mwakidila dispensary using Health Management Information System Book 2/27 (A-B) of 1996-2001. At the dispensary the books were collected and recorded in a form. The form was counter-signed by both the health dispensary in-charge and one of the investigators.

Data analysis

Transcriptions from Kiswahili to English were made from the tapes after each session. The transcripts were reduced to sets of coding notes using an 'open' coding method to break down, examine, compare, conceptualise and categorize the data, keyed to the content areas of the interview guide (Marshall & Rossman, 1995).

Field notes from all discussion groups were ordered and reduced in relation to the study objectives. Raw data were then summarised, similar responses from all groups were given the same labels and data belonging to the same label were listed together and given the same heading.

The epidemiological data were entered into an Excel matrix. Data for 1998-2001 were analysed on a month-to-month basis to determine disease burden and any change in malaria occurrence over a period of 4 years

Results

Respondents perceived malaria as the most common communicable disease (Table 1). The people of Mwakidila showed a good understanding of malaria as a disease and its symptoms (Table 2). They could detect and diagnose household members with the disease and initiate early treatment. The most prominent symptoms mentioned were repeated fever, loss of appetite, headache, general body weakness and vomiting. The knowledge about malaria causes, prevention and treatment was greater among females as compared to males.

Mosquitoes were incriminated to cause malaria in this community. Periods after rainy seasons were associated with abundant mosquitoes. It was further reported that the most deadly hours were the evenings

and early nights (from 6-10pm) and early mornings (5-7am), during which many people are bitten. Respondents had views that the presence of mosquitoes resulted in high malaria incidence and deaths during the rainy season. Because ill villagers were not engaged in production activities, this resulted in low economic performance. However, malaria was mentioned to be the main source of income for shop owners in the village who sell anti-malarial drugs.

Table 1. Major diseases as reported by community members of Mwakidila

Girls	Boys	Men	Women
Malaria	Malaria	Malaria	Malaria
Tuberculosis	HIV/AIDS	Diarrhoea	Diarrhoea
Cholera	STDs	HIV/AIDS	Maternal problems
Pneumonia	Cholera	Cholera	HIV/AIDS
HIV/AIDS	Typhoid fever	Skin infections	Pneumonia

Key: HIV/ AIDS= Human Immuno-deficiency Virus/ Acquired Immunodeficiency Syndrome; STDs = Sexually transmitted diseases.

Table 2: Malaria symptoms as reported by the community members in Mwakidila

Girls	Boys	Men	Women
Fever	Fever	Fever	Fever
Loss of appetite	Body weakness	Headache	Vomiting
Headache	Loss of appetite	Joint pains	Body weakness
Body weakness	Dizziness	Loss of appetite	Headache
Vomiting	Vomiting	Insomnia	Loss of appetite

Table 3: Major diseases as recorded at Mwakidila Dispensary 1998-2001

Disease	1998		1999		2000		2001	
	Cases	Rank	Cases	Rank	Cases	Rank	Cases	Rank
Malaria	4444	1	6156	1	7421	2	5667	1
URTI	1563	2	3194	2	8428	1	987	2
Diarrhoea	1275	3	606	5	760	4	883	3
Pneumonia	916	4	1789	3	1814	3	768	4
Anaemia	569	5	944	4	464	5	124	5

Key: URTI = upper respiratory tract infection

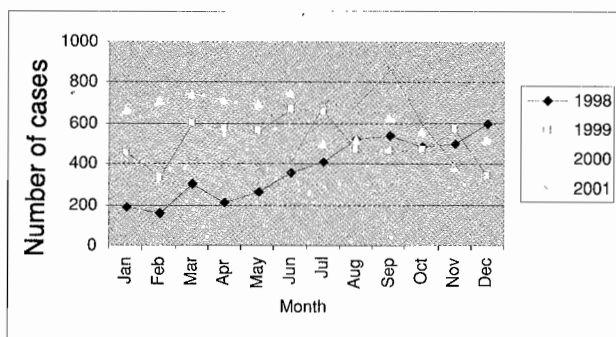


Figure 1: Malaria pattern in Mwakidila in 1998-2001

Respondents reported various treatments used against malaria at the household level. These included the use of traditional herbs such as neem (*Azadirachta indica*), locally known as “muarobaini”. The bark of the stem or leaves were boiled in water and a cup is taken daily for the treatment of malaria. Most of the discussants admitted to have used neem as the first line treatment of fever or malaria. Burning of the neem leaves or bark inside houses was also used to repel mosquitoes.

Some communities used anti-malarial drugs, available at nearby public dispensary or drug kiosks. However, many people expressed their inability to afford these drugs. Thus, most of them opted for traditional herbs such as neem or antipyretics such as paracetamol or aspirin. Respondents were pessimistic about anti-malarial drugs available from drug kiosks or shops. These drugs were relatively expensive, the shopkeepers lacked the necessary dispensing knowledge, and sometimes they even dispense expired drugs.

People of Mwakidila village acknowledged that current antimalarial drug (sulfadoxine-pyrimethamine) provided a better cure than chloroquine. However, they observed that the drug was expensive and unaffordable to most of the villagers. Many admitted, therefore, taking partial or incomplete doses.

All respondents had the opinion that public-owned health facilities were the best sources of health care for poor communities, when home treatment had failed. The villagers were required to pay for medical consultation and the prescribed drug at the public dispensary. This was singled out as forcing some to opt for cheap drugs obtained from drug kiosks or for traditional medicine. They also admitted that there were many private health facilities with better services compared to public facilities, but the services were relatively expensive, and far from the village.

The respondents had good knowledge about bed-nets. They claimed that untreated bed-nets were very popular and used by many villagers. Insecticide-treated nets were however, not common as they were relatively expensive.

Many villagers had low incomes that were only adequate for subsistence and hence cannot cater for health care needs. The women observed that the health situation at the village was deteriorating fast and was worse than it was six years ago, when the service was free. They said that they have experienced serious malaria attacks in recent years, and that diseases such as cholera were uncontrollable causing high morbidity and mortality.

Malaria was incriminated to reduce the time and capacity of the affected households or individuals to participate in income generating activities. Men, who in most cases were heads of households and the economic pillars of their respective households, were worried about the survival of their family members should themselves fall sick or even die of malaria.

Financial ability of household members was reported to be of high priority when deciding on the treatment course to take. In most cases, male household members had moderately high income and hence in a good position to decide where and when to seek medical care for any member of the household. Some male respondents even claimed to have the final decision-making power on health seeking dynamics of their families. However, female respondents pointed out that currently this socio-cultural power vested on males was of little help, because women who spend most of their time at home know better the health problems faced by the family. They were the ones who usually detect illness problems and have to take actions before their male counterparts can provide some assistance.

Many respondents pointed out that leaving only males to decide on actions to be taken when someone falls sick resulted in high morbidity in the families. This reality has been recognised by the district health authorities and appropriate actions were taken to encourage people to immediately seek medical care regardless of their socio-cultural background and position in the household. Some of the constraints mentioned to hinder proper malaria control among the community members were mentioned to include poverty and poor quality of care delivery at the public dispensary. Respondents indicated their awareness of the problems associated with self-medication that was common in the village. These included over/or under dosing, use of expired drugs, and use of inappropriate drugs.

Villagers admitted to have participated in community-based malaria control activities such as clearing of bush and filling of water ponds around their homes. These and the use of mosquito nets were regarded by the community to be the best approaches that may reduce the rate of malaria transmission in the village. However, involvement of the community in decision making in health issues was considered to be poor. For instance, they claimed not to be involved in setting up goals that may be used as targets for controlling common health problems they are facing. In most cases they said to only receive orders or directives for implementation. Nonetheless, they admitted to be involved in: reporting and management of disease outbreaks; guarding of the public dispensary drugs and other equipment; purchase of kerosene for the dispensary refrigerator; and minor repair of the dispensary building.

In general, the community's feelings about malaria reflected the seriousness of the disease in the village. Respondents frequently mentioned loss of relatives due to malaria as among the saddest events in the families. They said that almost all families had the experience of malaria. According to the community opinions, malaria has caused more deaths than any other known disease in the village. The respondents expressed the need for the government to provide effective malaria intervention including free treatment to the sick individuals.

Epidemiological data from Mwakidila dispensary showed that malaria, upper respiratory tract infection, diarrhoea, anaemia and pneumonia were the most prevalent diseases in the village. Except for the year 2000, malaria was the number one public health problem in the village (Table 3). The monthly average malaria cases were 200-850 for the past 4 years. The occurrence of the disease did not show any seasonal pattern and the number of cases remained almost constant throughout the year (Figure 1).

Discussion

Data from both the community and records of the dispensary indicate that malaria is the most important communicable disease in Mwakidila. Other diseases include diarrhoea and respiratory tract infections. Similar disease pattern has also been observed in other areas of Tanga District (Rumisha *et al.*, 2003). This is also true for most of the districts in Tanzania (Magesa *et al.*, 2002).

Data from Mwakidila dispensary showed no definite seasonal pattern for the occurrence of malaria

in the district. This is similar to observations reported from other holoendemic areas along the coastal belt of Tanzania (see Mboera, 2000). This was contrary to the perception of the local population. In such areas, adults acquire immunity which is marked by a considerable clinical tolerance to malaria. This immunity expresses itself in marked brevity of clinical attacks and a lower number of attacks than that expected from the intensity of transmission.

The community's knowledge about malaria and its treatment was reasonably high; this was attested to by their reports that malaria was the most serious disease in the village, and that they were knowledgeable of its signs and symptoms. Women seemed to be more knowledgeable of the disease than men. This is likely at least partly to be a consequence of the fact that village health personnel have intensified malaria health education campaign among women (who attend antenatal clinics), than among men. Moreover, it was learnt that every first Thursday of each month all women gather at the village office for health education sessions mainly on child nutrition and control of communicable diseases.

Studies on malaria in other parts of Tanzania have reported similarly high levels of understanding about malaria transmission and control (Mboera *et al.*, 2002; Barongo *et al.*, 2002). Nonetheless, the inability to control the disease has been linked, not only to lack of knowledge, but rather to people's poverty, risk behaviours and poor medical service delivery (Njunwa' *et al.*, 1991; Barongo *et al.*, 2002). Although in this study no attempts were made to estimate the household expenditure on malaria prevention and treatment, other studies have shown that 20-40% of outpatient visits in sub-Saharan Africa are for fever and each visit costs \$0.96 (Goodman *et al.*, 2000).

The community at Mwakidila reported combining western and folk medicine in an attempt to treat malaria. This pattern may have drawbacks, indicated by respondents mentioning use of drugs with little or no knowledge of their ability to cure malaria. People's health seeking dynamics in the study village were found to be similar to patterns reported from Kenya characterised by the simultaneous use of western antimalarial drugs and traditional medicines (Munguti, 2000). According to the Kleinmann's (1980) model of patterns of treatment seeking behaviour, a serious health condition stimulates people to seek simultaneous medical remedies as what was observed in the present study.

The study has also revealed that home treatment is common among the people of Mwakidila. Most

malaria cases were first recognized and treated within the family networks, and only if this does not produce clinical relief, then family members would discuss the next line of treatment approach.

From the study results, it is evident that if malaria control is to be achieved, the existing strategies must be improved at both the community and national levels. It is undoubtedly true that improved health education campaigns can help. However, communities having knowledge about a certain disease does not necessarily provide the desired control actions, unless serious community sensitization is provided to enhance behavioural change. It is crucial to emphasise the importance of public policy initiatives that are essential if real progress is to be made in the control of malaria. Most importantly, the persistence of poverty among the people that the respondents represent points to a need for the government to revise its cost sharing policy and provide health care for diseases such as malaria at relatively affordable costs.

In conclusion consideration of the social and economic aspects of malaria should also be extended to the basic requirement for any effective malaria control programme at both national and community levels.

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