PERCETIONS OF CAUSES OF AND HEALTH SEEKING BEHAVIOUR FOR SEVERE COMPLICATED MALARIA IN UNDER FIVE IN MKURANGA DISTRICT, TANZANIA

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH (MPH) OF THE UNIVERSITY OF DAR ES SALAAM

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The undersigned certifies that he has read the dissertation titled "Perception Of Causes And Health Seeking Behavior For Severe And Complicated Malaria In Under Five In Mkuranga District, Tanzania, in fulfillment of the requirements of the Master of Public Health Degree.

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DECLARATION

I Christopher Sime Jakoracha, declare solemnly that the whole or part of this dissertation has never been submitted for a degree in any other University. It is a result of my own sole effort and field work in partial fulfillment of the requirements for the degree of Master of Public Health (MPH) of the University of Dar es Salaam.

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DEDICATION

This dissertation is dedicated to my parents, wife, sons and daughters.

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ABSTRACT

To determine the extent of management of childhood febrile illness and health care seeking behavior for under five, a cross sectional descriptive study was conducted in Mkuranga district in June 2003. The study involved 155 community members, 37 mothers/guardians of ill under fives admitted in heath facilities and 48 health workers. Structured and semi-structured schedules were used for data collection.

The results showed that 25% of community respondents and 97% of mothers/guardians were aware of severe malaria and used some local terms to describe the disease. Some beliefs related to the causes of life threatening signs of severe malaria were explored; some respondents associated such signs with spiritual causes. Thirty three percent (33%) of community respondents and 36% of mothers/guardians reported witchcraft as a cause of convulsions.

Treatment of under fives was found to be delayed and in some cases inappropriate for a child presenting with signs of severe malaria. Forty eight percent (48%) of children who were reported to be sick two weeks prior to the interview started treatment after one to two weeks of the onset of the illness, while 24% started after 4 to 6 days. Twenty one percent (21%) of community respondents and 11% of mothers/guardians preferred traditional healers for management of convulsions, while 6% and 3% of community and mothers/guardians respectively, preferred traditional healers for management of coma. About 92% and 65% of the community and mothers/guardians

respondents reported that they preferred to take their children with coma to a health center/dispensary, respectively.

About 75% and 51% of community and mothers/guardians reported that they would take a child with convulsions to a health center/dispensary. Likewise 88% and 57% of community and mother/guardians of under fives reported to prefer to take their children with anaemia to health centers/dispensary. Furthemore, the results showed that about 96% and 62% of community and mother/guardians reported that they would take a child to the health center/dispensary if she/he would present with inability to eat and suck, respectively. Home management of the mentioned childhood problems was reported only by about 26% of the community respondents.

From the study it is concluded that there are some beliefs related to the causes of life threatening signs of severe malaria. These may lead to delay of timely health care seeking and inappropriate treatment of malaria. Failure to recognize danger signs of severe malaria and misinterpretation of these danger signs ends up into fatal condition.

The study recommends that more effort should be taken to increase awareness of the community on danger signs and symptoms of severe and complicated malaria in under-fives. Health education may change the misconception of the causes of signs and symptoms of severe malaria and lead to positive change of health seeking behaviour. Correct interpretation of signs may influence

treatment seeking behavior towards modern treatment. Home care may prevent simple malaria from progressing to complicated and life threatening conditions

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ABBREVIATIONS

BOD	-	Burden of Disease
CHMT	-	Council Health Management Team
DC	-	District Commissioner
DED	-	District Executive Director
GDP	-	Gross Domestic Product
HF	-	Health Facility
IMCI	-	Integrated Management of Children Illness
ITNS	-	Insecticide Treated Nets
MAMOP	-.	Malaria Management in Under fives Project
MCH	-	Maternal and Child Health
MOH	-	Ministry of Health
OPD	-	Outpatients Department
PHT	-	Primary Health Care
PI	-	Principal Investigator
RBM	-	Roll Bank Malaria
SP	-	Sulfadoxine-Pyrimethamine
TDR	-	Tropical Disease Research
UNICEF	-	United Nations Children Fund
USAID	-	United States of America International Development
WHO	-	World Health Organization .

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Malaria is the most common childhood febrile illness, which is widespread and complex disease condition.[1] Other disease conditions, which present as febrile illness in childhood include urinary tract infections, acute otitis media, acute respiratory infections, acute tonsillitis, meningitis, anaemia, etc.[1]

Currently approximately 40% of the world's population is at risk of malaria, with the greatest burden placed upon the population living in the world's poorest countries of Sub-Sahara Africa where malaria is endemic in more than 90 countries [2] with more than 90% of all malaria cases [3]. Over 40% of the World's children live in malaria endemic countries. Each year, approximately 300 to 500 million-malaria infections lead to over one million deaths, of which over 75% occur in African Children below five (5) years infected with *P. falciparum.*[4] Malaria accounts for one in five of all childhood deaths in Africa and contributes the greatest disease burden, affecting the health and wealth of developing nations and individuals alike.[4]

In Tanzania, malaria contributes the greatest burden of diseases, accounting for 49% of the under five admissions, 34% of death occurring in under five admitted in health facilities (HF) and accounts for 24-49% of out patients' visits in all 20 regions in Mainland Tanzania.[5]

Children under five years are the most vulnerable group in which severe and complicated malaria is a significant cause of death.[6] Severe anaemia resulting from repeated, untreated exposure to *P.falciparum* malaria also contributes to overall mortality.[6] In this age group, however, even uncomplicated malarial illness can become or progress to severe and fatal illness in as little as two days.[8] Other complications of malaria include change of behaviour, confusion or drowsiness; altered consciousness or coma; convulsions; hypoglycaemia; acidosis; difficulty in breathing or pulmonary oedema; oliguria or acute renal failure; circulatory collapse or shock; haemoglobinuria; jaundice; bleeding tendency and prostration.

Malaria can lead to complications and death if not treated within 48 hours of onset.[8] Simple treatments for malaria exist but large numbers of children continue to die from the disease.[6] These deaths from malaria infections may be due to care-takers failure to associate malaria signs and symptoms like convulsions and change of mental status with severe malaria. As a result, there is often a delay in seeking antimalarial treatment or in some cases, a sick child receives no appropriate treatment.[6] Without prompt treatment with an effective antimalarial drug, children with severe and complicated malaria are at high risk of death.[6] Other factors, which lead to high risk of death, include inaccessibility to health facilities (social, cultural, financial, and geographical inaccessibility); all contribute to delay or failure in seeking medical care[6]. Because of the lack of access to health care facilities many residents of Sub-Sahara Africa, including Tanzania, receive their initial treatment for febrile illnesses at home using herbal medicines, or antipyretics

or antimalarial drugs purchased without prescriptions in local shops.[9,10] Even when fever is suspected to be caused by malaria, antimalarial drugs used may be inadequate in terms of dose and course of treatment[11, 12] and many only visit a health facility or hospital after the illness has failed to respond to several days of self-treatment.[13]

Currently malaria control is based on primary health care strategies, decentralization, and multisectoral approach.[6] The management of malaria has been developed along two lines, the community and the facilities. The community based management of malaria demonstrated significant effects on reduction of morbidity and mortality[3]. More recently, an intervention on teaching mothers through local mother co-coordinators to provide correct home treatment of malaria to under five children has been shown to be both feasible and effective[3].

Interpretation of symptoms has been found to influence treatment-seeking behaviour. Families would seek modern treatments only when they perceived the fever to be due to specific causes.[14] People attribute convulsions to supernatural forces and believe modern treatments to be ineffective in curing it, while other families associate convulsions with high fever and malaria. However, witchcraft may be suspected as the causes of convulsions, despite that, both modern and traditional healing have been found to be sources of treatment for the condition.[15] Access and quality of care affect decisions whether to take a child to a health facility[16] while compliance with drug is influenced by many local factors[16].

1.2 STATEMENT OF THE PROBLEM:

Malaria is a major cause of death and illness in the developing world, particularly in Africa, where about 80% of cases occur[6]. Children are especially vulnerable and most malaria deaths occur in the under fives. Severe malaria threatens life, causes convulsions, severe anaemia and other complications in young children.

Studies of care-seeking report that tremendous amount of treatment of febrile illness takes place at home before help is sought at a health facility[7] and that treatments in the formal sector occur more than 24 hours later.[12] Because of the lack of access of health care facilities, (economic, geographic, social, and cultural impediments) many under fives receive their initial treatment for febrile illnesses at home using herbal medicines. Oral antipyretics and antimalarial drugs purchased without prescription at local shops, and many visit a health centre or hospital only after the illness has failed to respond to several days of self-treatment.[17]

In Tanzania, a study showed that caregivers were quick to recognize treatment failure when children treated with antipyretics (e.g. chloroquine) failed to improve.[16] However, when children continued to be ill after receiving first line antipyretics, care-givers frequently reinterpreted the cause of the illness and rather than returning to a health facility for treatment with second-line drug, sought out traditional remedies instead.[16]

Caretakers of the under five children and community living in malarious areas may have perceptions and practices related to severe complicated malaria which may be difficulty to single out[18]. However, peoples' perceptions,

practices and health seeking behaviours when faced with febrile illness may differ from one area to another depending on the socio-economic and demographic characteristics. For instance, age, sex, household size, level of education, occupational status and availability, accessibility and affordability of modern health services might in one way or another have an influence on the health seeking behaviour for under fives with malaria.[19]

A recent household survey done in Mkuranga district showed a positive blood slide of malaria prevalence of 24.4% among the general population of under fives surveyed. [20] However, for those under fives who presented with fever during the survey, a preliminary positive blood slide of malaria prevalence was 8%. A survey also showed that mothers of under fives mentioned clinical symptoms of malaria like fever, loss of appetite, yellow eyes, shivering, yellow urine, joint pain, fatigue and diarrhoea. [20] Furthermore, the preliminary data analysis of the survey showed that mothers reported that most of under five children are given antipyretics at home when found to have fever as a first solution[20]. Hence, there is a need to determine the perceptions, practices and factors influencing health care-seeking behaviour of under five caretakers living in holoendemic malarious areas.

1.3 RESEARCH QUESTIONS

Home treatment of childhood febrile illness is a reality and will continue to exist in the families with under five children. Now, how can home treatment of malaria be improved in order to reduce mortality in under fives due to severe malaria?

The study specifically aims at answering the following questions:

- What signs and symptoms of malaria are recognized in under fives.
- What are the different local terms used to describe "malaria."
- How the recognized signs and symptoms of severe malaria are interpreted.
- What is the sequence of seeking care i.e. how and where do mothers/caretakers start to manage "malaria."
- What kind of treatment is given and how the place to go for care is determined.

1.4 RATIONALE OF THE STUDY:

Severe and complicated malaria is a significant cause of deaths in children below five years of age. Severe malaria is sufficiently serious to be a threat to life and is a medical emergency. In children below five years of age, severe malaria may be accompanied by complications, the most notable and dramatic of which is cerebral malaria. Children with severe malaria, and those with cerebral malaria as a complication of severe malaria, are in immediate danger and need to be given rapidly effective antimalarial drugs.

Recent studies in several African countries have found that convulsions and changes in mental status are commonly believed to have spiritual causes. Because caretakers do not associate convulsion changes in mental status with malaria, there is often a delay in seeking antimalarial treatment or, in some cases, a sick child receives no appropriate treatment, as a result these children become at high risk of death[6].

In order to improve the identification and management of malaria in children, we need to know local identification and description of malaria signs and symptoms, how they interpret and respond to these signs and symptoms and what kind of care and advice they receive from relatives, friends and different health care providers.

Therefore, the study aimed at describing how community perceives different causes of signs and symptoms of malaria and related illnesses; health care-seeking behaviours for treatments of symptoms and signs of severe malaria in under fives; add more knowledge to the existing information on home treatment of childhood febrile illness disease condition, and make recommendation as to how to improve the recognition and treatment of childhood malaria at the community level.

Collection of this information would help to identify whether children receive appropriate care and which interventions are needed to improve community and family management of malaria. The information may be very potential for the Mkuranga Council health management team (CHMT) in improving home care of childhood febrile illnesses as well as promoting health-seeking behaviour of the people of Mkuranga district. The findings of this study may

also enable the implementers of the recently proposed community based malaria case management (shared-care) project[20] to find out a way of establishing acceptable and feasible strategies for the improvement of the community based malaria management in the district.

1.5 LITERATURE REVIEW:

Malaria, once thought to come from fetid marshes, hence the name *malaria,* (bad air), is a life-threatening parasitic disease transmitted by female anopheline mosquitoes.

Currently 40% of the World's population, mostly those living in the world's poorest countries are at risk of malaria.[4] The disease is found throughout the tropical and sub-tropical regions of the wold, causing approximately 300 to 500 million acute illnesses and at least one million deaths annually[21] of which 90% of deaths due to malaria occur in Africa, mainly in children less than 5 years of age[22], and about 75% of all deaths occurring in children infected with *Plasmodium falciparum.*[4] Malaria presents a major obstacle to social and economic development, and is estimated to cost Africa more than US $ 12 billion every year in lost GDP.[23]

Malaria symptoms typically appear 9 to 14 days after the infectious mosquito bite, producing fever, headache, vomiting and other flu-like symptoms[4]. If the drugs are not available for treatment or the parasites are resistant to the drugs, the infection can progress rapidly to become life-threatening.[4, 24] Malaria kills by infecting and destroying red blood cells (anaemia) and by

clogging the capillaries that carry blood to the brain (cerebral malaria) or other vital organs.[4] Other consequences of severe malaria include epilepsy, and other neurological disorders, all compromising the health and development of millions of children throughout the tropical world.[4]

Economists believe that malaria is responsible for a growth penalty of up to 1.3% per year in some African countries. Malaria also has a direct impact on African's human resource, not only resulting in lost life and cost productivity due to illness and premature death, but malaria also hampers children's schooling and social development through both absenteeism and permanent neurological and other damage associated with severe episodes of the disease.[4] Approximately 7% of children who survive cerebral malaria are left with permanent neurological disorders like weakness, blindness, speech problems and epilepsy[4] and children who appear to have made a complete neurological recovery may develop significant cognitive disorders like attention deficits, planning and task initiation difficulties, speech and language disorders which can adversely affect school performance.[25]

Anaemia due to severe malaria causes between 190,000 and 974,000 deaths each year among children below 5 years.[26] These result from recurrent fever episodes among African children who suffer between 1.6 and 5.4 episodes of malaria fever each year[27] depending on geographical and epidemiological factors.

Malaria accounts for 1 in 5 of all childhood deaths in Africa and causes low birth weight, anaemia, epilepsy, and learning difficulties.[4] Malaria can be prevented through the use of insecticide-treated nets (ITNS), environmental

modification, and intermittent preventive treatment in pregnancy, and can be treated by use of anti-malarial drug combination therapy.[4]

Recent research from Tanzania demonstrated that treatment of infants with sulfadoxine-pyrimethamine (SP) at 2,3 and 9 months of age, at the time of routine immunization reduces episodes of clinical malaria by 69% and episodes of severe anaemia by 50%.[27]

The combined administration of anti malarial drugs such as SP, to which resistance is developing rapidly, with artemisinate markedly, improved cure rate for malaria[4]. However, improved access to effective antimalarial treatment is very important since the majority of deaths from severe malaria in childhood are caused by the delayed administration of effective antimalarial treatment.[4]

Deaths from severe malaria are also due to failure of the caretakers of under five children to associate the signs and symptoms of severe malaria with malaria, as a result there is often a delay in seeking antimalarial treatment or in some cases, a sick child receives no treatment. Therefore, despite the existence of simple treatments for malaria, large number of children have continued to die from malaria. [4, 24]

Home management of malaria as a way to improve prompt and access to effective treatment of malaria, has been introduced in several countries.[23] Training of local mother coordinators in holoendemic malaria areas in order to teach mothers to give under five children anti-malarial drugs can achieve a major reduction in under five mortality.[28] Treatment of malaria with antimalarial drugs has been the most widely used approach in efforts to

reduce the effects of malaria in Africa[29,30] but, treatment provided through health centers and health posts has been of little help in reducing infants and deaths in young children because severe falciparum malaria in these children strikes so rapidly that mothers are not able to obtain treatment in time.[11,18,31] Home management of all suspected fever with antimalarial drugs is an approach that has been suggested as one of the malaria control strategies in countries where mortality rates for the disease are high and resources for vector control are scarce.[32,33] In countries where malaria is highly endemic, anti-malarial drug treatment of young children is recommended when diagnosis cannot be based on the results of microscopy.[33] Provision of treatment to such a large target group is, however, a major challenge, and therefore it is important to know what role parents play in treating febrile illness because the frequency with which parents give antimalarial drugs to children with fever varies widely in Africa.[12]

Home treatment of malaria greatly increases the proportion of children below 5 years with fever who receive antimalarial drugs, and treated timely as antimalarials are given the first day of the onset of fever. However, it depends primarily on a system of distribution of antimalarials by street and market vendors that is self-financing and self-managing.[12] However, home management of malaria has potential disadvantages which include under dosage[13] which may lead to drug resistance; may delay presentation at a health centre with condition other than malarial[34] and a chance for over dosage is increased from either the mother or staff at a referral centre who may be unaware that antimalarial has been given previously.[12]

Home treatment of malaria is frequently used in rural areas. An anecdotal evidence suggests that large numbers of African mothers use antimalarial for themselves and for their children. The practice of home treatment of malaria in under five children offers a potential method of augmenting existing control strategies within primary health care and may also be useful in villages which are too small to be part of the Primary Health Care programme (PHC) or which are far from a source of treatment. [32]

Optimal childhood malaria case management involves a series of steps, that is, recognition of symptoms; appropriate home care and monitoring; accessibility to health facility and quality of care given[15]; compliance with drug regimen and monitoring for treatment failure[24] and return visit to health facility for treatment. This care-seeking model shows that there are many points at which breakdowns in the process can occur.

In Nigeria a study[35] in three rural communities to determine the baseline understanding of childhood fevers and other childhood illnesses revealed local terms used, *ina* and *oyi*, to describe malaria[35] and several factors found to influence early and appropriate treatment of childhood illness. These include illness recognition, awareness of sources of help, medication knowledge (types and dosages) and skills in administering the medication in

The study in Nigeria further showed that there was minimal use of indigenous healers and home herbal remedies[34]. However, people resorted to an indigenous healer primarily when a condition persisted for a longer period or when it occurred in a more serious or unusual form than expected[35]. The study furthe showed that malaria illness, *iba* or *oyi*, was viewed as a minor problem, often, receiving minimal attention, but once febrile convulsions ensued, local remedies, some containing dangerous components, such as cow's urine, were sought.[35]

In Muheza, a study on the local concepts of malaria control in a rural community showed that indigenous people could easily recognize malaria manifestations and made special efforts to control the disease using local herbs.[37] The course of action that followed home diagnosis of malaria case varied between administering a single tablet of aspirin on one hand or chloroquine on the other hand. Others consulted the traditional healer[37]. A recent survey in Mkuranga showed that mothers of under fives recognized clinical symptoms of malaria, which was mainly managed at home with antipyretics.[20]

The World Health Organization (WHO) realizes that early diagnosis and prompt treatment of malaria cases is the best method of malaria control in Africa in order to prevent mortality and reduce morbidity especially in children.[36] The strategy does not perform well becouse of low attendance at health facilities, due to physical difficulty of reaching the health centre, the scarcity of affordable drugs, and the poor performance of health personnel[13,18,31,38,39,40]. In such circumstances many people seek to resolve

their health problems at the household or the village level, without recourse to formally trained health professionals. However, the proportion of malaria episodes diagnosed early and treated promptly can be increased using community- based health care.[32,41,42]

Community-based distribution of anti-malarials had successfully managed to overcome some of the difficulties in the treatment and prevention of malaria in under served African populations.[3]

Although some community-based malarial control programmes have been able to demonstrate significant effects on morbidity and mortality, others have failed to show a beneficial effect towards reductions in morbidity and mortality.[3]

Adequate management of malaria in health facilities remains a problem. At the dispensary level, in Tanzania and Burkina Faso respectively, clinical history and physical examination were not adequately performed among under five patients[13,43.] Literature search has shown that home treatment for malaria is common in Tanzania, and that formal health care facilities remains a problem. The search for a better strategy for managing malaria hasn't found the gap, which exists between the community and health providers and other factors, which influence health-seeking behaviour in Tanzania. A proposed shared-care project in Mkuranga aims at bridging the gap that exist, so need for determining the prevalence of home treatment and factors which influences care seeking in the area for severe and complicated malaria[20].

CHAPTER TWO

2.0 OBJECTIVES

2.1 BROAD STUDY OBJECTIVE:

To determine the perception of causes malaria and health care-seeking behaviour for severe and complicated malaria in under fives in Mkuranga District.

2.2 Specific Objectives:

1. To find out local terms do mothers/caretakers of children below five years use to describe "malaria" and awareness of signs and symptoms of under five malaria.
2. To find out how mothers/caretakers of children below five years perceive different causes of symptoms and signs of malaria and related illnesses.
3. To explore what mothers/caretakers of children below five years do when a child has fever accompanied with symptoms and signs of severe malaria.
4. To determine where mothers/caretakers of under fives with severe malaria go for advice and treatment.
5. To determine places of choice for treatment of under fives with severe malaria.
6. To determine the sequence of treatment for under five malaria illness (places for care and medicines).

7. To identify factors that constrain mothers/caretakers from seeking timely and appropriate health care.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Area:

The study was conducted in Mkuranga district, which is one of the six districts of the Coast Region. The district has 4 divisions, 15 wards, 101 villages and 42,937 households. Total population of Mkuranga is estimated to be 187,428 out of which 91,714 and 95,714 are males and females respectively. The average household size is 4.4.[44]

The district is situated along the Indian Ocean south of the city of Dar es Salaam. The Kibiti-Lindi main road passes through the district. The district prominent ethnic groups are the Zaramo, Ndengereko, and other small ethnic groups are the Makonde and Matumbi.

In the district, especially at the village level there are several economic women groups led by women leaders. These small women economic groups do small-scale bussinesses like selling food crops, fish, clothes (mitumba) etc.

Mkuranga district has one hospital, two (2) health centers and twenty eight dispensaries, (appendix 4,5&6). Health facilities are located mainly in the rural areas and are owned by both public and private sector.

Malaria is the leading cause of morbidity and mortality children aged below 5 years. Other diseases include diarrhoeal diseases, anaemia, eye infections, acute respiratory infections, intestinal worms,and malnutrition.

.Subsistence farming is practiced by majority of the people in the district. Major crops include cassava, maize, rice, millet, coconuts and cashew nuts.

Fruits like oranges, mangoes and pineapples are among the agricultural products produced in the district. Some residents are involved in fishing and others in small-scale business.

3.2.0 Target and Study Population:

The target population comprised of households selected from among community members, health workers and mothers/guardians of the under fives at the health facility.

3.2.1 Sample Size:

(a) Households:

The sample size of the community representatives was determined using the formula

$$n = \frac{z^2 pq}{e^2}$$

Where n = the desired sample size

z = the standard normal deviation set at 1.96 which corresponds to the 95% confidence level.

p = the proportion of mothers/guardians in the target population estimated to seek for timely and appropriate health care. (p = 0.42 assuming that 42% of the target population do seek for timely and appropriate health care for under fives)

q = 1 – p

e = degree of accuracy desired, (set at 0.08 (8%) due to

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$$n = \frac{z^2 pq}{e^2}$$

Where n = the desired sample size

z = the standard normal deviation set at 1.96 which corresponds to the 95% confidence level.

p = the proportion of mothers/guardians in the target population estimated to seek for timely and appropriate health care. (p = 0.42 assuming that 42% of the target population do seek for timely and appropriate health care for under fives)

q = 1 – p

e = degree of accuracy desired, (set at 0.08 (8%) due to

limitation for the sample size because of time and resource constraints)

Thus $n = \frac{(1.96)^2 \times 0.42 \times 0.58}{(0.08)^2} = 146$ respondents

(b) Mothers/guardians of admitted under fives
Sample size was determined by number of under fives admitted at the health facilities with diagnosis of malaria during the interview.
(b) Health care providers:

Sample size of health care providers inteviewed was determined by number of heallth workers found providing health care services at the MCH, OPD, pediatric wards and pharmacy/drug counter during the interview.

3.2.2 Sampling Procedure

A multistage sampling procedure was conducted to select the households for the study. First, a random sampling was done to get two wards out of fifteen (see appendix 5) which constitute the district. A list of the wards was obtained from the office of the District Executive Director (DED). The wards were selected using a table of random numbers having assigned an index number of two digits from 01 to 15 to each ward. The principal investigator (PI) blindly picked up a starting point, which was found to be the digit (12) at the first row of the table of random numbers. The PI had previously decided to read from the left to right along the rows whereby a data point had to be chosen only once. The wards which were selected are Mkamba and Mwalusembe. From each ward one village was randomly selected using the same procedure. The list of villages was obtained from the offices of the respective Ward Executive Officers (WEO). The selected villages were Kimanzichana and Mwalusembe.

Sampling units (households) to be visited in each village were obtained using the following procedure. First a list of hamlet leaders was obtained from the village office. The hamlet leaders were selected using a table of random numbers. All households belonging to the selected hamlet leader were visited. The respondents were either a husband or mother or one of the two if he or she was living alone in the household. If a husband was a polygamous the wife who had under five child was chosen for the interview in order to collect more accurate information concerning the sick child. If a child was reported to have been sick two weeks prior to interview, MCH card was requested from the mother in order to counter check date of birth of the reported sick child to ascertain the diagnosis and record medication given. If more than one mother had a sick under five then the mothe/guardian whose child was sick of malaria was the one to be included in the study. A total of 155 individuals were interviewed in the study.

A purposeful selection of health workers was done, both in public and private health facilities. Any health worker who was found providing service at the MCH,OPD,pediatrict ward and pharmacy/drug counter of the health facility was interviewed. A total of 48 health workers were involved in the study.

A purposeful selection was also done to get mothers/caretakers of under five children who were admitted with diagnosis of malaria at the hospital, health centers or dispensaries. A total of 37 mothers/guardians of admitted under fives were interviewed in the study.

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3.3.0 Research Instruments:

3.3.1 Data Collection Procedures

Three sets of questionnaires were used for data collection. There were questionnaires for community representatives, health workers and mothers/guardians of under fives at the health facility. All questionnaires were both semi - structured and structured (see apendix 1-3). Kiswahili version of the questionnaire was used in the field to collect data. The interviews were conducted at the household level of the selected community respondents except for health workers and mothers/guardians of the under fives. The consents of the interviewees was asked and obtained before interview takes place. This was preceded by creation of a good rapport between the interviewer and respondent. The interviewer introduced himself/herself to the respondent, and he/she assured the respondents on the information obtained from him/her by explaining the purpose of the interview. The respondent was assured that the information collected will remain a confidential, and it will not bear his/her name. The process of interviewing was carried privately with each respondent being interviewed separately.

3.3.2 Manpower:

Three interviewers were recruited at the district. They were selected from among the youth who had completed form four and were familiar with language and culture of the study population. The interviewers had a prior experience in interviewing. They were trained for two days on how to administer the study questionnaires. The training intended to familiarize the

research assistants with questionnaires and crosschecking the interviewees in order to minimize any bias, which might arise.

3.4 Data Management and Analysis:

The PI checked the questionnairs in the field for consistecies and accuracies. Whenever a mistake was found the interviewer was asked to go back to the household or the person interviewed for correction. Then, data entry and analysis was done using Epi info version 6.

3.5 Expected outcomes of the study:

The study was expected to determine health care-seeking behavior for symptoms and signs of severe malaria in under fives, perceived causes of signs and symptoms of malaria and, perception about appropriate treatment of these symptoms and signs of severe malaria, including both home treatment and care-seeking. The study was also expected to identify other factors that affect home care and care-seeking practices for children with malaria.

3.6 Limitation of the study

The study coincided with the District Commissioner's (DC) one week long visit in the study area. The entire village government was with DC and the community members had to attend the rally. The respondents who were selected but missed due to DC's visit were re-visited.

Mkuranga district hospital had no wards for inpatients. Patients whose condition required admission stayed at the district hospital out patient resting room for a short time while waiting for transport to Temeke Municipal hospital. Mkamba health center had only 4 patients throughout

the period of study. In order to interview more mothers/guardians of admitted under fives, research assistants went back to the district hospital and stayed at the OPD and MCH for another one week to interview mothers/guardians of under fives who were diagnosed to suffer from malaria/severe malaria before referral to Temeke.

3.7 Definition of terms:

Community: a group of individuals who share a "sense of belonging" or persons in the catchment area for a primary health programme.

Culture: Acquired knowledge that people use to interpret experience and guide behaviour.

Disease: is an undesirable deviation from a measurable norm, emphasis is on signs and symptoms of severe and complicated malaria.

Health: is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity."

Health Care decision making: the process of deciding on a course of action related to maintaining or restoring health, including factors and or people that influence the decision and reasons (explicit and implicit) for the decision.

Health care providers: public and private professional trained health providers, traditional healers, traditional birth attendants and community health workers.

Health facility: includes private and public hospital, health center, dispensary, maternity clinics, and private doctor's office.

Health-seeking behavior: what people collectively and individually do in order to maintain and/or return to good health.

Holoendemic: area with 6-12 months/perennial intense transmission and the immunity to malaria is high in all groups but especially in adults.

Home treatment: any treatment with antimalarial/drug that was not given during or after a visit to health facility.

Household: a group of people who share fire, that is, who share food on a regular basis. It contains people related by blood or ritual (such as marriage) called families. People who are not members of the family may also live in the household.

Illness: inability of the body to function well.

Key informant: someone with whom the researcher develops a special relationship of information exchange and has access to the culture under study in a way that the researcher does not.

Malaria: means clinical malaria and not the fact of carrying malaria parasites in the blood.

Severe malaria: is a clinical malaria presenting with change of behaviour, confusion, drowsiness, coma, convulsions, difficulty in breathing, shock, jaundice and/or prostration.

CHAPTER FOUR

4.0 RESULTS

A total of 155 respondents were interviewed from different communities. The study also interviewed 37 mothers/guardians of admitted under fives admitted at the district hospital and health center, and 48 health workers.

4.1 Social-demographic characteristics of a study population:

Table 1:Social-demographic characteristic of study population in Mkuranga district.

Characteristic provider	Community n=155		Mothers/guardians n=37		Health care n=48	
	No	%	No	%	No	%
Sex						
Male	41	26.5	0	0.0	10	20.8
Female	114	73.5	37	100.0	38	79.2
Age (years)						
<20	11	7.0	3	8.0	0	0.0
20-29	66	42.6	24	65.0	17	35.4
30-39	41	26.4	8	21.5	20	41.6
>40	37	24.0	2	5.4	11	23.0
Education						
No formal education	69	55.5	20	54.0	48	100.0
Primary education	86	44.5	17	46.0	0	0.0
Marital status						
Married	128	82.6	37	100.0	38	79.2
Single	27	17.4	0	0.0	10	20.2
Religion						
Moslems	146	94.2	31	83.8	25	52.1
Christians	4	2.6	2	5.4	23	47.9
Others	5	3.2	4	10.8	0	0.0

Table 1 shows that the community respondents ages ranged from less than 20 to above 40years,and among them were 41 males and 114 females. Among community respondents 128 were married while 27 were not married. About 94% of the community respondents were Moslems and 3% were Christians. About 56% of the respondents reported to have had a formal primary education while 44% had no formal education.

All mothers/guardians of admitted under five at the health facilities were married and their age ranged from below 20 to above 40 years, with the majority 24 (65%) aged between 20 and 29 years. About 84% of mothers/guardians were Moslems while about 3% were Christians. Among the mothers/guardians of admitted under fives interviewed, 54% had a formal primary education while 46% reported to have had no formal education.

In the health workers sub-sample 10 were clinicians, 30 nurses and 8 were drug sellers from both public and private health facilities. And in total a sub-sample comprised of 10 males and 38 females aged between 15 and 45 years. All had formal education and about 79% were married.

4.2. Major health problems and perceived causes of Malaria and related signs.

The community respondents, mothers/guardians of admitted under fives at the health center and district hospital, and health workers were interviewed on major health problems affecting under fives in their communities.

Table 2: Distribution of major health problems among under five children.

Illnesses/providers signs	Community		Mothers/guardians		Health care prviders	
	No	%	No	%	No	%
High fever	68	43.8	26	70.3	0	0.0
Malaria	46	29.7	6	16.2	46	96.0
Diarrhoea and vomiting	5	3.2	1	2.7	1	2.0
Cough	8	5.2	1	2.7	1	2.0
Others	28	18.1	3	8.1	0	0.0
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 2 shows that high fever was the most commonly reported as the major health problem (43.8%) among under fives. A higher proportion of health workers (96%) reported high fever compared other study population categories. About 30% of community respondents mentioned malaria while 18% of community respondents mentioned other diseases like scabies, intestinal worms, running and swelling of lower limbs as the major health problem among under fives.

Respondents from the community, mothers/guardians of admitted under fives and health workers were asked about major causes of under five deaths.

Table 3: Distribution of major causes of death amongunder five hildren.

Illnesses/signs	Community		Mothers/guardians		Health care providers	
	No	%	No	%	No	%
High fever	87	56.0	26	70.2	0	0.0
Malaria	12	7.7	0	0.0	45	94.0
Diarrhea and vomiting	21	13.5	4	10.8	1	2.0
Inability to eat and suck or and sit and stand	19	12.2	4	10.8	0	0.0
Convulsions	14	9.0	1	2.0	1	2.0
Cough	2	1.2	2	5.0	1	2.0
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 3 shows that, high fever was mentioned as the leading cause of death among under five children in the study population. About 56% of community respondents and about 70% of respondents among mothers/guardians of admitted under fives mentioned high fever,while about 94% of the health workers mentioned malaria as a major cause of mortality in underfives.

4.2.1 Local terms for malaria.

Respondents from the community and mothers/guardians of admitted under fives were asked if they had heard of a disease known as malaria. All of them reported to have heard of malaria..

Table 4: Distribution of locally formulated names for malaria as reported by the respondents.

Local term for malaria	Community		others/guardians		Health care provider	
	No	%	No	%	No	%
Malaria	102	65.8	18	46.6	33	68.8
Homa	26	16.8	16	43.2	10	20.8
Galagala	8	5.2	0	0.0	0	0.0
Mbinda	8	5.2	0	0.0	0	0.0
Degedege	8	5.2	3	8.1	2	4.2
Mpenda mbopo	0	0.0	0	0.0	1	2.1
Ugonjwa wa upepo	3	1.9	0	0.0	2	4.2
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 4 shows that the majority of the respondents mentioned that *malaria* was the term used for malaria in the community. About 65% of community respondents, 47% of mothers/guardians of admitted under fives and 69% of health workers reported that *malaria* was the most common name used for the disease. Abut 17% of community respondents and 43% of mothers/guardians of admitted under fives mentioned *homa.* About 21% of health workers also reported *homa* as a common local name for malaria in their community.The terms *Galagala, mbinda* and *degedege* were each mentioned by about 5% of community respondents.

4.2.2: Types of malaria in under fives.

Respondents from the community and mothers/guardians of admitted under fives were asked about types of malaria they knew. Two types of malaria were mentioned: severe/complicated and uncomplicated malaria. About 79% of mothers/guardians of admitted under fives and 25% of community respondents reported severe and complicated malaria, while about 42% and

21% of community respondents and mothers/guardians of admitted under fives respectively, mentioned uncomplicated malaria as a second type of malaria. Among the health workers, about 81% mentioned severe/complicated malaria (Table not presented).

Respondents were asked if they had any local terms used to describe severe and complicated malaria.

Table 5: Local terms reported to describe severe and complicated malaria in under fives.

Local expressions providers for severe malaria	Community		Mothers/guardians		Health care	
	No	%	No	%	No	%
Malaria kali	41	27.0	1	3.0	36	75.0
Homa kali	40	25.8	4	11.0	0	0.0
Malaria ya degedege	16	10.3	3	8.0	8	16.7
Malaria ya akili	5	3.2	0	0.0	4	8.3
Malaria ya shetani	1	0.6	0	0.0	0	0.0
Don't know	52	33.5	29	78.3	0	0.0
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 5 shows that *malaria kali* was commonly mentioned as the term used to describe severe and complicated malaria in the study populations.A high proprtion of community respondents(27%) and health workers (75%) mentioned *malaria kali*, while *homa kali* was mentioned by about 25.8% and 11% of community and mothers/guardians of admitted under fives respectively.However, about 78.3% of mothers/guardians of admitted under

fives that they didn't know any local term used to describe severe and complicated malaria.

Respondents were also asked if they had any local expressions for uncomplicated malaria. Table 6 shows local expressions mentioned by the respondents to explain uncomplicated malaria.

Table 6: Local terms reported to describe uncomplicated malaria

Local terms for providers uncomplicated malaria.	Community		Mothers/ guardians		Health care	
	No	%	No	%	No	%
Homa ya kawaida	65	41.9	8	21.6	10	20.8
Malaria ya kawaida	37	23.8	5	13.5	30	62.5
Malaria ya kutapika	23	14.8	1	2.7	0	0.0
Malaria ya vipindi	8	5.2	2	5.4	6	12.5
Don't know	22	14.2	21	56.7	2	4.2
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 6 shows that *homa ya kawaida* was a common local term reported by the community respondents(41.9%) and mothers/guardians of admitted underfives(21.6%). The term *malaria ya kawaida* was mentioned by about 62.5% of health care providers, 23.8% of community respondents, and 13.5% mothers/guardians of admitted under fives as a local term used to describe uncomplicated malaria in their communities.

4.2.3 Awareness of symptoms and signs of malaria among under fives

The community and mothers/guardians of under fives were also asked to mention symptoms and signs of malaria for under five children.

Table 7: Distribution of responses to symptoms/ signs of malaria for under fives

Symptoms/signs	Community N=155		Mothers/guardians n=37	
	No	%	No	%
High fever	132	85.2	33	89.2
Diarrhea and vomiting	96	62.0	23	62.2
Inability to eat and suck or and sit and stand	62	40.0	10	27.0
Yellow coloration of eyes and urine	23	14.8	1	2.7
Convulsions	28	14.8	10	27.0
Others	23	14.8	0	0.0

Table 7 shows the symptoms/signs of malaria mentioned by the respondents. About 85% of community respondents and 89% of mothers/guardians of admitted under fives reported high fever as the most common symptom of malaria. The second frequently reported symptoms were diarrhea and vomiting, reported by 62% of community respondents and 62% of mothers/guardians of admitted under fives respectively. About 40% of community respondents and 27% of mothers/guardians of admitted under fives reported inability to eat and suck or and sit and stand as the common symptom. About 15% and 3% of respondents among community respondents and mothers/guardians mentioned yellow coloration of the eyes and urine respectively. Convulsions were also reported as a symptom of

malaria in under fives by 15% of the respondents from the community, and 27% of mothers/guardians of admitted under fives.

4.2.4: Awareness of control measures against malaria for under fives.

We also explored on awareness of control measures against malaria in under fives .The respondents were asked if they knew of any method of controlling malaria in the community. About 50% of mothers/guardians of admitted underfives and 40% of the community respondents reported use of untreated bednets as a control measure, while about 6% of the community respondents and 21% of the mothers/guardians of admitted underfives mentioned insecticide treated nets. And about 50% of community respondents and 3% of the mothers/guardians of admitted underfives reported use of repellants (Table not presented).

4.3: Recognition and interpretation of symptoms and signs of severe malaria in under five children.

Recognition and interpretation of the symptoms and signs of malaria influences treatment-seeking behavior. Therefore, respondents were asked about what they perceived to be the cause of different illnesses they mentioned that were major underfive health problems.

4.3.1: Reported perceived causes of major causes of under five illnesses.

Respondents from the community, mothers/guardians of admitted under fives and health workers were interviewed on the causes of high fever in under fives.

Table 8. Proportion of perceived causes of high fever in under fives.

Perceived cause Of high fever	Community		Mothers/guardians		Health care provider	
	No	%	No	%	No	%
Malaria	66	42.0	33	89.1	45	94.0
Mosquitoes	40	25.8	2	5.4	1	2.0
Cold weather	21	13.5	0	0.0	1	2.0
Anemia	5	3.2	0	0.0	0	0.0
Bad air	5	3.2	0	0.0	0	0.0
Others	18	11.6	2	5.4	1	2.0
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 8 shows that malaria was reported by about 43% of community respondents and 89% of mothers/guardians of under fives. Furthermore, health workers were asked if they knew what their community perceived to be the cause of high fever in under fives. And about 94% mentioned malaria. This was followed by mosquitoes which was mentioned by 26% and 6% of community respondents and mothers/guardians of admitted underfives respectively. Only 3% of the community respondents mentioned anaemia as the main cause of high fever.

4.3.2: Perceived causes of malaria in under fives.

Respondents from the community and mothers/guardians of admitted under fives were asked about what they thought was the cause of malaria in under fives, and health workers were asked if they knew what their members of communities perceived to be the cause of malaria in under fives. Table 9 shows the reported perceived causes of malaria in under fives.

Table 9: Proportion of perceived causes of malaria in under fives

Perceived causes of malaria	Community		Mothers/guardians		Health care providers	
	No	%	No	%	No	%
Mosquitoes	138	89.1	33	89.2	39	81.3
High fever	11	7.1	1	2.7	0	0.0
Others	6	3.8	3	8.1	9	18.7
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 9 shows that about 89% of community respondents and 90% of mothers/guardians of admitted under five reported that mosquitoes were the main cause of malaria in under fives. Furthermore, health workers were asked about the community perception on the causes of malaria. About 81% reported that their community members perceived mosquitoes as the main cause of malaria in underfives.

4.3.3: Perceived causes of convulsions in under fives.

Convulsions, is one of the major illnesses of under five mentioned by respondents. Respondents from the community and mothers/guardians of admitted under fives were interviewed on what they thought could be the

cause of convulsions in under fives, while health workers were asked if they knew what the community perceived as the cause of convulsions. Table 10 shows the perceived causes of convulsions in under fives.

Table 10 Proportion of perceived causes of convulsions in under fives

Perceived causes of convulsions	Community		Mothers/guardians		Health care providers	
	No	%	No	%	No	%
Witching/devil	51	33.0	13	35.1	35	73.0
High fever	51	33.0	4	10.8	7	14.5
Malaria	26	16.7	10	27.0	3	6.3
Others	22	14.2	6	16.2	3	6.3
Don't know	5	3.2	4	10.8	0	0.0
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 10 shows that witching/devil was the most commonly reported perceived cause of convulsions in under fives. About 33% of community respondents and 33% of mothers/guardians of admitted under fives mentioned witching/devil respectively. In comparison, about 73% of health workers reported that the community members perceived that witching/devil was a cause of convulsions in under fives. About 33% of community members and 12% of mothers/guardians of admitted under fives mentioned high fever as a cause of convulsions, while about 17% and 28% of community respondents and mothers/guardians of admitted under fives mentioned malaria respectively. Thirteen percent (13%) and 7% of health workers reported high fever and malaria respectively as a community perceived cause of convulsions.

cause of convulsions in under fives, while health workers were asked if they knew what the community perceived as the cause of convulsions. Table 10 shows the perceived causes of convulsions in under fives.

Table 10 Proportion of perceived causes of convulsions in under fives

Perceived causes of convulsions	Community		Mothers/guardians		Health care providers	
	No	%	No	%	No	%
Witching/devil	51	33.0	13	35.1	35	73.0
High fever	51	33.0	4	10.8	7	14.5
Malaria	26	16.7	10	27.0	3	6.3
Others	22	14.2	6	16.2	3	6.3
Don't know	5	3.2	4	10.8	0	0.0
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

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4.3.4: Perceived causes of severe malaria and its symptoms and signs in under fives.

The community, mothers/guardians of admitted under fives respondents and health care providers were interviewed to find out if they knew the causes of severe malaria in under fives.

Table 11:Distribution of perceived causes of severe malaria in under fives

Perceived cause of severe malaria	Community		Mothers/guardians		Health care providers	
	No	%	No	%	No	%
Mosquitoes	108	69.6	31	83.8	38	79.2
Witching/devil	8	5.2	0	0.0	0	0.0
Others	6	3.9	0	0.0	0	0.0
Don't know	33	21.3	6	16.2	10	20.8
Total	**155**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 11 shows that about 70% of community respondents and 85% of mothers/guardians of admitted underfives mentioned mosquitoes as a cause of severe and complicated malaria. Health workers were asked what they thought their communities perceived as the cause of severe malaria in under fives. About 80% mentioned mosquitoes, while 5% of the community respondents interviewed mentioned witching/devil as a cause of severe malaria in under five. And about 21% and 15% of community and mothers/guardians of admitted under fives respectively didn't know the cause of severe and complicated malaria.

Respondents were also asked if what causes severe malaria differs from what causes uncomplicated malaria. About 79% and 58% of community respondents and mothers/guardians of admitted under fives respectively reported that there was no difference; it was mosquito for both of them.

The respondents from the community and mothers/guardians of admitted under fives were interviewed about the symptoms/signs and the perceived causes of symptoms/signs of severe/complicated malaria in under fives.

Table12:Symptoms/signs and perceived causes of the symptoms/signs of severemalaria as reported by the community respondents (n=155)

Perceived Cause of symptoms/ Signs	Symptoms /signs of severe/complicated malaria In under fives													
	High fever No	%	Coma No	%	Vomiting No	%	Deep breathing No	%	Convulsions No	%	Anemia No	%	Inability to eat /suck No	%
Malaria	62	40.0	116	74.8	28	18.0	9	5.8	23	14.8	9	5.8	11	7.1
High fever	0	0.0	0	0.0	73	47.1	45	29.0	100	64.5	102	65.8	130	83.8
Witching/devil	0	0.0	0	0.0	0	0.0	0	0.0	19	12.2	0	0.0	0.	0.0
Mosquitoes	20	12.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cold weather	12	7.7	0	0.0	0	0.0	56	36.1	0	0.0	0	0.0	0	0.0

Table 12 shows that, about 40% of community respondents reported malaria as a cause of high fever, while 75% of the community respondents reported that malaria was the main cause of coma in under fives. Also about 47% reported high fever as a cause of vomiting, while about 65% and 66% of the community respondents reported that high fever was the main cause of

convulsions and anemia in under fives respectively. And about 84% of the respondents from the community mentioned high fever as the main cause of inability to eat and suck in under fives. About 12% of the community respondents mentioned witching /devil as the cause of convulsions in under fives. Furthermore, about 8% and 36% of community respondents reported cold weather as the cause of high fever and deep breathing respectively. Mothers/guardians of under fives were asked about the perceived causes of symptoms/signs of severe malaria.

Table 13: Symptoms and perceived causes of symptoms/signs of severe malaria as reported by mothers/guardians of admitted under fives. (N=37).

Perceived Cause of severe malaria	Symptoms /signs of severe/complicated malaria in under fives													
	High fever No	%	Coma No	%	Vomiting No	%	Deep breathing No	%	Convulsion No	%	Anemia No	%	Inability to eat /suck No	%
Malaria	33	89.2	1	2.7	3	8.1	26	70.2	1	2.7	30	81.1	34	91.9
High fever	0	0.0	33	89.2	31	83.8	0	0.0	29	78.3	34	91.9	0	0.0
Witching/devil	0	0.0	0	0.0	0	0.0	0	0.0	3	8.1	0	0.0	0	0.0
Mosquitoes	1	2.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 13 shows that about 89% of mothers/guardians of admitted under fives mentioned malaria as the main cause of high fever in under fives, and about 70% and 81% reported that malaria was the main cause of deep breathing and anaemia respectively. About 92% of the mothers/guardians mentioned that malaria is a main cause of inability to eat and suck in under fives. Also about 89% and 84% of the mothers/guardians mentioned that high fever is a

main cause of coma and vomiting respectively. And about 78% and 92% of mothers/guardians of admitted under fives mentioned high fever as the main cause of convulsions and anaemia respectively, while 8% of mothers/guardians of under fives reported that convulsions is caused by witching/devil.

Health care providers were interviewed about what they thought were the symptoms/signs and perceived causes of symptoms of severe malaria in their community. (Table 14)

Table 14 Symptoms and perceived causes of symptoms/signs of severe malaria reported by health care providers as perceived by their community (n=48)

Perceived cause of severe malaria	Symptoms /signs of severe/complicated malaria in under fives											
	High fever		Coma		Vomiting		Deep breathing		Convulsion		Anemia		Inability to eat /suck	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Malaria	20	41.7	2	4.2	7	14.6	19	39.6	1	2.1	0	0.0	33	68.8
High fever	0	0.0	20	42.0	28	58.3	0	0.0	11	23.0	27	56.3	2	4.2
Witching/devil			7	15.0	0	0.0	0	0.0	34	70.8	0	0.0	0	0.0
Mosquitoes	9	18.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Contaminated food/water	0	0.0	0	0.0	12	25.0	0	0.0	0	0.0	0	0.0	0	0.0
Tooth eruption	0	0.0	0	0.0	0	0.0	5	10.4	0	0.0	0	0.0	0	0.0
Anemia	0	0.0	0	0.0	0	0.0	2	4.2	0	0.0	0	0.0	0	0.0

Table14 shows that about 42% and19% of health workers mentioned malaria and mosquitoes as causes of high fever in under fives respectively. About 40% and 69% of health workers mentioned malaria to be the cause of deep breathing and inability to eat and suck respectively. And also about 42% and

58% reported high fever to be the cause of coma and vomiting in under fives respectively,

while about 22% of health workers mentioned high fever as the cause of convulsions, and 57% mentioned high fever as the cause of anaemia in underfives. 15% and 71% of the health workers mentioned Witching/devil to be a cause of coma and convulsions respectively

4.4.Health care-seeking behavior for treatment of symptoms and signs of severe malaria in under fives

We explored what mothers/guardians of under fives in the community do when they recognize symptoms of severe malaria in underfive children. The prevalence of febrile illnesses and places of choice of treatment of different illnesses/symptoms was also explored.

4.4.1:Preferred place for treatment of illnesses/symptoms/signs of severe malaria in under fives.

The respondents from the community were interviewed on places which they would prefer for treatment of the symptoms/signs of severe malaria in under fives. (Table15)

Table 15:Preferred places for treatment of symptoms or signs of severe and complicated malaria in under five as reported by community respondents

Illness/symptom	Traditional healer		Health center/ dispensary		Hospital		Total	
	No	%	No	%	No	%	No	%
Convulsions	33	21.2	116	74.8	6	4.0	37	100.0
Anaemia	8	5.2	136	87.7	11	7.1	37	100.0
Coma	11	7.0	142	92.0	2	1.0	37	100.0
Deep breathing	6	3.9	144	93.0	5	3.1	37	100.0
Inability to eat/suck	2	1.3	148	95.5	5	3.2	37	100.0
Vomiting	2	1.3	148	95.5	5	3.2	37	100.0
High fever	3	4.7	144	93.0	8	5.2	37	100.0

Table 15 shows different places preferred by the community respondents for treatment of symptoms or signs of severe and complicated malaria when recognized in under five children. Health center and dispensary were common preferred places which were mentioned by community respondents for treatment of high fever(93%), convulsions(74.8%), anaemia (87.7%), coma(92.0%), deep breathing(93.0%),inability to eat and suck (95.5%),and vomiting(93.0%). However, about 21% and 7.0% mentioed traditional healer as a preferred place for treatment of convulsions.

Table 16: Preferred place for treatment of symptoms/signs of severe complicated malaria in under five as reported by mothers/guardians of admitted under fives.

Illness/symptom	Traditional healer		Health center/ dispensary		Hospital		Total	
	No	%	No	%	No	%	No	%
Convulsions	4	10.8	19	51.3	14	37.8	37	100.0
Anaemia	0	0.0	21	56.8	16	43.2	37	100.0
Coma	1	2.7	24	64.9	12	30.4	37	100.0
Deep breathing	2	5.4	23	62.2	12	32.4	37	100.0
Inability to eat/suck	0	0.0	23	62.2	14	37.8	37	100.0
Vomiting	1	2.7	27	73.0	9	24.3	37	100.0
High fever	2	5.4	24	64.9	11	29.7	37	100.0

Table 16 shows that a health centre and dispensary category was the most common place preferred by mothers/guardians of under fives for treatment of symptoms or signs of severe malaria. Traditional healer was mentioned by mothers/guardians of under fives as their preferred place for treatment of convulsions(10.8%),coma(2.7%) deep breathing(5.4%) and high fever(5.4%). Health workers were asked if they knew where people in their communities take their children with high fever for treatment.

Table 17: Preferred place for treatment of symptoms/signs of severe complicated malaria in under five as reported by health workers

Illness/symptom	Traditional healer		Health center/ dispensary		Big hospital		Total	
	No	%	No	%	No	%	No	%
Convulsions	22	45.8	19	39.6	7	14.6	48	100.0
Anaemia	20	41.7	24	50.0	4	8.3	48	100.0
Coma	18	37.5	25	52.1	5	10.4	48	100.0
Deep breathing	1	2.0	14	29.2	33	68.8	48	100.0
Inability to eat/suck	1	2.0	31	64.6	16	33.3	48	100.0
Vomiting	7	14.6	36	75.0	5	10.4	48	100.0
High fever	10	20.8	29	60.4	9	18.8	48	100.0

Table 17 shows that health workers reported that under five would be taken to traditional healer if developed convulsions(45.8%),anaemia(41.7%), coma (37.5%) and high fever(20.8%). Health center and dispensary were most commonly reported as preferred places for treatment of convulsions (40%), anaemia (50%), coma (52%), inability to eat/suck (65%),vomiting (75%) and high fever was mentioned by 60%. Big hospital was reported by about 69% and 33% of health workers as a preferred place for teatment of deep breathing and high fever respectively.

4.4.2: Choice of places and treatments for under fives.

Community respondents were asked if there were any under five children in their households who felt sick two weeks prior to the interview, the types of treatments that were sought and given, and if anyone was consulted for advice apart from place of care.

Out of 155 community respondents, 35(23%) reported to have had an under five child who was sick two weeks prior to the interview.

The number of sick children in a household ranged from one to three. Thirty (30) households (86%) out of 35 reported to have had one sick child, 3(9%) households had 2 children and 2 (6%) households had 3 children who were sick two weeks before the interview. There were a total of 42 under five children who were reported to have been sick two weeks prior to the interview (table not presented).

Table 18-shows age distribution of under fives reported to have been sick, two weeks before interview.

Table18: Age bistribution of children who were reported to be sick in two weeks prior to the interview.

Age group(months)	Number of children	Percentage
1-12	6	14.0
13-24	29	69.0
>24	7	17.0
Total	**42**	**100.0**

Table 18 shows that about 69 % of the under fives reported to be sick were aged between 13 and 24 months .

The community respondents and mothers/guardians of admitted underfives were asked about the first sign/symptoms noticed in a reported sick child.

Table19: Reported symptoms/signs noticed in under fives by mothers/guardians and community respondents before seeking health care.

Illness/symptoms/signs	Community		Mothers/guardians	
	No	%	No	%
Fever	29	69.0	34	92.0
Diarrhoea and vomiting	4	9.5	1	2.7
Convulsions	2	4.8	1	2.7
Deep breathing and chest tightness	2	4.8	1	2.7
Anaemia	2	4.8	0	0.0
Others	3	7.1	0	0.0
Total	**42**	**100**	**37**	**100.0**

Table 19 shows that fever was noticed in 69% of the under five reported to had been sick two weeks prior to interview, Vomiting and diarrhoea were reported by about 9.5% and 2.7% of the community respondents and mothers/guardians respectively. Table 19 shows that about 92% of mothers/guardians of admitted under fives reported that fever was a main symptom/sign noticed before the child was admitted.

Community respondents were asked about the place where the child was taken first for treatment. Respondents reported that, about 29(69%) were taken to a private health facility while 10(24%) were taken to the public health facility. Other 3(7%) were treated at home. Mothers/guardians of under fives were also asked if a child was treated at any other place before being admitted at the current place. All reported the admitted place to be the first

place where treatment was sought. Surprisingly, no child was reported to have been given treatment at home before admission.

Mothers/guardians were asked about the person who usually decides a sick child should be taken for treatment. About 57% of mothers/guardians of admitted under fives reported that father of a child usually makes the decision while about 32% mentioned the mother of the child. Furthermore the respondents were asked if they did have any discussion with someone before taking the child for treatment. About 78% of mothers/guardians of admitted under fives reported that they usually discuss the condition of under five with husbands and 16% reported that no discussion with anybody.

Among 35 of the respondents who have had an under fives who were reported to be sick two weeks before interview, 24(69%) have had no formal primary education while 11(31%) have had formal primary education (Table 20)

Table 20: Percentage of reported places of treatment of under five by education of the mother

Level of Education of Mother	PLACE OF TREATMENT						Total	
	Public health facility		Private health facility		Home treatment			
	No	%	No	%	No	%	No	%
No formal education	6	17.1	10	28.6	8	22.9	24	68.6
Formal primary education	3	8.6	7	20.0	1	2.9	11	31.4
Total	**9**	**25.7**	**17**	**48.6**	**9**	**25.7**	**35**	**100.0**

*Mothers/guardians of admitted underfives not included.

Table 20 shows that about 33% of the mothers with no formal education treated their children at home. And about 65% and 29% of mothers with formal primary education took their children to private and public health facilities respectively, while about 9% reported to had treated their under fives at home.

The community respondents were asked to report on the number of days elapsed before care was sought.

Table 21:Reported duration of sickness before seeking care for under five children who were reported to be sick two weeks before the interview.

Duration of illness(days)	Number of children	Percentage
1-3	9	21.4
4-6	10	23.8
7-14	20	47.6
>14	3	7.1
Total	**42**	**100.0**

Table 21 shows that about 48% of the sick under fives reported to have had started treatment after 6 days of illness while about 24% and 22% started treatment after 4 days and 1 day respectively.

.The community respondents who treated their sick children at home were interviewed on the types and sources of the drugs they used to treat their children. About 10% of the mothers/guardians mentioned paracetamol, 10% reported SP, 8% gave quinine, and 3% administered aspirin, while chloroquine was mentioned by 3%. However, the majority, 62%, of the

respondents could not remember the name of the drug. Respondents were asked about where they got the drugs, 13% mentioned hospital, 50% obtained from health center and dispensary while 37% reported that they had bought from the pharmacy/medical store (table not presented).

The amount of money spent on the medicines ranged from Tzs.100.00 to more than Tzs. 1500/=. Among the mothers who treated their under five at home, one (11.1%) reportedTzs100.00, 4(4.4%) mentioned Tzs 500.00, 3(33.3%) reported Tzs1000.00 and 2(22.2%.) About 5% of mothers who treated their children at home reported free donation.

Responding to the question on who prescribed or suggested the drug for the sick child, about 38% of the mothers who treated their children at home reported that the drug was prescribed by a doctor, while 25% reported that the father of the child suggested the drug. Other people mentioned to have suggested or prescribed the drug for a child were mother (17%), nurse (13%) and self or relative (6%).

5.0 Factors influencing health care seeking behavior for under fives

Utilization of health services is determined by several factors, which include accessibility availability and affordability of health services. The study explored the factors, which may be negatively, or positively influencing the community in using health services. Community respondents who reported to have had child below five years (135), mothers/guardians of admitted under fives (37) and health workers (48) were interviewed to explore such factors

5.1 Transportation of sick under fives to health facility

The community respondents were asked if there was any problem on transportation of a sick under five to a health facility where health care is sought. About 85% of the community respondents, who reported (115) to have had the child below five year, reported that there was no problem, while about 5% said that there was a transport problem. Respondents (5%), who said that there was a transport problem, were requested to mention the problem. All of them said that the nearest health facility where heath care was sought was far from their homes. Respondents were asked about the distance from home to the nearest health facility where health care was sought for under fives. Table 22 shows the reported distances from respondents home.

Table 22: The distance between proportion of respondent's home and the nearest health facility where care was sought for under fives

Distance (Km)	Community		Mothers/guardians	
	No	%	No	%
0 – 5km	128	94.8	28	75.5
6 – 10km	4	3.0	5	13.5
10km+	3	2.2	4	11.0
Total	**135**	**100.0**	**37**	**100.0**

Table 22 shows that about 95% of the mothers who reported to have had a child aged below five years reported that the nearest health facility was within 5 kilometers while 3% reported that the nearest health facility was between 6 and 10 kilometers from their home.

Mothers/guardians of admitted under fives were asked about the distance from their home to the health facility where they were admitted. About 76% reported a distance less than 5 kilometers, 14% reported to live between 6

and 10 kilometers, while 11% reported a distance more than 10kilometers from the health facility,

Respondents were asked to mention any other problems that make transportation of sick under five to the health facility where care was commonly sought difficult. Table 23 shows other reported problems associated with transportation of under fives to the health facility. .

Table 23: Reported transport problems (%) in transporting sick under fives to a health facility:

Type of Transport problem	Community		Mothers/guardians		Healthcareprovider	
	No	%	No	%	No	%
No money	80	59.3	22	60.0	25	53.1
No transport	51	37.7	7	20.0	20	40.6
Impassable roads	0	0.0	4	10.0	3	6.3
No safe transport	4	3.0.	4	10.0	0	0.0
Total	**135**	**100.0**	**37**	**100.0**	**48**	**100.0**

Table 23 shows that about 59% of the community respondents reported that they had no money for fare while 38% mentioned lack of transport from home to the health facility. About 60% of mothers/guardians of admitted under fives reported that no transport to the health facility.

Respondents were asked to report on the amount of money spent for transport. The money reported to had been spent on transport ranged from Tzs. 100.00 to more than Tzs. 2,000.00. Among community respondents interviewed 56% reported between Tzs. 100.00 and Tzs. 500.00 while 34% mentioned Tzs. 1000.00 . About 86% of mothers/guardians of admitted under

fives reported had paid about TShs. 100.00, while 14% reported to had spent Tzs 200.00 on transport an admitted under fives

5.2: Perceived quality of care at a health facility for under fives.

Respondents who reported to have had a sick child two weeks prior to the interview were asked to give reasons for choosing the place they sent their child for treatment. The reasons given for taking a child to the place where treatment was sought were good service (45%) low cost (23%), advice from relative (15%), only place available (12%), and own decision (5%). Furthermore community respondents who reported to have had a sick under five two weeks before the interview were asked whether the child was taken to the second treatment place, and asked to give reason as to why the second place was chosen. Sixteen (16) children were reported to had been taken to a second place for treatment, Different reasons for taking the child to the second place were given as worsening of the condition (69%), own decision (25%), and referred by a health provider (6%). . Seven (7) children were reported to have been taken to the third place, and about 49% of the mothers said that they decided to take the child to a third place because the condition of the child was worsening (table not presented).

Respondents were interviewed on satisfaction with service received at different places of treatment was sought. About 83% of respondents in the community who reported to have had a sick child two weeks prior to the interview and 46% of mothers/guardians of admitted under fives reported very satisfied (no table presented).

Furthermore, respondents from the community who had reported to have a sick child two weeks before interview were asked about the person who usually decides on where a sick child should be taken for treatment. Sixty one percent (61%) of community respondents who have had a sick child two weeks prior to the interview reported that a father of the child usually made the decision. About 63% of community respondents reported that they usually discuss with the husband and 6% reported to decide without discussing with anyone.

As shown in table 19, about 92% of mothers/guardians of admitted under fives reported that fever was the main sign noticed before the child was admitted. And when asked if a child was treated at any other place before admission they reported that where the interview took place was the first treatment place. No child was reported to have received treatment at home before admission.

Respondents were interviewed on how do they perceived the quality of service at the health facility where care was sought for under fives by asking them what would be the benefits of taking a sick under five to the health facility. Table 24 shows the reported benefits perceived to be obtained by taking an under five to the health facility.

Table 24: Reported benefits of seeking care/ treatment for a sick under five from a health facility

Benefits of seeking care from health facility	Community		Mothers/guardians	
	No	%	No	%
Quality diagnosis and treatment	92	68	31	85.0
Quality medication	12	8.9	2	5.9
Fee medication	4	2.7	0	0.0
Positive attitude of health workers	0	0.0	1	2.9
Individual qualitycare/personal attitude	1	2.7	0	0.0
Child gets well faster	25	18.5	1	2.9
Other benefits	1	0.7	1	2.9
Total	**135**	**100.0**	**37**	**100.0**

Table 24 shows the perceived benefits that encouraged the respondents to use a selected health facility. About 65% and 85% of community respondents and mothers/guardians of admitted under fives respectively reported that at the health facility quality of diagnosis and treatment was good.

Respondents were also interviewed on strengths of a nearest health facility where health is sought for a sick under five. Table 25 shows the reported strengths that encourage utilization of health services for under fives at a health facility.

Table 25: Reported strengths of a health facility where care was sought for under fives.

Strength of health facility	Community		Mothers/guardians	
	No	%	No	%
Availability of drugs	114	85.0	28	77.0
Friendly staff	12	9.0	8	21.0
Cleanliness	3	2.7	0	0.0
Punctuality of staff	1	0.7	0	0.0
Proper instructions	3	2.7	1	3.0
No strengths	1	0.7	0	0.0
Other	1	0.7	0	0.0
Total	**135**	**100.0**	**37**	**100.0**

Table 25 shows that 85% of community respondents and 77% of mothers/guardians of admitted under fives reported that availability of drugs was a strength that encourages them to utilize health care services at the facility. While 9% of community respondents and 21% of mothers/guardians of admitted under fives mentioned friendly staff.

Respondents were interviewed on the weaknesses of a health facility that discourage them from utilizing health care services. About 51% reported that there were no weaknesses. However, about 9% of the community reported staffs were not punctual, 4% mentioned shortage of staff, and 5% reported health workers soliciting for bribe and unfriendly staff. Mothers or guardians of the admitted under fives were interviewed on weaknesses of the health facility where their under fives were admitted, 70% reported that there were no weaknesses and few reported weaknesses like bribery (3%) unfriendly staff (3%) lack of staff (4%), lack of equipment's (9%) and unavailability of drugs (11%).

Respondents were interviewed on their views on what they thought could be improved at the health facilities, 33% of community respondents suggested improvement of the working environment for the health workers while 26% reported that drug supply should be increased. About 7% of community respondents suggested that the number of staff to be increased. And, about 18% of community respondents suggested provision of health education at health facilities(Table not presented).

CHAPTER FIVE

5. DISCUSSION

The study was on perception of causes and health care-seeking behaviour for severe complicated malaria in under fives in Mkuranga district. The baseline information about malaria in under fives in terms of symptoms, signs and perceived causes is very important in the implementation of control measures stipulated in Roll Back Malaria, of which among them are case management, insecticide treated nets and Advocacy, Information, Education and Communication[3]. Community awareness of the symptoms and signs of the disease is of paramount importance particularly when a child is recognized to have symptoms of severe malaria.

The study has shown that local terms are used to describe malaria in the sample population interviewed. *Malaria* and *homa* are the most common local terms used to describe malaria in the study community. Premji and Leshabari in their study found that most of the households (77%) in the surveyed populations in Tanzania had socially constructed local names for the disease[45]. In Nigeria a study done in three rural Nigerian communities to determine the baseline understanding of childhood fever and other childhood illnesses behaviour revealed local terms *iba* and *oyi* to be used to describe malaria[35]. In Kilifi district, Kenya, term *homa* was used to describe a range of illnesses and in association with symptoms including fever (hot body), cough, and headache[46]. In Ghana various terms like *pua* and *sa-ar* were used to describe malaria[46], while in Ethiopia and Malawi official local terms for malaria were *bussa* and *malungo,* respectively.[47]

Apart from the local terms used to describe malaria, symptoms and signs, severity of the condition and perceived causes of the disease are also used to describe the disease. The term *ugonjwa wa upepo* (disease of air), indicated that the community still perceived that malaria is caused by bad air[4]. The terms *degedege* and *homa* are signs of malaria but were also referred as specific names for malaria[45]. The term *degedege* (convulsions) which was used to describe malaria refers to convulsions of any kind like epileptic convulsions and meningitis.[48,49] *Homa kali* (high fever) can also be caused by any other febrile illnesses.[46]

Malaria was reported as the most common cause of morbidity and mortality among under fives in Mkuranga district. and the study documents' good knowladge in recognising symptoms and signs of malaria. However, awareness of danger symptoms and signs of severe complicated malaria was low, and the respondents perceived them as caused by evil spirits. The participants in the interview associated the danger signs of severe malaria like convulsions, inability to eat and suck or and sit and stand, severe vomiting and loss of consciousness with whitchcraft/devil. As other studies in African communites has shown, complications of severe malaria are perceived to be separate diseases and not related to malaria and convulsions, severe vomiting, and loss of consciousness, are commonly associated with spiritual causes.[46,50,51]

The respondent's awareness of the symptoms and signs of severe and complicated malaria in Mkuranga was a myth, and there was a misconception. Although under fives presenting with symptoms and signs of

severe complicated malaria were reported as being managed at the health facilities, a potential proportion of under fives especially those presenting with convulsions and coma are managed by traditional healers because they are believed to have a spiritual cause. Childhood convulsions and coma are attributed to causes that cannot be treated in a cosmopolitan health services apparently, because patients will die, especially if get injected.[17,46,47,49] In this case death of the patient is associated with route of administration of the drug.[17,46,47] The perception and such practices (traditional remedies) are potential causes for delaying the child from getting proper hospital treatment for these life-threatening conditions.

In this study husbands were the key decision-makers of whether a sick under five should be taken to the health facility for treatment, including management of *degedege* (traditional healers). This is contrary to findings in other parts of Tanzania where grandmothers and mothers-in laws are decision-makers and powerful tools to preserve deep-rooted culture and family beliefs.[50] In Kenya study showed that hushands were consulted before seeking for outside help[47], while in Ghana, when there was no improvement, the husband and soothsayer were consulted before seeking for further treament[51]. In Ethiopia mothers initially manage illness at home using traditional remedies, if there was no improvement in a child's condition, women cosult their husbands to obtain cash for outside treatment[47].

The awareness of the fever as a symptom of malaria in Mkuranga, which is one of the districts in the coast region, was higher among the people interviewed. In Bagamoyo Kayisire found that the majority of the respondents

(68.8%) knew symptoms and signs of malaria, which included fever.[20] Fivawo conducted a study in a rural area of Tanga and found that only 46% of the population were aware of the symptoms and cause of malaria[37]. These two studies were done in rural area, in the coast area of Tanzania but awareness of the cause of malaria was high in Mkuranga compared to that found in rural Tanga.[20,37] However, awareness of the cause of malaria among the people in Mkuranga at time when Fivawo did his study in Tanga is not known. So it cannot be concluded that awareness in Mkuranga has raised or not compared to the findings in Tanga. Malaria control intervention programmes and health education through redios and televisions, which is going on might have raised this awareness of the people interviewed.

However, it was observed from the study in Mkuranga that malaria was perceived by the community as a cause of high fever among under fives and that malaria is caused by mosquitoes. High fever was also associated with other causes. Study done in Bagamoyo district showed that fever had other meaning than those known to health care providers.[37] The study in Mkuranga did not look into what fever in under fives means, whether fever refer to increase in body temperature or other physiological conditions.

African studies have shown that there is a cultural differences, for example in local terms describing malaria, knowladge and beliefs about causes of malaria.[47] Studies done in Malawi showed that simple or uncomplicated malaria was perceived to be an illness caused by god or by environmental influences such as weather, food or mosquitoes.[47] African studies showed

that mosquitoes were mentioned as a cause of malaria when communities had been exposed to health education about malaria.[47]

The study at Mkuranga found that the approach to treatment and health care-seeking for under fives with symptoms and signs of malaria was mainly at the health centre and dispensary. This might had been influenced by the accessibility to the health facilities. Most families were accessible to available dispensaries (mainly private) but not hospital and health centres. Health care-seeking depended on duration of illness, distance from the health facility and financial considerations.

According to Kroegers' conceptual model of the 'user's choice' of the health service, utilization of under fives health care services considers benefits of choice and its constraints.[52] It is this actual choice which leads to a particular health action, which may be either no action, self-treatment or utilization of traditional healers, public services, private services or informal healer.[52] Therefore, the prefference of health center and dispensary or traditional healer for management of symptoms and signs of severe complicated malaria in Mkuranga might had been determined by what was available, accessible, affordable and what people believed could cure the disease. In Kenya, Ethiopia and Ghana, illnesses perceived not to be serious were cared for at home using over the counter drugs (antipyretics and chloroquine), while herbal teas and baths were used to treat convulsions, and in some cases no treatment was given because mothers believed that it *strengthens* the child.[45,46,51.53]

It has been found in Ghana that health care-seeking behaviour depends on perceived severity of illness and its duration, distance from health facilities, and financial consideratios.[51] In Ghana the private clinic was preferred option for prompt treatment, becouse it was near than the government clinic.[51] The costs associated with using the more distant government hospital, in terms of transport, consultation, drugs, and food, were important constraints.[51] In Ethiopia cost and quality of care determined the choice[47] .The malaria control sector in Ethiopia was preferred to the government health centre and the private clinic.[47] Treatment was free and slides were taken at malaria control sector while at government health center there were queues and the private clinic was expensive.[47] Drug sellers were the least preferred options in Ethiopia, while in Malawi given a choice mothers would prefer to seek treatment from the government health centre, followed by shopkeepers, a woman spiritual healer, the chief and a male traditional healer.[47]

The prevalence of febrile illness in Mkuranga was high but timely and appropriate treatment were delayed for under fives who were reported to be ill. Such delay to seek treatment for more than 48 hours of onset of malaria may lead to complications and death.[9] The delay may be due to caretakers' failure to associate malaria signs and symptoms like convulsions and change in mental status with severe malaria.[7]

This study showed that level of education of mothers or guardians of under fives somehow determined the choice of a place for care and type of treatment for under five. However, accessibility to heath facilities, availability of drugs at the health facility, good quality of services and good outcomes of

treatment of under fives were factors which were found to influence communities to seek care at modern health facilities. In Kenya the villegers were found to have access to a health centre, which was within a walking distance and local shops had a stock of antimalarials.[46] The nearest dispensary was 8 km away and the nearest hospital was 15 km away.[46] The study in Ghana showed that the dispersed rural population in Kassena-Nankana District had very poor access to health facilities.[51] The nearest health post was 8 km, the nearest hospital was 45 km away and transport was limited.[51] However, antimalarials were available from local shops and travelling drug sellers.[51] The Ethiopian study showed that a government health centre, four private clinics and five drug vendors were easily accessible, but the nearest referral hospital was 95 km away.[47] In addition services including microscopic diagnosis and free medication spraying and health education were provided by the local malaria control sector.[47]

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATOIN

6.1 Conclusion

The following can be concluded from this study.

- Malaria is a major under-fives health problem causing both morbidity and mortality, and the study population had a socially constructed local terms for the disease, both severe complicated and uncomplicated malaria.
- Recognition of symptoms and signs of malaria was high, but there were misconceptions of the causes of danger signs of severe complicated malaria.
- Mothers recognise important signs of severe illness such as repeated vomiting, inability to eat, drink or suck, and changes in mental status. They are able to identify when children evolve into severe illness.
- While symptoms of severe complicated malaria are easily recognized, places where treatment would be sought is dictated by the nature of symptoms and perceptions about their cause.
- Children with symptoms and signs of severe malaria did not start treatment timely and appropriately. Children with convulsions or change in mental status are taken first. and sometimes only, to traditonal healers for treatment. This results from a widely held

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- Children with symptoms and signs of severe malaria did not start treatment timely and appropriately. Children with convulsions or change in mental status are taken first. and sometimes only, to traditonal healers for treatment. This results from a widely held

belief that convulsions are special conditions caused by evil spirit that requires ritual treatment.

- Convenince and cost determine care-seeking decisions. Mothers may often choose the closest, cheapest and available health facilities.

6.2 Recommendations

The study recommends that more efforts should be done to increase awareness of the community on danger signs and symptoms of severe malaria in under fives. The community awareness can change the misconception of the causes of signs and symtoms of severe malaria and lead to positive change of health care seeking behaviour i.e.seeking for modern treatment. Correct interpretation of signs may influence treatment seeking behaviour towards morden treatment. Home based management may prevent simple malaria from progressing to complicated and life theatening conditions.

REFERENCES:

1. **Rooth I, Bjorkman A.** Fever episodes in a holoendemic malaria area of Tanzania: Parasitological and clinical fundings and diagnosis related to malaria; *Transaactions of the Royal society of tropical medicine and hygiene* 1992, **86**: 479 – 492.
2. **Nature**. Plasmodium falciparum: Malaria enters the genomic era 2002.
3. **MAMOP**. Improving the Management of Childhood malaria: an experiment to bridge the gap between mothers and health care providers. A research proposal submitted to E U 2000.
4. **WHO/RBM**. An extract from the African Summit on Roll Back Malaria, Abuja, 2000, 25 April (WHO/CDS/RBM/2000.17).
5. **MOH** United Republic of Tanzania Ministry of Health Annual Health Report 1999.
6. **WHO/TDR.** Special programme for research and training on tropical diseases. 2003
7. **Carel B. and Kachuru S P**. Improving community case management of childhood malaria. How behavioural research can help; 1999.
8. **Glick DC et al.** Malaria treatment practices among mothers in Guinea. *Journal of Health and Social Behaviour*, 1999, **30**: 421-435.
9. **Raynal AL.** Use of over-the-counter medications in rural Matabeleland, Zimbambwe: the Case for upgrading the dispensing skills of rural shopkeepers. *Central African Journal of Medicine,* 1985, **31**: 92-97.

10. **Kaseje DCO et al**. Usage of community-based chloroquine treatment for malaria in Saradidi, Kenya. *Annals of tropical medicine and parasitology*; 1987, **81** (supp.1): 111-115.

11. **Dabis F et al**. Monitoring selective components of primary health care:methodology and community assessment of vaccination, diarrhoea, and malaria practices in Conakay, Guinea. *Bulletin of World Health Organization,* 1989, **67**:675-684.

12. **Daming MS et al**. Home treatment of febrile, children with antimalarial drugs in Togo. *Bulletin of the World Health Organization,* 1989, **67:** 695-700.

13. **Bloland PB et al.** Making malarial treatment policy in face of drug resistance. *Annals of tropical medicine and parasitology,* 1999, **93** (1): 5-23.

14. **Baume, C.** Care-seeking for fever and convulsions in Bungoma district, Kenya. Implication for malaria programme. Final report USAID/BASICS project, Arlington, VA. 1998

15. **Hausman MS, Muera RJM, Tanner M.** Fake malaria and hidden parasites- the ambiguity of malaria. Anthropology and Medicine, 1998, **5** (1): 43-61.

16. **Kachur SP**. Local perceptions of malaria treatment: A comparative study, *American journal of medicine and hygiene, manuscript submitted for review.* 1999.

17. **Ruebush TK, Kern MK, Campbell CC, Oloo AJ**. Self-treatment of Malaria in rural area of Western Kenya. *Bulletin of the World Health Organization* 1995, **73**: 229-36.

18. **Farid MA**. The malaria programme from Euphoria to Anaochy, *World Health Forum,* 1980, **1** (1,2): 8-33.

19. **Kayisire H.** Peoples perceptions of Malaria and its socio-economic consequences at the household level, Bagamoyo district. Masters of Science in Tropical Diseases Control Dissertation. University of Dar es Salaam, 1991.

20. **Mujinja PGM, Premji Z, Masele A, Nsimba S, Makwaya C.** Improving the management of childhood malaria: an experiment to bridge the gap between mothers and health care providers. An annual report submitted to EU, 2003, March.

21. **WHO/UNICEF.** Africa Malaria Report Geneva, Switzerland, 2000.

22. **Diallo AB et al.** Home care of malaria-infected children of less than 5 years of age in rural area of Republic of Guinea. *Bulletin of the World Health Organization,* 2001, **79**: 28-32.

23. **WHO/UNICEF.** Africa Malaria Report Geneva, Switzerland, 1999.

24. **Kachur SP.** Improving community cars management of childhood malaria: How behavioural research can help, SARA project, 1999.

25. **Holdings PA.** Cognitive sequelae of severe malaria with impaired consciousness. *Transaction of the Royal Society of Tropical Medicine and Hygine,* 1999, **93** (5): 529-34.

26. **Murphy SC**. Gaps in the childhood malaria burden in Africa. Cerebral malarial neurological sequelae, anaemia, respiratory distress, hypogycaemia and complications of pregnancy, *American journal of tropical medicine and hygiene,* 2001 **64** (1-2 supp): 57-67.

27. **Schwellenberg JA.** Intermittent treatment for malaria and anaemic control at time of routine vaccination in Tanzanian infants; a randomized, placeble controlled trial, *LANCET*, 2001, **35** (9267): 1471-7.

28. **Kidane G, Morrow HR.** Treaching mothers to provide a home treatment of malaria in Tigray, Ethiopia, a randomized trial: *LANCET*. 2000,August12, **356** :550-555.

29. **WHO.** Malaria control as part of primary health care: report of WHO study group (Technical Report series Number 712), Geneva, 1984.

30. **WHO.** Implementation of the Global malaria control strategy (Technical Report series Number 839), Geneva. 1993.

31. **Mwabu G.** Health care decision at the household level: results of a rural health survey in Kenya, *Journal of social science and medicine,* 1986, **22**: 215-19.

32. **Menon A, Greenwood BM, Joof D, Rowan KM.** Maternal administraton of chloroquine: An unexplored aspect of malaria control, *Journal of tropical medicine and hygiene,* 1988, **91**: 49-54.

33. **WHO.** Technical Report Series No. 735, (Expert Committee on Malaria eigthteeth report), 1986.

34. **Bremen JG.** Memorund: A strategy for decreasing severe malaria in African children, current experience. Department of Health and Human services, Public Health Services, Centre for diseases control Atlanta, Georgia, 1987, pg 28.

35. **Salako LA et al.** Treatment of childhood fever and other illnesses in three Rural Nigerian Communities. *Journal of tropical paediatrics,* Oxford University Press, 2001, **47:** 230-7.

36. **Tanner M**. Treatment-seeking behavior for malaria; A typology based on endemicity and gender medicine 1998 **46:**523-32.

37. **Fivawo M**. Indigenous concepts of malaria control in Tanzania. Washington D.C. USA. Proceedings of the conference on malaria in Africa. Practical consideration on malaria vaccines and clinical trials. Edited by a Buck 1986.

38. **Kloos H.** Illness and health behaviour in Addis Ababa and rural central Ethiopia, *Social Sciences in Medicine*, 1987. **25:**1003-1019.

39. **Ciardi P.** Qualitative survey of utlization of health services, participation and health needs in Burkina Faso, rural communities, Washington, D.C. World Bank , 1993.

40. **Foster S**. Treatment of malaria outside the formal health services. *Journal of tropical medicine and hygiene*, 1995, **98**:29-34.

41. **Spencer HC.** Impact on mortality and fertility of a community-based malaria control programme in Saradidi, Kenya, *Annals of tropical*

42. **Greenwood BM, Bradly AK, Greendwood AM, et al:** Morbidity and mortality from malaria among children in rural area of theGambia, West Arica. *Transactions of the Royal society of tropical medicine and hygiene* 1987, 81, 478-486.

43. **Greenwood M, Snow RW, Byass P, Havas RJ, Njie N.** Comparison of two strategies for control of malaria within a primary health care programme in the Gambia, *LANCET,* 1988. **I**: 1121-1127.

44. **Tanzania National Census** report, 2002, October.

45. **Premji Z, Leshabari MT.** Research report on community knowladge, attitudes and practices on malaria in Tanzania, 1999.

46. **Schellenberg JA, Newell JN, Snow RW et al** Analysis of the geographical distrubution of severe malaria in Kilifi district, Kenya. *Internation journal of epidemiology.* 1998; **27**:323-339.

47. **WHO/TDR.** Using Ethnographic Reseach to Improve Malaria Management in Young Children. 2003

48. **WHO/TDR** Meningits, vaccine and immunization news. The newsletter of the global programme for vaccine and immunization, 1996, June.

49. **Mwenesi HA, Harphan T, Marsh K, Snow RW.** Perceptions of symtoms of severe childhood malaria among Mujikenda and Luo of coastal Kenya. *Journal of biosocial sciences.* 1995b; **27**:235-244.

50. **Comoro C, Nsimba SED, Warsame M, Tomson G.** Local understanding, perceptions and reported practices of

mothers/guardians and health workers on childhood malaria in a Tanzanian district-implications for malaria control. *Acta Tropica*. 2003; **87**:305-313.

51. **Ahorlu CK, Dunyo SK, Afariea, Koram KA, Nkrumah FK.** Malaria related belief and behaviour in southern Ghana. Implication for treatment, prevention, and control. *Tropical medicine international health* 1997; **2:** 488-499.

52. **TEHIP.** Household health seeking behaviour research proposal. Conceptual model for analysis of user's choice of health service, 1983.

53. **Mwenesi HA, Harphan T, Snow RW.** Child malaria treatment practices among mothers in Kenya. *Social science medicine,* 1995a; **40** 1271 – 1277.