PERCEPTIONS OF DIARRHOEA IN CHILDREN UNDER FIVE YEARS OF AGE AMONG THE LUO OF BONDO DIVISION IN WESTERN KENYA

BY

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A THESIS SUBMITTED TO THE INSTITUTE OF AFRICAN STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN ANTHROPOLOGY OF THE UNIVERSITY OF NAIROBI

OCTOBER 2000

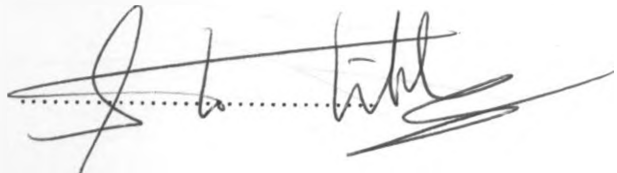
DECLARATION

This thesis is my original work and has not been presented at any other university for a degree.

7/11/2000

Kennedy Wanjala Barasa **Date**

This thesis has been submitted for examination with my approval as a university supervisor.



8/11/2000

Prof. Simiyu Wandibba **Date**

DEDICATION

To all scholars who cherish their cultural ideals

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ACKNOWLEDGEMENTS

A number of people and institutions contributed to the success of this thesis, right from proposal writing to the final stage. It would be indeed a hard task for me to thank individually all those who contributed generously through guidance, advice and the provision of moral support. However, a few are worth mentioning.

First I am grateful to the Kenyan-Danish Research Project **(KEDAHR)** for financially supporting my fieldwork, without whose assistance, the production of this thesis would have been a far-fetched dream. The project's Danish director, Dr. Jens Aagaard-Hansen, also provided a lot of encouragement while I was in the field. His encouragement filled me with the steam to perfect my work, especially when I felt low due to field- associated stress. Likewise, I would like to thank the **KEDAHR** members of staff, especially Mr Peter Ouma, the project's Field Co-ordinator, for making sure that my fieldwork went on well.

This thesis also benefited a great deal from the long time experience of my supervisor, Prof. Simiyu Wandibba, as a University supervisor and a Professor of Anthropology. Without his untiring supervision, I would have made little headway.

I would also like to thank Dr. Stevie Nangedo for his contributions and constructive criticisms that helped shape the thesis. His experience as a University supervisor helped me a great deal.

I am also grateful to the Principal of Bondo Teachers' Training College, Mr. Ondiek Babusa, for allowing me to stay in the college. Without his kind action, the research would have been a hard experience for me because of the fact that the intricacies involved in the collection of primary data, writing reports and, preparation of the work plan require a quiet environment, which the college perfectly provided. In addition, in retrospect, the friendly nature of the College Bursar, Mr. Ismael Rogo, made my life in the field considerably desirable. If the

world was made up of only such good people, it would have been a place to be envied even by the dead!

Lastly, I would like to thank Mr. S. K. Mwaniki, the head-librarian at the Institute of African Studies, for his untiring assistance when I had difficulties in retrieving reference materials from the library. His assistance enabled me to review the relevant literature from the library with much ease.

ABSTRACT

This study was designed to investigate the perception of diarrhoea in children among the Luo of Bondo District. Fieldwork for the study was conducted between January and March 1999.The study sought to find out the people's perception of paediatric diarrhoea, what is/are considered to be the symptoms of diarrhoea and, to describe the methods used in the management of the disease.

The methods used in obtaining data for the study were library research, interviews, case histories, focus group discussions and key informant interviews. A total of 60 respondents were interviewed using a structured questionnaire. The data were analysed through qualitative and quantitative techniques. These techniques description of the research findings and the use of percentages and frequency tables respectively.

The findings indicate that the people of Bondo perceive diarrhoea to result from natural, supernatural and human causes. The people identified five categories of diarrhoea and the symptoms are category specific. Traditional medicine and practices perceived to be appropriate in the management of paediatric diarrhoea are still widely used. The water available to the people for drinking and domestic use is drawn from stationary water bodies and not all people boil it before use. Therefore, it is recommended that organizations working in the area with the objective of uplifting the people's health status should put more effort in educating people on the need to boil water for domestic use and drinking as away of prevention against diarrhoea.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Developing countries carry a heavy burden of disease and death. This is seen mainly in such vulnerable groups as children and women. Women are vulnerable especially in their reproductive phases of life. In these groups, inadequate nutrition and lack of resistance make the effects of disease more serious (Ebrahim, 1984).

A striking feature of all studies in childhood mortality is that most of the morbidity and death are caused by only a handful of diseases which, until recently, used to be widespread in all the countries of Western Europe but have now been controlled and contained. Such diseases include protein-energy malnutrition, respiratory infections and diarrhoea which, in the 1970s and early 1980s, accounted for between 30 and 40 per cent of all paediatric admissions (Ebrahim, 1984; Amref, 1975).

In diarrhoeal disease episodes, three or more watery stools, with or without blood, are passed in 24 hours. It is particularly more serious in new-borns and young infants who cannot tolerate even small upsets in fluid and electrolyte balance. It is rare in infants who are entirely breastfed but very common in those who are artificially fed, especially if the standards of hygiene are poor. Dirty bottles and teats with left-over milk provide excellent media for the growth of pathogens and are more common causes of diarrhoea in such infants. In spite of this fact, a study by Amref (1975) revealed a decrease in breastfeeding and the introduction of milk formulas.

However, according to Tzipori (1985), many of the children suffering high rates of diarrhoea in developing countries are breastfed and given traditional weaning foods. These foods can be as hazardous bacteriologically as bottle formulas when prepared in unhygienic conditions. Death from acute diarrhoea is most often due to the dehydration that results from the loss of body water and electrolytes in excess of replacement.

Of particular interest in this research are children under the age of five. This age group is significant because during this period, children are susceptible to many infections, especially from pathogenic agents, notably because their immune systems would not have fully developed to protect them. If left unattended, infections would take a high toll on them. These infections are harmful, especially if they interfere with the intake of essential nutrients into the growing bodies. Any deficiency in essential nutrients may have adverse effects such as poor physical and psychological development of the children. These harmful effects, which can otherwise be easily controlled, may lead to permanent deformities in later stages of children's lives.

Diarrhoea is one of the symptoms of infections that interfere with the intake of nutrients in children's bodies, since most of these nutrients are passed out in the form of stool during diarrhoeal episodes. At a later stage, especially after the immune systems of the children have fully developed, the effect of diarrhoea is reduced to dehydration. Though harmful because it may lead to death, dehydration can easily be managed by taking oral rehydration solutions (ORS), and so its effects are short-term. The proper development of children under five years of age is pertinent for the survival of all human species, since this age range forms the foundation of realization of the human potential.

Every society has its own beliefs about the causes of diseases which, in turn, influences its health-seeking behaviour. Some of these beliefs could be harmful for the

community since they may create and sustain health problems to the members. For example, in Indonesia, diarrhoea is believed to be part of the growing process of a child. Therefore, this research aimed at establishing if there is any relationship between the Luo perceptions of diarrhoea and its prevalence in Bondo Division.

1.2 The People

This study was carried out among the Luo. These are a River-Lake Nilotic people with a patrilineal, patrilocal kinship structure and who speak Dholuo. Most of them occupy the area surrounding the Kenyan side of Lake Victoria.

According to Ogot (1967), the original home of the Luo is somewhere in Southern Sudan, in the region today occupied by the Shiluk people. From this general area, beginning about the fourteenth century, the Luo began their long migration southwards, driven by famine and war. During this early wave of migration, some settled in Acholiland and Padhola-land in Uganda while the rest settled on the shores of Lake Victoria. From their lakeshore settlements, the Luo began spreading along the shores to Kisumu and Kano Plains. Wrigley (1981) on the other hand notes that, the original home of the Luo was somewhere in Central Uganda and that it was from this area that they migrated northwards into Sudan and eastwards into Kenya. However, the origin of the Luo and their historical movements is not the central concern of this thesis, and so need not detain us here.

The economic activity of the Luo involves cultivation of crops such as maize and beans, cassava and millet as well as keeping domestic animals. Cattle are kept for milk and meat. They are also used in traditional ceremonies and in settlement of bride wealth. Goats and sheep are used for meat, poultry for eggs and meat, and donkeys are kept for transport

purposes. Donkey milk and donkey dung are also used in the management of some categories of paediatric diarrhoea.

1.2.1 The Luo Perception of Disease

According to Sindiga (1995), the Luo believe that disease and illness may be caused through at least five ways, namely: diseases of the air, water and food; diseases caused by humans; diseases of the "living dead"; diseases of inheritance; and, diseases resulting from breaching of taboos or customs. The Luo recognize that disease and illness may come from changes in weather. Diseases that may result from such changes include malaria and flu. Drinking dirty water and eating contaminated food may cause abdominal pains, dysentery, typhoid and diarrhoea. Evil people may also direct harm to other society members through sorcery and witchcraft. Supernatural causes are also blamed for some illnesses which are believed to be some form of punishment due to behaviour against the wishes of the living dead.

A breach of taboos and customs is also believed to result in misfortune and illness to the offender or his family. A notable consequence of breaking taboos is wasting away of the body, ultimately leading to death. This is referred to as chira. Disorders such as epilepsy and mental illnesses are believed to be genetic and perpetuated from one generation to another.

1.2.2 The Luo Belief System

The Luo people believe in only one God, Nyasave, who is a supreme being. Nyasaye is believed to be almighty and is the creator of the universe and everything

within it. He is believed to have human attributes for he can love and punish. People's prayers, actions and sacrifices can also influence him.

According to Whisson (1964), Nyasaye was, to some extent, equated in the Luo thought with the sun. It was considered well for all people to be out of bed by dawn when prayers would be offered individually to the rising sun. The prayer would be given force by the supplicant's spitting in the direction of the sun. However, Nyasaye is not only perceived in the sun but also in other large and extraordinary things such as in the moon, large rocks, big snakes, and other extraordinary things which fill people with awe.

Nyasaye's attributes were those of a moral God. He created the world and people, and brought health and wealth to those who obeyed the customs of the ethnic group. He was the final power directing the universe. In general, all could pray to Nyasaye and hope for his blessings. According to Hange (1974), Nyasaye is believed to be a great giver of gifts and protector of humans. Nyasaye is especially resorted to in prayers and sacrifices when serious calamities such as drought, war and epidemics affect the population.

Nyasaye is not, however, the only source from which people can get help and protection against misfortune or disease. There are other agents such as traditional medical practitioners and the spirit of the dead, who intervene actively in everyday life, and those whose power and help are sought for protection against different kinds of calamities (Hange, 1974, Ndisi, 1974; Whisson, 1964). The spirits of the dead (jachien) rank next to Nyasaye in power and importance. Some are evil while others are good. Jachien are often believed to be the cause of disease and other misfortunes but they can also help people to have good fortune. When there is a suspected offence against them

by any living member of the society, sacrifices are offered to them for appeasement, restoration and sustenance of good relationship between them (jachien) and the living members of the society.

Religious specialists called jabilo conduct sacrifices to Nyasaye. Sacrifices to ancestral spirits are mostly conducted by another specialist called ajuoga, or the head of the family after receiving advice from a traditional medical practitioner (Hange, 1974).

Every misfortune that is experienced by individuals among the Luo has an explanation in relation to cause, effect and remedial measures. Sorcery evil eye and chira are however, the most common factors given as explanations for misfortune. Witchcraft and sorcery involve the use of evil powers possessed by some society members and used to affect the targeted members negatively.

According to Whyte (1997) sorcerers work upon people through the manipulation of powerful material substances. The sorcery items can be applied directly into or onto the body of the intended victim, they can be brought into proximity so that the victim steps over or sees them or they can be removed from the body of the victim and worked upon for the powers to accomplish the desired effect. On the other hand, evil eye is believed to cause harm to victims by looking. The possessor of the evil powers may not even be aware that she has the powers. Evil eye is believed to affect mainly children.

Chira, the misfortune caused by disregard of the society norms is characterised by total wasting of the victims' body. According to Parkin (1978), some of the reasons blamed

for chira include: a man having sex with the wife of a living brother, a breastfeeding mother meeting a woman whose child has just passed away, a man having a sexual relationship with a woman who is sexually related with his son/sons, an unmarried girl sitting or sleeping on her parents bed and a man neglecting his senior wives in favour of the younger wives. In all the above cases, the victims are usually children

1.2.3 Mobility

Siaya District (now divided into Bondo and Siaya Districts) is one of the districts with a high rate of out -migration in the country. A combination of relatively poor soils, erratic rainfall and unreliable crop yields contributes to the endemic high out-migration pattern in the district The people of Siaya and Bondo districts, therefore, attach great importance to high educational attainment which enhances employment prospects mostly in the wage sector outside the district (GOK, 1997) Despite the general observation of high out-migration in the two districts, actual data on migration is not available in the area .

However, according to GOK (1994), there was net in-migration of children from urban areas coming back with their mothers to enrol in schools Those in involved were age groups 10 to 19 years for males and 10 to 24 years for females But while those people were streaming in, another set, mainly young men in their 20s, were moving out of the district. Most of the out-migrants do usually stream back to the district after their 40th birthday The most popular destination for most out-migrants from the district are Nairobi (47.2%), Nakuru (12.2%), and Homa Bay and Migori (5.7%) The big towns are destinations for urban employment while areas such as Homa Bay and Migori are havens for permanent migrants (GOK 1997)

The fact that there is a high in and out migration in Bondo District, the district is open to people and hence new ideas. Therefore, ideas about effective ways regarding the management of diarrhoea and other paediatric diseases are not new to the Luo of Bondo.

1.3 Statement of the Problem

In most Third World countries, including Kenya, diseases that could easily be controlled continue to cause a major health problem in terms of morbidity and mortality. Many people, especially children under five years of age, have died and the few lucky ones who have survived have had a continuous struggle with these conditions and diseases that may otherwise be easily controlled.

Diarrhoeal ailments have been one of the diseases that people in the Third World have had to struggle with despite there being knowledge of their aetiology and their preventive practices. This could be attributed to the mechanistic way in which the designers and implementers of the programmes aimed at controlling such diseases have approached the whole issue. The traditional approach in biomedicine has been laboratory-based diagnosis of the disease and a prescription of anti-diarrhoeal drugs which, in essence, has to work if the diagnosis is right. However, the recurrence of diarrhoeal diseases has been due to the fact that members of the affected communities have been considered as beneficiaries of control programmes, but have not been seen as contributors to the problem they suffer from and that they can be important actors in the elimination of their particular problem.

Diarrhoeal diseases are specifically detrimental to children's health. This is because in the age range of five-year olds and below, children need nutrients that are essential for their growing bodies. The nature of diarrhoea, that is, a situation in which a lot of nutrients

pass out as stool instead of being absorbed, puts it in a disease category that is supposed to be controlled at whatever cost if at all healthy children are to be raised. The urgency of their control is also added weight by the fact that diarrhoeal diseases kill within a very short time due to dehydration of the patients, especially children.

Primary health care is supposed to be introduced in communities prone to diarrhoeal diseases such as Bondo Division. However, such programmes cannot succeed without involving the local community. One of the major prerequisites for the successful integration of the people in control programmes is to learn their perceptions and other cultural practices that may encourage the continued persistence of the undesirable condition. Without this approach, the rate of infant diseases cannot be successfully controlled.

It is quite evident that what is considered a disease and what is not is culturally relative. What may be defined as a disease by a scientific community may be seen otherwise by the population in which the control project is to be implemented. The local community may also have its own measures of controlling health problems. While some of these practices may be useful in alleviating the condition of disease, others may be risk impediments to a healthy community.

The central theme of this study was, therefore, to answer the following questions

1 What do the people of Bondo conceptualize diarrhoea to be?

2 What do these people consider to be the symptoms of diarrhoea?

3 What do the people do when their under five year-old children contract diarrhoea?

1.4 Objectives of the Study

The general objective was to study perceptions and management practices of diarrhoea in children under five years of age among the Luo of Bondo District in western Kenya. In specific terms, the study addressed three objectives:

1 To investigate and document the perception of diarrhoea by the people of Bondo District.

2 To investigate what the people of Bondo consider to be the symptoms of diarrhoea.

3 To describe the methods used in the management of the disease.

1.5 Rationale of the Study

Diarrhoea is one of the main child killer diseases which, though easy to control, remains to be a great problem in developing countries. It is closely associated with malnutrition because during diarrhoeal episodes, stool which contains un-absorbed nutrients needed for the proper physical and intellectual development of the child, is passed out. As a problem in Kenya, diarrhoea needs attention because in its acute form, it leads to malnutrition. Early childhood malnutrition may lead to stunted physical and intellectual development, thus denying children the realization of their genetic potential.

It is my opinion that major improvements in health will not be achieved by putting more funds into curative measures alone. Recommendations aimed at addressing the behaviour patterns that promote disease must be made and strategies for eradication laid down from the grass-roots. This might be more useful than doctors and drugs in the minimization of the burden of diseases such as diarrhoea and the tragedy of early death.

It is also my strong belief that most of the problems that people face are preventable and that the people themselves play a major role in the contraction of these health problems. It is, therefore, important to understand this role from the people's perspective, and have a bottom-up approach to the health problems faced by our societies. The aim of this study was to contribute to the control of some of these preventable diseases by providing a spotlight into the point of interaction, if there is any, between the health problems and cultural practices of the concerned people, with the aim of discouraging such an interaction through health education campaigns.

The findings of this study should, therefore, be important to planners and especially those in the Ministry of Health in their efforts to control morbidity and mortality from diarrhoeal diseases. The study should also be useful to non-governmental organizations (NGOs) and UNICEF that are interested in the betterment of children's lives. Finally, this study should contribute towards a better understanding of cultural practices of the Luo of Bondo Division and the existing knowledge on childcare that may be incorporated into, or discouraged from, intervention programmes, depending on whether they are profitable or detrimental to the health of the children.

CHAPTER 2

LITERATURE REVIEW

In this chapter, information from library research has been used. Relevant information as far as the research topic is concerned was sought and recorded. The chapter, therefore, gives information about the definition of diarrhoea, its causes, its effects on child health, prevention and control. Some aspects on people's beliefs about diarrhoea are also given

The fact that different people come from varied ecological and cultural backgrounds makes them have varied solutions to similar health problems. This is because there is always an interplay between biology, ecology and the culture of a people From this perspective, diarrhoea is both a behavioural and medical problem The onus of controlling diarrhoea in children should, therefore, be put firmly on the medical personnel and the population in question

2.1 Causes of Diarrhoea

Diarrhoea is not a disease, but a symptom of a problem in the gastro-intestinal tract of an individual (K'Okul, 1991) This problem is reflected by the passing out of three or more loose or watery stools in a period of 24 hours (Amref, 1975) On their part, Nagelkerke et al. (1990) also state that diarrhoea is not a disease but a major symptom of a large variety of infections caused by many different organisms, either bacterial, protozoal or viral

According to Amref (1975) and Ebrahim (1984), the main causes of diarrhoea can be grouped into two categories, namely, enteral infections and parenteral infections. Enteral infections are direct infections of the intestinal tract. Bacteria such as Shigella salmonella and Cholera vibrios may cause these kinds of infection. Other organisms that may be responsible for enteral infections include protozoa, such as Entamoeba histolytica, and intestinal worms such as Schistosoma and Ascaris. These may also cause diarrhoea. According to Ebrahim (1984), a heavy infestation of a child with ascaris in the gastro-intestinal tract may result in absorption difficulty and loose stools. Bacteria cause diarrhoea either by producing an exotoxin or by invasion of the gut's epithelium. These toxins paralyse the normal absorption functions of the gut.

The parenteral infections are infections external to the digestive tract. Amref (1975) observes that, in children, parenteral infections may cause diarrhoea, with or without vomiting. Such infections include malaria, measles, pneumonia and urinary tract infections. However, according to Cutting and Elliot (1994), infants are at great risk of diarrhoea when foods other than breast milk are first given. This is because, during weaning, infants are exposed to food-borne germs for the first time. High levels of contamination are often found in animal milk and traditional weaning foods, especially gruels. Escherichia coli, a bacterium which causes at least 25% of all diarrhoea in developing countries, is commonly found in weaning foods.

According to Amref (1975), Cutting and Elliot (1994), Ebrahim (1984), Nagelkerke et al. (1990) and Tzipori (1985), feeding bottles and rubber teats which are particularly difficult to clean, are often breeding grounds for germs. They are, therefore, not fit to be used during weaning.

Breast milk is rarely contaminated with harmful bacteria. The hazard with contamination of milk given to bottle fed babies has received a great deal of attention and deserves emphasis, particularly in the urban areas of developing countries. However, many of the children suffering high rates of diarrhoea in developing countries are breast-fed and given traditional weaning foods. These foods can be as hazardous as bottled formulae when prepared in unhygienic conditions (Tzipori, 1985; Ebrahim, 1984).

There are many possible ways in which foods could be contaminated. Often, the food ingredients and water are contaminated and inadequate cooking permits survival of bacteria. Containers and utensils used to prepare food, even when washed, may still be heavily contaminated. Food stored in the house can be contaminated by household members, animals or insects. Perhaps the most critical factors are the duration and conditions of storage, for many bacteria would be expected to multiply in food kept at the temperatures commonly found in the homes in developing countries.

The predominance of bacterial diarrhoea emphasizes the importance of strengthening community-based health programmes aimed at improving personal and community patterns of hygiene, nutrition and health awareness. Maternal malnutrition is also widespread in rural areas and the malnourished mothers secrete breast-milk with suppressed levels of anti-infective factors. This makes their breast-fed infants and young children malnourished and more susceptible to infections, particularly in heavily contaminated environments (Tzipori, 1985). Ebrahim (1984) notes that epidemiological studies in several countries have emphasized the role of the nutritional status of the child as an important factor in the aetiology of childhood diarrhoea. Diarrhoea is not only more frequent in children with poor nutritional status but also tends to be more severe.

According to Ashworth and Draper (1992), childhood malnutrition in developing countries is usually most prevalent between 6-18 months of age. This is the weaning period. An important causal factor of malnutrition is the low energy and nutrient density of weaning diets. The problem in essence is that the volume of weaning food needed to satisfy nutritional requirements is far in excess of the amount a child can actually consume. Porridge, the main weaning food in most poor societies, is a particular problem because it is made from staples with a high starch content which, when cooked with water, gelatinise and become highly viscous. Considerable quantities of liquid, usually water, are utilized to bring the consistency to a level appropriate for child feeding. This markedly lowers their energy and nutrient concentration. According to Tzipori (1985), for the poor women who wean their babies by giving them cow's milk, the expense of the milk forces them to dilute the milk, thereby causing the babies to slowly starve.

Smith and McNeish (1986) state that most mothers in developing countries neither have knowledge, money, time nor sanitary conditions to bottle-feed their babies safely. Lack of adequate education and hygiene by the mothers allows the feeding bottle to become heavily polluted with bacteria, thereby causing the baby to have frequent episodes of diarrhoea. This makes the feeding bottle a real baby killer.

According to Ebrahim (1984), the challenge facing child health in all traditional societies is the widespread decline in breastfeeding. The small amount of health education carried out by the health personnel is no match for the large commercial advertisements and sales drives of the baby food manufacturers. A precipitous drop in breastfeeding has been observed, particularly in urban areas where women are increasingly taking up paid employment.

According to Amref (1975), defects of intestinal enzymes can cause diarrhoea. Intestinal enzymes are essential for breaking down carbohydrates, proteins and fats to enable a proper digestion of the food. Sometimes, in children with malnutrition, there is a temporary lack of lactase, an intestinal enzyme which splits the sugar lactose into glucose and galactose. If this enzyme is lacking, children get diarrhoea and their stools contain a lot of undigested sugars. This kind of diarrhoea is called lactase deficiency or lactose intolerance diarrhoea.

2.2 The Effects of Diarrhoea

Diarrhoea is one of the most common diseases of children, especially those living in poverty. Together with respiratory infections, diarrhoea ranks as a major killer disease in the paediatric age group. It is also responsible for a large proportion of the workloads of hospitals and health centres (Amref, 1975; Ebrahim, 1984; Ciba Foundation, 1976). According to Ciba Foundation (1976), Helman (1994) and WHO (1989), diarrhoea is associated with an estimated 4 million deaths of children under five years of age annually. It is, thus, one of the leading contributors to childhood mortality. In addition, diarrhoea may lead to malnutrition and also predisposes children to death from other diseases.

Acute dehydrating diarrhoea is a common condition which can occur at any age and which causes an estimated 4 - 5 million deaths each year throughout the world. Young children in the first two years of life are the most commonly and seriously affected, particularly in developing countries where diarrhoea is frequently associated with malnutrition. It is most likely to prove fatal in undernourished infants (Jelliffe and Jelliffe, 1989).

Diarrhoea itself frequently leads to severe malnutrition, owing to low food intake resulting from poor appetite, vomiting and the unnecessary stopping of feeding as a means of treatment. The risk of malnutrition increases with repeated attacks of diarrhoea in already poorly malnourished children (Jelliffe and Jelliffe, 1989; Cutting and Elliot, 1994).

Conversely, malnutrition increases the severity of diarrhoea, and poor resistance to infections increases the likelihood of diarrhoea being prolonged, with further worsening of the child's nutritional state (Amref, 1975; Ciba Foundation, 1976; Ebrahim, 1984). The causes of malnutrition in children include inadequate diet as a result of poverty, lack of appropriate food, or cultural practices which tend to prohibit children from eating certain foods, and infections, of which diarrhoeal diseases are among the most important. The commonest type of malnutrition in which diarrhoea plays an important part is protein-energy malnutrition (PEM). In its severe form, this kind of malnutrition leads to kwashiorkor and marasmus (Chessa, 1992; Jelliffe and Jelliffe, 1989; Nagalkerke et al., 1990).

2.3 Prevention and Control of Diarrhoea

In principle, diarrhoea can be prevented either by avoidance of infection, for example, through improved hygiene, use of clean water and food, or increasing the capacity of the host to defend itself through vaccination and improving nutritional status (Ciba Foundation, 1976; Nagalkerke et al., 1990; Tzipori, 1985; Vogel et al., 1974). According to Amref (1975) and Jelliffe and Jelliffe (1989), most diarrhoea-causing pathogens are ingested through the mouth. Diarrhoea in children can, therefore, be prevented by putting in place measures aimed at decreasing the likelihood of swallowing harmful bacteria and

viruses. Such measures include maintaining breast-feeding. Breast milk contains substances that protect children against infection. It is also clean and avoids the need for water which might be contaminated. Cleaning of feeding bottles and teats is also hard and so they become favourable breeding grounds for diarrhoea-causing pathogens. If breast milk is not available, the most economical and nutritious substitutes, such as animal milk, or commercial formulas, should be given, preferably using a cup and spoon.

According to Cutting and Elliot (1994) and Smith and McNeish (1986), breast-feeding has a major beneficial impact upon the three scourges of young children in developing countries, notably malnutrition, infections and unregulated fertility. The tragedy, however, is that the decline in breast-feeding, which has been a phenomenon of the developed countries in recent decades, has spread to the developing countries where bottle-feeding is assuming the dimension of an epidemic. While the educated, affluent section of the community living under conditions of good hygiene can bottle-feed their babies safely, most mothers in developing countries have neither the knowledge, money, time, sanitary conditions nor the basic facilities to bottle-feed their babies.

Cutting and Elliot (1984) are of the view that safe preparation and storage of food is crucial to good health. It is estimated that improvements in food hygiene could decrease the incidence of diarrhoea by between 15 and 70%. Food can be contaminated in many ways. These include contact with the following: Human faeces used as fertilizer; unclean water; dirty hands of food handlers; dirty or unclean utensils or containers; animals; and insects. Two common mistakes that significantly increase the risk of food contamination are:

1. Preparation of food several hours before eating, then storing it under warm temperatures, which encourage growth of bacteria.

2 Insufficient cooking or re-heating of food to kill the pathogens.

Food should, therefore, be eaten soon after cooking or if storage of cooked food is necessary, the food should be kept in a refrigerator. Alternatively, stored food should be boiled. All these are aimed at minimizing favourable conditions for the growth of diarrhoea-causing pathogens.

According to Amref (1975), any child with diarrhoea, whether or not he or she has detectable signs of dehydration, needs extra fluids. Breast milk as much as is available should be given. However, breast milk alone is not sufficient to cover the fluid requirements. Therefore, safe water, fruit juice, coconut juice or tea should be given. The ideal solution should, therefore, contain water, sugar and electrolytes, which are lost in the stools.

In diarrhoeal episodes, the use of oral re-hydration salt solution (ORS) is greatly emphasized by the United Nations Children Fund (UNICEF) and the London School of Tropical Hygiene (K'Okul, 1991). However, K'Okul adds that oral re-hydration salt solutions are not always a sufficient antidote for diarrhoea. Oral re-hydration salt solutions, often given to assist rapid restoration of the salt and water to the body, though apparently helpful, only alleviate a situation that remains rooted in the patient. It is now a common awareness that the ORS approach alone cannot tackle the underlying cause of diarrhoea.

According to Ashworth and Draper (1992) and Nagalkerke et al (1990), in addition to a solution of oral re-hydration salts in the treatment of dehydration, a rotational use of drugs in the treatment of acute diarrhoea in children should be as follows:

1 Antibiotics should be given or used only for dysentry and suspected cholera. In diarrhoea of any other aetiology, antibiotics are of no practical value and should, therefore, not be given

2. Anti-parasitic drugs should only be used in the following cases

a) If suspected Shigella infection treatment has failed;

b) When trophozoites of Entamoeba histolytica containing red blood cells are seen in the faeces;

c) When diarrhoea has lasted for at least 14 days and cysts or trophozoites of Giardia intestinalis are seen in the faeces

However, WHO (1990) observes that numerous problems are associated with the use of medications. Adverse reactions are common while the extensive use of antimicrobials contribute to widespread antibiotic resistance. Nagalkerke et al (1990) add that the use of drugs that are effectively constipants may result in the retention of pathogens in the gut whereas antibiotics may affect the host by destroying the walls of the gut, thus permitting infection by pathogenic organisms.

According to the Kenya Demographic and Health Survey of 1998, 49% of children suffering from diarrhoea were found to have been provided with some home based traditional remedy, including herbal medicines, while 10% had not been given any treatment for their diarrhoea. The survey also revealed that urban children are more likely than rural children to be treated at a health facility or with some form of oral rehydration therapy (Liku, 1999)

2.4 Common Beliefs about Diarrhoea

For successful and sustained control of persistent diseases in our society, the culture of the concerned people is supposed to be put in consideration. According to Ebrahim (1984), the bulk of child health work in developing countries presents cross cultural problems to varying extents, especially with health personnel trained abroad and who, as a

result of their training, have become cut off from traditional culture and values. Western-trained workers who work among traditional societies always complain about the resistance or lack of response for their health education. This is related to the fact that attempts to alter people's ways of life are never made from culturally appropriate considerations but usually in competition with, and against the resistance of deep rooted traditional beliefs and customs. Health education that aims to modify harmful practices is most likely to be successful if it is based on knowledge of the people's customs, beliefs and practices (Mc Elroy and Townsend 1989)

Helman (1994) gives some explanation about the origin, significance and treatment of diarrhoeal illness. He states that in many groups of Latin America and South Asia, diarrhoea is blamed for an imbalance of "heat" and "cold", either within the body or in the environment. In other groups, "bad breast milk", heavy foods, dirt or pollution may be blamed. Supernatural causes of diarrhoeal illness include the evil eye, witchcraft, sorcery, divine punishment, contact with a menstruating woman or having sex during pregnancy or lactation. Indigenous treatment may involve herbal remedies and change of diet.

Nichter (1991,quoted in Helman 1994: 36) points out that in some communities in the Philippines, diarrhoea associated with dysentery may be considered more serious than the more watery diarrhoea. Fever and pain, not blood in the stool, were seen as the reasons for going to the clinic. On the other hand, in Sri Lanka, bloody diarrhoea is associated with "heat" trapped in the body and is treated by ingesting "cooling substances" as well as medicines and oral re-hydration solutions. Some people, therefore, refuse antibiotics as they see them as dangerous heating agents for bloody diarrhoea. In contrast, others refuse ORS for water diarrhoea because cultural beliefs dictate drying up of the watery stool during diarrhoeal episodes.

According to Maina (1987), diarrhoea in children among the Akamba is considered to affect all children and, therefore, is classified as one of God's diseases. It is especially common during teething, weaning, crawling and learning to walk. Diarrhoea associated with these stages of development is commonly known as "teething diarrhoea".

Treatment of teething diarrhoea involves cutting the sides of a child's gums with a tool or rubbing hard with a specialist's finger until the gum becomes sore. Indigenous herbs are then applied in the cuts. The purpose of this operation is to force the teeth out more quickly and thereby remove the cause of teething diarrhoea.

The Akamba also believe that diarrhoea burns the stomach and the intestines, causing an ulcer for which indigenous herbs are the most effective treatment. Maize and beans should not be eaten in this case because they are too tough for the diseased stomach to digest.

A second type of diarrhoea is identified as "sickness diarrhoea". A child who is not in a stage associated with teething diarrhoea is regarded as sick when he or she observes diarrhoeal episodes. For sickness diarrhoea to occur, a foreign body is believed to have entered the abdomen of the child and disturbed "the big worm" believed to reside in there. Sickness diarrhoea is treated with herbs and prevention for this diarrhoea is believed not to be possible.

Among the Banyole of Uganda, when a person is unjustly or mistakenly killed by a relative, he or she becomes a spirit called omuhieeno. Omuhieeno is believed to retaliate to the killer by causing diseases and, ultimately, death to his or her children down through generations. The symptoms of omuhieeno-caused complications in children include convulsions, fever and diarrhoea. Omuhieeno is believed to kill children in as short a time

as two days. The protection of children against omuhieeno include the use of amulets believed to be capable of keeping away the spirits (Whyte 1997).

According to Logan (1978), the way people define and respond to illness is learned and varies from society to society. In different cultures, the same symptoms might be attributed to different causes. Because of culture, people learn to view and treat their illnesses in different ways. Nyamwaya (1986) and Whyte and Kariuki (1997) note that the Luo believe that if either parent commits adultery, their children will be affected by chira, a ritual impurity causing an illness which leads to chronic wasting and debility. Because severe diarrhoea leads to wasting of the child through dehydration, chira may be blamed for diarrhoea among Luo children. Such beliefs, according to Foster and Anderson (1978), influence how and where the patient seeks health.

According to Kawango (1995), the Luo believe diarrhoea may result from many diseases in children, the common ones being thrush (orianyacha), amoebiasis (mgongo) and other parasitic infections. All these diseases are believed to come from eating soil. Herbal therapy is recommended, not simply for stopping diarrhoea but also for treating the underlying cause.

Another important belief which may particularly influence immunization against illnesses among the Luo children is a belief in medical practitioners known locally as jakor and jabilo. These people foretell forthcoming epidemics and produce medicines to be put in rivers, valleys and pathways. This is believed to prevent the occurrence of an epidemic (Nyamwaya, 1986). These approaches to illness may explain why some illnesses such as diarrhoea are prevalent and persistent in Nyanza Province.

2.5 Theoretical Framework

2.5.1 Disease Theory

The disease theory was proposed by Foster and Anderson (1978) The theory deals with causality, the explanations given by people to account for the loss of health. explanations such as breach of taboos, an upset in the hot-cold balance within the body or the failure of a person's immunological defences against pathogenic agents such as germs and viruses. The main tenet of the disease theory is that, the people's ideological standpoint about causality pertaining to a particular health disorder influences their (people's) health seeking behaviour.

The subject matter of explaining illness, its causes and how to go about curing it is, therefore, found in the disease theory of any particular community. The disease theory dictates where and from whom to seek treatment For example, if an illness is defined as due to an intrusion of an object by a sorcerer, extraction of the object is essential to return the patient to health In Western medicine, if a laboratory analysis indicates a pathogenic infection, then an appropriate antibiotic is prescribed by a physician.

This theory, therefore, focuses on people's beliefs about the nature of heath, the perceived causes of illness and the approaches used for restoration and protection of health The disease theory has been utilized by Maithya (1992) in his investigation of the awareness and management of mental illness among Babukusu of Bungoma District

2.5.2 Relevance of the theory to the study

The disease theory is relevant to this study in that it gives an explanation about the perceived causes of paediatric diarrhoea among the Luo and offers a rationale for the choices made regarding the best forms of health care The theory also stresses the uniqueness of health care systems to individual communities and thus distinguishes the Luo management of paediatric diseases from that of other communities.

2.6 Hypotheses

The following three hypotheses guided the study:

1 The people of Bondo have a complex understanding of what diarrhoea is.

2. The perceived symptoms of diarrhoea among the people of Bondo do not differ from those given by biomedical practitioners.

3. The people's beliefs about the causes of diarrhoea have a direct bearing on the methods employed to control and manage the problem

2.7 Definition of Terms

Diarrhoea : A health disorder evidenced by passing out of three or more watery stools, with or without blood, in a period of 24 hours.

Health : The World Health Organization (WHO) defines health as a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.

Health- seeking

Behaviour: A deliberate move to restore health during and after an illness episode

Perceptions: People's beliefs, knowledge and attitudes regarding particular phenomena

CHAPTER 3

METHODOLOGY

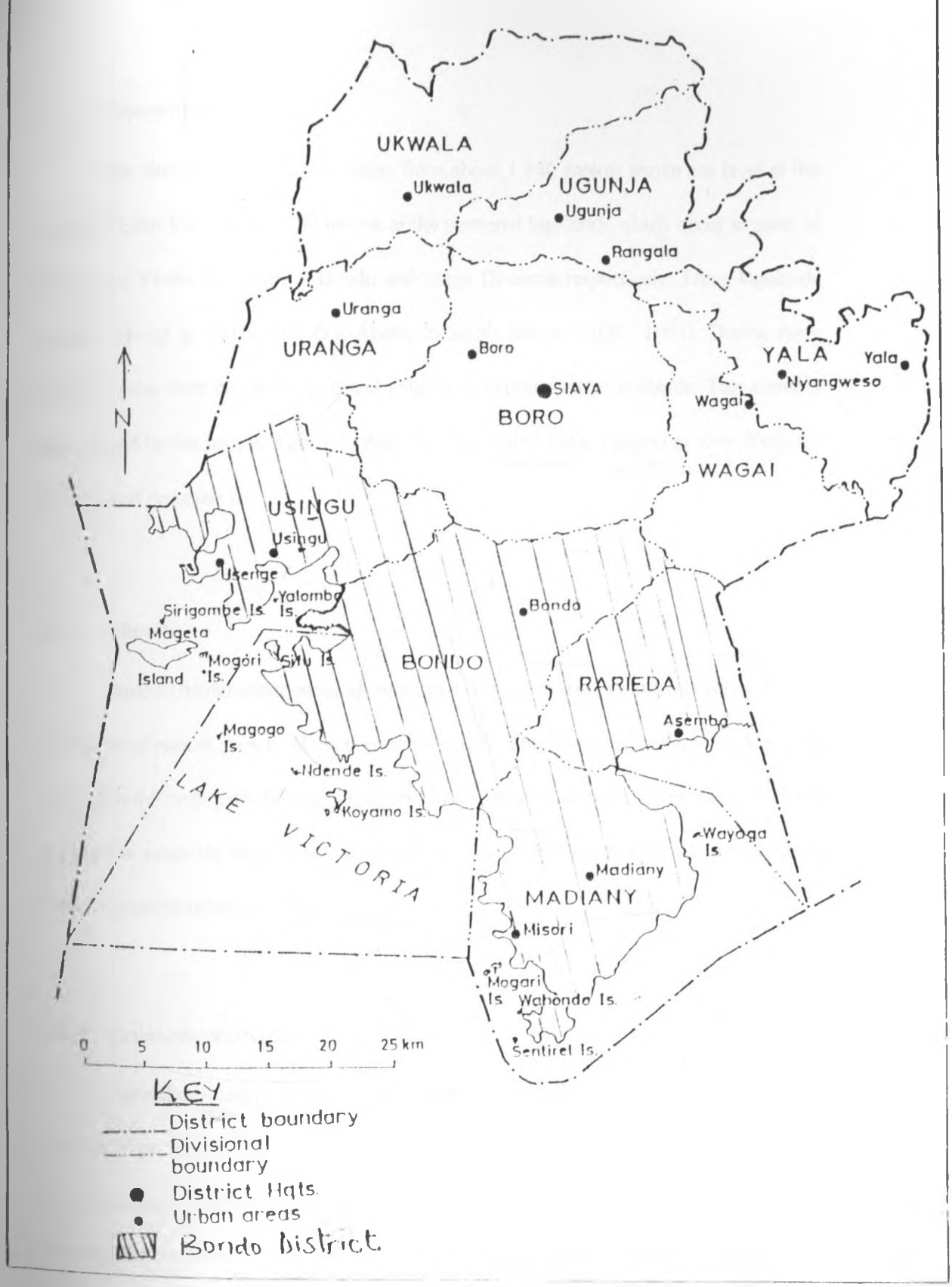
3.1 Introduction

This chapter describes the methods the researcher used to get relevant data. These methods are survey, focus group discussions, key informant interviews and case histories. The chapter starts with a description of the research site focusing on topography, climate, health and economic activities. The chapter concludes by looking at the methods employed by the researcher to analyse the data, as well as the problems encountered in the field and their solutions.

3.2 Research Site

Bondo Division is one of the four divisions that form the newly created Bondo District, the other three being Usigu, Rarieda and Madiany divisions (See Map 3.1). Bondo District, one of the seven districts in Nyanza Province is bordered by Vihiga District to the east, Siaya District to the north and north-east, Lake Victoria to the south and south-east and Busia District to the north-west (GOK 1997).

Bondo Division covers the southern parts of the District, bordering Lake Victoria. The division has six locations and these include West Sakwa, South Sakwa, South-West Sakwa, North Sakwa, North-West Sakwa and Bondo Township. It covers an area of 387 km^2 with a population of 67,619 persons, according to the 1989 National Census Report (GOK, 1994). This research was carried out in West Sakwa location.



MAP 3.1: SIAYA DISTRICT - ADMINISTRATIVE BOUNDARIES

Source: Siaya District Development Plan 1994-1996 (GOK 1994)

3.2.1 Topography

The altitude of the district ranges from about 1,140 metres above sea level at the shores of Lake Victoria to 1,280 metres at the scattered highlands which occur in parts of Sakwa and Yimbo Locations in Bondo and Usigu Divisions,respectively. These highlands include Ramogi in Yimbo and Got Abiero in South Sakwa (GOK, 1994). During rainy seasons, water runs down the slop and collects in depressions in lowlands. This water is then utilised by the people, especially those far from either Lake Victoria or river Yala, for drinking and domestic use

3.2.2 Climate

Bondo District experiences an equatorial kind of climate It receives about 1,600 - 1,800 mm of rainfall, mostly of the convectional type The long rains occur from March to June, with the peak periods being April and May. Temperatures are on average 22°C and humidity is relatively high Warm temperatures favour the survival of diarrhoea-causing micro-organisms (Chessa, 1992)

3.2.3 Economic Activities

Agriculture and livestock farming are the leading economic sector in Bondo District Fisheries follow this sector The average range of farm holdings is 1 - 20 ha. Most people practise a non-cash economy by growing mainly cassava, sorghum, finger-millet and keeping Zebu cattle for milk, meat, and bride wealth However, other animals such as goats, sheep and poultry are kept for meat and prestige

Along the shores of Lake Victoria, a substantial amount of commercial fishing takes place. Many people derive their livelihood from this sector either as fishermen, traders or indirectly as suppliers of complementary goods and services. The high value fish species include Nile perch, tilapia and *omena*. Most of the fish produced is transported to factories in Nairobi and Mombasa. A substantial amount of fish is also exported to overseas countries.

According to GOK (1997),fishing activities had been on the increase from 14,090 metric tonnes in 1991 to 19,267 in 1994. However, there was notable decline in 1995 to 13,802 metric tonnes. This is attributed to the use of wrong fishing tools and the effects of the water hyacinth in Lake Victoria.

Hunting is also done but only on a small scale. Spears and clubs are the tools mostly used in hunting activities. People move for distances to hunt in forested areas, especially the area around Usire hill. Early in the mornings hunters can be seen with their dogs either carried in cages on bicycles or just following the hunters on foot heading East towards Usenge from Bondo town. Late in the evenings, the hunters can be seen going back with their catch in baskets. The meat is mostly for domestic consumption. Therefore, protein and other valuable nutrients needed for healthy growth of children may be found locally.

2.5.3 Health

According to G.O.K., (1998) the risk of children dying varies widely across provinces. Notably, the under five mortality is highest in Nyanza Province where one in five children dies before the fifth birthday (199 per 1000) and lowest in Central Province where one in thirty children under age five dies (34 per 1000) (See Fig 3.1 below).

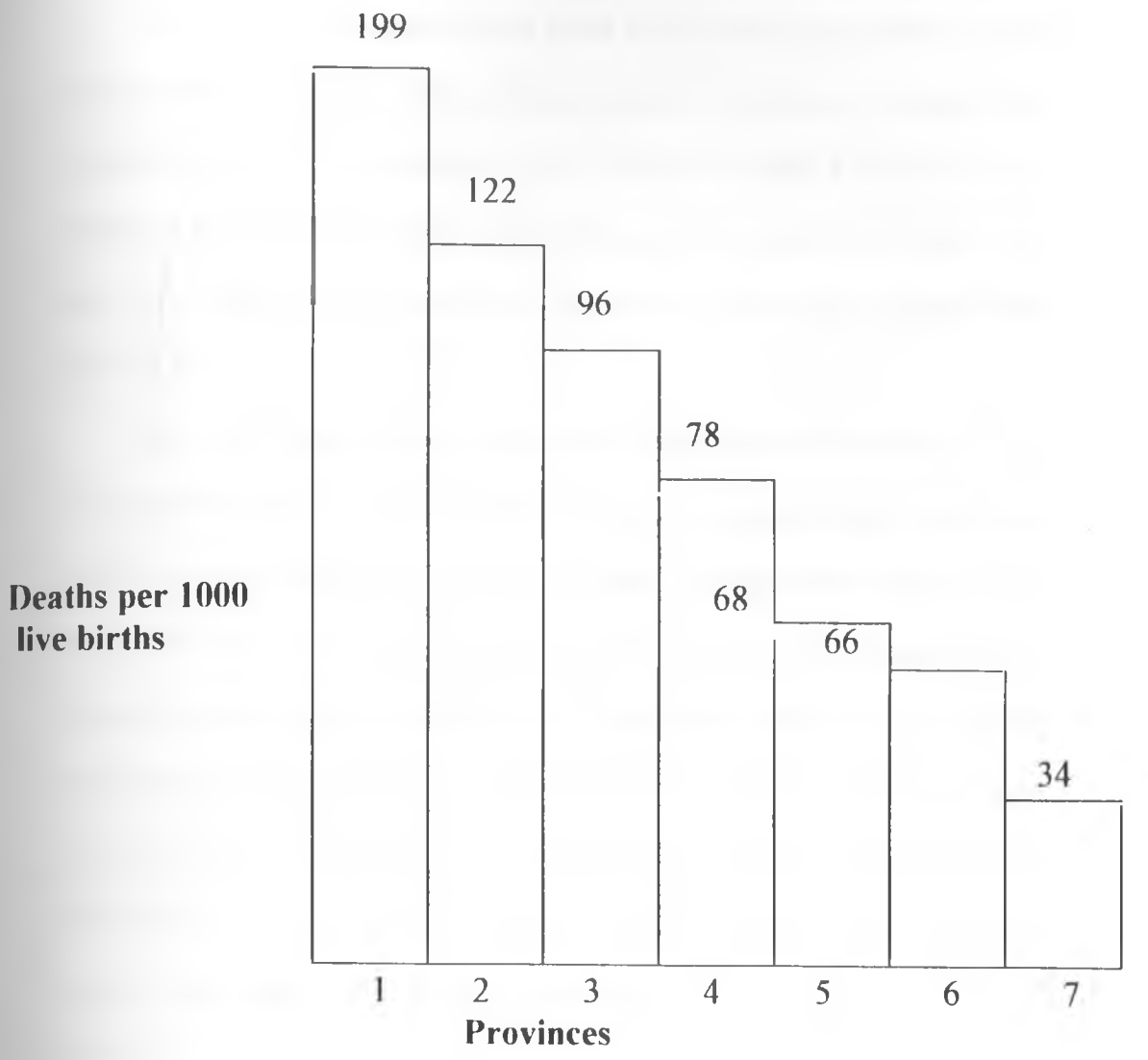


Figure3. 1 : Infant mortality by Province

Source: Kenya Demographic and Health Survey 1998 (GOK, 1999).

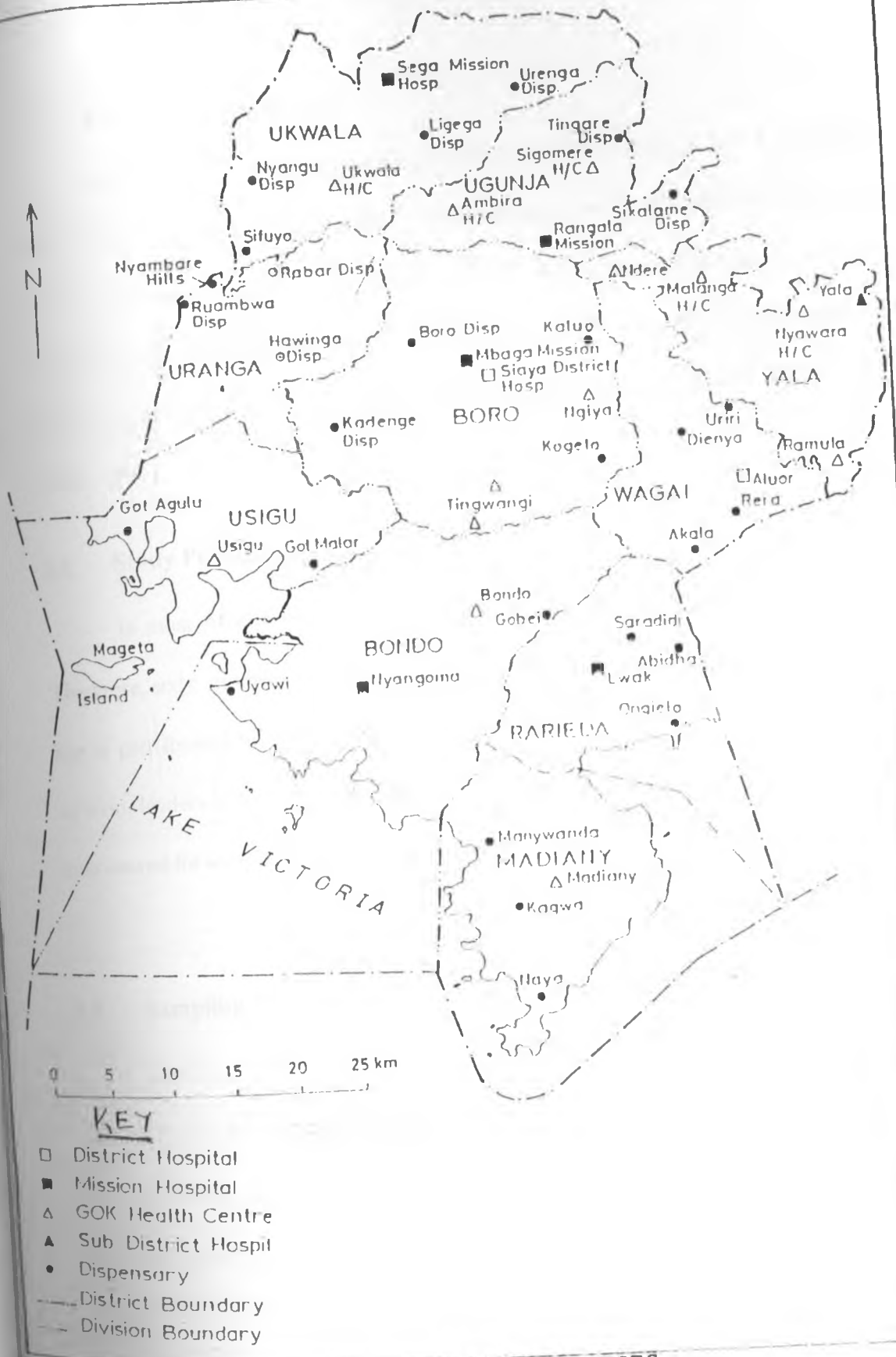
The main cause of infant and child deaths in Bondo District are diseases such as malaria, diarrhoea, measles, anaemia, bronchi-pneumonia and disorders related to the Acquired Immuno-Deficiency Syndrome (AIDS). The health facilities in the district are not sufficient to cater fully for the health needs of the population. According to GOK (1994), there are 54 health facilities in Siaya District. Bondo was formerly part of Siaya District (See Map 3.2).

Out of the 54 health facilities, only 38 offer both curative and preventive services. These health facilities are also not equitably distributed. Non-governmental organizations (NGOs) such as CARE Kenya and the Lake Basin Development Authority, church organizations and private clinics also provide health education through health awareness campaigns. Apart from the hospital treatment, other home remedies are also utilised in the management of diseases. These home remedies include the use of ethno medicine. According to GOK 1998, more than half (57.6%) of the people in Nyanza Province, utilise home or other remedies apart from biomedicine in the treatment of paediatric diarrhoea (See Table 3.1). The report also indicates that 11.4% do not seek any treatment.

Table 3.1 : Treatment of diarrhoea

Province	% taken to health facility or provider	Oral rehydration therapy				Did not receive ORT	Other treatments		No treatment
		ORS packet	RHF at home	Either ORS or RHF	Increased fluids		Injection	Home remedy/ other	
Nairobi	60.0	53.3	60.0	86.7	60.0	0.0	13.3	66.7	0.0
Central	44.9	42.4	46.9	70.2	64.2	13.1	0.0	35.4	13.1
Coast	63.3	54.6	52.3	78.5	82.5	6.2	33.4	54.2	4.1
Eastern	37.2	30.7	57.3	65.3	58.4	19.6	3.2	33.5	13.8
Nyanza	37.1	34.1	49.4	62.6	44.7	24.1	10.2	57.6	11.4
Rift Valley	52.9	38.2	59.2	70.4	47.2	18.1	17.3	45.5	7.4
Western	33.0	30.9	64.7	67.5	56.9	20.3	4.9	58.7	10.0

Source: Kenya Demographic and Health Survey 1998 (GOK, 1999)



MAP 3.2: SIAYA DISTRICT - HEALTH FACILITIES

Source: Siaya District Development Plan 1994-1996 (GOK 1994)

3.3 The Population Universe

According to 1989 National Census Report, Bondo division had a population of 66,811 people in 1989. The population was then projected by the Siaya District Planning Unit to be 90,456 people in 1999 (GOK 1997) According to the Census Report, the population of children under five years of age was 108,924 in 1989 in the formally Siaya district (now Siaya and Bondo districts) and was projected to be 147,474 children in 1999 (GOK 1997).

3.4 Study Population and Unit of Analysis

In most African societies, raising children is a function of women and their siblings. Therefore, sixty mothers and care takers, preferably those nursing children under five years of age in part formed the unit of analysis in this research However, community health workers, opinion leaders (chiefs and clan elders), and traditional medical practitioners were also interviewed for information

3.5 Sampling Procedure

Bondo Division was selected for this study because the organization that funded my field study, the Kenyan-Danish Health Research Project (KEDAHR), has its operations in the area KEDAHR has two main objectives: To strengthen the research capacity of participating institutions within the fields of parasitology, nutrition, education, psychology, anthropology and health services; and to contribute to the improvement of health status and school performance

of Kenyan primary school children by control of helminth infections and improved nutrition. Apart from Bondo Division, KEDAHR also has operations in Usigu Division.

West Sakwa location was chosen because of its proximity to Bondo town. Bondo town was the researcher's base of operation and,therefore, movement to and from the research site was made easier. The villages were identified with the help of the local administrators (chiefs). Three villages, namely, Kawour, Kamlando and Kamayuje were then purposively sampled. The determining factors for their sampling were accessibility and the distance from the Bondo-Usenge road. The study population was not cosmopolitan in nature. This is, the area under study was predominantly inhabited by the Luo and, therefore, external validity of the results in the other parts of Bondo district could not be compromised as a result of the purposive sampling.

To get to the homes in which to administer the questionnaire the researcher utilized the census survey method. This is because the villages are sparsely populated.

3.6 Methods of Data Collection

In this study, both primary and secondary methods of data collection were used.

3.6.1 Secondary Methods

Secondary methods of data collection were used in the initial stages of this study. The exercise-involved utilization of already documented data. Specifically, the data from secondary sources such as books, journals and theses were included mainly in the literature review section of this study. Though easy to find, some of the secondary data might be outdated.

3.6.2 Primary Methods

The primary methods of data collection employed in this study were aimed at answering the research questions. The methods, therefore, formed the core of this study. These methods included survey, direct observation, focus group discussions, case histories and key informant interviews

3.6.2.1 The Survey Method

In the survey method, interviews were conducted with the help of a structured and semi-structured questionnaire. The structured questions have the advantage of being easy to answer by the respondent. This is because a range of answers were given and the respondent did not have to trouble him /herself with thinking about the answers. Moreover, data from structured questions are easy to analyse. However, the major weakness of structured questions is that the respondent is restricted and does not have a chance of giving his or her own ideas about the issue in question. Probing where necessary is not possible in this case. To solve this problem, the researcher also used open-ended questions. This enabled the respondents to express their own ideas. Open-ended questions were particularly important for issues relating to perceptions.

In general, therefore, the survey method was used by the researcher as a path finder into the community. For example, insights into the folk taxonomies of diarrhoea were only possible because of the information obtained as a result of questionnaire administration. Other issues such as the general symptoms, treatment and control of the paediatric diarrhoea (especially traditional treatment and control) were hinted at during the survey. The information

obtained at this stage was, therefore, used as a basis for other research methods such as key informant interviews and focus group discussions.

The questionnaires were administered by way of interview. Direct interviews were applied in order to minimize misunderstanding or misinterpretation of questions.

3.6.2.2 Observation

This is a form of non-reactive research. It was carried out alongside survey by directly observing and recording anything interesting as far as the subject under study was concerned. This method was convenient because in an instance where a respondent was tempted to cheat or say what he or she thought impressed the researcher, the researcher had a second chance of verifying the validity of the response by observing what was going on. Other risk factors in the area that might have contributed to the epidemiology of diarrhoea, such as unavailability of clean water, latrines and the general hygienic status of the environment, were obtained mainly through direct observation.

3.6.2.3 Case Histories

Here the researcher approached the mothers or siblings who were involved in taking care of young children and whose children had suffered from diarrhoea. The respondents were requested to give information in retrospect about what they thought diarrhoea was, the perceived symptoms and what they did to bring the child/children back to health. Their experiences with diarrhoea also provided an understanding of the changes (in perception) that occurred over time.

3.6.2.4 Focus Group Discussions (FGDs)

A total of four focus group discussions were held (two in Usire and the other two in Maranda sub-location). Mothers and caretakers who were considered knowledgeable and those who seemed not to "close up" during the questionnaire interviews were selected and invited for discussions. Each group was composed of eight to ten participants. On average, each sitting took two hours. Such a small group was preferred in order to encourage everyone to talk and share opinions. In groups that are too large the discussions tend to fragment into subgroup discussions, which may threaten the objective of the organisation of the focus group discussion.

During the questionnaire interviews, there were some issues that emerged and which needed clarification. Such issues included the symptoms and treatment of diarrhoea. For example, some respondents had the view that donkey's dung and milk, and bang (*Cannabis sativa*) are used to treat *anyiew* (measles). This, they said, stopped the infant diarrhoea resulting from measles and also served as an effective treatment of measles itself. The crosschecking of such available information with what the participants in the focus group discussions provided helped to authenticate the already available information and, therefore, enabled the researcher to write his findings with confidence. New information as far as the research topic was concerned was sought during the focus group discussions.

1.6.2.5 Key Informant Interviews

During the field research, three key informant interviews were conducted. The participants in these interviews were community health workers (nyamrerwa), a clan elder and a clinical officer from the Bondo District Hospital. The nyamrerwa are knowledgeable about traditional medicine and the associated practices and, therefore, provided in-depth information about the Luo health-seeking behaviour after a diarrhoeal attack. The clan elder, on the other hand, provided information about some aspects of Luo culture that were of interest to the research. Finally, the clinical officer provided information about the clinical aspects of paediatric diarrhoea.

3.7 Data Analysis

This study used both qualitative and quantitative techniques of data analysis. Data obtained from key informant interviews, focus group discussions and observation were analysed qualitatively. Specifically, information from focus group discussions and observation were analysed by description. The case histories were analysed and presented by verbatim quotations of the information provided by respondents in retrospect. On the other hand, data obtained from the survey were analysed quantitatively by the use of frequency tables and percentages. These data (quantitative) included age distribution of respondents, the respondents' occupation, weaning age and responses regarding the boiling of water as a form of water treatment before drinking.

3.8 Problems Encountered in the Field and Measures Taken

An intuitive problem that was experienced by the researcher was language. This problem was expected because the area of study was predominantly occupied by Dholuo-speaking people, many of whom people did not understand English or Kiswahili well, especially the mothers. However, an interpreter was utilized during interactions between the researcher and these respondents. The interpreter was selected with the help of the KEDAHR field personnel. Her responsibilities included interpretation and recording of responses in Dholuo.

Towards the end of the research (about mid-March) there was some rainfall, which interfered with the research. This was because during this time the mothers went to the fields to prepare their pieces of land for agriculture. However, whenever possible the researcher could interview these mothers in their farms or booked an appointment for afternoon when they were through with their cultivation activities.

Sometimes during interviews, some husbands also could sit there and listen to the conversation. In such cases the mothers (their wives) did not respond to the questions asked but looked upon their husbands for answers. The same was experienced when the mothers-in-law to the women were present. To solve this problem the researcher informed the husbands that he wanted to get the information from mothers and, if possible, another interview would be organized for the fathers. This was done to avoid suspicion from the husband about the researcher's intention and at the same time helped to have the mothers give their opinions and perceptions about diarrhoea freely. The mothers-in-law were told that they would be interviewed after the interview with their daughters-in-law. At the end

of it all, the mothers gave their side of the information while the mothers-in-law also gave theirs.

3.9 Ethical Issues

Before an interview was carried out, consent was first sought from the local administrator (chief). This was because without his consent it would have been treated as an illegal research and chances of success of such a research are always very remote. After getting an okay from the area chief, the researcher proceeded to the homes where another consent for interview was sought from the mothers or caretakers of the children. If the consent was granted, the researcher interviewed the respondents. However, the researcher did not come across a respondent who refused to be interviewed.

CHAPTER 4

PERCEPTIONS ABOUT DIARRHOEA

4.1 Introduction

This chapter presents an overview of the Luo perceptions about paediatric diarrhoea. The presentation of these perceptions is from an emic perspective and is guided by the objectives of the study, namely, finding out what the people of Bondo district perceive diarrhoea in children to be, the perceived symptoms, and the prophylactic and curative measures undertaken in the management of this illness. To determine people's perceptions, questions related to categories of diarrhoea, their causes and symptoms were asked.

With regard to prophylactic and curative measures against diarrhoea in children, the respondents were asked about the options that they utilized and the reasons behind their choices. Environmental and cultural factors that may or may not influence the prevalence of diarrhoeal diseases in the district and the state of perceptions - whether they are static or dynamic - are also part of this chapter

4.2 Age and Occupation of the Respondents

4.3 4.2.1 Age

The youngest respondent to be interviewed was 18 years while the oldest was 65 years old. In total, 8 mothers or care takers who fall under the age range 17 - 20 years were interviewed while 5 were from the age range 51 and above (Table 4.1). Old women

were specifically included in the study because of the fact that most of the younger mothers interviewed mentioned that for the treatment of diarrhoeal problems in children, the old women (either mothers-in-law or old women in the neighbourhood) were knowledgeable and provided herbal remedies or advice when visited by parents with such health problems. The old women, who formed 8.4% of the respondents, also performed the role of caretakers (japidi) of the children when the mothers were away. They, therefore, formed an integral part in the process of child care and socialization. Some men were also approached for information as key informants in their capacity as either the community's opinion leaders (chief and clan elders) or as possessors of knowledge in the alleviation of paediatric health problems

Table 4.1 : Age distribution of respondents

Age range (years)	Frequency	Percentage
17 - 20	8	13.3
21 - 30	12	20
31 - 40	20	33.3
41 - 50	15	25
51 and above	5	8.4
Total	**60**	**100**

4.2.2 Occupation

The people of Bondo Division, specifically Usire and Maranda sub-locations of West Sakwa location, are subsistence farmers. As shown in Table 4.2, 51.7% of the

respondents were mainly engaged in subsistence agriculture Maize, beans, cassava, millet, sweet potatoes and bananas were grown. There was also a high potential for production of fruits such as mangoes and paw paws Livestock rearing was practised, the animals kept included cattle, sheep, goats and donkeys Livestock is reared for domestic products such as milk, beef, for prestige and for fulfilling social obligations such as paying of bride wealth Poultry was kept for eggs and meat Donkeys were used for transporting goods to the market and water from water sources A few people (15% of the respondents) were also engaged in small businesses such as weaving of ropes and selling farm produce like mangoes and green vegetables These items were either sold in the villages or in Bondo town during market days The money obtained from such activities was used for satisfying domestic requirements. Mothers also used such money to buy milk for their children as a supplement for breast milk

Table 4.2 : Respondents' occupation

Occupation	Frequency	Percentage
House wife	20	33 3
Business woman	9	15
Peasant farmer	31	51 7
Total	**60**	**100**

However, the above categorisation of occupation is not mutually exclusive

4.3 The Luo Perception of Diarrhoea

The general Luo name for diarrhoea is diep Unlike the biomedical definition of diarrhoea as the passing out of three or more watery stools in a period of 24 hours, the

Luo define diarrhoea as the passing out of more than normal watery stools (mareprep) which may be accompanied with vomiting. The stools could also be with or without blood (remo).

Among these people, some cause(s) of paediatric diarrhoea can be traced back to the conditions surrounding the foetus in its early stages of development. If the mother has some uterine infections (yamo) , it is believed that the infection will be transmitted from the mother to the child and this would make the child become susceptible to many diseases after birth. The other causes identified by the participants in focus group discussions include wind (yamo) which blows from affected areas to unaffected areas. It is believed that this wind carries with it diseases. The word yamo, therefore, has two meanings, namely, infection and wind. Giving food that does not rhyme with worms that are believed to digest food in the stomach (njokla), is also blamed for diarrhoea. Apart from yamo and giving food that does not rhyme with the worms in the stomach, Table 4.3 shows the additional perceived causes of paediatric diarrhoea

Table 4.3 :Main causes of paediatric diarrhoea as perceived by the respondents

Cause	Frequency	Percentage
Contaminated food	13	21.7
Contaminated water	12	20
Chira	12	20
Witchcraft	10	16.6
Growing teeth	13	21.7
Total	**60**	**100**

The Luo identify eight categories of paediatric diarrhoea. These include mbaha, nyaldiema, ndira, orianyancha, diarrhoea due to chira, diarrhoea due to the evil eye (sihoho), teething diarrhoea, and diarrhoea due to measles (ang'iew, anyiew, aruodhi). These categories have different causes, symptoms and treatment. However, in some cases, some symptoms and treatment overlap (See Figure 4.1) The information about the above categories is provided in detail below.

4.4 Types of Diarrhoea

4.4.1 Mbaha

This type of diarrhoea comes about as a result of two causes. The first cause is believed to be other attacks such as malaria and measles (ang'iew, anyiew). These attacks are believed to result in mbaha if they are not properly treated. The second cause of mbaha that was identified by the informants is feeding the child on porridge made from only maize flour. If not treated, then mbaha develops into yet another category of diarrhoea called orianyancha whose prominent symptom is the passing out of greenish stool

4.4.1.1 Symptoms of Mbaha

During the focus group discussions, the following were identified as the symptoms of mbaha:

- Child's body turns yellowish (marmar);
- High body temperature;
- Breathing problems (okul bat);

- Headache,
- Hair "stands" on the body;
- Passing of mucoid stool (wuoyo).This is stool which contains mucus-like substance;
- Loss of appetite;
- Passing out of yellowish stool,
- The child passes out urine that is warmer than normal

4.4.1.2 Prevention and Treatment of Children Against Mbaha

A child of less than five years should be fed on porridge made from a combination of beans (oganda), groundnuts (njugu), finger millet (kal), sorghum (bel), cassava (omwogo) and maize (oduma). A little milk should be added to the porridge.

Herbal protection is also practised. Here, a large quantity of leaves from a variety of plants (ibago yadh) is pounded and mixed with water. The mixture is then kept in a large container such as a basin and warm water added to the concoction everyday. The concoction is then used to bathe the child/children. Another concoction is separately prepared for the child/children to take. This is used for a week and then it is discarded. Thereafter, a fresh concoction is prepared and the whole process repeated till the child reaches the sitting stage. Sometimes, roots from some trees are boiled and the mixture sieved, and the resultant liquid added to the child's porridge. This, according to the respondents, also protects children from mbaha.

The treatment of mbaha is effected when the symptoms mentioned above are observed. However, it is imperative to note that the most popular remedy for mbaha is the

use of yadh nyaluo (herbal medicine). As indicated in Table 4.4, 46.7% of the respondents used exclusively traditional medicine while 23.3% combined traditional medicine with biomedicine. Direct observation revealed that most of the old women interviewed had planted the herbs with both curative and prophylactic value in their gardens. However, these respondents were not willing to reveal the plant species and the particular illness that they cured. This could be because the possession of knowledge in traditional medicine is highly valued and so should be protected. The mothers who had ill children approached the old women who provided these services at a fee. To avoid identification of the plant species, these traditional healers provided the leaves and/or roots, mixed with water, sieved and gave patients the filtrate. The roots and leaves could also be dried, ground and then given to the patients in powder form. By giving them medicine in either powder or liquid form, these traditional medical practitioners made sure that their knowledge in herbal medicine is kept to themselves and so their importance in the community is sustained.

The yadh agulu / yadh nyaluo (traditional medicine) is given to the sick child three times in a day before meals. The participants in the focus group discussions disclosed that this traditional medicine worked by making the child pass watery stool or urinate the disease out of the body. The other way in which herbal medicine is used in relieving diarrhoeal maladies in children includes the concept of sweating the disease out of the body, emically called fumo / fundo / humo. In this process, the mother or caretaker (japidi) and the child are covered with a blanket or a bed sheet and a pot of boiling herbal concoction put in the sheet or blanket such that the child and the mother or caretaker can inhale the vapour from the concoction. The temperature in the enclosure would be high

and, therefore, this would induce sweating in the mother and the sick child. It is believed that the sweat from the sick child comes out with the disease.

Table 4.4 : Treatment of Mbaha

Mode of treatment	**Frequency**	**Percentage**
Hospital	18	30
Traditional medicine	28	46.7
Traditional medicine and hospital	14	23.3
Total	**60**	**100**

According to the information from the focus group discussions, the herbs offer the best treatment for mbaha. The participants stressed that although these days some people go to hospital for the treatment of mbaha, biomedicine does not treat mbaha but only reduces its effects. For a complete healing, the informants advocated for a combination of the Luo traditional medicine and biomedicine. This is how they put it

> People go to hospital for treatment of mbaha nowadays though yadh agulu should accompany it. Hospital alone cannot treat mbaha. Since mbaha usually comes with malaria, when you go to hospital, you would be given drugs for malaria such as panadol and chloroquine. When you come back home, you must use yadh nyaluo / yadh agulu for proper healing of mbaha.

Hospitals only treat malaria and not mbaha as a whole. Yadh agulu treats mbaha.

4.4.2 Nyaldiema

In Dholuo, nyaldiema means something that strikes and kills fast. In this context, it is the name given to diarrhoea resulting from personal and environmental hygiene (dak). The way food is kept, how clean the utensils are and the general cleanliness of the handlers of children's food determine whether or not there is going to be a nyaldiema attack. Nyaldiema is also believed to result from travelling from unaffected areas to affected ones.

Drinking of unboiled water and breathing bad air (muya maricho) are also blamed for nyaldiema. However, as shown in Table 4.5 below, only about 58% of the respondents boil their water for drinking.

Table 4.5 : Responses regarding the boiling of water as a form of water treatment before drinking or domestic use

Boiling of drinking water	Frequency	Percentage
Yes	35	58.3
No	10	16.7
Sometimes	15	25
Total	**60**	**100**

On nyaldiema, the following response was recorded from one of the key informants:

> If you take pond water without boiling, then you will be attacked by nyaldiema. This is because there are normally some worms (kute) in the water that when taken would cause nyaldiema in both adults and children. When we do not have latrines, people relieve themselves in the bush. When it rains, the rainwater carries the dirt to the pond and river. If this water is taken without boiling, then there will be a nyaldiema attack. You should also ensure that the child's bedding is clean and dry. When left wet or dirty, the bedding would emit bad air and this could cause diarrhoea.

Breast-feeding mothers who are suffering from nyaldiema should not breast feed their babies. This is because, it is believed that the disease would be passed to the child through the breast milk. The other factors given as being the causes of nyaldiema include:

- Giving the child food in which a housefly has landed.
- Giving the child the previous day's food without re-heating it (chiemo monindo mang'ich);
- Leaving the child to stay with long finger nails in which dirt or soil accumulates. When the child licks the fingers, he or she develops diarrhoea. This, according to the information from the focus group discussions, happens during the sitting stage of the child's development

4.4.2.1 Symptoms of Nyaldiema

The following information was given by participants in focus group discussions as the symptoms of nyaldiema:

- The child passes out whitish watery stool (mareprep). This stool is more watery in comparison to that from other categories of diarrhoea.

- In the initial stages (after one day), the child passes out what he or she had taken After two days of attack, the child passes out water alone and there is also a lot of vomiting. This vomiting and diarrhoea are very frequent
- There is stomach ache (iye lude)
- The stool has foul smell.
- Rumbling of the stomach.
- The eyes of the child look sunken after a short time of attack.

4.4.2.2 Prevention and Treatment of Nyaldiema

During the focus group discussions and key informant interviews, nyaldiema was identified as a new disease. Biomedical services are, therefore, recognized as the most important and effective way of preventing and treating the disease. Regarding its management, the informants had the following to say:

> Nyaldiema is a disease that has come recently. Therefore, there is no yadh nyaluo with prophylactic and curative qualities for its management. However, personal and environmental cleanliness (ler) is most important for its control

The perceived prevention and treatment, therefore, corresponds to what the mothers are told at the clinics and hospitals about the management of diarrhoea. Thus, the respondents identified the following as measures for prevention of nyaldiema

- Covering the child's food so as to avoid houseflies (lwang'ni) from landing on it
- Having a pit latrine for safe disposal of human waste

- The child should not be breast fed by the mother when she (the mother) has been attacked. It is believed that the mother might pass the disease to the child through her breast milk. In case the mother is attacked by nyaldiema, the child should be fed on porridge or cow milk till she (the mother) gets well.
- Boiling of drinking water so as to avoid the passing of diarrhoea-causing worms (kute) to the child.

On treatment, the informants identified the use of a solution of some salt and sugar. This is the local form of oral rehydration salts (ORS). The child is given the solution at home before he or she is taken to hospital. According to the informants, the salt and sugar solution should not have a proper taste, it should neither be salty nor sugary (machwotchwot). This solution should be given immediately when signs of nyaldiema are noticed.

4.4.3 Ndira

Ndira is also known as cholera among the people of Bondo. However, according to a clinical officer at Bondo District Hospital, ndira is bio medically identified as dysentery. The participants in focus group discussions gave the following as causes of ndira.

- Milk from the bottle (bottle feeding) (chak mar chupa). This is especially when the bottle is not kept clean.
- Giving the child half-cooked food (food cooked for a short time).

- Infection in the mother's womb during pregnancy.

4.4.3.1 Symptoms of Ndira

Ndira is identified by the presence of blood in the stool. The stool is watery and the child has stomach pains. The child cries out a lot and looks weak

4.4.3.2 Prevention and Treatment of Ndira

Some of the preventive measures given by the informants correspond with the biomedical preventive measures of diarrhoea. The following were given as the preventive measures:

- Good personal and environmental hygiene (ler) is very important.
- Boiling of drinking water before giving the child.
- Covering the child's food to prevent houseflies from landing on it.
- Having a pit latrine.
- The child's food should be properly cooked. To be properly cooked in this case means cooking for a long time.

Like in the case of mbaha, yadh nyaluo plays an important role in the treatment of ndira. According to information from the focus group discussions and key informants, leaves and/or roots from specific shrubs are pounded and mixed with water. The solution is then given to the child after every diarrhoeal episode. This is believed to stop ndira immediately after treatment. The treatment is also given to everybody in the house to

prevent the other family members from being attacked. Hospital treatment of ndira comes secondary to the use of yadh nyaluo. People resort to biomedical services when they have tried herbal remedies but without success.

4.4.4 Orianyancha

Orianyancha, also known as mgongo, is a category of diarrhoea which occurs during the sitting stage in children. It is caused by much bottle feeding at the expense of breast feeding. Apart from too much bottle feeding, sitting on wet surfaces or wet bedding for a long time is also blamed for orianyancha. Table 4.6 shows that 68.3% of the respondents were against bottle feeding while 31.7% still bottle feed their children.

Table 4.6 : Bottle feeding of children

Bottle feeding	Frequency	Percentage
Yes	19	31.7
No	41	68.3
Total	**60**	**100**

4.4.4.1 Symptoms of Orianyancha

Information from key informants and focus group discussions revealed the following as symptoms of orianyancha:

- The child refuses to breast feed (thuno).
- Blisters (opudhre) appear on the tongue. These blisters make the tongue look whitish.
- Saliva flows from the mouth (olaw chuer)
- The child looks weak.
- The child passes out greenish stools.
- The child passes out yellowish urine that is warmer than normal
- The child also cries a lot when passing out urine
- Rashes can be seen on the anus.
- The child has convulsions as if he or she has stomach pains.

4.4.4.2 Prevention and Treatment of Orianyancha

The preventive measures mentioned in the focus group discussions involve keeping the children's clothes and bedding dry, and avoiding bottle-feeding. Bottle-feeding is associated with the creation of blisters in the child's mouth. Instead of bottle-feeding, the participants in the focus group discussions stressed the use of cup and spoon to give supplementary food to breast milk (see Table 4.6). There is no traditional medicine with prophylactic qualities against orianyancha.

The treatment of orianyancha involves utilization of yadh nyaluo. The outer covering of a lemon fruit (opokla ndim) is peeled, dried and ground into powdery form.

This powder is then mixed with cow's ghee (mor dhiang'). The mixture is afterwards warmed every morning and evening before being giving to the child. According to the respondents, this warming is done for the medicine to flow to all parts of the body. This enables the ailing organs and tissues to heal. The treatment is done for three days after which the child is expected to have been successfully healed.

Apart from the above treatment, dry leaves from a plant called nyanyodhi (Leonotis mollissinia) are burned and the ashes applied on the tongue to heal the blisters. On this treatment the respondents had the following to say when probed:

> There is yiend nyaluo that can be prepared. You can burn dried leaves from nyanyodhi tree, mix its ashes with some salt to give it a taste. After that apply the mixture on the sick child's tongue. The child will swallow some and some will remain on his or her tongue. The medicine swallowed will treat the child from inside while the one that is left on the tongue will treat the blisters on the tongue.

Another recognized treatment of orianyancha is the use of fruits and roots of odolwa/odol tree (Rhiocissus tridentata). Here, the gender of the child influences details in treatment. In case of a baby girl, three fruits and a piece of fruit split into three parts are used. Both the root pieces and the fruits are boiled in a pot, the mixture sieved and given to the baby girl. She is supposed to be given the treatment three times a day for three days. The remaining medicine is then discarded. Conversely, for a baby boy, the same procedure is repeated but in this case, four fruits and four pieces from a piece of split root are used. The baby boy is also given the medicine four times in a day for four days, and thereafter the remaining medicine is discarded. The informants explained that the difference in treatment between the boys and girls here is because the boys are relatively weaker and

more vulnerable to many diseases. Others simply said that that is how the treatment is done.

When asked whether hospitals can treat orianyancha, the informants admitted that hospitals can treat it but not fully. They, therefore, stressed that for a complete and fast healing of the children, both biomedicine and yadh nyaluo should be used. This combination of biomedicine and yadh nyaluo, they said, would make sure that orianyancha/mgongo does not recur.

4.4.5 Diarrhoea due to Chira

Every human society gives priority to its physical and social existence. To fulfil this quest for survival, societies have put in place mechanisms that ensure a harmonious interaction and sustenance of the desired behaviour from individual members. These control mechanisms include norms, which define what is considered appropriate and inappropriate behaviour. Any member of the society who exhibits behaviour considered to be against the norms is believed to suffer retribution afterwards. The Luo of Bondo District are not an exception to this behaviour. According to the information from focus group discussions, chira is a form of punishment from the supernatural for any member of the society who breaks the norms (chike). The punishment is not confined to the individual who breaks the norm but may also afflict his or her children. When chira affects children, the effect will be diarrhoea and a complete wasting of the child's body.

Some of the behaviours which are believed to cause chira-induced diarrhoea in children, include committing adultery by either parent. When a parent having a breast-

feeding baby commits adultery and then goes back home and carries the baby before bathing, the child will be attacked by chira. It is believed that the parent from his or her adulterous activity carries with him or her harmful powers, which can be washed away by bathing before handling the breast-feeding child. Breast feeding children are always vulnerable to these harmful powers.

The Luo norms also provide a guideline through which the family's activities are to be conducted. For example, in a polygynous household, agricultural work that involves cultivation, planting and harvesting of crops, is supposed to start from the eldest wife's piece of land and then follow the order to the youngest wife. The intricacies involved in these activities are supposed to be followed if at all the parents are to protect their children from attack by chira. The husband is also supposed to spend the night with his eldest wife on the eve of either the planting or harvesting activity. Likewise, failure by the husband to observe this rule would make his children suffer from chira.

The information from the key informants and focus group discussions indicated that a girl who has began to experience menstruation (dhi edwe) should not sleep on her parent's bed, or else, chira would attack her children when she gives birth. Chira is also blamed for diarrhoea in a breast-feeding child when his or her mother meets a woman who has just lost her husband (jasirowa). It is believed that the widow's shadow carries harmful powers, particularly to breast-feeding children. To prevent this form of chira from attacking a child, the mother is supposed to attend the funeral of the dead man. A mother whose child has just passed away is also not supposed to hold somebody else's child until she sees her monthly period and has had sexual intercourse with her husband. If this is not observed, the chira-induced diarrhoea would attack the child that the woman holds.

Likewise, a breast-feeding mother is not supposed to meet a woman whose child has just passed away. They are also not supposed to shake hands. It is believed that the mother of the dead child now possesses a spirit, which is harmful to breast feeding children. If, however, they (mother of the breast feeding child and that of the dead child) meet, the breast-feeding mother on reaching home is not supposed to breast feed the child immediately. She is, instead, supposed to make her baby lie down and then press milk from her breasts such that the stream of milk just passes over the baby. It is believed that the milk that passes over the baby goes with the evil powers that she may have collected on the way. The baby is, therefore, protected by this act. Conversely, if this is not done, the baby would suffer from diarrhoea.

According to the information from focus group discussions, an expectant mother should not breast feed. If she conceives while still breast-feeding, she is supposed to stop breast-feeding immediately. Failure to stop breast-feeding at this time would lead to chira attack on the breast-feeding child. This attack may be fatal. Another explanation given for the need to stop breast feeding the child once conception has taken place is that the growing foetus will be jealous about the breast feeding child and may, as a result, poison the mother's breast milk, thus causing diarrhoea in the breast feeding child.

4.4.5.1 Symptoms of Chira

- The child passes out a lot of watery stools. The frequency of the diarrhoea episodes is also very high.
- Blood veins show on the child's forehead and lower abdomen (piny iye).

- Frail or loose skin develops on the joints and buttocks of the child.
- The child grows thinner and thinner everyday.
- The child clenches his or her palms to make fists. Although young children close their palms and form fists, the informants said that the fists formed during chira attack have closed thumbs. Conversely, the fists formed when a young child is normal have open thumbs.
- The child looks dull and weak.
- When the treatment of other categories of diarrhoea such as orianyancha, sihoho and nyaldiema are treated without success, chira is suspected.
- The child's hair stands on the head like hot-combed hair.

4.4.5.2 Prevention and Treatment of Chira

Chira can be prevented by following the Luo norms (chike). However, there is a provision for preventing children from chira attack after a taboo has been broken. This prevention involves the use of herbal medicine to cleanse the offender before he or she interacts with the children who also fall under the vulnerable group. For example, adultery is not allowed among the Luo. If, however, adultery happens, chira would attack the children/child of the concerned parent unless protective measures are put in place. To prevent chira from an adulterous parent, the faithful parent prepares leaves from specific trees and pounds them. Water is then added to make a mixture and the concoction is poured on the doorframes such that when the adulterous parent comes back home from his or her adventure, the chira is left outside the door and, therefore, the child is not

attacked. Another protective measure is pounding the leaves from specific trees, adding water and the resultant liquid mixed with drinking water for all the family members to take. This water is now believed to have prophylactic qualities against chira from adultery. All this is done without the knowledge of the adulterous parent.

On treatment of complications resulting from chira, the informants were categorical that hospitals cannot successfully treat chira. Only traditional Luo medicine is recommended for treatment. For example, in chira resulting from an adulterous husband or wife, a large quantity of leaves (bago yadh) from a variety of trees are pounded and mixed with water. This concoction is used to bathe the child. A separate concoction from the same leaves is also prepared and given to the child to take. In case of a baby girl, the treatment is done for three days while it is four days for a baby boy.

4.4.6 Diarrhoea from Witchcraft (Juok) and Evil Eye (Sihoho)

Diarrhoea from witchcraft is caused by evil powers from witches. The person practising witchcraft (jajuok) either bewitches the child directly by magically inscribing objects into the child's body or bewitching the child's food, thus making the food harmful once taken. However, most of the informants in the focus group discussions and key informant interviews identified the evil eye (sihoho) as the most common form of witchcraft. Here, the possessor of the harmful powers (jasihoho) causes harm to the child or his/her food simply by looking at the child or when he or she (the child) is feeding. The mother's breast milk may also be affected by the evil powers such that she produces milk that is harmful to the baby. The evil powers are believed to be passed on involuntarily

from the jasihoho to the child. Once such powers are passed on, the child's food that he or she was taking at that particular time becomes stale in the stomach. The stale food causes the child to have stomach pains and the stomach becomes hard. For relief, this stale food is supposed to be removed from the child's stomach. A specialist called jatak does this removal.

4.4.6.1 Symptoms of Sihoho

The following were identified by the participants in the focus group discussions as symptoms of evil eye complications:

- The child refuses to breast-feed.
- The child has convulsions and cries a lot.
- The stomach swells and pains (the stomach aches at specific times, for example, at cock crow (kok gwen) and at the time when the sihoho was passed to the child).
- The child's skin becomes dark in colour.
- The stomach becomes hard.

4.4.6.2 Prevention and Treatment of Disorders from the Evil Eye

The prevention of children against witchcraft and evil eye involves the use of charms and making cuts (angola) on the body of the baby. Protective medicine in powder form is then rubbed into these cuts. The cuts may also be made on the mothers breasts. On the other hand, the charms are sewn in a band and tied around the child's waist or neck. On this protection, the informants had the following to say:

> In fact, the best protection one can get is Angola. These cuts are done when the child is still makwar (newly born). Cuts are also made on the mother's breasts to protect the milk against evil powers from those with evil eyes (josihoho). Sometimes, soil from an ant-hill is mixed with dried herbs, ground into powder and then applied in the cuts made either on the child's body or the mother's breasts. In such a case, the jasihoho will not see the child throughout his or her lifetime

It is also believed that pig's lard (mor anguro) is capable of keeping away the evil power from the witches. Therefore, the lard is applied on a child's body to protect him or her from being attacked.

4.4.7 Teething Diarrhoea

The growing of teeth in children causes this category of diarrhoea. However, the informants did not recognize it as a disease. They said it is normal for children to diarrhoea during the stage when teeth are growing and, therefore, this diarrhoea does not require any treatment. However, some prophylactic measures were put in place to prevent children from growing the teeth early.

4.4.7.1 Symptoms of Teething Diarrhoea

The following were identified by participants in focus group discussions and key informant interviews as symptoms of teething diarrhoea

- Passing out of watery stools.
- Swelling of the child's gums.
- The child does not look sick and feeds normally.

4.4.7.2 Prevention of Teething Diarrhoea

Although teething diarrhoea is perceived to be normal and marking a stage in the child's development, its early occurrence is supposed to be suppressed. According to the information from the focus group discussions and key informants, this is done by the prevention of false teeth from growing. It is believed that early diarrhoea would adversely affect the health of the child who is still tender and vulnerable to many diseases. Therefore, after delivery, the mother of the child is given a special herbal portion to chew and press on the child's gums. This treatment serves to prevent the child from developing early teeth (teeth which occur at about three months) and it is also believed to prevent other diseases, such as malaria, from attacking the child/children.

4.4.8 Diarrhoea due to Measles (Ang'iew / Anyiew / Aruodhi)

Measles (ang'iew / anyiew) was defined by all the informants as a disease from the devil (tuo mar jachien). It is carried by the evil spirits of the dead (jochiende) in the wind. These spirits attack not only children but also mature people and cause many other diseases apart from measles. The wind that carries these spirits is referred to as bad wind (yamo marach) or nyawawa. Nyawawa is believed to appear when wind blows from the lake to land (this is around April). The informants described nyawawa as having human qualities such as the ability to talk (both to humans and amongst themselves), and walking to and fro in areas they want. Conversely, these spirits in the wind (nyawawa) could not be seen. They caused measles amongst other diseases to individual families when they entered one's household.

4.4.8.1 Symptoms of Ang'iew

The participants in the focus group discussions identified the following as the symptoms of measles (ang'iew):

- The child coughs.
- Scratching of the body.
- Lips turn reddish (makwarkwar) and become dry.
- Stomach pain with or without diarrhoea.
- High body temperature.
- Rashes develop on the child's body.
- Eyes become watery and produce a lot of wax (ololo).

4.4.8.2 Prevention and Treatment of Ang'iew

The preventive measures against measles involve the barring of nyawawa - which is considered the causal agent - from passing through the homesteads. Therefore, during times when nyawawa is passing (observed when the wind blows from the lake to land), every able member of the family beats drums and metallic objects. This is believed to chase the evil spirits in the wind away from the land back to the lake. Failure to beat these drums and metallic objects allows nyawawa to pass through homesteads.

According to the informants, two days after the nyawawa's passing, children and adults alike start to suffer from many illnesses, which include measles. One of the key informants had the following to say:

> In fact, angi'ew is caused by nyawawa. I do not know how nyawawa is called in either English or Kiswahili. The nyawawa are evil spirits (jochiende). The spirits collect themselves together and are carried by the wind. In some cases they come from ugwe (where the sun rises) and go towards the lake, while at other times they come from the lake to the interior. These spirits talk like human beings, especially at night, though they are not visible. If you are unlucky, they may pass through your home and the members of your family, especially children, will catch ang'iew.
> The nyawawa wind is different from ordinary wind in that when nyawawa is passing, you hear sounds like those produced by waves in the lake and some voices can also be heard.

Measles is known by the people of Bondo to be highly contagious. Therefore, when a child is suffering from it, he or she is not allowed to come into contact with the unaffected children. Finger millet (mok kal) or baby powder (used these days) is applied on the suffering baby's body so as to prevent measles from spreading to other family members. Lard (mor anguro) is also applied on children's bodies during the time when nyawawa is suspected to be about to pass. The lard is believed to protect children from evil spirits and their effects as they (evil spirits) are believed to be very fearful of pigs.

There are also Luo traditional medicines with prophylactic qualities. These medicines are utilized during seasons associated with nyawawa, for example, around April. According to the information from focus group discussions, during the nyawawa season, a large quantity of leaves from the ang'iwe tree (Kedrostis foetidissima) may also be pounded and mixed with water. The concoction is then put in a large container and left in the house. This is believed to keep the evil spirits away from the house.

The treatment of ang'iew is a two-fold process. First, it is believed that the rashes that make the child ill develop from inside the body and have, therefore, to be moved to the skin surface for treatment to be effected. The removal of these rashes from the body onto the surface is done by giving the child boiled donkey milk (chak punda). The milk is

supposed to be given when still warm. Chieth punda (donkey dung) is also boiled, sieved and the resultant liquid is given to the child. The donkey dung performs the same role as donkey milk. The process of removing the rashes from the inside onto the skin surface during a measles attack was also observed by Imperato (1977) among the Bambara and the Tuareg of Mali. However, instead of using donkey dung or donkey milk as do the Luo, the Bambara and the Tuareg plaster their sick children with camel dung and bathe them in a solution of monkey faeces.

The second step involves drying the rashes that have now been removed from the inside onto the skin surface. Here, ashes (buru) or finger millet flour (mok kal) is applied on the whole body of the baby. The leaves of the lantana plant (Lantana camara) could also be pounded, mixed with water and used to bathe the baby. Ashes, finger millet flour and the lantana leaves are believed to be capable of drying the rashes. Once the rashes on the skin heal, it is believed that ang'iew has been successfully treated.

According to the information from focus group discussions, another form of treating ang'iew involves the use of elephant dung (chieth liech). The dung is burned and either the child made to sniff the resultant smoke or the ash is mixed with water and then given to the child. However, all through the research period, the researcher did not come across any elephant. Nevertheless, when probed about the source of elephant dung, the informants said that they bought it from dealers in yadh nyaluo (Luo traditional medicine) at market places.

Bhang (njaga)-Cannabis sativa-leaves are also pounded, mixed with water and sieved. The filtrate is the given to the child to take. It is believed that when this njaga is given, the child gets well after three days of treatment. Feathers from gwend ogara (fowl

with poorly arranged feathers) are also burned and the ashes given to the child directly or mixed with water and given to the child in liquid form. On the above treatment, the informants had the following to say:

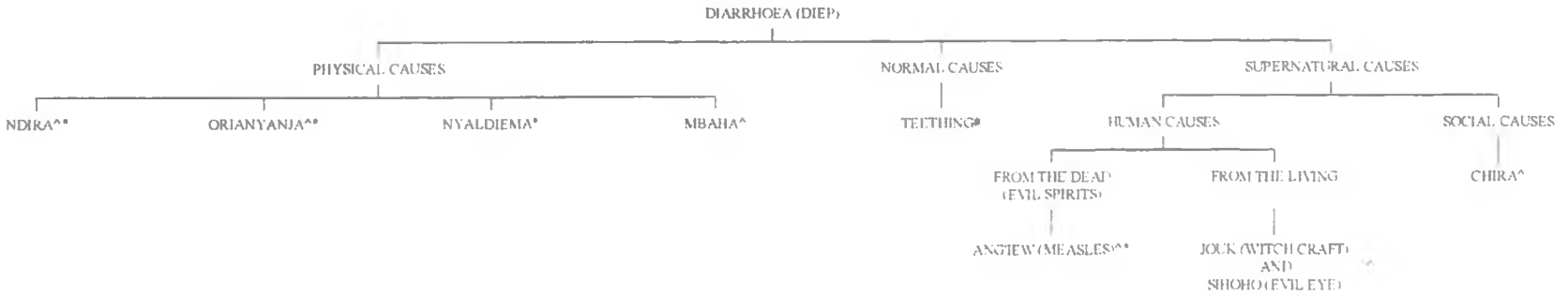
> The treatment of ang'iew occurs in many ways. First, njaga leaves are pounded, mixed with warm water and sieved. This is then given to the child using a teaspoon in the morning and evening. After three days of treatment, the child would be healed. Chieth liech (elephant dung) bought at the market from people who sell Luo traditional medicine can also be used. Here, the dung is dried, ground, mixed with water and given to the child. Chieth liech can also be burned and the child made to inhale the smoke. You may also combine chieth liech with porcupine spines (kuth chiew). These are burned to ashes, mixed with water and then given to the child. Donkey milk (chak punda) and chieth punda (donkey dung) when boiled in water, sieved and given to the child also provides an effective treatment for ang'iew.

The use of Cannabis sativa for medical purposes is not peculiar to the Luo. Many societies have used it to cure some illnesses. Unfortunately, it falls under banned drugs in many countries. However, Braid and Parker (1998) note that there is an increasing argument in many parts of the world that bang, cannabis or marijuana should be legalised, especially because of its positive role played in the medical circles.

Apart from the above traditional treatment, some informants were of the view that Luo traditional medicine and biomedicine should be used complementarily (see Table 4.4). Such informants believe that biomedicine provides the same function as ashes and finger millet flour, that is, they all dry up the rashes while the other traditional medicine (donkey dung, donkey milk and elephant dung) ensure that the rashes are brought to the skin surface.

To avoid measles from being exacerbated, the following measures should be observed:

- Children attacked by measles should not cross paths or roads, as this would make the rashes on the body surface disappear and grow from inside the body. This would make the child more sick. When the rashes grow from inside, measles becomes very difficult to treat.
- Meat should not be cooked in the house where there is a child suffering from measles. If this is done, the child would become more sick and in such a case ang'iew may be fatal.
- The child should not bathe till he or she gets well



KEY

* Hospital treatment only

^ Yadh nyaluo only

^* Yadh nyaluo and hospital

\# No treatment required

Figure 4.1: Luo folk taxonomy of diarrhoea and their mode of treatment

4.5 Eco-Cultural Considerations

The area of study is very bushy. The ground surface is inclined at a low gradient such that when it rains, water flows down and collects in depressions. This collected water forms a reservoir for domestic use and for watering domestic animals. In West Sakwa Location, the Tinga Koduma dam is such a reservoir and serves the area from Bondo town, Usire to beyond Kambajo.

It should also be noted that not all people have pit latrines. To relieve themselves, especially for long calls, such people utilize the bushy environment. During rainy seasons, such dirt finds its way into the collected water bodies and this contaminates the water. When such water is used for domestic purposes, especially drinking before boiling, children and adults alike are exposed to diarrhoeal diseases. As shown in Table 4.5, only 58.3 of the respondents boil water for drinking.

From the survey and focus group discussions, the weaning of children is done quite early (Table 4.7). The mean age of weaning is 2.9 months, while the modal weaning age is 3 months. Cow milk is widely used as a supplement to the breast milk and also as weaning food. Porridge (nyuka) and soup are also used for weaning. During weaning, the majority of respondents do not use bottles to feed their children. As shown in Table 4.6, 31.7% of the respondents used bottle-feeding as an alternative to breast-feeding while 68.3% believed bottle-feeding causes orianyancha and were, therefore, against its use.

Table 4.7 : Weaning age

Age at weaning (months)	Frequency	Percentage
0.5 (2 weeks)	1	1.7
1	10	16.7
2	13	21.7
3	21	35
4	7	11.7
5	5	8.3
6	2	3.3
7	0	0
8	1	1.7
Total	**60**	**100**

Modal weaning age - 3 months

Mean weaning age - 2 9 months

Most mothers also appeared to be informed about the importance of re-heating children's food before serving it to them. The results show that 91 6% of the respondents re-heat cold food before giving it to their children Only 8 4 % said it is not necessary to re-heat the food as the food is considered fit for the child after cooking.

4.6 The State of Perceptions

As observed in case histories, perceptions, like culture, are not static. If a category

of diarrhoea is treated but without success, another category is suspected and curative measures deemed fulfilling to the new perceived category are put in place. The following information given in retrospect by Millicent Akinyi (not her real name), aged 24 and a mother of two, from Kamayuje village of Usire sub-location gives a clear view of the dynamism of perceptions:

> My first baby was attacked by diarrhoea at 6 months. My mother-in-law came to me and observed the child and then we concluded that it was orianyancha. This is because the child was passing out greenish stool, refused feeds and the stool had a very bad smell. The child also cried a lot and had convulsions as if he had stomach pains. I was given yadh agulu by a javath (herbalist) and gave the child. However, it appeared to me that the child was becoming weaker and weaker as the diarrhoea did not stop.
> After two days of treatment, my mother-in-law said that if the illness was not responding to the yadh agulu treatment, then it could be the new diarrhoea that we call nyaldiema or cholera. I took the child to hospital and he was admitted for three days. I was then advised to boil water for drinking and also to prepare water with salt and sugar and give him when the same disease attacked him in future before taking him to hospital.

The research findings, therefore, reveal that the people of Bondo district are knowledgeable about risk behaviours associated with diarrhoeal disease outbreaks and are also conversant with biomedical information about the management of diarrhoeal diseases. These management practices include the preparation of some solution of salt and sugar - a local form of oral rehydration salts - and giving it to the child to avoid dehydration before going to hospital for treatment. The use of herbal medicine, both for prophylactic and curative purposes, is also widely practised.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter consists of a discussion of the research findings. The discussion is guided by themes obtained from the objectives of the study, that is, the people's perceptions about diarrhoea, perceived causes and symptoms, and the prophylactic and curative measures taken against paediatric diarrhoea. Thereafter, conclusions are drawn and some recommendations made.

5.2 Discussion

The definition of diarrhoea as advanced by the Luo does not differ radically from the one given by the biomedical practitioners. The point of intersection between the definitions given by the two groups (biomedical practitioners and the Luo people) is that the passing out of watery stool with or without blood as a symptom of diarrhoea is general to both definitions. However, the Luo are not specific in the frequency and temporal dimensions as exhibited in biomedicine. They define diarrhoea as the passing out of more than normal watery stools. On the other hand, biomedical practitioners give the precise frequency and time period in their definition of diarrhoea. They state that it is the passing out of 3 or more watery stools in a period of 24 hours (Amref, 1975; Ebrahim, 1986).

The Luo perceptions about the causes of diarrhoea also correspond with biomedical beliefs. However, it appears that the Luo perception of causes is not restricted

to the natural causes. The natural causes of diarrhoea as identified by biomedical practitioners include infestation of the gastro-intestinal tract by diarrhoea-causing organisms such as bacteria and the intestinal worms. The Luo believe that disease and illness may be caused through air, water and food, from humans, "the living dead", and breaching of taboos or customs (Sindiga, 1995)

The research findings reveal that most people in Bondo district are knowledgeable about the harmful effects of giving either children or adults contaminated food or water, using unclean utensils for feeding children and the value of good personal and environmental hygiene, including the use of pit latrines for the safe disposal of human waste. This could be the result of effective use of community health workers (nyamrerwa) by formal health institutions and the local administration during diarrhoea management campaigns. However, through observation during survey, in some homes, pit latrines could be seen but a notable fact is that, the area around the pit latrines and the path leading to them were bushy, an indication that they were not in regular use. This leads to the conclusion that there is a difference between knowledge and practice among the people of Bondo. This is because despite there being knowledge, of the risk factors associated with diarrhoea, some people still used the bushy environment for disposal of human waste while others used unboiled water for drinking and for other domestic uses (see table 4.5).

The above conclusion was also made by Mwanzo, (1996) after his study about the potential of primary schools as an agent of health education in Bondo Division. He found out that 55% of the respondents were knowledgeable about the risk of human waste (faeces and urine) to their health if not safely disposed of. He however, noted that the

knowledge did not tally with what was observed as in some schools he saw pupils urinating near latrines and stepping in the urine.

The categorization of diarrhoea into groups may serve to create an antithesis of the biomedical strive to effectively manage diarrhoeal problems. Each category has distinct perceived causes and symptoms, and may also have distinct management practices. Therefore, the stress of biomedical practitioners to promote the use of oral rehydration salts (ORS) and use of similar management practices irrespective of cause may create a problem in the adoption of health promotion and health maintenance programmes. For instance, it is hard for the Luo to conceptualize the provision of oral rehydration salts to manage diarrhoea from nyaldiema and that from chira. However, this folk taxonomy of diarrhoea is not peculiar to the Luo. Green *et al.* (1994) found a similar categorization in Mozambique. Nyoka dzo kusorora and phiringaniso were, respectively, identified as diarrhoeal disorders caused by neglect of tradition and extramarital sexual intercourse by a parent(s) while their child was still breastfeeding then coming home and interacting with him/her (child) before bathing. This is consistent with chira diarrhoea among the Luo. Chinhamukaka and chikamba correspond to the Luo categories of nyaldiema and orianyancha diarrhoea, respectively. The preventive measures of diarrhoea in biomedicine call for good personal and environmental hygiene while among the Luo, the preventive measures transcend the above biomedical measures to include other factors such as remaining faithful to one's spouse, obeying the norms and taboos of the society and chasing away of nyawawa which is believed to cause measles in children. Some of these protective behaviours may not be bio medically relevant to diarrhoea as far as aetiology and prevention are concerned.

Some Luo perceptions about diarrhoea causation are helpful in the development of healthy children. For example, one of the causes of mbaha is feeding the child on porridge made from only maize flour. The preventive measures against mbaha, the respondents said, include feeding the child or children on porridge made from beans, groundnuts, finger millet, sorghum, cassava and maize flour. They also insisted on adding a little milk to the porridge. Such a combination of foods gives an assurance about the quality as far as balanced diet is concerned.

According to the respondents, a mother who is suffering from nyaldiema should not breastfeed her baby. This is because it is believed that the disease would be passed to the child through the mother's breast milk. This belief could serve to minimise the chances of the child being attacked by nyaldiema.

The study also revealed that disease labelling among the Luo could give wrong information to biomedical practitioners. For example, ndira, a diarrhoea category, was referred to as cholera. However, as identified from the symptoms by a clinical officer at Bondo District Hospital, ndira is dysentery. Therefore, if treatment is given on the basis of people's diagnosis, this may lead to right treatment for the wrong illness.

The symptoms of illness influence health-seeking behaviour. The experiencing of headaches, body turning yellow, passing out of mucoid yellowish stool and passing out of urine that is warmer than normal among the Luo leads to the parents treating the child from mbaha. The symptoms here are more detailed than those in biomedical descriptions. The Luo look at many factors that could guide in emic categorization of diarrhoeal diseases.

The people's beliefs about the cause(s) of diarrhoea have a direct bearing on the

methods employed in the control of the problem (Jennings, 1995; Kaendi, 1995; Sindiga, 1995). This is also consistent with the research findings. Diarrhoea from the evil eye (sihoho) or witchcraft (juok) entail the taking of the affected child or children to a traditional medical practitioner called jatak, who is believed to be knowledgeable in matters relating to bringing the children and mature people back to health from problems resulting from witchcraft and evil eye. Jatak is also believed to be capable of offering prophylactic services against harmful effects of the evil powers possessed by those who practise witchcraft and the evil eye. Other categories of diarrhoea thought to result from chira and ang'iew (measles) are believed to be from the supernatural forces and, thus, can only be managed by the use of yadh nyaluo. Nyaldiema is thought by the people to be new. Accordingly, they believe it does not have effective yadh nyaluo and traditional management practices and can, therefore, be treated only by biomedicine.

Implementers of any diarrhoea control programmes should, therefore, be knowledgeable about these people's beliefs and general perceptions on cause(s) and management practices before initiating the programmes. If the people's perceptions are found to be detrimental to the people's health, then changes in the perceptions are very necessary. Without such changes acceptability of the programme's ideas, however benevolent they could be, is a remote possibility. A convincing explanation about the adverse effects of their beliefs to health and the supremacy of the new ideas over their traditional ideas should be given to the people. In Bondo District, such information should be disseminated through either the community health workers (nyamrerwa) or the clan elders. This is because: the people saw the nyamrerwa and the clan elders as being closer to them. The chief's barazas cannot be the best fora to pass information to the people, as

there is some fear of the chief's authority. It is important to note that chiefs enforce decisions from the local administrators such as District Officers. Decisions passed through the chiefs could be a success on the ground in terms of structural layout but usability could be hard to realize. This is because the people may identify the idea with the administration but not themselves. The biomedical practitioners should also give credit to traditional health workers in areas where ethno medicine is effective.

As shown in chapter four, the people of Bondo district utilize ethno medicine for prophylactic and curative purposes as far as paediatric diarrhoea is concerned. This can be attributed to the scarcity of adequately equipped modern health facilities or that ethno medicine is effective in curing some categories of diarrhoea, such as mbaha and chira caused diarrhoea. The other contributing factor to the observed persistence in use of yadh nyaluo is because traditional medicine was readily available. The high cost of biomedical services offered, especially in private health institutions, was a stumbling block to the widespread use of biomedical services in the management of diarrhoea. This is because of the widespread poverty in the district. The perceptions of cause(s) of paediatric diarrhoea also dictate the health care choices as shown in the findings (See Figure 4.1). Those diseases perceived to be caused by supernatural or human causes such as chira and witchcraft were believed to be managed effectively by Luo traditional medicine (yath nyaluo). Diseases that were labelled "new" such as nyaldiema were believed not to have effective Luo traditional medicine and thus managed more effectively by biomedicine. However, it is imperative to note that the Luo of Bondo are very flexible as far as their health seeking behaviour is concerned. This is because some cases such as measles (angiew) considered to be caused by evil spirits could be effectively managed through a

combination of both biomedicine and ethno medicine

Ideas from the biomedical perspective are that weaning periods are particularly hazardous when it comes to diarrhoeal attacks. This is because, children are introduced to weaning foods which are new to their digestive systems and contain a large number of bacteria that may cause diarrhoea, especially if the standards of hygiene are favourable to the survival of diarrhoea-causing pathogens (Ebrahim, 1984; Amref, 1975; Nangelkerke *et al.* 1990). According to the biomedical information, the ideal age for the introduction of weaning foods to the child's diet, apart from breast milk, is six months. However, as shown in Table 4.7, weaning among the Luo of Bondo District starts comparatively early. The earliest weaner is 2 weeks while the latest is 8 months. The modal weaning age is 3 months while the mean age is 2.9 months. Going by the biomedical requirements of weaning age, the Luo children are prone to diarrhoeal attacks due to early introduction of weaning foods, which Tzipori (1985) and Ebrahim (1984) describe as being hazardous if prepared under unhygienic conditions.

The fact that teething diarrhoea is seen as normal and a stage marker in the child's development makes it hard for diarrhoea control programmes to achieve their required goal. This is because such diarrhoea, besides being taken as normal, according to these people, does not need any treatment. However, from the biomedical standpoint, diarrhoea entails loss of water through dehydration and this fact makes diarrhoea a fast killer if no attention is given. Therefore, if at all child mortality rates from diarrhoea are to be minimized, all diarrhoeal diseases must be given equal attention as far as prevention and treatment is concerned. Indeed, biomedical literature on diarrhoea does not seem to give much attention on such categories of diarrhoea perceived to be "normal". Instead, such

categories are just mentioned under "people's beliefs about diarrhoea." The necessity of management of such diarrhoea is not stressed. The fact remains that dehydration, which is considered fatal, is always present in all diarrhoeal diseases.

In disorders perceived to result from the evil eye and witchcraft, diarrhoea and vomiting are seen as a positive step towards healing. In such cases, diarrhoea is experienced after treatment and is believed to indicate the effectiveness of the medicine given. The child would, therefore, not be taken to hospital because of diarrhoea and no corrective action would be taken to stop it. There is a high risk of death in children who suffer from disorders perceived to be from either witchcraft or evil eye.

Among the Luo, measles is depicted as a disease from the devil. This depiction was also observed by Ouko (1998), Olenja (1991), Kawango (1995) and K'Okul (1991) in their studies among the same people living in the province. Children suffering from measles are supposed to stay in dark rooms and not to interact with other children because measles is believed to be highly contagious and they are not supposed to cross either roads or paths. This, by extension, means that the children cannot be taken for treatment away from their sick rooms as any action against the above requirements is believed to exacerbate measles, thus making it fatal (Ouko, 1998). The preventive action against measles involves barring of nyawawa, considered to be the casual agent, from entering households. This barring or chasing away of nyawawa is done by hitting metallic objects. This observation is consistent with the use of a small bell (rogambi) among the Agikuyu that was believed to have powers to scare away evil spirits (Kenyatta, 1989). The concept of nyawawa is also not peculiar to the Luo of Bondo District as the same phenomenon was observed by K'Okul (1991) among the Abasamia of Busia District.

A reader form a different community who goes through the literature in chapter four would probably come up with cultural explanations about the perceived causes of paediatric diarrhoea and the folk categories of diarrhoea that exist among the Luo of Bondo District. It would, however, not be easy for the reader to link health disorders with some of the perceived causes. This is particularly if the study is approached from an etic perspective.

The social function of perceptions is clearly seen from the analysis of the perceived causes of chira disorders. For example, as indicated in chapter four, committing adultery by either parent is supposed to cause chira in the children of the parents in question. This is manifested in total wasting of a child's body and may ultimately lead to death. Because of the fear of children being affected, the parents are compelled to stick to their spouses and to avoid extra marital sexual relationships. This kind of perception could be very functional, especially in keeping the social cohesion of individual families. If followed, it may also help to minimize the devastating effect of HIV/AIDS to human populations in Bondo district.

Another type of behaviour which is perceived to cause chira-induced diarrhoea in children is not following the right procedure by the parents (mostly the fathers) during agricultural activities. The father is supposed to spend the night with his eldest wife on the eve of either the planting or harvesting season. Therefore, to see to it that the husband plays his matrimonial roles to all his wives, norms are put in place and any behaviour against these would lead to chira attack in children. Likewise, the agricultural activities are supposed to start from the eldest wife's piece of land. This happens in polygynous households. It is quite clear that such perceptions are aimed at giving importance to the

eldest wives and barring a man from becoming more attached to his younger wives at the expense of their predecessors. This, by extension, may lead to maintenance of social solidarity in the families. Therefore, perceptions should not be taken from their face value as, when given a closer look, they have socially significant covert meanings that may be essential for the continuous survival of individual families and, by extension, the whole society. It should, therefore, be noted that cultural perceptions are not only medically significant but also have social implications

In conclusion, therefore, the people of Bondo conceptualise diarrhoea to be as a result of natural, supernatural and human causes

The perceived symptoms of some categories of paediatric diarrhoea such as nyaldiema correspond to the symptoms as advanced by biomedical practitioners. However, some categories of diarrhoea namely orianyanja, diarrhoea due to witchcraft, mbaha and diarrhoea due to chira were not identifiable in biomedicine and thus the respondents utilised ethno medicine in the management of such categories.

The information also shows that the people's beliefs about the cause(s) of diarrhoea have a direct bearing on their health seeking behaviour.

5.3 Conclusion

This study revealed that the definition of diarrhoea on the basis of the passage of watery stool is common to both biomedical practitioners and the Luo people. The variation in the definition between the two groups is that the Luo are not specific in the frequency and temporal dimensions as exhibited in biomedicine, where diarrhoea is defined as the passing out of three or more watery stools in a period of 24 hours

The folk perceptions of the causes of diarrhoea also correspond with the biomedical ones However, it appears that the Luo perception of causes of diarrhoea are not restricted to the natural causes, such as infestation of diarrhoea-causing organisms in the gastro-intestinal tract which include bacteria and intestinal worms The Luo believe that disease and illness may be caused through air, water and food, from humans, the "living dead" and breaching of taboos or customs The research findings reveal that most of the respondents in the study area are knowledgeable about the harmful effects of giving either children or adults contaminated food or water, the use of unclean utensils for feeding the child/children and the value of good personal and environmental hygiene, including the use of pit latrines for the safe disposal of human wastes This could be the result of effective use of community health workers (nyamrerwa) by formal health institutions and other organizations during diarrhoea management campaigns.

The lack of safe drinking water is a major problem in Bondo District. Treated piped water is only available in very few places which include Bondo town and Bondo Teachers Training College The utilization of pond water from Tinga ko duma dam in Maranda sub location by many people for watering domestic animals, washing clothes and bathing from the shores of the dam, definitely leaves the water contaminated The use of this water for domestic consumption, therefore, makes management of diarrhoeal diseases in Bondo division an uphill task

The existence of several categories of diarrhoea with distinctive causes, symptoms and treatment makes the understanding of paediatric diarrhoea among the Luo from an etic perspective difficult As revealed by the findings, some categories such as mbaha, chira diarrhoea and siholo are not identifiable in biomedicine Programmes aimed at

controlling this illness should, therefore, be culturally specific.

The prevention and treatment of paediatric diarrhoea among the Luo is category specific. This is because each category has its own treatment and preventive measures. Therefore, the biomedical stress on the use of oral rehydration salts (ORS) for every diarrhoeal episode cannot be easily conceptualised and fully accepted by the Luo of Bondo unless a more aggressive educational campaign aimed at addressing the people's perceptions about diarrhoea is done.

The use of Luo traditional medicine (yadh nyaluo) for prophylactic and curative purposes is widespread. This could be attributed to the effectiveness or superiority exhibited by the traditional medicine over biomedicine in the treatment of some categories of diarrhoea. It should also be noted that health services provided by private clinics are very expensive and beyond the reach of many people in the district. The unavailability of sufficient drugs at the district hospitals and other health facilities run by the government and which are relatively cheaper providers of health, and poverty may also explain the widespread use of ethno medicine.

The perception of "teething diarrhoea" as being a normal phenomenon to the growing child predisposes children to the danger of losing vital nutrients through passing out of watery stools which contain a lot of unabsorbed nutrients needed for a healthy physical and psychological development. Because treatment is also not sought in "normal diarrhoea", paediatric deaths from diarrhoea due to dehydration cannot be easily minimized unless such perceptions are addressed.

People's perceptions about an illness may change depending on the outcome of the treatment offered. If a diarrhoea category is treated but without success, then either

another category is suspected and treated or a different mode of treatment is sought

Perceptions should not be thought of as something meaningless and without any function. Taking perceptions from the face value does not lead to any understanding of the covert meaning. Instead, only the overt practice associated with the disease category or social phenomenon can be described. The concept of chira among the Luo has some social significance. It gives guidelines on the perceived right mode of behaviour and the loss of health is the retribution for going against the requirements.

5.4 Recommendations

1). In Bondo District, safe drinking water is a great problem. By all standards, the level of contamination of water from Tinga ko duma dam in West Sakwa location, which serves a wide area (from Bondo town to kambajo area) is high. This is because the water is stationary and there is a daily routine of people from the villages washing clothing, bathing and drawing water for domestic use. If treated water that is safe for human consumption is made available to these people, then only can we talk of having set a good precedence for management of diarrhoeal diseases. Therefore, apart from offering curative services, the ministry of health and other organizations working in the area such as Kedahr (Kenyan-Danish Health Research Project), church organizations and the Lake Basin Development Authority, should redouble their effort in educating the people on the need to boil water for drinking and for other domestic uses.

2) In this study, it emerged that traditional medicine is widely used in Bondo District to treat paediatric diarrhoea. The most common form is use of

herbal remedies. Therefore, there is need to tap the existing knowledge in traditional medicine that cures diarrhoea in order to supplement biomedicine in the endeavour to reduce child mortality rate due to paediatric diarrhoea in the population.

3) Community health workers (nyamrerwa) should be used as the entry point in the community for the health education campaigns. They should also be used objectively to propagate information to the people about the most effective ethno-or biomedicine and medical practices in the management of diarrhoeal diseases and not merely used as tools for the advancement of the use of biomedicine among the people. The respect and popularity enjoyed by the nyamrerwa from the people of Bondo should be used to improve their (people's) health standards.

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APPENDIX

QUESTIONNAIRE

1. Name of location .....

2. Name of village .....

3. Respondent's occupation .....

4. What is the name for diarrhoea in Dholuo?

.....

5. How many categories of diarrhoea are there?{please name them in the space provided below}

6. What do you think is the main cause of diarrhoea in children?

   (a) Contaminated food ☐

   (b) Chira ☐

   (c) Dirty water ☐

   (d) Witchcraft ☐

   (e) Growing of teeth ☐

   (f) Don't know ☐

(If there are any other causes, please specify)

.....

7. What are the signs of diarrhoea (how do you know that a child has diarrhoea)?

.....

8. (a) Can diarrhoea kill?

(a) Yes ☐

(b) No ☐

(c) Don't know ☐

(b) If your answer is **No**, why do you think it cannot kill?

.....

9. Has any of your children ever contracted diarrhoea?

(a) Yes ☐

(b) No ☐

10. If your answer for 9 above is **Yes**, what did you do to cure him or her?

.....

11. How frequently do children contract diarrhoea in this area?

.....

12. Do you think diarrhoea should be controlled?

(a) Yes ☐

(b) No ☐

13. Where do you get your water for drinking and domestic use from?

.....

14 Do you boil your water before drinking?

(a) Yes ☐

(b) No ☐

(c) Sometimes ☐

15. Do you re-heat food for your child after keeping for some hours?

(a) Yes ☐

(b) No ☐

(c) Sometimes ☐

16. Do you wash your hands when handling children's food?

(a) Yes ☐

(b) No ☐

(c) Sometimes ☐

17. Do you have a latrine?

(a) Yes ☐

(b) No ☐

18. If your answer for 17 above is Yes, do you wash your hands after going to this latrine?

(a) Yes ☐

(b) No ☐

(c) Sometimes ☐

19. Do children also handle younger children's food?

(a) Yes ☐

(b) No ☐

20. If your answer for 19 above is **No**, who prepares the child's food when you are away?

.....

21. At what age do you give your children supplementary food (food other than breast milk)?

.....

22. Do you bottle-feed your child / children?

(a) Yes ☐

(b) No ☐

23. Is colostrum given to new borns?

(a) Yes ☐

(b) No ☐

24. If your answer for 23 above is **No**, please explain why.

.....

25. Do you think diarrhoea can be controlled by the hospitals?

(a) Yes ☐

(b) No ☐

(c) Don't know ☐

26. Apart from the hospitals, do you think other people or places can also treat diarrhoea?

(a) Yes ☐

(b) No ☐

27. If your answer for 26 above is **Yes**, who are these people or places?

.....

28. Which age group is most commonly affected by diarrhoea? (please mark all that apply)

(a) Below 1 year ☐

(b) When they grow teeth ☐

(c) Don't know ☐

(If there are any others, please specify)

.....

29. Why do you think the age group you have given in 28 above is vulnerable?

.....

30. Do you think hospitals can conclusively manage diarrhoea?

(a) Yes ☐

(b) No ☐

31. Do the health personnel at the hospitals and clinics tell you anything about how to control diarrhoea at home?

(a) Yes ☐

(b) No ☐

QUESTIONS FOR KEY INFORMANT INTERVIEWS

(Nyamrerwa, Clan Elder, and Opinion leader [Chief])

1. How many categories of diarrhoea in Children under five years of age exist (Please name these categories)
2. What do you think is the cause(s) of these categories diarrhoea among the under five year old children?
3. What are the symptoms of each of these categories?
4. How was diarrhoea in children prevented traditionally, and how is it prevented today among the Luo?
5. How as diarrhoea in children treated traditionally and how is it treated today?

QUESTIONS FOR MEDICAL OFFICERS

1. What do you think are the causes of diarrhoea in children under five years of age in this area?
2. How common is the diarrhoeal problem among children in this district
3. Do you know of any explanations given by mothers about diarrhoea in their under five year olds
4. Do you believe in some of these explanation?
5. Do you know of any cultural risks factors that may cause diarrhoea in Children among the Luo

QUESTIONS FOR FOCUS GROUP DISCUSSIONS (FGDS)

1. Tell us what you think causes diarrhoea in children
2. How many types of diarrhoea do you know?
3. What are the symptoms of each of these diarrhoea categories?
4. How was diarrhoea among children prevented traditionally and how is it done today?
5. How was diarrhoea treated traditionally and how is it done today?