# CHILDREN'S PERCEPTIONS AND SELF-TREATMENT PRACTICES IN RELATION TO MALARIA ASSOCIATED SYMPTOMS IN USIGU DIVISION, BONDO DISTRICT.



BY

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## LIST OF ABBREVIATIONS

| | |
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| **CHWs:** | Community health workers. |
| **KEDAHR:** | Kenyan-Danish Health Research Project. |
| **PHC:** | Primary Health Care. |
| **SPSS:** | Statistical package for social sciences. |
| **WHO:** | World Health Organization. |

## DECLARATION

**This thesis is my original work and has not been submitted for an award of a degree in any other university.**

James Ochieng' Maende

Signature _____

Date 11th June. 2001.

**This thesis has been submitted with my approval as the University supervisor.**

Dr. Leunita . A. Muruli.

Signature _____

Date 18.9.2001

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## ABSTRACT.

This study explores self-treatment practices among children in relation to malaria associated symptoms in Usigu Division, Bondo District.

Cultural Ecology theory which views people's health-seeking behaviour during illness episode as a cultural interaction with their natural environment guided the study. It argues that people adjust to their natural environment by means of their culture. The ecological approach also views distribution of disease in broad dimensions including; how factors of biology, culture and environmental pressure as well as the economic status of the individuals influence distribution of disease. People are seen as utilizing culture through the generations as a tool for adapting to and controlling their environment.

Data were collected through both quantitative and qualitative techniques, which included semi-structured surveys, focus group discussion and case histories. Data collected through surveys were coded and fed into computer for analysis using the SPSS computer package while qualitative data were summarized and analyzed qualitatively, some of it presented verbatim, that is, presented in the form in which it was offered by the respondents. A total of 203 children provided data for the study. Of these, 139 responded to the individual semi-structured questionnaire while the remaining 64 participated in the focus group discussions. Twenty mothers of the study children were also involved in the study to provide case histories of previous illness episodes of their children and what they did in response to illness.

The results show that malaria is a common everyday illness whose treatment during an episode depends on the family presumptive diagnosis at home and home treatment is the first remedy that people resort to. Other therapeutic choices are made as illness progresses with more interpretation and reinterpretation of illness symptoms to explain the cause.

Results of the study further indicate that individual perception of illness and the subsequent treatment practices as well as their knowledge of prevention of disease

influence malaria control in the study area. A striking finding of the study was that self-medication among school children is prevalent despite the fact that medicines education is not included in the school curriculum.

It is recommended that efforts need to be put on health education geared towards rational use of drugs to help in reducing and controlling the prevalence of malaria in the study area.

# CHAPTER ONE

# INTRODUCTION AND BACKGROUND

## 1.1 . Background

The burden of severe and complicated morbidity from *Falciparum* malaria in childhood still poses a major public health challenge throughout tropical Africa. Severe potentially life-threatening malaria can present in several forms involving different symptoms and signs (Mwenesi et. al 1995).

In sub-Saharan Africa, various illness behaviours are possible when individuals are faced with the signs and symptoms of malaria . Such behaviour ranges from symptom recognition and illness diagnosis to health-seeking processes; including use of home-care, medical care or traditional healing and to the choice, acquisition and use of different types of therapeutic regimen (Glick, 1989, Mwabu 1986). The process of labeling disease and symptom diagnosis to the choice of therapeutic course takes some time during a disease episode. The multiple use of different health resources is also a cause of concern since these do not necessarily complement each other but may be in conflict especially if patients receive and take medicines from more than one source at the same time.

When malaria is not treated fast enough or when drugs are not taken as prescribed, it can lead to very serious complications and even lead to death. Wrongful antimalarial drug administration may result from the self-medication practices where the sick persons administer antimalaria treatment by themselves without consultation with medical professionals when they fall sick, or in some cases as a result of individuals not understanding or not following the directions of use as given by physicians. At one point, patients may overdose, which may be dangerous.

Similar patterns of antimalarial consumption throughout sub-Saharan Africa impede efforts to reduce malaria morbidity and mortality in this population (Glick 1989:1).

In addition the use of medicines by people without sufficient training entails health risks for the individuals concerned and the wider society. Polypharmacy, that is the intake of a number of different western drugs for one ailment and excessive intake of drugs can result in dangerous side effects and inefficient treatment. Underdosing and unnecessary use of patent drugs like antimalarials contributes to development of resistant pathogens and can thus affect the health of entire community (Abosede 1984).

With regard to this background, if malaria is to be controlled through community-based health education programs, then it is necessary to have a clearer understanding of how the symptoms and signs of malaria are perceived and treated by people in communities ( Mwenesi et. al 1995).

Upon this background, this study was an attempt to investigate children's perception of Malaria and their self-medication practices of the disease in Usigu division of Bondo district. Bondo district is one of the key malaria zones in Kenya.

The study provides recommendations on how to improve malaria control through proper use of drugs and other intervention strategies.

## 1.2 Statement of the Problem

In the tropics and subtropics, malaria remains one of the principal infectious diseases and has an immense health impact. Worldwide, 300-500 million persons fall sick and 1.5-2.7 million die from malaria per year (WHO 1996). In Africa alone, an estimated one million deaths result from the disease annually, primarily among children under five years of age and children under the age of about fourteen years. It is estimated that 90 million people suffer from malaria annually in Africa South of Sahara (Ibid).

In Kenya, malaria is the leading cause of mortality and accounts for about 27% of all the outpatient attendance in health facilities nationwide (WHO 1996).

It is a major health problem in nearly all the parts of Kenya. It is estimated that in endemic areas, for example in Siaya district, five out of forty (or 12%) of children are absent from school on any given day due to malaria fever. (Ongore 1989). It is a major hindrance to economic and social progress due to morbidity and mortality it causes. Given the impact of disease in the district and generally in Kenya, it is important that effective control strategies be developed. This highly depends on the understanding and perceptions of the disease by the people.

Control of malaria has also become difficult due to people's health seeking behaviour. Chronic course of malaria may develop in case of chloroquine resistance or in a situation with insufficient treatment like when people do not buy the full course of chloroquine treatment (Ringsted and Ringsted 1996:75). The lack of knowledge of malaria's chronic relapsing course may lead to a situation where people will not easily recognise their pattern of underdosing when using self-medication (Ibid).

In addition, the utilization of health care facilities in Kenya has been undermined by among other things lack of drugs. Consequently some patients buy medicines from various sources. Different brands of chloroquine are widely available in kiosks retail shops and drug stores. These brands of chloroquine are sold without prescription in open markets and hence increasing the risk of their improper use (Ongore and Nyabola 1996). This widespread and increasing inappropriate use of antimalarials and the increasing levels of drug resistance call for more detailed qualitative studies at the community level in order to come up with concrete recommendations on how the problem could be addressed (Kilimali 1985).

This study aimed at understanding children's self-medication against malaria associated symptoms . The study attempts to examine their perceptions of the illness and to identify factors that prompt them to take such treatment against the disease. It is important to learn of children's self-treatment practices from this point of view so as to come to grips with the common trends of self-medication amongst them.

The following questions were therefore addressed in this respect:

1. What are children's perceptions of malaria?
2. What factors prompt children to administer treatment?
3. How do children treat what they perceive to be malaria; do they make use of the right procedures for treatment of malaria, that is from a biomedical point of view?
4. How can findings be useful in making appropriate recommendations for improvement of community health with regard to malaria treatment and control..

## 1.3 Study objectives

### 1.3.1 Overall objective of the study

The overall objective of the study was to investigate children's perceptions and understanding as well as their self-medication practices in relation to malaria associated symptoms.

The specific Objectives were to:

1. explore children's understanding of malaria associated symptoms
2. identify factors that prompt children to administer treatment.
3. describe children's use of various kind of treatment in order to identify whether they make proper use of drugs at their disposal
4. On the basis of research findings at this stage, to make recommendations on how malaria control can be improved in the study area.

Although numerous descriptive studies on knowledge/attitude/practice concerning rational use of drugs have been conducted, information on documented descriptions of public education interventions in rational use of drugs is scanty. In contrast, to the lack of reported public educational studies, many of the interventions and intervention studies described in the literature are aimed at changing the drug utilization patterns of prescribers or at influencing

## 1.4 Rationale of the study

what is described as "patients compliance"(WHO 1997:5). That is, the studies have emphasized adherence of an individual to a prescribed treatment regimen whereas leaving out the judicious, appropriate, and safe use of medications whether prescribed or purchased over-the-counter (Ibid.).

In this study, an attempt was made to bridge this gap. Wrong use of drugs may contribute to development of drug resistant pathogens and this leads to chronic malaria course hence a health risk to the community at large. It was therefore prudent to look at how children make use of drugs at their disposal for treatment of the disease.

Third, knowledge of cause symptoms and treatment of malaria has been extensively studied (Alkins et al. 1994, Agyepong 1992; Gessler, M., 1995; Hongvitavana 1985; Kengeya - Kayondo et al 1994; Mwenesi et al. 1995; Ongore et al. 1989; Ongore and Nyabola 1996). But all these have mainly focused on adult knowledge of malaria and treatment practices, leaving out children.

School children are part of a family. They are often able to spread good health messages and good health practice from school to home. In addition they have a special role to play helping their younger sisters and brothers become healthy and happy especially when their parents are away from home (Hawes1997:12). It is therefore important to focus on children's knowledge of disease and therapeutic choices in the light of the fact that children will medicate in some cases without talking to an adult and this has health implications. There is

therefore, need to improve the existing self-treatment practices. The modalities need to be explored.

Despite the widespread practice of self-treatment among school children, the school curriculum does not include any teaching on treatment of illness and the use of pharmaceuticals, but emphasizes preventative measures in school health education.

This study was an attempt to incorporate "medical education", that is teaching on the appropriate use of and functioning of western pharmaceuticals in the school curriculum.

**1.5 Scope and limitations**

Studies have been conducted on malaria knowledge, attitudes and practices (KAP) with the aim of developing long lasting control strategies. In this study, only the perceptions of illness and the self-medication practices were studied. These were selected on the basis that they play an important role in malaria control. The study examined the issues defined in the statement of the problem with the aim of achieving the specified objectives. The study was limited to Usigu Division of the Bondo district. The investigated problem affects neighbouring areas as well, but due to limited time to conduct the study and financial resources, covering of all areas affected was not possible.

This study was anthropological in approach and its emphasis was on the field of medical anthropology where malaria control is seen as affected by people's perceptions of the illness and the subsequent medication practices to control it.

While there is an obvious link to other disciplines, the study only focused on the aspects of disease mentioned in the objectives. There were no attempts made to push the study to the other domains. For instance, no laboratory tests were carried out to determine who had contracted malaria

D uring interviews, it was anticipated that children might not be free to come up to participate in fear of being given test or examination. Talking to the children about the aims of t ne study and assuring them that this practice was not to try to show who was the best among st them so ved this problem.

# CHAPTER TWO

# LITERATURE REVIEW AND THEORETICAL FRAMEWORK

## 2.1 Introduction

The purpose of this chapter is two fold. First, to it review literature on the subject of illness perceptions and self-medication practices. This helped in the formulation of assumptions to guide data collection on children's perceptions of malaria associated symptoms and their medication practices.

The chapter also presents the theoretical perspective on which the study is based and which enables me to explain children's health seeking behaviour in relation to malaria associated symptoms.

## 2.2 The nature of the disease

Malaria is an infectious tropical parasitic disease, essentially rural in nature because the habitat is very favourable for the female anophelene mosquito species that transmits it. Mosquitoes transmits the parasite by sucking blood from already infected person and then biting a healthy person. When an infected mosquito bites a healthy person, it takes 12-18 days before the onset of Malaria fever depending on the species of the parasite (Hill 1989).

There are four different species of malaria parasites; *Plasmodium falciparum, Plasmodium malaria, Plasmodium vivax and Plasmodium ovale* (Bhatt 1994).

*Plasmodium falciparum* is the most dangerous because many parasites clot together in the body capillaries and in this way block oxygen and blood supply to vital body organs. It is the most common type of malaria infection in Kenya.

Malaria presents clinically as fever, shaking, chills, rapidly rising temperatures headache, joint pains, and vomiting and general malaise. The fever appears intermittently. After an

interval of free fever the cycle is repeated either daily or every third day depending on the causative parasite (Gatheru, 1995).

Malaria is diagnosed in two ways. These include: laboratory diagnosis, where laboratory test is done by watching blood slides taken from the patient under a microscope for malaria parasites. Second, clinical diagnosis where presenting symptoms suggest malaria and a therapeutic course is prescribed. The laboratory diagnosis is the surest way of diagnosing malaria.When malaria is not treated fast enough or when drugs are not taken as prescribed it can lead to various serious complications and eventually lead to death (Hill, 1989).

**2.3 Effects and the economic importance of malaria**

Malaria is a serious infectious disease that affects a country's economy, education and social life in the following manner. A lot of school time is wasted when pupils become sick. In addition, a lot of money is spent buying drugs and paying for transport taking the sick to the hospital. People who work in major enterprises going for treatment waste man-hours. Families are also affected by deaths from malaria complications (Gatheru, 1995; Hill, 1989). The public budget is also over stretched as a result of malaria morbidity.

**2.4 Prevention and control of malaria**

A number of malaria control strategies have been employed in Kenya. Chemotherapy of febrile illnesses is still the mainstay of malarial control in Kenya. The focus for delivery of anti-malarials has been through the National, provincial and district hospitals, health centers and primary health care infrastructure (Snow et al. 1992).

Chemoprophylaxis has been practiced to aid in the prevention of malaria infections and the associated symptoms with drugs that exert their effects before the parasite enters the blood. One of the weaknesses of this method of malaria control is that it may deter the development of natural immunity. Chemoprophylaxis has also been shown to be toxic to human tissues

with prolonged usage of drugs. In addition it also accelerates chloroquine resistance (Kaseje et al. 1987).

Another strategy for malaria control. is vector control.. It takes the following forms: one way could be by spraying the vector (mosquitoes) with insecticides. Another means could be by way of environmental management, that is, by keeping the environment free of bushes and stagnant water masses that are key breeding places for the vector. Reduction of man-mosquito contact through use of mosquito screens and bed nets. The screens are impregnated by permethrin to become more effective (Mac Cormack et al. 1989). Community based control has also been employed as a strategy for control of malaria in Kenya. It involves mobilizing community support from family members, volunteers, primary health care staff and traditional birth attendants. These groups are trained on malaria control to a degree that they are able to recognize suspected symptoms of malaria cases early and handle them appropriately. They also offer preventive medicine to high-risk groups .

A major constraint upon the reduction of malaria mortality and morbidity has been accessibility to treatment centers (Jeffrey, 1984). It is perhaps for this reason that in Kenya and other countries in Africa, the use of antimalarials purchased from street vendors and traders in the presumptive home treatment of malaria is between 27% and 69% (Snow et al. 1992; 237). Other possible reasons for high utilization of shops could also be due to lack of health awareness, overcrowded facilities, long waiting times and frequent referrals when patients visit public health facilities (Snow et al., 1992).

Due to shortage of drugs in government hospitals and health centers,and especially with the introduction of structural adjustment programs that has demanded that patients pay a fee for services, has led to increased use of herbs for treatment of malaria suspected symptoms. This has also been partly as a result of chloroquine resistance. In a study carried out by AMREF and Glaxo, malaria control project in Sagana revealed that 75.8% of people in

Sagana treated malaria at home using herbs while 24.2% used shop-purchased drugs (AMREF and Glaxo, 1993; 28). This indicates that small shops in the village play an important role in malaria treatment. Another feature that is related to self-medicated by use of proprietary drugs is the fact that patients most frequently do not purchase the full treatment course of anti-malarials. People in most cases buy drugs in quantities that they are able to afford at that particular time of illness episode and even when they have enough medication at home they stop taking the medicine once the symptoms subside. This has been shown to lead to development of drug resistant pathogens hence an implication on malaria control efforts. (Whyte, 1991; 137).

This study having this in mind, attempted to identify the sources of medication available for children for treatment of malaria associated symptoms as well as understanding their drug use patterns.

**2.5. Common beliefs about malaria;**

A number of studies have been carried out on the knowledge attitudes and practices of people with regard to malaria control in Kenya (Mwenesi, 1995; Ongore et al , 1989; Ringsted and Ringsted 1996). It has been identified that in rural communities local terms for illness overlap to a large extent with the biomedical concept of malaria (Mwenesi et al. 1995; Vinch et al. 1996). At the same time some severe manifestations of malaria namely cerebral malaria and anemia are excluded from most models of malaria and are often associated with "supernatural causes" requiring treatment by traditional healers (Mwenesi 1995).

In her study on perceptions of malaria in Kilifi district of Kenya, Mwenesi found that mothers of young children conceptualised malaria as two separate illnesses that correspond to simple and complicated terms of the disease. The simple kind was seen as a natural occurrence of fever and treated by purchasing drugs from the nearest shop. The second type was characterised with convulsions and was seen as spirit possession and was therefore referred to

traditional healers (Ibid.). In Siaya convulsions in febrile children is recognised as a serious condition. When asked generally about treatment of this condition, mothers explained that this is an illness which must be cured by the herbalist although some parents know the cure themselves (Ringsted and Ringsted 1996; 29).

The Mijikenda and the Luo peoples in Kilifi district explain illness as part of the misfortunes of being human (Mewenesi et al. 1995). Like any calamities, illnesses can happen naturally when God so wishes or when there is disharmony in the elements that include wind, heat and food. Illness can also be as a result of witchcraft or sorcery and the evil eye or one can bring illness on oneself or on one's progeny by neglect of taboos and other ancestral or religious obligations. Some of the illnesses attributed to the (cold and 'evil) wind are febrile illnesses including malaria, *homa* (sin-specific fever), colds, aches, and pains, convulsions and splenomagaly (Mwenesi et al. 1995: 237).

Understanding the local population's perception and understanding of disease is an important starting point to understanding their therapeutic choice. By going ahead to investigate children's perceptions of the disease therefore, will enable us to understand their understanding of the disease etiology and their therapeutic choice.

## 2.6. Health seeking behaviour

Health seeking behaviour refers to what an individual does when he/she falls sick. .Health seeking behaviour is a highly complex area incorporating many variables. It is affected by both people's knowledge and understanding of disease causation and by factors such as relative costs direct and indirect of different types of practitioners and facility (Hill J. 1996). Disease and illness are perceived in various ways cross-culturally (Helman 1994). In different circumstances the decision to seek medical care lies with an individual's personal and social circumstances.

People become ill and make choices about who to consult in the popular, folk or professional sectors for further help. These choices are influenced by the context in which they are made, which includes, the type of helper actually available, whether payment for their services has to be made, whether the patient can afford to pay for the services and the explanatory model that patients use in explaining the cause of their ill health (Helman 1998:84). The decision to seek medical care lies with an individual's personal and social circumstances.

Kroeger (1983) identified two commonly used models that explain the phenomena of health seeking behaviour. One of the models identified here is the pathway model.The first stage of the pathway model is where an individual is confronted with a decision about whether or not something is wrong or whether to accept the symptoms as evidence of illness. The second stage involves symptom experience, where an individual makes assumptions of the sick role, which comes after a decision has been made to accept the health disorder. The last stage is contact stage that is entered when professional assistance is sought. The dependent patient role stage is the fourth stage and is entered when both the patient and practitioner agree that treatment is necessary. Finally, the recovery and rehabilitation stage is entered where the practitioner prescribes medication in attempts to treat the ailment in question.

The second model is the determinants model. This focuses on a set of explanatory variables or determinants that are associated with the forms of different health services. The factors that determine choice of medical care or action to be taken during an illness episode are put under the following categories: -

I) Predisposing factors - here the questions as to what could have been the cause of disease are posed

ii) Characteristics of the disorder - for instance does the disorder seem to be life threatening, does it seem to be fatal ?

iii) Health services system factors and enabling factors, as where the available resources have to be considered as well as the availability of a helper.

## 2.7 Lay theories of Illness Causation

Lay theories about illnesses are part of wider concepts about the origin of misfortune in general. They are also based on beliefs about the structure and function of the body the structure and function of the body and the ways in which part of a complex body of inherited folklore (Helman 1998: 120). Lay theories of illness place the etiology or causation of ill health in one of the following sites.

1. within the individual
2. in the natural world
3. in the social world

In many cases, illness is ascribed to combinations of two or more or the interactions between two or more causes or to interactions between these various worlds.

Lay theories that locate the origin of ill health within the body sometimes related to changes in diet or behaviour. Here the responsibility for illness falls mainly (though not completely) on the patient themselves. Ill health is blamed on not taking care of one's diets, dress hygiene, lifestyle, relationships, sexual behaviour. smoking and drinking habits and physical exercise. Ill health is therefore evidence of such carelessness, and the sufferer should feel guilty for causing it.

The natural world theory of illness causation includes aspects of the natural environment, both living and inanimate, which are thought to cause ill health. Common in this group are

climatic conditions such as excess cold, heat, wind, rain, snow or dampness. In Morocco,it is believed that excess environmental heat can enter the body and expand the blood vessels to cause fullness and throbbing in the head. Parasitic infestations such as round or threadworms also form part of this group of illnesses which originate from the natural world (Ibid: 124).

Blaming other people for one's ill health is a common feature of smaller-scale societies where interpersonal conflicts are frequent. Very common in non-western societies are; witchcraft sorcery and the 'evil eye'. Here illness (is attributed to interpersonal malevolence whether conscious or unconscious. In witchcraft, beliefs, particularly common in Africa certain people are believed to possess mystical power to harm others. This power is usually an intrinsic one and is inherited either genetically or by membership of a particular kinship group. They are usually the deviants of society on whom all the negative frightening aspects of the culture are projected. Their malevolent power is practiced unconsciously and not all witches are observably deviant.

Illnesses sometimes are ascribed to the direct actions of supernatural entities such as gods, spirits or ancestral shades. Here illness is ascribed as a 'reminder' from God for some behavioural lapse such as neglecting to go to church regularly, not saying prayers or not thanking God for daily blessings. Illness was a divine punishment for sinful behaviour. On this basis neither home remedies nor a physician were considered useful in treating the condition. A cure involves acknowledgment of sin sorrow for having committed it and a vow to improve one's behaviour. In other societies disease - bearing spirits strike unexpectedly causing a variety of symptoms in their victims. Their invasion is unrelated to the individual's behaviour and therefore he is considered blameless and worthy of sympathetic help from others. The pathogenic spirits reveal their identity by particular symptoms and are only treated by driving them out of the body (Helman, 1998: 127).

In most cases those lay theories of illness etiology (like moral explanations) are multi-causal, that is they postulate several causes acting together. Individual, natural, social and supernatural causes are not mutually exclusive, but are usually linked together in a particular case.

Foster and Anderson have proposed an alternative way of classifying lay illness etiologies, especially in non-western societies. They differentiate between personalistic and naturalistic systems. In personalistic system, illness is due to the purposeful active intervention of an agent such as supernatural being (a god), a non-human being (ghost, ancestral spirit, Capricious spirits), or human being (witch or sorcerer). In naturalistic systems, illness is explained in impersonal systemic terms, it can be due to natural forces or to conditions such as cold, wind or damp or to disequilibrium within an individual or in his social environment.

Young (1983) has classified belief systems. Concerning health as either externalizing or internalizing. Externalizing belief systems concentrate mainly on the etiology of the illness, which is believed to arise outside the sick person's body, especially in their social world. In trying to identify a cause for the individual's illness, they examine closely the circumstances and social events of his life before he fell ill, such as tracing the cause of illness from a grudge between two people, then to feelings of resentment, then to some pathogenic act (such as witchcraft, or sorcery), which then led to the illness itself. Many of the lay etiologies can be described as externalizing types of explanations on the other hand internalizing belief systems concentrate less on etiological explanations, but more on events that occur or arise inside the individual's body and always emphasize physiological and pathological processes as explanations of how and why some people get ill. This is the perception of the modern scientific medical model. Its strength lies in its detailed perception of physiological events within the individual body, but its weakness lies in ignoring the social and psychological

events that preceded the onset of symptoms, while the reverse is time of the externalizing systems.

It is important to understand the lay etiologies of illness and how they influence their health seeking behaviour, in terms of what they do to avert or prevent disease or to treat it when it strikes. This is also relevant to studying children's perception of disease and their medication practices.

**2.8 Social, cultural and environmental factors in malaria control**

Social, cultural, environmental and economic factors may prompt individuals to administer malaria treatment. The social networks in a community or in any given social set up play a major role in the decisions made as far as treatment and prevention practices are concerned.

Culturally related people are bound by a set of roles expected to be performed by each of them, one of which includes helping a sick person make a good choice of a course of action when illness strikes. This has been referred to as therapy management group. In a social setting: village, school, home, the therapy management group usually consists of relatives, friends, neighbours and paramedical staff, some already retired and some still working within the formal sector (Sindiga, 1995).

The social network thus determine in a great way, the health seeking behaviour during an illness episode (Lasker, 1981). While designing Malaria control programs, this would be very important aspects to be considered. A comprehensive malaria control program therefore, should take into account the need for understanding the cultural practices which are mainly embedded in the belief systems of a community or a social group and which to a great extent determine their treatment options

Economic factors in this case would include the availability of enough resources required to purchase the relevant technology for diagnostic and prompt treatment and also the availability of financial resources at the household level to access the medical facilities. This is one of the determinants of choices to be made during an illness episode (Mwabu, 1986).

Hence it is expected that the social, cultural, and environmental situation in which children find themselves will greatly determine how they react to an illness episode.

## 2.9 Self -medication

Many studies have been carried out to explore people's self-medication or treatment practices in various communities (Abosede 1984; Levin 1981; Haak and Hardon 1988; Mwenesi 1995; Ongore et al 1989; Whyte 1991). In various Communities researchers have identified patent medicines use and herbal use for self-treatment at home during an illness episode. These studies have revealed for instance that people prefer to buy drugs in drug stores without consulting doctors because it is a convenient and cheap way of healing common disorders like malaria.

Self- care or self- medication has been defined as a process in which people function on their own behalf in health promotion and prevention and in disease detection and treatment at the level of the primary health resources in the health care system (Levin 1981). Much of the literature that is available on self-medication has mainly focused on adults. With regard to the fact that children also self- medicate it is important to come to grips with trends in child self-medication.

In a study carried out in a rural area of Western Kenya , primary school children's health seeking behaviour in response to common illnesses was investigated It was found out from the study that 21% of the illness episodes were serious enough to keep the children from

school. On 28% of the illnesses, an adult was consulted, while 72% were not reported to an adult caretaker of the episodes without adult involvement, 81% remained untreated, while 19% were treated by the children themselves with either herbal or western medicine, of all medical treatments taken by the children, two thirds of the cases were provided or facilitated by adult relatives, and one third by children themselves without adult involvement (Geissler et al 2000).

Among the self-treatments, the proportion of western pharmaceuticals increased with age from 44% amongst children above 14 years to 63% among the children above 14 years. Antimalarials (mainly chloroquine), painkillers and antipyretics (mainly aspirin and paracetamol) were the drugs most commonly employed. These drugs were sold at most small shops in the village at low prices and readily available by the shopkeeper also to children. Children used the pharmaceuticals systematically in that, they took them mainly to treat headaches and fever, or cold while they treated abdominal complaints and wounds mostly with herbal medicine. Western pharmaceuticals were integrated by the children into medicine patterns shaped within the local medical practice where treatment of illness is regarded as something everybody can and does with exception of certain complicated, serious illnesses. Available medicines irrespective of their belonging to one or another medical tradition are used in an open and to some extent experimental practice (Ibid). With increase in age Kenyan primary school children take care of a growing proportion of common illnesses and are autonomous agents in the field of health care. It is thus, important to investigate more about what school children do to control or to treat such infectious diseases like malaria, which take toll of individuals life if not treated quickly.

### 2.9.1 Importance of self- medication

Self care is the most frequent response to illness. Self care or self-medication in the individual family and community worldwide represents 50-80% of all health care (Levin 1981:177).

One important feature of self-care is autonomy; that a lay person is able to function effectively on his own behalf in health decision making. Self-care is not limited to the individual but also include members of one's own family or household.

In many cultures family operates as a therapeutic group. Self- care constitutes among other things self diagnosis, and self-treatment. It may imply use of homemade remedies, herbal medicines and modern pharmaceuticals as well as dietary practices and the effect of religion and other taboos.

Levin (1981) has identified four rules for self care. Self-care ensures health maintenance and disease prevention self-diagnosis, self-treatment and patient participation in professional care (use of services). Health care professionals however express fear about the practices and how much lay people can be trusted with self-medication during illness episode.

The most obvious reason why self-medication should be taken seriously is that roughly 80% of all illness episodes are self -treated at home. Self-care is thus an individual's first and most common reaction to the experience of feeling unwell (Van der Geest 1987). The medical situation in Third World countries is a second reason why self-care is of crucial importance. Whereas in the industrialised world people resort to self-care for minor ailments, because it is an easy, convenient alternative to medical consultation in poor countries people often have no other choice than to treat themselves. The main distribution of medical services, doctors and other personnel in the third world poses difficulty in consultation. The shortage of medical personnel and material in the third world forces people to resort to self-treatment even when

specialist help is needed to fill the gap in formal medical services an extensive informal drug market has grown up in most developing countries.

A third factor underscoring the significance of self-care presents itself in WHO policy on Primary Health Care (PHC). The cornerstone of PHC is self-reliance Viewed in the general thrust of development. PHC is an attempt to halt the growing medical dependency of Third World Countries on the west by promoting people's awareness of their own resources. Many countries have pledged commitment to it and with self-reliance very much needed now, self medication deserves close scrutiny.

### 2.9.2 Risks of self -medication

In many parts of the developing world, the use of western pharmaceuticals is becoming increasingly important in self care (Whyte 1991, Mwenesi 1995; Snow et al. 1992, Ruebush et al: 1995). Studies have shown that even where health facilities have shown that even where health facilities were adequate and easily accessible, the prevalence of self-medication remained high (Mwenesi 1995). In a study by Mwenesi (1995) in Kilifi district it was elicited that mothers preferred to first treat fewer by purchasing drugs from the nearest shops to home. Ringsted and Ringsted (1996) have also shown that amongst the Luo of Sakwa in Siaya district, people bought antimalarials from shops at the onset of illness suspected to be malaria.

Treatment decisions taken in the first stages at the onset of malaria can be critical to the outcome of malaria infection. For example, in Gambia 52% of children who died from malaria did so in the first 48 hours of onset of symptoms and most died at home (Hill 1996:41).

According to Abosede (1984), self-medication in spite of different legislation on drugs is practiced at dangerous levels throughout the world. There are several cases of misuse and

abuse of drugs which can be prevented Though developed countries have control of over-the-counter drugs, dangerous drugs such as sedatives and hormones are hawked freely in the developing world. Lack of easy access to public facilities in most parts of rural Africa; frequent non-availability of drugs and long waiting times in public facilities are some of the reasons for the growth of the informal drug market (Whyte 1991).

Drug use practices in African Countries show that a vast majority of people presenting with suspected malaria symptoms receive treatment from outside the public health system most preferring to buy anti-malarial drugs from private outlets such as pharmacies and retail shops as well as at the market place. Home treatment of malaria in the African scene can account for upto 75% of all cases (Hill, 1996:530).

Whyte (1991) asserts that the movement of pharmaceuticals and practitioners out of the government institutions has positive and negative implications Self-treatment is characterised by irrational use of drugs. Some of the drug shops are owned and operated by people who have no training in medicine. Mo e common still, many general shops sell a variety of pharmaceuticals including antibiotics. Vendors who sell drugs in the market have some knowledge of what they sell, but it is often gathered in a very haphazard manner and adjusted to notions of what the client might like and how much one can afford. In drug shops, therefore people seldom give full course of antimalaria or antibiotics. People ask for the amount they want and can afford not the full dose. This automatically leads to underdosage exposing individuals to danger of complications of disease and in some cases death (Whyte 1991:141).

In some cases family members share drugs which probably were meant for treating an illness episode affecting one member. This automatica ly leads to underdosage and sometimes use of wrong medication. In the long term improper use of antimalarials has negative effect for everyone, in that certain disease causing organisms like in the case of malaria, *plasmodia falciaparum* may become resistant to commonly used drugs (Whyte 1991 145).

Excessive use of drugs might in some cases also lead to over dosage which is poisonous to the human body.

## 2.10 Conclusions drawn from the literature review

Deterioration of state of health care especially with the inception of structural adjustment programs which has led to radical government expenditure on health has required greater community self-sufficiency. This means that popular knowledge about pharmaceuticals is far more crucial than it ever was when the professional sector functioned more effectively.

Interventions for improved case management of malaria in Kenya therefore needs to be done using consolidated approach involving public service providers, private practitioners, traditional healers, drug retailers as well as suppliers and patient education.

With regard to the fact that children self-medicate during illness episodes, one of the very important issues for this study is the fact that self-care-oriented school health education programs should be devised that will foster therapeutic and prevention skills in solving health problems. This study intended to generate information that will aid in this effort.

## 2.11 Theoretical framework

The study adopted one theoretical framework. The purpose of any theory is to describe, explain and predict relationships between variables affecting a given phenomenon. The phenomenon for the case of this study is perceptions of disease amongst school going children and their self-medication practices.

### 2.11.1 Cultural Ecology

Julian Steward propounded Cultural Ecology in 1955. According to the author, Cultural ecology basically looks at how cultural patterns affect the environment and how the environment in retrospect produces cultural adaptation. The theory focuses on how people make adjustments to their natural environment by means of their culture. People are seen as interacting with their environment culturally. Cultures are seen to adapt differently in response to unique environmental pressures. Cultural ecology simply refers to the dynamic interrelationship of the people, the environment and their culture.

The natural environment is seen as exercising a creative, not merely a limiting effect on a culture by weeding out those cultural elements that are least adaptive, that give people the least control over their environment (Steward 1977: 34).

Drawn to the field of medical anthropology, the ecological orientation is broadly concerned with dimensions of disease. Taking disease as dependent variable, it explains how factors of biological, culture and environmental pressure influence the process of distribution of disease. Within this broad framework, human beings are seen as revolutionarily unique, utilizing and transmitting culture as a pride and as highly efficient instrument for adapting to and controlling their environment.

It acknowledges that humanity may change its environment drastically through the adaptive mechanisms of culture and this changed environment then acts as a selective agent of human beings physical structure and behaviour.

The approach stresses the ecological aspect of health and disease as well as studying of disease as an environmental factor. It also allows for the study of disease as a behavioural factor within the bio-cultural framework involving socio-cultural system and environment. It

permits analysis of the relationship between disease and a population's socio-economic and environmental conditions.

### 2.11.2 Relevance of the theory to the study

The central argument of cultural ecology theory is that human beings transmit culture as an efficient instrument for adapting to and controlling their environment. The environment on the other hand also necessitates the development of cultural traits that will enable people to adapt to the prevailing circumstances within their own environment. For the case of Usigu division, the physical environment supports prevalence of malaria. The large water mass that lies alongside the division provides a conducive atmosphere for the growth of disease carrying vector, the mosquito. People living in this environment over time have adapted ways of coping with the disease, which are culturally prescribed.

Health seeking behaviour is a product of people's attitudes, knowledge and beliefs regarding disease and health care alternatives available. This may be culturally determined. The definition of disease for instance is usually began by parents at the family level through socialization and is continued by the community. Through socialization, individuals internalize the group ways of handling disease.

The approach sees human behaviour as adjustable and human beings as always attempting to come to terms with or adjust to the prevailing environmental conditions which they find themselves in. From the above premise, it is expected that children's perceptions of disease and self-medication is prompted and determined by the environment they find themselves in, with regard to the social, economic, and cultural factors. It is expected thus, the economic conditions may lead to inability to access medical facilities; cultural factors on the other hand may demand some specific therapeutic measures to be taken during a disease episode and thus define action taken by family members. Social or lay etiology of disease may also be relevant in determining the actions that individuals take.

Within the ethno-medical systems of African communities, febrile illnesses are classified and labeled by a variety of terms. Illnesses such as malaria are described through indigenous medical modes and terminology. In most cases there is not a one to one correspondence between biomedical disease terms and categories such as malaria and ethno- medical taxonomy.

As children grow up in the community, they learn systems of diagnosis, definition and treatment. The indigenous medical models will largely affect the action children take

## 2.12 Assumptions

On the basis of reviewed literature the following assumptions were derived: -

i) Children's perceptions of malaria are derived from their social networks such as: siblings, friends, parents and the others.

ii) Social, cultural, environmental and economic factors prompt children to administer malaria treatment.

iii) Children are likely to administer wrong dosage of anti-malarials or wrong medicines when they self-medicate, looked at from a biomedical perspective.

## 2.13 Definitions of Terms

**Health care:** Is used to refer to any practice related to the restoration of health or prevention of ill health or disease.

**Symptoms:** Used to denote any noticeable changes in the body or its functions to indicate the presence of disease.

**Child:** Every person under 18 year of age unless national law grants majority at an earlier age. For the purposes of this study children aged 12-15 years old were recruited in the study.

**Drug :** The generic name for any substance used for prevention and treatment of diagnosed illness for the relief of the symptoms.

**Medicine:** Used to refer to therapeutic drugs to distinguish them from addictive drugs, which are used illegally.

**Proprietary drugs/patent medicine:** Used to denote over-the-counter medicine, that is any remedy which is bought and administered without consultation with professional healthcare provider.

**Delayed action**: The act of postponing medical consultation or any other alternative measures over a period of time.

**Self-medication/treatment**: Is used here to refer to the act of treating oneself or administering of pharmaceuticals for treatment of illness without consulting with a professional health care taker.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

In this chapter the discussions on the background to the study area and the methodological techniques employed to collect the necessary data required to meet the study objectives and assessing the assumptions derived is presented.

## 3.2 Site selection

Usigu Division was chosen as the study site because it falls within the focus area for the Kenya-Danish Health project (KEDHAR) which sponsored this fieldwork.

KEDHAR project had earlier on started its activities in Bondo division and Usigu division with two broad objectives:

1. To strengthen the research capacity of participating institutions within the fields of parasitology, nutrition, educational psychology, and social anthropology as well as health services research.
2. To contribute to the improvement of the health status and school performance of Kenyan primary school children in the study area, primarily by control of helminth infections and improved nutrition and now has also incorporated health education.

Usigu was also selected given earlier school-health projects from which the study was based

## 3.3 Research site description

The study was conducted in Usigu Division, Bondo district of Nyanza Province in western Kenya. It is bordered by Busia district to the North, Vihiga and Kakamega district to the Northeast, Kisumu district to the South East and Homa Bay district across the Winam Gulf to the South. To the west it lies on the shores of Lake Victoria. Bondo district covers a total area of 3523 km2 out of which about 1005 km2 is under and Victoria. It lies between latitudes 0-26 0 South to 0-180 North and between longitudes 33-350 East. The District

comprises of 4 divisions: Boro, Usigu, Rarieda Madiany and Bondo. Usigu division covers 187 km2. It has 5 locations and 9 sub-locations (Siaya District Development Plan 1994-1996).

### 3.3.1 Topography, climate and Soils

Usigu Division is within Lake Victoria basin. It experiences an equatorial climate with strong influence from local relief and Lake Victoria. The rains come between March to May, with April and May being the peak month's. Short rains often as reliable but fail between October and November Usigu has an annual rainfall of 864 mm. The soil type is of versitol and verlic subgroups of phaezones and luvisole commonly known as black cotton soil.

### 3.3.2 Land use

Most people grow food crops such as maize, Beans, Cassava and Sorghum. Cotton is the main cash crop is about 20% of the total area. There is also livestock keeping. Animals commonly reared for domestic products like milk, beef and dung for smearing the floors of houses and as fertilizer for soils.

### 3.3.3 Population, size and Composition

98% of inhabitants are Luo. According to the District development plan, there was an increase in population growth rate from by 3.1% between 1979-1989 in the district. The census showed that population increased in Usigu from 80 persons per square kilometer in 1979 to 153 persons per square kilometer in 1989. This increase is attributed to the fact that Usigu is close to major fishing village in the district and attracts people from other areas

### 3.3.4 Health situation

Bondo District has one of the highest infant mortality rates in Kenya with the leading cause of mortality being Malaria. In Bondo district, Malaria infection accounts for the highest cause of mortality leading to 29.9%of the deaths in the district per year. The other causes of mortality include diseases of respiratory tract infectious anemia, rheumatism, ear and eye infections (Bondo district hospital record 1999).

Despite some gains in controlling mortality rates in the district, infant mortality rates are still high at 89 per 1000 compared to the National record. Malaria remains the leading killer of those 0-9 Age group in the district.

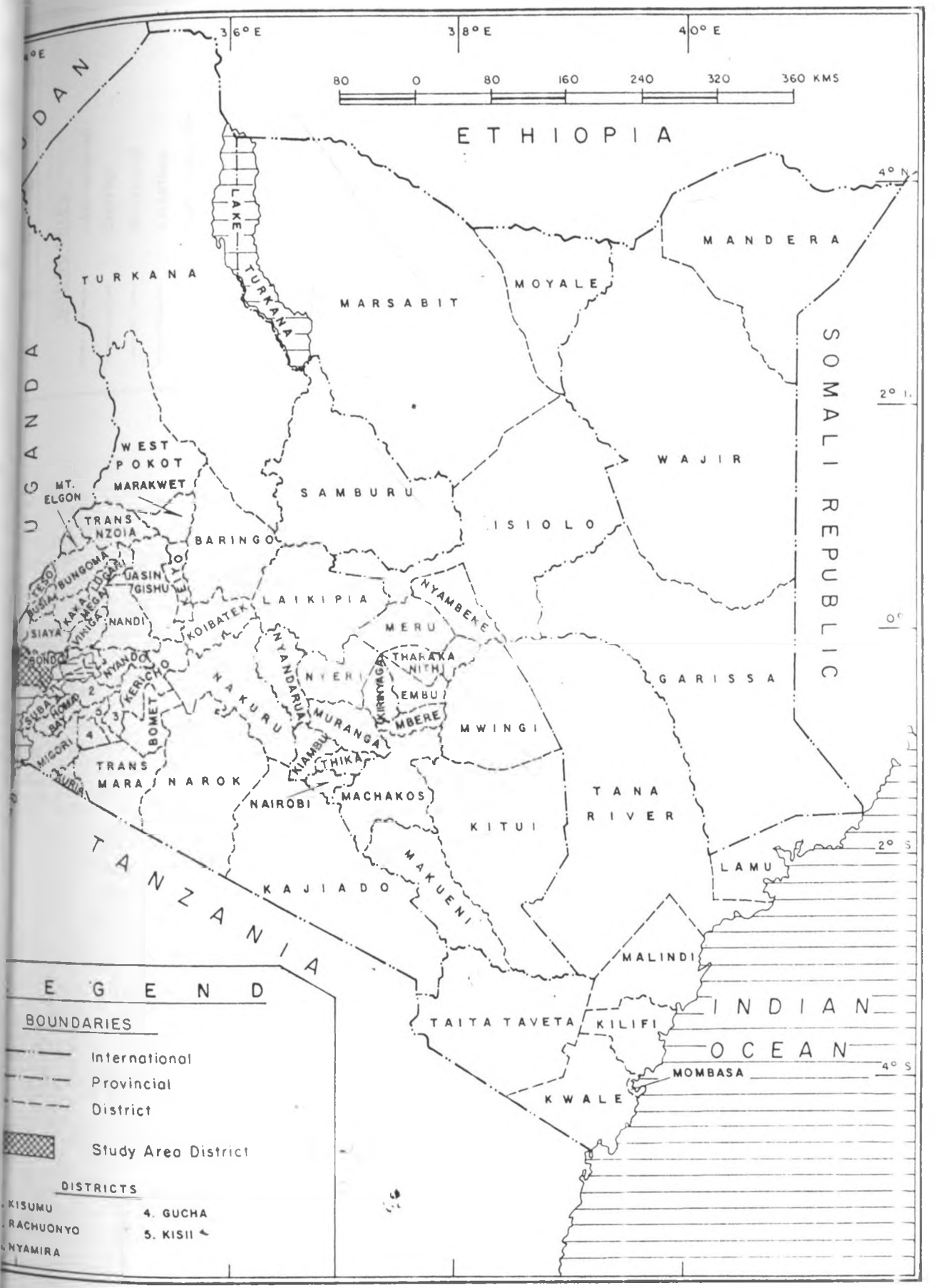


Figure 1 : LOCATION OF BONDO DISTRICT IN KENYA.

Source : Adapted from CBS Census Map, 1999

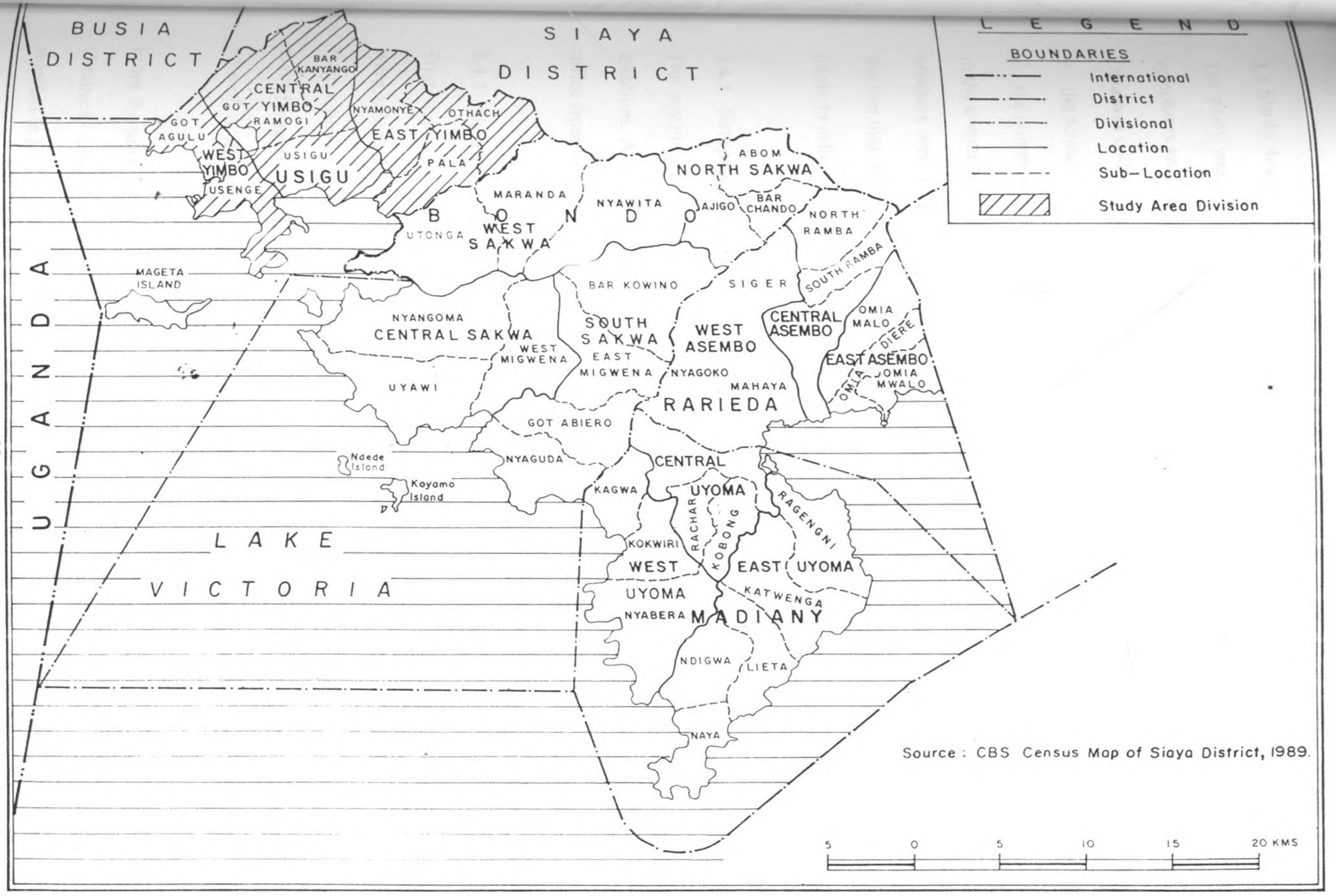


Figure 2: LOCATION OF USIGU DIVISION IN BONDO DISTRICT.

### 3.4 Study design

The study was designed to elicit information on children's perceptions of malaria-associated symptoms and the self-medication practices in treating illness.

Data was collected at two levels, which included:

- the school
- the community.

In the community selected mothers of participating children were interviewed.

Mothers were chosen because they are the key healthcare providers in the family and given the fact that they are the ones who spend more time with the children at home, hence they are likely to influence their perceptions and treatment practices.

#### 3.4.1 Sampling frame.

The sampling frame of the study was all schools in Usigu Division. The division has five locations. A list of all the schools in the division was obtained from the division education office from which four schools were sampled.

#### 3.4.2 Sampling procedure

From the five locations, four schools were purposively sampled for the study. Two schools were selected on the basis that they were located near a health facility while two far away from a health facility. The purpose of doing selection based on this criterion was to help in identifying any differences that may exist in choice of therapeutic modes depending on the ease of, or difficulty of reaching a health facility.



From the selected schools a random sample of 140 children attending classes five and six was obtained. They were asked to respond to a semi-structured questionnaire. Another 64 were selected to participate in the focus group discussions. Mothers of children participating in the

study, roughly 1/10 of the number of participating children were also randomly selected to give case histories of previous illness episodes and how they handled them.

### 3.5 Questionnaire pre-testing exercise

The help of KEDHAR deputy field coordinator and field supervisor identified one field assistant. He was then trained by being highlighted on the key objectives of the study and the process of questionnaire administration.

Following the training, a pre-test was conducted with 20 school children in two schools not to be included in the study population. The children were selected randomly from classes five and six (these were school going children aged between 12 and 15 years).

The pretest took one week. During this time we concentrated more on the meaning of questions since the wording in some cases was a bit difficult for children to comprehend. Such questions were noted and later refined.

At the end of pre-test changes were made on the questionnaire with the assistance of my supervisor. These included: -

- Addition of more questions that were deemed to be important and had been left out.
- Changing wordings of questions.
- Coding the closed questions

### 3.6 Methods of data collection

Basic anthropological data collection techniques were employed in this study which was basically a qualitative and descriptive one (Bernard, 1995).

### 3.6.1 Semi-structured Interviews



Respondents were asked to answer a set of questions asked in the same order using a standardized questionnaire. The questionnaire had both open-ended and closed questions. This tool was used to elicit information about children's perceptions of the disease and their self-medication practice.

### 3.6.2 Focus Group Discussions

This was used to gather more information on children's perceptions of Malaria and self-medication practices. Children were able to discuss freely in the group context to bring out more information that might have not been captured during interview sessions with individual children.

### 3.6.3 Case Histories

Were used to gather information from parents (mothers and guardians) as healthcare providers within the family and community set up(Kleinman 1980). A guide was developed that asked selected parents of children participating in the study, to give accounts of recent illness episodes (especially those identified as Malaria attacks), and what measures were employed in treatment of illness.

### 3.6.4 Secondary data sources

Documentary materials obtained through library research were a major source of data for this study. Mainly at the stage when I was trying to formulate it. Relevant literature regarding malaria beliefs, knowledge of cause and transmission and treatment practices like self-medication was reviewed to provide background information to the study. The examined issues were pertinent to the study and it was from the literature reviewed that the research assumptions were drawn. Written materials reviewed included: books, journals, papers, and articles.

## 3.7 Data analysis

This study was mainly qualitative and therefore descriptive. Therefore there was a great inclination towards qualitative techniques of data analysis. Some quantitative data analysis procedures were however utilized. but confined only to frequencies and percentages. Since the data collected from case- histories and focus group discussions were mainly descriptive in nature, content analysis of this information was done. Summarized and analyzed qualitatively, some of it was presented verbatim, that is, presented in the form in which the respondents offered it.

Data collected through semi-structured interviews were coded and fed into computer for analysis using the statistical package for the social sciences (SPSS).

## 3.8 Ethical issues

In all research with human subjects certain ethical principles must be observed. Informed consent means that a respondent has been informed of and understands the aims of a study, the methods and processes followed in gathering data, what the findings will be used for and how the information gathered will be disseminated. They should know that it is possible to withdraw from the study at any time.

Based on this background, the adult or child can consent or dissent at any point in the research process. It was therefore important to take note of the following during the research process:

1. No child was forced to participate in the research process.
2. We ensured that children and adults were not forced to answer questions through probing even when it appeared that a child or adult would rather not give an answer.
3. Not to act as an instructor to children telling them when they are wrong or night or contradicting the information they gave.

4. Try to give every respondent an equal chance of contributing to a discussion or interview.

Everyone interested in the study was informed about the objectives of the study. They were also asked for their consent to be noted as participants in the study.

# CHAPTER FOUR

# CHILDREN'S KNOWLEDGE AND PERCEPTION OF MALARIA ASSOCIATED SYMPTOMS AND THEIR TREATMENT PRACTICES

## 4.1 Introduction

This study aimed at investigating children's knowledge and perception of malaria associated symptoms and to look at their health seeking practices in treating the illness. In this chapter I wish to illustrate this with regard to the interviews and focus group discussions conducted with selected children from the four schools selected for the study. Information gathered from a few selected mothers of children participating in the study is also presented in this chapter.

## 4.2 Sample characteristics

Participants in this study were 139 school going children (75boys and 64 girls) ages ranging between 10-15 years, mean age 12.5 years. The 139 randomly selected children responded to the developed questionnaire in which case they were interviewed individually. Two focus group discussions were conducted per school giving a total of eight sessions with at least eight children per group. In total, 203 children participated in this study.

Participating children were all Luo speaking . They were attending four schools Pap Lela and Nyamonye primary in the North of Usigu division and Pala and Chunga Primary Schools in East of Usigu division. These schools are located within the villages where most of the interviewed children lived. Most residents are engaged in subsistence farming, animal husbandry and fishing. Children contribute in the household through fetching of water, collecting firewood, herding cattle, fishing and sometimes taking care of younger siblings when parents are away from home.

In addition, twenty mothers (some of them guardians to schoolchildren participating in the study) were interviewed, ages ranging between 32 and 60 years.

### 4.3 Definition of illness

Children defined malaria by making reference to the symptoms that it presents as shown in table 4.0. When asked to cite some of the common ailments affecting children in the community in which they lived, children cited malaria as a common illness affecting children in the community. All children, 139 (100%) cited malaria in the list of common ailments affecting children.

***Table 4.0 Definitions of malaria given by children***

| Definition | Frequency | Percentage |
|---|---|---|
| *Tuo ma ka omaki ibedo kod wichbar*<br>Illness that makes one have headache | 81 | 58.3 |
| *Tuo ma ka omaki to ing'ogo ng'ok maratong*<br>Illness that makes people vomit yellowish liquid | 24 | 17.2 |
| *Tuo ma makoji kinde ma koth chue kata ka piny ngich*<br>Illness that is common during rainy seasons and cold weather | 11 | 7.9 |

| | | |
|---|---|---|
| *Tuo ma miyo del bet maliet*<br>Illness that makes one's body hot | 5 | 3.6 |
| *Tuo ma ka omaki to dhogi ruodho*<br>Illness that causes rashes or swellings on ones lips | 11 | 7.9 |
| *Tuo ma ka omaki to thedo kod del ma ool*<br>Illness that makes people very tired/weak | 7 | 5.0 |
| Total | 139 | 100 |

The above Table shows that children mainly associated headache with malaria. 81 children (58.3%) associated a headache to be with malaria, while 24 (17.3%) defined malaria as an illness that makes a person vomit yellowish liquid. A small proportion, 11 (7.9%) of the children defined malaria as an illness that is very common during rainy season or when the weather turns cold.

Malaria is perceived as a very common everyday illness. All interviewed children reported to have experienced malaria episodes themselves. When asked to give the local name used for malaria, children mentioned mainly two that were names associated with malaria symptoms and these were *Homa* and *tou mar wichbar* (headache).

***Table 4.1 Local names for malaria cited by children***

| Local Name of illness | Frequency | Percentage |
|---|---|---|
| *Homa* (Flu) | 30 | 21.6 |
| *Wichbar* (headache) | 103 | 74.1 |
| I don't know | 6 | 4.3 |
| Total | 139 | 100 |

From focus group discussions one more local name was mentioned. This was also a name associated with symptom of malaria *Nyajonya* is a local name given to malaria and refers to the feeling of tiredness and general body weakness when one has malaria especially weakness felt on body joints and muscles.

Mothers interviewed in the study mentioned *midhusu* as a local name used for malaria in Usigu. It was mainly associated with shivering, dullness and yellowish vomit. According to them *midhusu* usually results following consumption of fresh farm products such as green maize and foods prepared from fresh grains like millet and is therefore very common during harvesting season.

Mothers also referred to malaria as *sambua*. *Sambua* is a name that refers to convulsions mainly in infants and attributed to punishment from ancestors or as a result of witchcraft.

*Homa* stated both by children and mothers as a local name for malaria is a term borrowed from Kiswahili language and refers to a variety of febrile ailments which present with colds flu, fever, loss of appetite and headache (Muella and Muella: 1998, Mwenesi: 1995).

Interestingly, children's knowledge of *homa* as malaria is influenced by the fact that a drug like Homaquine is used to treat malaria. As one of them asserted during a focus group session.

*'Malaria bende en mana homa nikech seche moko ka omaki to ibiro tio mana kod homaquine mondo ithiedhe to yadhni biro mana dhiedhi maber'.*

"If you have it you can use homaquine and it will treat it. Their definition of malaria as *homa* in this case can be seen as being influential by name of the drug that according to them treats both malaria and *homa* yet the prefix of the name homaquine is '*homa*'. It should be used for treating *homa* (flu)".

In addition children said that when one has *homa* at the initial stages one can have, high body temperature, and at times will feel cold, dizzy and headache and will feel tired and weak. All these symptoms that flu presents with are also similar to the case of malaria.

**4.4 Signs and symptoms associated with malaria**

Children participating in the study enumerated a number of signs and symptoms. These included:

- Feeling cold accompanied by shivering
- Yellowish vomit
- Headache
- Loss of appetite
- Joint pains
- High body temperature
- Stomachache

- Running nose with headache felt on the forehead
- Body pains, especially on the muscles and joints
- Body grows weak
- Feeling dizzy.

### 4.5 Knowledge of causes of malaria and its transmission

Most of children in Usigu are aware of malaria as an illness. Most of the school going children are aware that when one is rained on they are likely to catch malaria, 70 children (50.4%) identified playing outside when it is raining or being rained on as a cause of malaria, while 38 (27.3%) identified mosquito bites as a cause of malaria, and 9 (6.4%) identified walking or playing in cold, stagnant water as a means through which malaria is transmitted while 11 children (7.9%) identified cold weather as a cause of malaria. That is, when the weather turns cold this lowers the body temperature and hence people get malaria. Another cause of malaria cited by 8 children (5.7%) was chewing of the fresh, green maize stalk, which is very palatable.

***Table 4.2 causes of malaria and transmission***

| Cause of malaria | FREQUENCY | PERCENTAGE |
|---|---|---|
| Playing outside while it is raining | 70 | 50.4 |
| Mosquito bite | 38 | 27.3 |
| Playing/walking or standing in stagnant water | 12 | 8.6 |
| When weather turns cold | 11 | 7.9 |
| Chewing maize stalk | 8 | 5.7 |
| Total | 139 | 100 |

From focus group discussions, it also emerged that malaria is an illness that can be sent to a person by God. Children participating in focus group discussions and who belonged to the Legio Maria sect faith believed that if a family member went against the expected behaviour or rules he would possibly catch malaria. This type of malaria then would demand that the sick child or adult be taken to church to be prayed for or one of the church pastors would be invited to pray for the sick at home so that they get well.

*Sambua* (convulsions) were highly attributed to punishment from ancestors and sorcery or witchcraft by mothers participating in the study. Malaria got through affliction by evil sprits or witchcraft would cause mental instability where patients would be talking to themselves. In such cases prayer was the main source of cure sort . One can also be taken to *Jathieth* or *ajuoga* traditional medicineman and try and help the patient. People were also believed to get malaria when they worked very hard for long hours in their farms.

**4.6 perceived effects and risk of malaria**

Among the children of Usigu, malaria is felt to be a common everyday illness that affects all age groups in the community, when asked about who suffers most from malaria, 79 children, (56.8%) said children of their age (10-15years) suffered most from malaria that made them to miss school at times, 38 (27.3%) said both adults and children suffered from malaria, while 22 children (15.8%) believed that children below the age of 5 years suffered most from malaria.

*Table 4.3 Response to question – Who suffers most from malaria?*

| Age category | FREQUENCY | PERCENTAGE |
|---|---|---|
| Children aged between 10-15 years (Category selected for study) | 79 | 56.8 |
| Adults and children of our age and older people parents, siblings and grandparents | 38 | 27.3 |
| Children under the age of 5 years | 22 | 15.8 |
| Total | 139 | 100 |

All the interviewed children, that is 139 out 139 (100%) repotred that they had suffered from or experienced malaria episodes themselves at one time.

Majority of the interviewed children reported that malaria could kill if a person suffering from it is not treated quickly. Thus, 80 children (57.5%) said malaria could kill if not treated quickly, 36 children (25.9%) said it makes people thin and weak since the patient does not eat and 23(16.5%) of them mentioned that malaria makes people so weak that they cannot work on their farms or go to attend school.

***Table 4.4 Effects of malaria***

| Effects and Risk of illness | Frequency | Percentage |
|---|---|---|
| Can kill patient if not treated quickly | 80 | 57.5 |
| Makes people weak and thin down because they do not eat | 36 | 25.9 |
| Makes people so weak that they cannot work in their farms or go to school | 23 | 16.5 |
| Total | 139 | 100 |

### 4.7 Malaria treatment and prevention practices

Malaria treatment and prevention practices refer to the actual stages in an individual health seeking behaviour when illness strikes. In this study this was determined by what children said they did when they suspected that they were sick of malaria or rather, when they became aware of malaria signs or symptoms.

#### 4.7.1 Patterns of health seeking during an illness episode demonstrated by children.

The key purpose of exploring children's treatment practices was to determine to what extent children treat themselves without the knowledge of the adult, parents, guardians or older siblings during an illness episode. It was also to determine the nature and variety of treatment options that are available for children and finally the factors that prompt children in the study area to administer malaria treatment.

The key question asked here was:

When you suspect that you have malaria what do you do?

Then a list of options was given to the children and this included: -

1. Talk to an adult
2. Go straight to dispensary
3. Go for prayers
4. Visit a healer (*Jathieth*)
5. Buy medicines from shop.

Steps taken in attempts to fight illness were then listed in order from the first step taken to the last within these options. Notes were taken on any other options illustrated by children. Majority of the children indicated that most of the time they fell sick, and suspected they had malaria they first talked to an adult in mostly mothers. The next step for most of them was that they were given money and asked to buy medicine from the shop. If this did not work

malaria they first talked to an adult in mostly mothers. The next step for most of them was that they were given money and asked to buy medicine from the shop. If this did not work then the third step would be to go to visit the nearest dispensary or health center. Most of the children that is 67.6% demonstrated this pattern of health seeking, 30 children (21.5%) demonstrated that when illness struck, they would go straight and buy medicine from the shop. If this did not work then they would visit the local health facility, and if this did not work, then they would now come home and talk to an adult so that an alternative treatment option would be taken. Only 15 (10.8%) said when they fall sick they go straight to dispensary then later buy medicine from the shop after being given a prescription.

From the illustration of the treatment pattern sort during an illness episode, it can be seen that treatment of malaria associated symptoms at the onset of illness, is with pharmaceuticals mostly bought from the shops or from hawkers at the market before going to consult with medical professionals at the health facility. The visit to a health facility is second option after home treatment with pharmaceuticals or herbal remedies do not seem to relieve the patient of signs of malaria.

From the focus group discussions, it emerged that children had knowledge of the fact that if malaria continued after visiting health facility, then in some cases, what it meant was that illness could possibly be similar to malaria but may have been as a result of witchcraft and may require that a traditional healer (*jatheith* or *ajuoga*) be consulted for treatment. In most cases if malaria symptoms like severe headache, body pains and weak paining joints continue after treatment in hospital, then it was a sign that it was not the malaria that is treated with pharmaceuticals or treated in hospital. As one of them put it:

*"Ka ineno ka wiyi medo bari matek to ineno ka dendi pod lit a lita to iol bang dhi e osiptal to mano nyiso ni, nyalo bedo ni mano ok en malaria ma ithiedho kod yiend osiptal. Mano nyalo bedo malaria ma oor kod ng'ato ma oiri"*

"If you continue having a severe headache, you feel tired and weak and continue to have body pains even after treatment in hospital, then it means it is not the kind of malaria treatable in hospital with western pharmaceuticals".

This may require treatment by traditional healer locally referred to as *jathieth* or *ajuoga*. Alternatively for people who belong to religious sects like *Luong ma ogik* church of God of the Last Appeal, Israel church and Legio Maria may opt to go for special prayers to counter the power of a sorcerer or to ask God for forgiveness in case illness was as a result of breaking the rule of the church.

### 4.7.2. Types of Medicines used to fight malaria associated symptoms

When asked about the main medicines or pharmaceuticals used for treatment of malaria, majority of children mentioned Panadol as a key treatment to malaria 53 (38.1%) cited Choloquine while 21 (15.1%) cited Hedex, 6(4.3%) cited Action while only 1 child cited Asprin as shown in the table below.

*Table 4.5 Types of medicines used for treating malaria*

| Name of medicine | Frequency | Percentage |
|---|---|---|
| Panadol | 58 | 41.7 |
| Chloroquine | 53 | 38.1 |
| Action | 6 | 4.3 |
| Hedex | 21 | 15.1 |
| Aspirin | 1 | 7 |
| Total | 139 | 100 |

During group discussions with children, they were asked to list medicines, that is, western pharmaceuticals or drugs corresponding to the symptoms they were used to fight during an illness episode suspected to be malaria and the following was found out as shown in Table 4.6 below

*Table 4.6 Drugs corresponding to malaria symptoms they are used to treat*

| Name of medicine | | Symptoms treated |
|---|---|---|
| Asprin | Antipyretics/pain killers | Headache, high body temperature |
| Action | | Headache |
| Hedex | | Headache |
| Hedapan | Antipyretics/pain killers | Headache |
| Panadol | | Headache and fever |
| Malariaquine | Generics of Chloroquine | Headache, fever |
| Homaquine | | Fever, *homa*(flu) headache |
| Chloroquine | | Headache, fever, |
| Dawaquine | | Fever, headache, body pains |

**4.7.3 Children's knowledge of dosage of medicines cited.**

Children were then asked about the dose of tablets that they required for treatment of malaria for a child of their age, that is for a complete malaria treatment. The responses are shown in Table 4.6 below.

*Table 4.7 Dosage of medicines identified by children.*

| Dosage | Frequency | Percentage |
|---|---|---|
| Only 2 tablets of chloroquine | 34 | 24.5 |
| 2 tablets of chloroquine + 2 panadols | 32 | 23.0 |
| 3 tables panadol + 3 of Chloroquine | 4 | 2.9 |
| 2 tablets of panadol | 58 | 41.7 |
| 3 tablets of tablet | 4 | 2.9 |
| 3 tablets of asprin + 2 of chloroquine | 7 | 5.0 |
| Total | 139 | 100 |

The Table above shows that majority of children in Usigu were aware of panadol as the Main malaria drug, 41.7% reported that a complete malaria dose comprises of taking two tablets of panadol, 34% knew the dose comprised of two tablets of chloroquine while 32% said the full malaria dose was two tablets of chloroquine taken together with two tablets of panadols.

When asked if the treatment cited was repeated again, most of the respondents said the similar treatment or rather they were only added more tablets only when one got more sick after the first treatment. 79(56.8%) said that they were given another treatment only if they still felt sick after the first treatment, 49 (35.3%) said in most cases they were added more tablets in the evening before they retired to bed while 11 (7.9%) agreed that treatment was not repeated at all after the first treatment.

***Table 4.8 Patterns of treatment with mentioned pharmaceuticals in table 4.7 above.***

| | Frequency | Percentage |
|---|---|---|
| Only when one gets more sick | 79 | 56.8 |
| Yes treatment is repeated in the evening before going to bed | 49 | 35.3 |
| Treatment is not repeated | 11 | 7.9 |
| Total | 139 | 100 |

Findings shown on Table 4.7 above indicate that there is a great likelihood of children underdosing or using medicine that are not recommended for malaria treatment while self-medicating at home. Table 4.8 below shows the recommended dosage for children of various ages.

*Table 4. 9 Recommended dosages for malaria treatment.*

| Fancidar Tablets | Age of patient | Paracetamol tablets (500mg) Upto 4 times a day for 3 days |
|---|---|---|
| 0.5 of tablet | Under 1 year | 0.25 of tablet |
| 1 tablet | 1-4 years | 0.5 of tablet |
| 1.5 tablet | 5-8 years | 0.5 of tablet |
| 2 tablets | 9-14 years | 1 tablet |
| 3 tablets | Above 15 years | 2 tablets |

Source: Kenya National Malaria Control Strategy 2001-2005

### 4.7.4. Children's knowledge of herbal remedies used to fight malaria related symptoms

Primary school children in Usigu division have a considerable knowledge of herbal remedies, which are also used for treatment of malaria, associated symptoms. During focus group discussions with school children, they were able to enumerate a number of herbal remedies used for different malaria symptoms. Children in this community use natural herbs to treat themselves, friends and siblings. Sometimes treatment is administered with the involvement of parents, guardians or other adults while in some cases treatment is administered without the knowledge of or the involvement of an adult guiding the children on how to prepare and make use of the herbal remedies. Majority of respondents in our study agreed that in some cases, for instance when there was no money at home to buy hospital medicine, or when an adult was not at home to help with the purchase of medicines or when a patient had failed to recover from malaria symptoms after administering hospital medicine, herbal remedies were employed.

The table below, Table 4.9, illustrates the names of herbal remedies mentioned by children, how they are prepared and what symptoms they are used to treat.

***Table 4.10 Herbal remedies description of preparation, administration corresponding to symptoms they are used to treat.***

| Name of herb (Luo and scientific names) | Description of Preparation and Administration. | Malaria associated Symptom. |
|---|---|---|
| Okita (*Ocimum kiliamendascharium*) | Leaves are boiled in water in a pot tightly covered when it starts steaming patient covers his head over the steaming pot with | Fever cough |

| | | |
|---|---|---|
| | a blanket•process know as (*fundo*). | |
| Mwarubaine | Roots are boiled solution taken | Headache ,fever ,body pains, vomiting. |
| Ochuoga (*Carrisa edalis*) | Roots are boiled and solution is drunk by patient | Very severe headache on the forehead |
| Dwele (*Erlangea Cordofolia*) | Roots are boiled in water and solution is drunk by patient | Fever and headache |
| Ober (*Albizia Coriaria*) | Bark is pounded mixed with water solution is drunk | High body temperature (fever) and stomachache associated with malaria, headache |
| Chwaa (*Jamarindus indica*) | Roots are boiled in a pot and solution drunk | Fever (*del maliet*) |
| Nyabunge odidi (*Microgiossa pytfollia*) | Roots are pounded soaked in water then boiled and solution is drunk | - Headache (*wichbar*).<br>- Cold and body weakness (*koyo kod olo*)<br>- Helps patient vomit out malaria |

| | | |
|---|---|---|
| Ombasa (*Tylosema fassoglensis*) | Mixed with ochol (*Aphania senegalensis*) boiled and solution is then drunk | Severe headaches (*wichbar matek)* |
| Chamama | Leaves pounded and then sap squeezed into nostrils. | Flu (*athung'a*) |
| Nyabend winy (*Lantana camara*) | Leaves are rubbed on the forehead | Headache (*wichbar*) |
| Abaki (*Warburgia ugandesis*) | Bark is crushed powder mixed with water and solution drunk | - weak paining joints<br>- Colds and flu (*athunga*)<br>- High body temperature (*del maliet*) |
| Ochol (*Alphania senegalensis*) | Bark of the tree is boiled in water then solution is drunk by patient | Fever (*del maliet*) |
| Pedo (*Harrispmoa abyssinica*) | Roots are boiled and solution drunk can also be used for steaming (*fundo*) | - fever (*del maliet*)<br>- Flu (*athung'a*)<br>- Cold/shivering (*del matetni*) |

Source: My own field work running between February – April 1999.

Scientific names from Kokwaro JO. 1972/1976.

According to children, these herbal remedies could be used at home before visiting a health facility and sometimes also used to speed up symptom relief after administering western

pharmaceuticals. This meant that at times they are also used alongside patent medicine administered in hospital or bought over the counter from the local shops.

Children were then asked who in most cases helped administer malaria medicines or malaria treatment in their respective families. Majority of children mentioned mothers as the key health care providers during an illness episode suspected to be malaria. Most of the children, 90 children (64.7%) mentioned mothers while 20 (14.4%) mentioned fathers, 19(13.7%) mentioned grandmothers while 10 (7.2%) mentioned grandfathers.

*Table 4.11 Health-care providers*

| Health taker | Frequency | Percentage |
|---|---|---|
| Father | 20 | 14.4 |
| Mother | 90 | 64.7 |
| Grandmother | 19 | 13.7 |
| Grandfather | 10 | 7.2 |
| Total | 139 | 100 |

It was also mentioned during focus group discussions that older siblings would occasionally, when others were not available at home, administer malaria medicines, mainly they used patent medicines from shop or hospital and sometimes herbal remedies.

### 4.7.5 Children's self-treatment during an illness episode suspected to be malaria

The aim of exploring children's treatment practices was to see how they cope with illness in circumstances in which they are not able to be helped by an adult and also to identify or rather to determine to what extent children administer treatment themselves without knowledge of or assistance from adults: parents, guardians, siblings or friends during an illness episode. Self-treatment as such, was considered in this study to refer to what the

children said they did to help themselves in circumstances when they fell sick, suspected that they had malaria and one alone at home with no adult to help them.

Majority of children said they would take malaria medicines (patent medicines) from where they are kept at home and take. Sixty children (43.2%) said they would take medicine kept in the house while 38 (27.3%) said if they had money they would buy medicines from the 'village' or the shops. Nineteen children (13.7%) said they would wait for an adult to come home and help them while 16(11.7%) said they would prepare a herb to relieve them of the symptoms and only 6 (4.3%) said they would go straight to dispensary.

### 4.7.6 Sources of medicines; patent medicines and herbal medicines available to school children

As in an earlier conducted study (Geissler et al 1998) on child self-treatment of common ailments among primary school children, the main source of western pharmaceuticals (patent medicines) was identified to be the small shops (dukas) in the villages. Children also identified another source to be from households in the village where medicines are sold. Pharmaceuticals used to treat fever headaches, flu and other ailments were found to be available and were also sold to children.

Medicines were also said to be available from 'village doctors'. The informal doctors sold tablets to children. In certain occasions when children felt more ill they administered injections. However children did not seem to know much about medicines used by 'informal doctors' to give injections. Children also identified community health workers (CHWs) otherwise known as *nyamrerwa* plural *nyamreche* as a source from which they buy antimalarials. Some of the community health workers also administered injections to children against malaria.

Herbal remedies are mainly prepared from wildly growing plants which overtime have been identified in the community as being efficacious in fighting malaria related symptoms. To combat mild malarial related symptoms children can in some cases go out gather the wild plants or parts of the wild plants like, roots, leaves, bark of tree and prepare following a recommended procedure then administer treatment. However, there are some herbal remedies only administered by the herbalists (*jothieth*) mainly in severe illness episodes or what can be referred to as more serious or severe cases.

In addition, children also reported to have relied more on buying medicines from the village households and some villages shops for the following reasons:

1. Because the household where medicines were sold were close to their homes (i.e. due to vicinity) so that they did not have to walk all the way to the shops or dispensaries or the pharmacy to buy medicines.
2. Because if they went without enough money they would be allowed to pay what they had and pay the balance later. That is, credit is allowed as opposed to most shops, dispensary and the pharmacies.
3. Because medicines were cheaper here than in shops and pharmacies (especially those provided for sale to the community through PHC).
4. Because they are well known to them and nicer to them than when they go away to the dispensaries or pharmacies or other shops at the market.
5. Because in many occasions when they fell ill, and visited the local health facilities, they were only given prescriptions to go and buy medicines due to lack of medicines in the local government run health centers.

Other explanations given for treatment of malaria at home by children included the following, as presented in Table 4.12 below.

*Table 4.12 Explanations for treatment of malaria at home by children*

| Reason for home treatment | Frequency | Percentage |
|---|---|---|
| Hospital/dispensary is far | 41 | 29.5 |
| People can buy medicines from shop/village | 21 | 15.1 |
| Sometimes people may use herbal remedies | 16 | 11.5 |
| People do not have enough money to visit health facility | 25 | 18.0 |
| Medicines can be bought from *Nyamrewa* (CHWs) | 14 | 10.1 |
| Many people go to hospital when they fell very sick | 22 | 15.8 |
| Total | 139 | 100 |

**4.7.7 Access to pharmaceuticals**

Given that school children would need to buy pharmaceuticals (especially western pharmaceuticals) and in cases where herbalists are visited they would need to pay a small service fee for the treatment offered it was prudent to identify the financial sources available to children, which would enable them buy patent medicines on their own.

When asked how they got money on their own to be able to buy medicines, they indicated that they got money from fishing. This was mainly the case with boys while from the girls some of them would sell firewood at the nearest market. Children also reported that at times they would work on a neighbour's farm or collect water from a common water point and sell it in jerricans in the neighborhood.

### 4.7.8 Prevention of malaria

Most of the interviewed children, (73%) said that people should avoid walking outside while it is raining or walk in stagnant water, while it is raining would be one way to avoid catching malaria. 12% said people should sleep under a mosquito net while 15% of the children said houses should be kept clean to avoid malaria.

*Table 4.13 Ways of preventing malaria cited by children*

| Way of preventing illness | Frequency | Percentage |
|---|---|---|
| Avoid walking in rain or standing water | 101 | 73 |
| Sleep under mosquito net | 17 | 12 |
| Keep house clean | 21 | 15 |
| Total | 139 | 100 |

### 4.7.9 Sources of knowledge about healthcare

Children's medical knowledge both about herbal and pharmaceuticals use is gained mainly through experience rather than from the formal teaching at school. During discussion with children most of them agreed that they have learnt about herbal remedies and pharmaceuticals observing parents, mostly mothers and grandmothers, administer treatment to other siblings and so they came to gain their knowledge through observing such activities at home. In some cases they also gained the knowledge from grandfathers.

Older siblings also play apart; as they administer treatment to younger siblings other younger brothers and sisters get to observe and internalize the observed practice. It was also mentioned that they also learn from friends in school.

## 4.8 Mothers' knowledge perception and treatment of Malaria Associated Symptom

Just as mentioned earlier in this report, malaria is felt to be a very common everyday illness. All the twenty mothers agreed that they had experienced malaria themselves at one time. Asked about the local name given to malaria mothers mentioned *homa*, *Midhusi*, and *Sambua*.

*Midhusi* according to mothers presented with such symptoms as shivering vomiting and coughing as well as a body weakness and joint pains. *Midhusi* is mainly caused as a result of consuming new fresh farm products just at the beginning of harvesting season, like fresh maize and food prepared out of such fresh grains like millet. Amongst children, mothers believed that *midhusi* could be caused also as a result of chewing fresh maize stalk which children find palatable.

*Sambua* also used as a local name for malaria refers to convulsions. Mothers jerked their limbs as they tried to imitate the intermittent and involuntary body movements that children with *Sambua* presented with. Some mothers attributed *sambua* to punishment from ancestors and some attributed it to witchcraft. The cure is therefore mainly provided for by herbalists *jotheith*.

### 4.8.1 Symptom recognition, causes of malaria and treatment practices by mothers of children

Mothers as in the case of interviewed children mentioned similar symptoms. Interviewed mothers added dullness, crying and a lot of involuntary jerking movement in infants as symptoms of malaria.

Mothers saw malaria as a very common ailment affecting most people during cold weather and rainy season. It was also mentioned that malaria could attack when one is rained on. The

interpretation here could be that as a result of cold weather or rain the body temperatures are lowered and this makes people vulnerable to malaria. Mothers also believe that malaria could be as a result of witchcraft or punishment from ancestors.

They explained that at times after taking malaria medicine one failed to recover from malaria symptoms and this could possibly be as a result of other causes like witchcraft in which case herbalists would be consulted to administer treatment to the sick.

As one mother illustrated:

" One day, not long time ago, my son in class four at Nyamonye Primary School had a headache and he was feeling cold It started at about 11.a.m and the class teacher sent him back home. When I tried to give him food at midday he ate a little bit of it, then he could not eat more. He had no appetite for the food. I knew he had malaria since he was shivering when he arrived from school and also because of the headache and because he could not eat. He also looked weak. So, I rushed to my neighbour's home, not far from here, and bought him two panadols then I gave him. I left him to rest as I went back to work in my garden behind our home here.

When I came back in the evening about 6.00p.m he was up and seemed to feel better than I had left him in the afternoon. He still felt tired and weak. He refused to eat dinner and just went back to bed. The following morning he woke up feeling much better but I asked him to rest at home so that if he felt better the following day, he could go to school. He stayed home, but in the evening he had fever again and the headache came back again. I added him two tablets of malariaquine which I bought from the local shop and he woke up the third day feeling well. The following week when he attended school he fell sick again and was sent back home and I decided to take him to Usigu (the nearest health clinic) for treatment. The doctors also said it was malaria and gave him chloroquine injection, but after two days he had

fever again and he was vomiting anytime I tried to give him something to eat and he was growing weaker and weaker everyday.

I then consulted with my father–inlaw and he said that the illness seemed not to be malaria that is treated with hospital medicine. If it were, the symptoms would have gone, with the treatment administered at home and at the health center. We then had to take him to a herbalist (*jathieth*). After that visit to the herbalist he became well and the following week he went to school.

After about another four days he had fever again and we decided to take him to a private doctor at Bondo town, approximately 30 km away from here. The doctor did a blood test and found out that our son had very strong malaria that had stayed in his blood for a very long time. He said if he was not taken to hospital at that time when we visited him or if he had stayed home longer with malaria in him he could have died. After the treatment at the private doctor's hospital my son was able to go back to school and for a long time now he has been well. The fever has not come back again".

It is interesting to note that only three mothers out of the twenty interviewed mentioned that they would go straight to a health facility when they suspected they had malaria or when a child fell sick and they suspected malaria. Others said that they mainly start treatment at home because in most cases when they visit the nearest government run health facility, they are given prescriptions of drugs and then asked to go back home and buy the medicine. For this reason, it was only important to visit a health facility when the patient felt more sick even after treatment at home. They also agreed that due to the distance between their home and the available health facilities it was not easy to visit health centers. In addition to the above, mothers also complained about, the cost of medical care. They were dissatisfied that after

they paid the user fee at the health facility they were still asked to go back and buy medicines.

Mothers also agreed that sometimes when one fell sick they would visit the injectionists to give chloroquine injection. The injectionists, sometimes referred to as informal doctors are people who live in the village and who have no formal training in human medicine from medical school, but have gained knowledge of administering various kinds of training including giving injections.

### 4.8.2 Health-care knowledge dissemination from mothers to children

Most of the interviewed mothers agreed that they do teach their older children about treatment of aliments . They learnt from them by observing what they did to them when they fell sick, or how mothers gave younger children malaria treatment at home.

Mothers agreed that it was necessary to show them how much medicine to take, just in case they fall sick and there was no one at home to take care of them. In some instances when an adult has to go away from home, children may be left with younger siblings to take care of, when they are not feeling well. So it also important that children gain knowledge of how to administer treatment, both herbal remedies and western pharmaceuticals.

# CHAPTER FIVE

# DISCUSSIONS CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter provides a brief discussion of the research findings presented in Chapter four, the implications of the information gathered on the health of the children and the community at large.

With regard to the findings of the study, recommendations for improving awareness on how health care and health behaviour in relation to Malaria prevention, control and treatment can be improved are presented.

## 5.2 Children's social networks as a source of their perception of illness and knowledge about health care

Children's perception and understanding of illness as well as their medical knowledge, both about herbal remedies for treatment of malaria symptoms and western pharmaceuticals use is gained mainly through the people who are always around them and who take responsibility of guiding them through their day to day life.

A social network can be described as a group of persons with specific cultural identities and association that relate to each other. Individuals who trace a kinship relationship or social relationships as in the case of friends are bound by a set of role expectations which include helping a sick member of the group make choices on the best course of action to take. Such a social network and of which is an important avenue through which people around a patient suggest alternatives for a health care has been referred to by Janzen (1978) as therapy management group. Helman (1994:84) refers to such a network as therapeutic network. The therapy management group usually consists of relatives, friends and neighbours (Sindiga 1995).

In Usigu division such social networks exist. The findings of the study showed that children gain knowledge about health, illness and health care, through their parents (mainly mothers), grandmothers, and in some cases grandfathers, older siblings and there peers and friends in school. Most of the children agreed that they had learnt about herbal remedies by observing their mothers administer treatment to younger siblings or to themselves during an illness episode suspected to be Malaria. Similar knowledge was also gained about western pharmaceuticals use for treatment of malaria related illness. During interviews with mothers, there was a general feeling that children should learn about treatment of illness so that they can help themselves or their younger siblings incase of situations which may arise when one falls sick while the parents are away working in the fields or traveled far away from home for some days, Children, observe and internalise the observed practices for their own help during an illness episode.

The social network thus determines in a great way the health seeking behaviour of individuals during an illness episode. It is therefore important to note that understanding of cultural practices with regard to Malaria prevention treatment and control, mainly embedded in the beliefs of a social group and which determine treatment options; is key to developing and planning of a comprehensive Malaria control program.

### 5.2.1 Children as social actors

When looking at health issues affecting children in their everyday life, the focus in the past has always been to interview adults, mainly mothers of children about the health of their children. It is important to note from the findings about children's health coping strategies with regard to treatment of malaria associate symptoms that children in certain circumstances make decisions and act upon them on their own when they are confronted by a health problem. For a quite long time children as a group have been seen to be the least powerful members of the human society. They are individuals in society who are usually not expected

to have useful ideas and insights on their own and through the first years of life, they are dependent upon adults for their needs (Chawla and Kjorholt 1995: 34).

When discussing with children about their perceptions of malaria associated symptoms, their treatment practices as well as prevention of illness children showed that they were able to identify symptoms of malaria related illnesses and make decisions on what to do to treat themselves, more so, when they are on their own with no adult at home to help them. They illustrated knowledge of illness in terms of cause and transmission. They understood that malaria that could not be treated in hospital might have been as a result of witchcraft or as a result of punishment from God.

The findings show that children should be seen as independent social actors with considerable personal resources or capabilities for coming to terms with, and dealing with their personal health. They also have responsibility for the health of community at large given that they take care of younger siblings at home. It is important to note upon this background, that the involvement of children as research partners is an avenue through which we can learn more about their lives and circumstances and this can make it possible to work with them towards change and can also be an effective means of mobilizing their communities in taking an active role in health promotion School children, as earlier mentioned in this paper, are often able to spread good health messages from school to home. In addition they have a special role to play helping their younger sisters and brothers become healthy and happy especially when their parents are away from home (Hawes 1997: 12).

The focus on children's knowledge of disease and illness is important in the light of the fact that children, will in some cases medicate without talking to an adult, at times administer treatment to younger siblings in the absence of an adult at home.

## 5.3 Factors that prompt children to administer treatment



A number of factors were identified as prompting children to administer or seek various kinds of treatment during an illness episode.

### 5.3.1 Religious background as a determinant of children's therapeutic choice during an illness episode

During our group discussions we came across children whose families belonged to religions sects like *Luong Ma Ogik* church of God of the last Appeal, Israel church and Legio Maria who believe that most of the ailments are as a result of God's punishment for a believers wrong doing or breaking the church rules and in some cases as a result of witchcraft. For these children who belonged to such religious sects they may opt to go for special prayers in order to counter the powers of the soccerer or to ask God for forgiveness in case illness was seen as a result of breaking church law or wrong doing. In these religious sects it is believed that even if one had illnesses that can be treated in hospital, he /she has to seek help from God first before one takes western pharmaceuticals or herbal remedies for these remedies to be efficacious.

### 5.3.2 Absence of adult at home during an illness episode

Many times children are expected to take care of themselves or their younger siblings when parents and guardians are away from home for one reason or another. A child may fall sick and find himself in a situation where he has to help himself in the absence of an adult or in the absence of an elder sibling.

Having found themselves in such circumstances, children will administer treatment. They may administer treatment with medicines usually kept at home for emergency use in case of illness. Some of these patent medicines are usually remnants of those used by a member of the family in a previous illness episode.

From discussions with children, they indicate that in such circumstances when they fall sick and no one is at home to help them they would go to where the medicine is kept in the household, take the medicine. In such circumstances then, children need to know how much of the available medicines they should take when confronted with some kind of symptoms that may as a result of malaria, and what kind of medicines should be used for treatment of malaria.

In addition, children showed that if they fall ill and they have some money with them they might opt to buy medicines from shop and use that to administer treatment. Children showed that they at times make savings from selling fish (these were mainly the male children), selling firewood for the case of most of the girls and working in a neighbor's farm; weeding planting or even tilling land. They can make use of this kind of savings to buy medicines and treat themselves when confronted with symptoms of illness.

Such circumstances of children being alone at home also may mainly prompt them to opt to administer malaria treatment with herbal remedies. Given that these can easily be prepared from wildly growing plants and which can be gathered from the bushes around the village, children may easily access herbal remedies for treatment of malaria related illness. However, children may resort to herbal remedies not only as a result of the absence of an adult person at home to help them, but also as a result of lack of money to be able to purchase patent medicine from shops or pharmacies or to go to hospital.

### 5.3.3 The financial situation at home

As mentioned above, the family financial situation is a main determinant of what kind of therapeutic course should be taken during an illness episode. In situations when a family member falls ill of malaria related sickness herbal remedies are resorted to as an alternative to purchasing patent medicine at home since there is no money to afford malaria medicine. Children being aware of this situation at home, may fall sick, decide not to report to an adult person in the family and then administer malaria treatment with herbs, themselves.

### 5.3.4 Children's knowledge of medicines and permission by parents that they may administer treatment.

With children being left at home alone with younger siblings to take care of and the expectations of the parents that they may administer treatment by themselves or to their younger siblings in case of illness in itself, is a source of knowledge and a way through which children internalise the practice of administering malaria treatment, in such away that when they are confronted by symptoms identified to be due to malaria, they may decide to administer treatment on their own without consulting with an adult person. One mother put it to us during an interview like this:

*"Nyathii ma oseromo higni apar, gi wiye onego bed ni ong'eyo kaka yien malaria imuonyokata kaka imiyo nyathi matin, nikech ka ng'at maduong onge machiegni to ginyalo thiedhore giwegi ka gituo kata ginyalo thiedho nyithindo matindo".*

"Children aged from about 10 years and above should know malaria medicine and the quantities used for treating themselves or younger siblings, just incase of illness when no adult is home, they can administer treatment".

### 5.3.5 Distance of health facility from home/school

Available evidence indicates that public health services cover a small part of population in several parts of Kenya, one key contributing factor is the distance that one has to travel to reach a medical facility to seek help. As such, most patients visiting health facilities in rural Kenya come from immediate vicinity.

In Usigu there are considerable long distances that an ill person needs to travel for consultation, and in addition the situation is made worse by the conditions of the access roads, especially during rainy season when roads are partially impassable.

A study by World Bank showed that in Kenya 40% of the outpatients attending a health a health center lived within 8 km, 30% lived within 8-16km away. From the findings of the study one of the key reasons for seeking malaria treatment at home was that health facilities are far away from home (World Bank 1980:39).

This is indicative of the fact that even if children fell sick and suspected that they had malaria they may not opt to visit a health facility due to the distance that has to be covered to reach them. To a large extent, the area of influence of an outpatient health facility is limited by the distance patients are prepared to travel. This can easily lead to delayed prompt treatment in case of a malaria episode.

### 5.3.6 The state of the health facilities

In Usigu just like many parts of Kenya, interrupted medical supplies and distribution of drugs repeatedly bog down health facilities. This makes them unable to provide adequate and efficient services. Asked why they would opt for home treatment of malaria treatment at home, children agreed that in most cases when people visit health centers and after they have

been asked to pay user fees they are still sent to buy medicines which are frequently not available at the health facilities. This is discouraging to patients. With this in mind and with the subsequent fear of having to travel long distances for medication many people will opt for home treatment.

### 5.4 Ambiguity in illness diagnosis

The findings of the study show that children are aware of some signs with which malaria presents and were also aware of the various kinds of therapeutic regimen both western pharmaceuticals and herbal remedies to combat malaria symptoms. However, like in a study by Muela (1998: 49) in actual illness episode individuals are confronted with the ambiguity of malaria. This is because, Just like other febrile illnesses, malaria presents with such diffuse symptoms like; headache, fever body weakening. One of the frequently mentioned term in most health discussions is the word *homa*- usually translated to fever and used to refer to fever as a symptom and to most febrile illnesses.

It can also refer to illness in general especially those characterised by aches and pain (Ringsted and Ringsted: 1996). When asked to give a local name by which malaria is referred to 21% of interviewed children mentioned *homa* as a name for malaria.

In addition, during group discussions children said *homa* and malaria are one and the same thing because when one has *homa* they feel cold, tired, they have a headache and they lose appetite just like in a general malaria case. The only difference they identified between *homa* and real malaria case was that when one had *homa* they have their nostrils blocked.

With the onset of *homa* (in many cases presenting with fever) the most possible interpretation is likely to be malaria. However, individuals will not be certain of illness until it is properly diagnosed and treated successfully by a specialist. If the treatment by specialist does not help

in relieving the symptoms, then more interpretation and explanations are given and diagnosis is redefined within indigenous categories. Data shows that within the Usigu community there exists two categories of malaria. First, is the malaria that can be treated with pharmaceuticals or in hospital. This is malaria which will respond to hospital treatment or treatment with western pharmaceuticals. Second, malaria that cannot be treated with hospital medicine and which is mainly seen to be as a result of witchcraft or punishment from God as illustrated by children.

This therefore means that if an actual case of malaria is not given prompt treatment and subsequently symptoms recurred, then it ceases to be the normal malaria treatable with western pharmaceuticals or in hospital, to the understanding of lay people. From this background we can see the ambiguity of malaria symptomatology. Malaria symptoms are often diffuse and similar to those of other febrile illness like *homa* (flu) hence early and prompt diagnosis based on clinical presentation is difficult. In addition, Malaria is expected to be an illness that should automatically respond to antimalarials. If symptoms reappear or when illness gets worse suspicion of witchcraft may emerge.

The use of the prefix *homa* in branding an antimalarial drug called homaquine helps in further defining *homa* (flu) and malaria as one and the same thing.

**5.5 Home treatment with pharmaceuticals: a source of wrong treatment and delayed appropriate treatment:**

The data interestingly points to the knowledge that community members have about panadols being malaria treatment. Many people in Usigu are aware that panadols alone can treat malaria. This understanding amongst people is likely to lead to delayed proper treatment of malaria.

During self-medication, therefore people may not administer the correct treatment for malaria. Even when the correct medicines for treatment of malaria are available, the right doses may not be administered. If, for instance the symptoms disappear after the initial administration of antimalarials then treatment is stopped hence complete course of treatment is not taken. This may lead to development of drug resistant parasites and possibly lead up to severe cases of malaria.

The findings also indicate that the theory of mosquito as a cause of and a source of transmission of malaria is not well appreciated by the local community.

**5.6 Conclusions.**

From the study findings presented in Chapter four and the foregoing discussion, it is important to note that children are active members of the community and have responsibility of the health of the community as well as their own health. It is important in this regard to note that there exists a considerable autonomy when it comes to children responding to an illness episode. Sometimes children report to their parents when they fall ill. In some circumstances when parents and other adult caretakers are not available, children administer malaria treatment themselves.

The knowledge children, have is gained from the immediate family members and the community at large. In this regard it is important to take note of the fact that the knowledge children have or rather, their perception of malaria related illness and their therapeutic choice reflects the community knowledge as well.

The study aimed at exploring children's self-medication with regard to malaria associated symptoms. As already shown above, sometimes children seek help from other members of

the family while in some cases they just go ahead and treat themselves. When other members of the family influence children's therapeutic choice, then one cannot talk of children's self-treatment/medication, but household health maintenance and or case management activities which fall within the popular health sector (Kleinman (1980)), where non-professional, non-specialists help in diagnosing illness. This may also overlap into professional sector (use of pharmaceuticals) and the folk sector (use of herbs, prayers etc).

The study findings show a considerable knowledge of medication that children have and that they in some circumstances administer treatment to themselves without consulting other family members. In which case we may refer to this autonomous decision and action as self-treatment.

The data presented in Chapter four have important implications for the health of the children and the community at large. As earlier mentioned in our discussion on self-treatment there is a high possibility of underdosing and wrong treatment of malaria related illness since people will tend to repeat treatment only if patient continues to present with malaria associated symptoms after the first treatment. If, in any case the symptoms disappear they will stop medicating immediately. In addition, the data also points to the fact that panadol is not perceived to be painkillers but a key malaria treatment amongst the people of Usigu. This point to the fact that there is a great need for the promotion of proper drug use patterns and health awareness in regard to the benefit of completing doses and use of right medicines for prompt treatment. In the absence of promotions, it means that people will continue to underdose and administer wrong treatment with antipyretics like panadols.

Individuals have their own alternative places to seek for health care in a plural medical health system that exists in this community, that might not necessarily follow the so called conventional remedies. Their own health beliefs and the popular environment in which they

find themselves determine how, when and where they may decide to seek for health care and for how long.

In the case of malaria, many individuals do not distinguish between treatable malaria from untreatable malaria on the basis of the symptoms but, on the basis of the time it takes for symptoms to respond to treatment given by a specialist and especially with western pharmaceuticals other interpretations and reinterpretations of illness become valid explanations to cause of illness and labeling when there is recurrence of symptoms after treatment. If fever keeps recurring then spirits, witchcraft may be the explanations of illness and this is most probably labeled as malaria that cannot be treated by hospital medicine.

The health care delivery system should therefore take note of this fact. In Kenya it is important to note that health care delivery systems at all levels is based on the conventional medical models which are basically insensitive to the community practices, beliefs, socio-economic conditions and the general environment which greatly determine their health status and health seeking behaviour. The use of medical facilities for prevention control and prompt treatment of malaria would therefore depend on social, economic, cultural, and the physical environment in which people live and which should be given serious considerations in health policy and plan formulation if such health interventions are to reach and benefit the targeted population.

For any given intervention, very high levels of correct use of medicines in treatment of malaria on the local population are necessary to exert significant impact on the illness. This can be achieved by understanding the local population's social and cultural responses to malaria and adequate training of health personnel in health communication.

## 5.7 Recommendations

Based on the findings of this study, the following recommendations were made to help in improving malaria awareness and improved case management:

1. There is need for a critical understanding by medical staff, of people's cultural beliefs and ways in which they perceive malaria in general to understand how one can come up with a means of mitigating the problem of wrong or delayed treatment.

2. There is need for the provision of information through health education.

   It is therefore necessary to develop locally appropriate messages and communication materials that explain how it is possible that malaria can be treated well by taking a full course of recommended dosages of anti-malarial without symptoms recurring frequently. Such a health education plan should take into account local knowledge concerning causality of disease and the treatment practices employed by the local people.

Specifically health education should focus on the following:

- The role mosquitoes play in transmitting malaria.
- The importance of patients taking a full course of malaria drugs when one is sick with malaria.
- Symptoms of malaria.
- That there is a possibility of malaria symptoms recurring if a full course of malaria medicine is not taken or when treatment is delayed, the parasites will multiply in the body making it difficult to treat within a short while.
- Ways of preventing malaria:

  More attention however, needs to be given to the fact that mosquitoes spread malaria in order to prove as much as possible to people that malaria is an illness with a natural as

opposed to a 'supernatural' cause. This would influence people to seek modern medical treatment more often than traditional remedies.

- The idea that malaria may present with such symptoms like convulsions and skin rushes as well as mental instability at a severe stage.

3. It is important to capitalize on children's apparent ability to successfully apply and transmit information on prevention, control and treatment of malaria and other health related issues like, hygiene, nutrition accident and illness prevention rather than on encouraging illness management. Schools are therefore very important partners for such health messages like the benefits of proper drug use. They are highly receptive to information and to new ideas. A well-structured education program could create a lifetime's understanding of the benefits and risks of medicines and information about their proper use.

A school journal can possibly be developed which focuses on health issues. It could be edited by the education and health sectors and disseminated with the schools. Children will then benefit from health information they could take home and share with other community members. This would also help in increasing written materials that pass health messages to households.

5. Lively entertainment could be provided for the village by the school children. Theatre pieces of songs could be used to transmit specific health messages within the community. Developed materials for school drug education should be formally integrated in to the school curriculum. This would help to promote children's education on medicines and their proper use.

Professional groups such as pharmacists or medical associations can influence the roles of their members, gain commitment to the concept of public education, contribute to materials development and community or schools projects and provide channels of communication for public education.

Encouraging mothers to take a leading role in singing of various health education songs to pass health messages to the community should also reinforce health education. The songs can be performed during public gatherings like chief's barazas or during women's associations meetings.

Health education sessions should be as frequent as possible to help in reminding people about various important health messages.

5. Shop owners who are likely to continue to be a major source of oral antimalarial drugs for the community in the foreseeable future should be made partners in the health care network, provided with information about the right dosages and the benefits of appropriate use of antimalarial drugs and encouraged to pass it on to their customers. This should also include people who sell medicines in their households as well as those who hawk patent medicines in the open-air market. Marsh et al. (1999) conducted a programme that t rained shopkeepers in Kilifi, rural coast of Kenya to gain knowledge on right dosages for treatment of childhood fevers. This type of programme if implemented in the study area and anywhere else in Kenya can assist in improving disease control..

6. Drug promotion is intended to lead to consumer demands and ultimately lead to profits by pharmaceutical industries. One of the ways of doing this is by branding medicines with some qualities with different names that sometimes confuse customers .

Industries involved in manufacture of medicines should take into account the need for proper communication so that they may not create confusion and promote in appropriate use of drugs.

It is my view that if efforts are put in health education many communities will gain information that will help reduce morbidity brought about by delayed prompt treatment and will also help in a great way to reduce risks of self-medication.

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**Appendix 1.**

## DRAFT INDIVIDUAL QUESTIONNAIRE FOR CHILDREN

Interviewer:_____

Date:_____Time

:Start_____Finish_____

Name of School_____

ID Number of pupil_____

Class_____

Age (Year of birth)_____

**Introduction**

Thank you very much for agreeing to participate in this study. This is not an examination I would like to learn from you what you know about Malaria and the treatment of the illness. The information you will give will not be given to your schoolteachers or compared with other pupils.

### Perception of illness

1. Name four common illnesses hat usually affect children in this area ?

*Chiw nying ang'wen mag tuoche machando ji e gweng' ma idakie.*2. What is malaria ?

*To malaria en tuo machalo nade ? (Probe)*

3. What is the local name of malaria?

*Malaria iluongo nang'o kod dholuo ?* (Probe: Tell me another name for malaria that you have heard

4. How does someone feel when you have illness in No. 3 above ?

   Ang'o ma ng'ato winjo sama en kod tuo ma ichiwo nyinge e namba 3.

5. How many types of malaria do you know of ?

   *Tieng' adi mag malaria ma ing'eyo ?* (Probe)

6. Have you ever suffered from malaria ?

   *Bende malaria osemaki ?*

   1 = Yes

   2 = No

   3 = D/K

7. How did you know that this was malaria ?

   *Ere gima nene onyisi ni ma en malaria ?(Probe: how did you feel ?).*

8. How can a person get malaria ?

   *Ere kaka ng'ato nyalo* yudo malariia)

9. Who suffers most from malaria in your home ?

   *Jo mage ma malaria hinyo mako e dalau ?*

   1. Children under 5 years
   2. Children of your age
   3. Adults
   4. D/K

10. What can malaria do to a person who has it ?

*Malaria ka omako ng'ato onyalo timo ng_ano nadi ?*

**Treatment practices**

11. When you suspect that you have malaria what do you do ?

*Ka sa ma iwinjo ka ituo to iparo ni tuo ma omaki en malaria itimo ga ang_o?*

(List in order from what step is taken first when illness begins).

1. Talk to an adult.
2. Go straight to dispensary.
3. Go for prayers.
4. Visit a healer.
5. Buy medicine from shop.

12. Which medicine is mainly used for treating malaria in your home ?

*Yiend malaria mage ma ing'eyo ma itiyo ga godo kuom thiedho tuoni e dalau?*

13. How many tablets of the mentioned drugs above are needed for a child of your age to

14. complete malaria treatment?

*Ng'ato marom kodi onego omuony yien maichiwo nying gi malo kae adi ka sama athiedhe ni malaria?*

14. Is there any herbal medicine that you know of that is used for treating malaria ?

*Nitie yath nyaluo maing_eyo minyalo thiedho godo.*malaria?(Probe to find out the name of the herb)

15. Who usually administers malaria medicine in your family ?

*Ng'ano mahinyoga miyou yiend malaria e odu ?*

1. Father.
2. Mother.
3. Grand mother.
4. Sibling (brother or sister).
5. Others specify.

16. What do you do to help yourself when you fall sick, and you suspect you have malaria and you are alone at home with no adult present to help you?(Probe :Is there any day when you fell sick and there was no one at home to help, what did you do to help yourself?)

*Ere kaka inyalo konyori sama ituo to iparo ni in kod malaria to in kendi e dala maonge ng ama duong manyalo konyi?*

17. Do some people treat malaria at home in your community ?

1 = Yes

2 No

3 = D/K

Yes : Explanation

No: Explanation

18. How can you prevent malaria from attacking you ?

1 = Sleep under bednet.

2 = Boil water for home use.

3 = Avoid walking (standing ) in rain or stagnant water.

4 = Keep the house clean

5 = Others (Specify).

19. How did you learn everything that you have told me about how to prevent and treat malaria at home?

## Appendix 2.

## CASE HISTORY GIUDE FOR MOTHERS AND GUARDIANS.

Name of interviewer:----------

Date of interview :----------

Time: start:----------Finish----------

Identification Number:----------

Age(year of birth):----------

Sex:----------

Place of residence:----------Years resident----------

Occupation:----------

Level of education:----------

### Introduction.

Before we begin, I would like to thank you for taking time to come and participate in thus interview shall be asking you a number of questions regarding a common illness in your area called malaria. Be sure that there are no right or wrong answers for the questions I will be asking. Answers you give will be treated as confidential and once this interview is complete this information will not be given to anyoneelse.

1. What is the local name(s) for malaria?

*Malaria ihuongo nang'o kod dholuo?*

2.Have you or any of your children been sick of malaria in the past(say one month ago) ?

*Bende in kata nyathini moro amora osebedo kod malaria e dwe achiel ma okalo?*

3.How many days did it last?

*Nene tuo okawo kode ndalo adi?*

4. How did you know that this was malaria?

*Ere kaka nene ing'eyo ni nene en malaria?*

5.What did you do to treat the illness?

*Ang'o ma nene itimo mondo ithiedh tuoni?*

6.If drugs were bought,which ones did you buy?

*Ka nene inyiewo yien, mage manene inyiewo?*

(ii).How was the medicine taken?

*Yien gi nene omuonygi nade?*

6(b). If visited a healer what didi he do to treat the illness?

*Ka nene idhi ka jathieth mar yiend nyaluo, nene othiedho tuoni Nade?*

(c). If you talked to a neighbour what aws the advice that he/she gave you?

*Ka nene iwuoyo kod watni kata ja bath dalani nene owachoni ni Mondo* itim ang'o mondo ikony j atuo?

7.What should you do first when you suspect that a member of your family is suffering from malaria?

*Ang'o ma onego itim ka iparo ni ng'ato ni kod malaria?*

8. If the sick person does not recover after the first treatment what do you do?

*Ka thieth ma okuongo otamore konyo ja tuo ang'o ma onego tim?*

9.Why would you want to treat malaria at home and not go to hospital or nearest health center?

*Ang'o ma nyalo miyo idwar thiedho malaria e dala kar dhi e osiptal?*

10. Is there any taboo which is associated with malaria?

*Nitie kwer moro ma ing'eyo ni nyalo miyo tuo mar malaria maki kata ng'ama chielo?*

(b). If yes explain the taboo(s).

11.Do you teach children of school going age about how to treat malaria so that incase child falls sick and you are away from home they can take care of themselves?

**Appendix 3.**

# FOCUS GROUP DISCUSSION GUIDE FOR CHILDREN

## Perceptions of Malaria

Q1 What are the common illnesses that affect children in your village/school?

Q2 What is malaria?

Q3 What is the local name fore malaria?

Q4 How many types of malaria do you know of?

Q5 When does malaria occur in this area where you stay?/When is malaria very common?

Q6 Have you ever suffered from malaria?

Q7 How did you know that this was malaria?

Q8 How long did it last?(Probe for more information)

How many school days did you miss?

Q9 How can a person get malaria?

Q10 Who suffers most from malaria in your home?

Q11 What can malaria do to a person who has it?

**Treatment Practices**

Q13 When you suspect that you have malaria what do you do?

Q14 Which medicine(s) is used to treat malaria in your home?

Q15 How many tablets of the mentioned drugs above are needed to treat a child of your age to complete malaria treatment?

Q16 Is there any herbal medicine you know of that is used for treatment of malaria?

Q17 Who usually administers malaria treatment at home?

Q18 What do you do to help yourself when you fall sick, and you suspect you have malaria and you are alone at home with no adult present to help you?(probe Is there any day you fell sick and there was no one at home to help you,what did you do to help yourself?)

Q19 Do some people treat malaria at home in your village? (Explain your answer)

Q20 How can you prevent malaria from attacking you?

Q21 How did you learn everything you have told me about malaria?

**Access to pharmaceuticals**

Q22 From where do you get money to buy medicines by yourselves for those who said they have bought medicine and treated themselves when they fell sick?