

**UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING**

**THE STUDY TO DETERMINE FACTORS CONTRIBUTING TO
THE DEVELOPMENT OF MALNUTRITION AMONG CHILDREN
AGED 0-5 YEARS AT ST. FRANCIS HOSPITAL, KATETE,
ZAMBIA**

BY

DAVID LUBUTA

**ZAMBIA REGISTERED NURSE 1988 - KITWE
ZAMBIA REGISTERED MIDWIFE 1994 - LUSAKA**

**A RESEARCH PROJECT SUBMITTED TO DEPARTMENT OF POST
BASIC NURSING, SCHOOL OF MEDICINE, UNIVERSITY OF ZAMBIA, IN
PARTIAL FULFILMENT FOR THE AWARD OF BACHELOR OF SCIENCE
DEGREE IN NURSING**

UNZA, LUSAKA

NOVEMBER 1998

TABLE OF CONTENTS	PAGE
-------------------	------

Title page.....	i
List of tables.....	v
List of abbreviations.....	vii
Declaration.....	viii
Statement.....	ix
Dedication.....	x
Acknowledgements.....	xi
Abstract.....	xii

CHAPTER 1

1.0 INTRODUCTION	1
1.1 Background information	1
1.2 Statement of the problem.....	5
1.3 Hypotheses	7
1.4 Objectives of the study	8
1.4.1 General Objectives	8
1.4.2 Specific Objectives	8
1.5 Assumption of the study	9
1.5.1 Socio-economic factors	10
1.5.2 Cultural factors	10
1.5.3 Health related factors	10

CHAPTER 5

5.0 Discussion of findings.....35

5.1 Introduction.....35

5.2 Discussion of findings..... 35

5.3 Implication to health..... 48

5.4 Conclusion.....51

5.5 Recommendations..... 52

5.6. Limitations of the study.....53

5.7. References.....54

ANNEXES

- ANNEX I: Consent to participate in an interview
- ANNEX II: Interview schedule
- ANNEX III: Letter for permission to conduct study
- ANNEX IV: Reply granting permission

LIST OF TABLES

TABLE 1:	Social Demographic Data frequencies.....	24
TABLE 2:	Breastfeeding and weaning practices.....	26
TABLE 3:	Pregnancy in relation to breastfeeding practices of respondents.....	27
TABLE 4:	Age at which respondents' child stopped breastfeeding.....	28
TABLE 5:	Respondents' child's age in relation to the age at which Child stopped breastfeeding.....	28
TABLE 6:	Number of times respondents gave weaning feeds to their children per day.....	29
TABLE 7:	Number of respondents' children who had diarrhoea prior to admission.....	29
TABLE 8:	Number of respondents' children who had other infections apart from diarrhoea prior to admission.....	30
TABLE 9	Family size in relation to household food security.....	30
TABLE 10	Number of respondents' children in relation to household food security.....	31
TABLE 11	Family size in relation to family planning practices.....	31
TABLE 12	Educational level in relation to the level of knowledge of respondents on prevention of malnutrition.....	32

TABLE 13 Educational level in relation to family planning practices.

TABLE 14 Availability of fields for growing crops in relation to
household food security..... 34

LIST OF ABBREVIATIONS

UNICEF	:	United Nations International Children Emergency Fund
ZDHS	:	Zambia Demographic Health Survey
WHO	:	World Health Organization
PEM	:	Protein Energy Malnutrition
HIV	:	Human Immune Virus
AIDS	:	Acquired Immune Deficiency Syndrome
NCDP	:	National Commission for Development Planning
IBFAN	:	International Baby Food Association

DECLARATION

I hereby declare that the work presented in this study for the degree of Bachelor of Science in Nursing has not been presented either wholly or in part for any other degree and is not being currently submitted for any other degree.

Signed.....

Date..... 28.1.99.

Candidate

Approved by.....

Date..... 28/1/99.

Supervising Lecturer

STATEMENT

I hereby certify that this study is entirely of my own independent investigation. The various sources to which I am greatly indebted are gratefully and clearly indicated.

Signed.....

Date.....

Candidate

DEDICATION

This research study is a special dedication to my beloved wife Betty, son my Cuthbert and my daughter Thokozile.

ACKNOWLEDGEMENT

Sincere thanks to all those without whom this study would not have been possible and in particular special thanks go to my sponsors, the Government of the Republic of Zambia, through the Directorate of Human Resource Development for the scholarship to undertake the Degree of Bachelor of Science in Nursing.

I would wish to acknowledge the contribution made by faculty members towards my study especially Ms Lambwe, the supervising lecturer in Nursing Research, whose encouragement and guidance made this study a success.

I am deeply indebted to my respondents for the co-operation and support during data collection.

My other thanks go to management and staff of St. Francis Hospital, Katete, Paediatric Ward (Mbusa-wa-bwino) for allowing me to carry out the study at the hospital.

A special note of appreciation goes to the secretarial services provided by Ms Elizabeth Mpundu Chamuka without whom this work would have remained a nightmare.

My heartfelt gratitude to my wife (Betty) and our two children (Cuthbert and Thokozile) who spent a lonely life while I was at school.

Lastly, but not the least my thanks go to my fellow students who made my life easy at school.

ABSTRACT

The study was undertaken in Katete, St. Francis Hospital, Paediatric Unit, called Mbusa Wa bwino (Good Shepherd). The study sought to determine factors contributing to the development of malnutrition among children aged 0-5 years at St Francis Hospital.

The study had the following general objectives: to determine whether mothers of malnourished children practice family planning to avoid frequent pregnancies , to determine whether breast feeding and weaning practices were associated with malnutrition, to identify any cultural beliefs which were associated with malnutrition, to determine whether diarrhoea diseases were associated with malnutrition, to identify if food insecurity was associated with malnutrition, to make recommendations to health providers at the hospital , community and the government at large on how to effectively improve the nutritional status of children under 5 years, in Katete District and to identify any factors that could contribute to the development of malnutrition in children aged 0-5 years in Katete District.

A descriptive study was conducted using a structured questionnaire. Respondents were parents or guardians taking care of malnourished children. The sample size consisted of fifty (50) respondents. Data collected were analyzed manually and cross tabulated.

The findings revealed that the direct cause of malnutrition was found to be inadequate food reserves (household food security). This was attributed to big family sizes which lead to scarcity of food. The results revealed that 38 (76%) of respondents who had bad household food security had 6 to 10 members in the family. Similar findings revealed that 21 (42%) out of 40 of respondents were found to have 5 to 10 number of children.

The risk factors that were found to be associated with malnutrition were, 25 (50%) had low educational level in relation to family planning practices and 38 (76%) of respondents children were found to have suffered from chronic diarrhoea prior to admission.

However, no traditional beliefs, customs and culture were found to be associated with this disease entity.

The major recommendations that were derived from the study were that the study of this kind should be done on a large scale (that is to cover the whole district, province, or country) All other members of multi sectoral team should be included to combine resources and counteract every factor that would be found to be associated with malnutrition. Hospital Health workers should strengthen information education and communication, emphasis should be on effective use of available family planning services, discourage negative traditional attitudes towards breast feeding and weaning practices.

Furthermore, the hospital should also intensify its outreach services to reach out children in remote areas. Children who were previously admitted should be followed up on out reach basis so that their nutritional status was reassessed. Village neighbourhood committees to encourage formation of women clubs where such problems as malnutrition could be discussed.

Villagers were urged to improve household food security by growing drought resistant crops like cassava and food legumes crops like soya. Villagers should also be encouraged to keep animals such as goats and chickens.

The government was also urged to subsidize fertilizers so that small scale farmers could easily afford to buy : Small scale farmers should also be provided with necessary technical skills to improve on their farming methods.

Lastly, there was also need to increase use of mass media for public awareness towards the fight against malnutrition. Non governmental organizations should be involved continuously.

CHAPTER 1

1.0. INTRODUCTION

1.1 BACKGROUND INFORMATION

Nutritional disorders are very common in infants and young children in developing countries and constitute a major problem world wide. (G.J. Ebrahim, 1965).

Each year malnutrition contributes to nearly seven million child deaths, more than any single infectious disease, war or natural disaster. Over half a million of all deaths between ages six months and five years in low income countries are malnutrition related. About three quarters of these are due to mild or moderate under nutrition (Ahrtag, 4th quarter, 1997, issue 9).

In Africa, like many sub saharan countries, Zambia suffers high rates of malnutrition and is rated among the highest in the region. (see table on page 2). The food consumption survey also shows that 73% of the Zambian people live below the poverty datum line. The problem is more prevalent among children and women and is widespread throughout the country. (Javaheri et al 1997).

Table: Under nutrition among children age 3 to 36 months in Zambia and other sub-Saharan countries

Country	Stunted (a)	Wasted (b)
Burundi	48%	6%
Uganda	44%	2%
Zambia	40%	6%
Nigeria	38%	10%
Togo	31%	2%
Ghana	30%	8%
Zimbabwe	30%	1%
Mali	24%	11%
Senegal	23%	6%
Cameroon	23%	6%

Source: Demographic Health Survey (DHS) 1986/1991.

- (a) Stunted reflect chronic under nutrition.**
- (b) Wasted reflect acute under nutrition.**

Zambian nutritional statistics do not have a good story to tell. Under five mortality rate has increased from 152/1000 in 1981 to 191/1000 in 1991 and now 203 per 1000 live births, out of which malnutrition accounts for more than 40%. This means that more than one child in every five die before reaching age of five. Infant mortality rate is 107 per 1000 live births. Unpublished malnutrition case fatality study results indicate that 50% of children admitted to hospital from malnutrition complications do not survive their hospital stay and 31% of reported cases of childhood mortality is directly attributed to malnutrition, where as the same scourge assist in about 91% of all fatality cases of death. (UNICEF, 1996).

According to Chongo D. K et al (1993) it appears Zambia has no rational food and national policy, but a number of action programmes have been articulated in the past by the government, through both the Ministry of Health and Ministry of Agriculture Food and Fisheries as well as through bilateral non governmental organisation. These measures have been aimed at alleviating malnutrition in its widest sense which currently is reported to be among the highest problem in Africa.

Chongo et al (1993) spelt out goals and objectives aimed at combating malnutrition, which include: growth promotion, micronutrient supplementation, breast feeding promotion, information education and communication, household food security, monitoring and evaluation.

Under nutrition is higher in rural areas than in urban areas. Luapula and Eastern Provinces with the highest infant mortality rates where approximately one in four children do not live up to the fifth birth day. (ZDHS, 1996).

Katete is one of the districts in Eastern Province, similarly, like any other districts it faces the same consequences of malnutrition which appears to be increasing.

The district has a population of 170,000 of mainly subsistence farmers who grow cotton, maize and groundnuts, and small scale traders.

The local economy is very small with only small scale amounts of income or money in circulation.
(St Francis Hospital, Annual Report 1996)

Katete district has only one hospital, St Francis, which serves as a referral hospital for eastern province. It has 15 rural health centres.

St Francis hospital (Researchers place of study) is situated in the centre of the district along great east road, 500km from capital town Lusaka, 125km from main border with Malawi. The population of Katete district is about 1 million people. (St Francis Hospital Records, Annual Report (1996).

Available nutritional records at the hospital for 1995 and 1996 showed the following:

- 176 children were admitted in 1995 with malnutrition of which 36 children died.
- 256 children were admitted in 1996 with malnutrition of which 95 children died.

No figures as yet been published for 1997 but from the above records it can be seen clearly that malnutrition in Katete is steadily increasing.

The issue and extent of malnutrition has never been scrutinised or being followed up. The hospital only keeps records or statistics of those cases which are admitted, but there are unreported cases outside the hospital which shun admissions for a number of reasons.

Similar studies elsewhere in Zambia have been done at hospital level, district level, as well as national level and published reports still carry a sad story of malnutrition among ages 0 - 5 years. It is therefore, the intention of this study to explore factors (at hospital level) report these factors contributing to development of malnutrition among children who are admitted to St Francis hospital, and make appropriate recommendation to arrest the problem in the district.

1.2 **STATEMENT OF THE PROBLEM**

Malnutrition is still on the increase in both rural and urban areas of Zambia. The number of cases or admissions to health institution is one of the major problems facing the delivery of health care services.

Malnutrition is and has always been a community based problem and is a consequence of prevailing state of cultural, social and technical development and its eradication, needs community action.

About one in three children under the age of five years is malnourished as judged by height- for- -age (Stunting), weight- for- height (Wasting) and weight-for- age (under weight) (Ahrtag 1997).

Protein energy malnutrition includes all cases of nutritional growth failure in which there is deficiency in both calories and proteins (E.J. Ebrahim, 1995). It occurs when a child eats fewer calories than the body needs. Good food is needed for a person to grow and stay well. Many sicknesses are caused by not eating enough of good food. A person who is weak or sick because he or she does not eat the food his or her body needs is said to be poorly nourished or malnourished. He or she suffers from malnutrition (Javaheri et al, 1997).

Malnutrition kills, disables and causes immense suffering mainly because a malnourished child has a weakened body immune system, poor nutrition leads to growth faltering, inactivity and apathy so affects physiological, mental, emotional and social development. (UNICEF/WHO, 1997).

Malnutrition in children (0 - 5 years old) occur where poverty and low status of women prevent families regular access to adequate food, health services and sanitation and where it is difficult to ensure proper care and feeding of young children.

(Ahrtag, 1997).

Malnutrition is therefore recognised to be a serious health problem. The concern is justifiable since undernourished children have a high problem of death of more severe or protracted illnesses such as diarrhoea, respiratory tract infections, measles and other infections due to impaired immune response. (UNICEF, Zambia, 1992).

There is a high prevalence of malnutrition among children aged 0 - 5 in Katete district of eastern province. The number steadily increases as shown by available data of malnutrition trends of 1995 - 1996.

Considering the district covers a vast and spaciely populated area, there is need to explore the factors that contribute to the high prevalence of malnutrition in the district. The needs of these children aged between 0 - 5 years should be addressed and appropriate measures undertaken to arrest or to try by all means to reduce the number of admissions to St Francis Hospital.

Therefore, understanding what malnutrition is, its causes and consequences are, is very important so that effective measures can be put in place to reduce mortality rate in Katete district among infants.

1.3 **HYPOTHESES**

1. Mothers with lack of knowledge on food preparation distribution and feeding habits contribute to their children developing malnutrition
2. Scarcity of food in homes of large families, where family planning is not practiced, is a major factor to development of malnutrition

3. Ignorance pertaining to breastfeeding practices, early weaning and complete stoppage of breastfeeding in absence of abundant food or lack of supplementary foods given to children can lead to malnutrition.
- 4.** Mothers with poor education on food preparation, weaning and breast feeding practices have a high rate of malnutrition.
5. Presence of diarrhoea and diarrhoea related diseases can lead to malnutrition.
6. Poor yields of maize and other crops due to drought, poor soils, lack of fertilisers contributed to poor food security in respondents homes, hence children developed malnutrition.

1.4 **OBJECTIVES OF STUDY**

1.4.1 General objectives

To determine factors contributing to the development of malnutrition among children aged 0 - 5 years, at St Francis Hospital.

1.4.2 Specific objectives:

1. To determine whether mothers of malnourished children practice family planning to avoid frequent pregnancies.
2. To determine whether breastfeeding practices are associated with malnutrition.
3. To identify whether cultural beliefs, practice and customs are associated with malnutrition.

4. To determine whether food preparation, distribution and feeding habits are associated with malnutrition.
5. To determine whether diarrhoeal diseases or diarrhoeal related conditions are associated with malnutrition.
6. To identify if food insecurity in homes is associated with malnutrition.
7. To make recommendations to health providers at the hospital on how to effectively improve nutritional status of children under 5 in Katete district.
8. To determine the knowledge of the caretaker on malnutrition particularly food preparation and prevention of malnutrition in general.
9. To identify any other factors (other than the ones above) that contribute to development of malnutrition. e.g. divorces, death of the mother etc.

1.5 **ASSUMPTIONS OF THE STUDY**

Malnutrition is a condition occurring as a result of several factors operating concurrently in a community. No single factor alone can contribute to its cause but there are various factors associated with this disease entity.

The gravity of kwashiokor and marasmus in Katete still remains prominent despite efforts at the hospital to combat them. The need to address this issue of increasing malnutrition in the hospital and the district at large is vital. Good health of children means a health nation because children will be future leaders of the country.

The study closely seeks to investigate these factors which contribute to development of malnutrition among children aged 0 - 5 years, at St Francis Hospital. It assumes the

following factors contribute to this rate of malnutrition:

1.5.1 **Socio-economic factors**

Malnutrition prevails where families are of poor or low socio-economic status. This covers things like lack of income, large families with poor family planning, inadequate diet due to poor household food security. In Katete this may be considered to be one of the contributing factors because as a result of the above, children receive inadequate food in terms of quality and quantity and hence malnutrition sets in.

1.5.2 **Cultural factors**

The Study seeks to address the old traditional practices and customs pertaining to breast feeding in which case some traditions advocate that a mother should stop breast feeding immediately she discovers that she is pregnant, give child traditional herbs and or take child to the grandmother.

1.5.3 **Health related factors**

Children living in poor conditions are prone not only to diarrhoea but also other infectious diseases. The study will assume that chronic diarrhoea is one of the contributing factor, of which contaminated food and water is one source of diarrhoea. Chronic diarrhoeal diseases in children give rise to nutritional deficiency disorders. But also it will consider other health related factors which can lead to nutritional deficiency disorder as contributory factor to malnutrition. For example, worm infestation.

1.5.4 **Health services oriented factors**

e.g. Distance

Some villages are situated very far away from rural health centres of the district. People have to cover more than five kilometres to reach the nearest rural health centre and this may mean that they seek help of the health provider once the condition sets in. Some mothers only attend under-five clinics not because they need their children to be weighed or given immunisations but because the child has developed malnutrition and it has reached an advanced stage. Normally, they do not attend under-five clinics because of the distance involved. Lack of attendance of under-five clinics means lack of knowledge and supervision of mothers by health providers on nutritional issues. This means that their children have a high chance of developing malnutrition. The study will assume that inadequate child care resulting from separation, death of mothers and divorces, inadequate knowledge on food composition, preparation, feeding and weaning practices are made worse by long distances involved and absence of nutritional rehabilitation centres at rural health centre level.

1.5.5 **Natural factors or disasters**

The study also assumes that the untimely draught which affected most parts of Zambia has left some families without food. Drought has resulted in poor harvest. Hence the rate of malnutrition will still remain high. Findings of the study will be made available to the hospital, recommendation will be made appropriate intervention be suggested so that certain measures could be undertaken to reduce the rate of malnutrition in the district.

1.6 **OPERATIONAL DEFINITIONS**

1. **Protein energy malnutrition(PEM)**

All cases of nutritional growth failure in which there is deficiency of both calories and proteins, presenting as either kwashiorkor or marasmus or a mixture of the two namely, marasmic-kwashiorkor.

2. **Weaning**

Process by which an infant gradually becomes accustomed to full adult diet.

3. **Mortality**

Likelihood of dying from a disease.

4. **Micronutrient**

Nutrients required by the body in small amounts such as vitamins and some minerals.

5. **Micronutrient malnutrition**

A form of malnutrition referred to cases of insufficient intake of substances mainly as mineral and vitamins which are required in small amounts.

6. **Height-for-age**

Indicator of past nutrition. Child is short or stunted, shortness caused by long term food deprivation and chronic illness.

7. **Weight-for-age**

Also referred to as under nutrition, is a combination of height-for-age and weight for height. It is caused by chronic and acute food deprivation.

8. **Weight-for-height**

An indicator of present state of nutrition. Child is thin or wasted, thin caused by frequent acute and short term severe infections or food deprivation e.g. in cases of marasmus.

9. **Family planning**

Process of regulating reproductive health by couples, individuals even families.

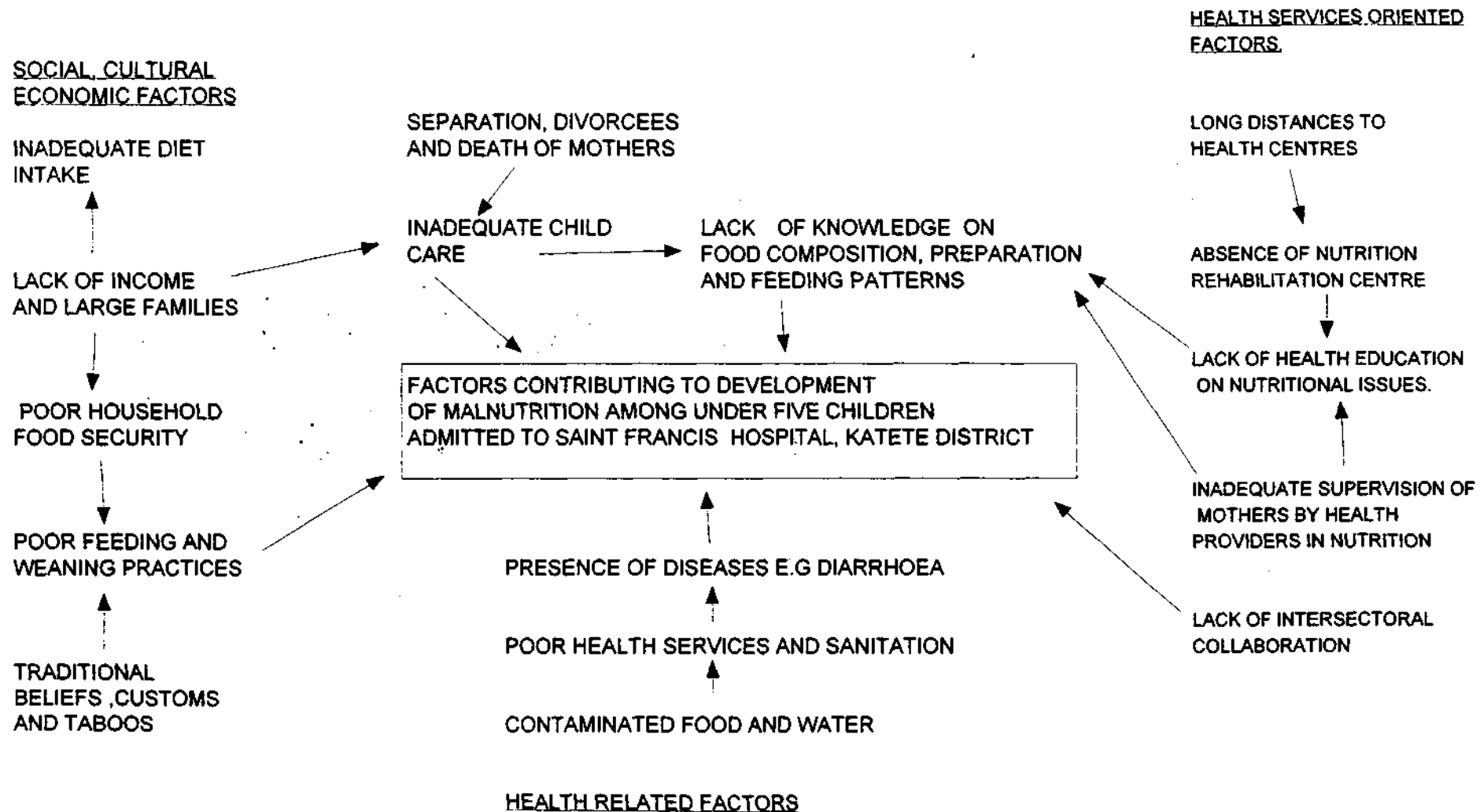
10. **Immune system**

The body defence mechanism against disease and infection

1.7 VARIABLES AND CUT OFF POINTS

VARIABLES	INDICATORS	CUT OFF POINTS
<u>DEPENDENT VARIABLES</u>		
RATE OF MALNUTRITION	HIGH LOW	3 DEATHS IN FIVE ONE DEATH IN FIVE
<u>INDEPENDENT VARIABLES</u>		
SOCIAL STATUS	HIGH LOW	ADEQUATE FOOD INADEQUATE FOOD
FOOD SECURITY	GOOD BAD	3 MEALS AND MORE PER DAY LESS THAN 3 OR NO MEALS PER DAY
EDUCATION	EDUCATED NOT EDUCATED	SECONDARY LEVEL PRIMARY LEVEL
DISTANCE	VERY FAR NEAR	MORE THAN 5KM FROM RURAL HEALTH CENTRE LESS THAN 5KM FROM RURAL HEALTH CENTRE
BELIEFS AND PRACTICES	GOOD BAD	POSITIVE NEGATIVE
DISEASE	PRESENT ABSENT	PREVAILING DISEASES EG. DIARRHOEA WORM INFESTATION NO DISEASE PREVAILING AT ALL

FIG : PROBLEM ANALYSIS DIAGRAM



CHAPTER 2

2.0 LITERATURE REVIEW

Zambia nutrition statistics still reveal malnutrition among children aged 0 - 5 years still on the increase and it is rated to be among major health problems leading to high mortality rate.

According to the Zambia Demographic and Health Survey (1996) it published the following report about nutritional status of children: childhood nutritional status overall in Zambia is 42% of children under the age of five are classified as stunted (low-for-height) and 18% are severely stunted, 4% are wasted (low weight-for-height).

The ZDHS (1992) published the following report, that 40% of Zambian children under the age of five were stunted, 25% were severely stunted and 5% were wasted. In comparison between 1996 findings and 1992 findings of nutritional status of children in Zambia, there was little change in these measurements.

Another study was conducted in Monze district (1997); study of factors associated with high rate of malnutrition among children aged 0 - 5 years, a cross sectional survey in sampled chief areas. Sikalutu et al (1995) reported that the trend of malnutrition in the district had risen.

This report revealed the risk factors associated with malnutrition in Monze but never addressed the most important factors such as food security in homes, and the impact of HIV/AIDS related conditions on the orphans.

In Mwinilunga, a similar study was done at the district level; determining factors contributing to high rate of malnutrition in age 6 - 23 months (Habanyama et al 1990), considering that not every child between 0 - 5 years attended the under-five clinic the possibility of having more malnourished cases in the community can not be overlooked. In this study, focus was on low birth weight, illness, inadequate diet (quality) low food intake (quantity) poor under-five clinic. The study left out factors such as knowledge in relation to food preparations weaning practices and further explore on how low nutrition which would have marked relationship to the problem. The other aspect of exploring on extent of malnutrition on all under-five was left out. The target group was 6 - 23 months instead of all age groups.

Mrs A Seine et al (1988) did a survey to the background of malnutrition among children in Kabompo district. (A pilot study). She revealed that too little food was available for children. These crops which were grown were of too little value and best crops were sold out. However, in her study she did not address the issue of availability of nutritional rehabilitation centres in the district to educate mothers, and knowledge of mothers had on caring for children more especially on food habits and patterns of food distribution in homes.

A national workshop on child malnutrition was held between 2nd - 4th August 1984, at Commonwealth Youth Programme Africa Centre, Lusaka. Presenters at this workshop gave various supporting figures on prevalence of malnutrition in Zambia, that it is still on the increase.

The National survey on Primary Health Care reviewed that 28% of all children below the age of 5 were below line of children growth and 32% were below 0 - 11 months of age category (indicating poor weaning practices) and 33% of 12 - 33 months of age were below lower line. The

question is, does this hold water still since the survey was done about 14 years ago, what factors were being looked at in this study?

The snap survey conducted in Lusaka (21 - 27th November 1997) revealed that paediatrics admissions and deaths constituted 21% and 75% of total admissions at University Teaching Hospital, respectively. Out of 139 children who died at UTH 138 (99%) were below the age 5 years while 43% were below one year of age which included 191 neonates.

In the same study nearly 60% of 156 sick children admitted to UTH who were considered for a study were found to be malnourished coming from peri urban compounds and 36.5% reported cases to be suffering from malnutrition during the same month.

The results of the workshop revealed such factors as low food production, poor family spacing poor sanitation and poor budgeting as contributing factors to the cause of malnutrition but it did not cite the time of the year (months) when malnutrition cases are high at the hospital and when they are low. It did not also look at the level of knowledge of the care taker has on malnutrition, source of income etc.

Mtey PJB et al (1989), also did a study in Tanzania; the prevalence and contributing factors to protein energy, malnutrition amongst under five years in district of Sengerena, he did not touch the role or multi sectoral collaboration to be related to prevalence of malnutrition in Tanzania.

In Zambia, the Health Reform policies have put emphasis to provide Zambians with equity of access to cost effective quality care as close to the family as possible (Health policies, 1992). This means provision of better management to quality health care for the individual family and the

community.

To achieve the above vision, the government of Zambia has adopted primary health care strategy as the most appropriate tool.

In view of this, research studies at various national levels are being conducted exploring major health problems like malnutrition in children aged 0 - 5; the intention and purpose of this research is to focus on family level and reveal factors contributing to the development of malnutrition among children, at St Francis and find the means of solving them through appropriate and accurate intervention measures.

CHAPTER 3

3.0 RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

The study was descriptive in nature. It is thought to be the most appropriate in determining factors contributing to the development of malnutrition among children, aged 0 - 5 years, admitted to St Francis Hospital, Katete.

According to Treece and Treece (1982) they defined descriptive study or research as the study that does not involve experiments but rather aims at describing the existing phenomena.

It was found to be appropriate because it was less expensive as respondents remained in the hospital environment where their children were receiving treatment.

Co-operation was easily obtained.

3.2 RESEARCH SETTING

The research was conducted in the Paediatric Unit of St Francis Hospital, called Mbusawa-Bwino (meaning Good Shepherd). St Francis Hospital is the only hospital in Katete district. It also acts as a referral hospital for the eastern province, Zambia, particularly for surgical, orthopaedics, obstetrics and eye patients. The hospital not only provides curative services but also preventive and rehabilitative services, both at hospital and outreach activities. It provides training for medical students (from University of Zambia, School

of Medicine) surgical Registrars, enrolled nurses and enrolled midwives. (St Francis Hospital, Annual report 1996).

3.3 **STUDY POPULATION**

The study population comprised of all women, young mothers, fathers, grandmothers (or any care taker) looking after a child with malnutrition. The population was from different tribes of eastern province with varied background (Chewas, Ngonis, Nsengas, Tumbukas). These were from different villages.

3.4 **CRITERIA FOR SELECTION**

All subjects with malnutrition aged five years and less, admitted to the hospital were used in the study.

3.5 **SAMPLE SIZE**

Sample size comprised of 50 subjects. This size consisted of all mothers or caretakers with malnourished children who were five years and less were used in the study.

3.6 **DATA COLLECTION TECHNIQUE**

For the purpose of the study, a structured interview (questionnaire) was used. It was selected because of the following reasons:-

- (i) Interviews were face to face, women or any care taker who could not read or write were still be interviewed.

- (ii) The researcher/research assistants had an opportunity to read physically non verbal messages and also see the condition or severity of malnutrition in a child in hospital
- (iii) The method was relatively simple, rapid in gathering information and the data was easily accomplished within a given specified time.
- (iv) Certain responses were explored in depth by probing in/or repeating subjects answers. (Treece and Treece, 1982, p 245). However, the questionnaire had the following drawbacks:-
 - (i) Face to face interview or interaction decreased the respondents freedom of opinion
 - (ii) Respondents/subjects felt uneasy because the subject (malnutrition) being studied was rather personal negligence on the part of the care taker.
 - (iii) The interview schedule was time consuming because of the large number of respondents being involved.
 - (iv) Some useful information was be missed out if the respondent lost her trend of thought while waiting for the researcher/research assistant to finish writing.

3.7 **CULTURAL/ETHICAL CONSIDERATION**

Before data was collected, written permission was sought from the Nurse Advisor of St Francis Hospital, Katete.

- A verbal consent was obtained from the interviewee before conducting an interview, a written consent was provided or attached to each questionnaire. The respondent was, requested to sign after accepting to be interviewed.

- Information collected was treated highly confidential until results were made available to the hospital authorities or any sponsors of the study.
- No names of respondents were included in the questionnaires. Respondents were identified by questionnaire numbers or client numbers.

3.8 **PILOT STUDY/PRETESTING**

The pilot study was conducted at University Teaching Hospital, Paediatric Ward, A07.

The purpose was to pre-test and assess validity of data collecting tool after which necessary amendments or modifications were made to the final questionnaire.

10 subjects were selected to assess respondents reaction.

CHAPTER 4

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 INTRODUCTION

The purpose of the study was to determine factors contributing to the development of malnutrition among children aged 0 - 5 years at St Francis Hospital, Katete.

Polit and Hungler (1983) stated that data collected is not useful unless it is arranged in a meaningful manner so that it is possible to draw patterns of relationships.

Following collection of data from the ward (mbusa-wa-bwino), each questionnaire was checked for accuracy to ensure that questions were answered. Ordering of information was done according to research questions. Responses were then processed and categorised. Data was presented in summary form of tables. Cross tabulations for the variables were done in frequencies and percentages. Data was processed manually using data master sheets and a scientific calculator.

TABLE 1: **SOCIAL DEMOGRAPHIC DATA FREQUENCIES**

Sex	FREQUENCY	PERCENTAGE (%)
Male	5	10
Female	45	90
Total	50	100
<u>Age group of respondents</u>		
11 - 20	7	14
21 - 30	17	34
30 - 40	12	24
40 and above	14	28
Total	50	100
<u>Marital Status</u>		
Single	10	20
Married	23	46
Divorced	7	14
Widower	10	20
Total	50	100
<u>Relationship of care taker to the child</u>		
Mother	36	72
Grand mother	9	18
Father	5	10
Aunt	-	-
Total	50	100
<u>Age of hospitalised child</u>		
6 - 18 months	7	14
19 - 31 months	30	60
32 - 44 months	9	18
Does not know	4	8
Total	50	100

<u>Family Size</u>		
1 - 5 members	5	10
6 - 10 members	31	62
11 and more	14	28
Total	50	100
<u>Educational Level</u>		
Primary	14	28
Secondary	5	10
College	-	1
None	31	62
Total	50	100
<u>Occupation</u>		
Subsistence farmer	30	60
Marketeer	15	30
Housewife	5	10
Total	50	100

The table shows that the majority, 45 (90%) of those interviewed were females. The age distribution of most of them, 17 (34%) was between 21-30 years and 23 (46%) were married.36(72%) looked after their own children. The age range of hospitalised children, most of them 30(60%)was between 19-31months. 31(62%) of respondents had family size of 6-10 members. 31(62%) of those interviewed had no educational attainment at all and most 30(60%) survived as subsistence farmers.

}

TABLE 2: **BREASTFEEDING AND WEANING PRACTICES**

TYPE OF PRACTICE		RESPONDENTS	PERCENTAGE
Stopped breastfeeding suddenly	Yes	22	44
	No	14	28
	N/A	14	28
	Total	50	100
Child taken to its grandmother	Yes	13	26
	No	23	46
	N/A	14	28
	Total	50	100
Child given traditional medicine	Yes	20	40
	No	16	32
	N/A	14	28
	Total	50	100
Child given supplementary feeds	Yes	30	60
	No	6	12
	N/A	14	28
	Total	50	100

The majority of respondents, 30 (60%), gave their children supplementary feeds at the time of weaning the children, 22 (44%) stopped breastfeeding suddenly, 20 (40%) gave their children traditional medicine while 13 (26%) took their children to be looked after by their grandparents.

TABLE 3: PREGNANCY IN RELATION TO BREASTFEEDING PRACTICES OF RESPONDENTS

PREGNANCY	BREASTFEEDING			
	YES (GOOD)	NO (BAD)	N/A	TOTAL
Yes	2(4%)	5(10%)	-	7(14%)
No	15(30%)	14(28%)	-	29(58%)
N/A	-	-	14(28%)	14(28%)
Total	17(34%)	19(36%)	14(28%)	50(100%)

The table shows that among 19 (30%) of respondents who stopped breastfeeding, 5 (10%) were pregnant while 14 (28%) were not pregnant

TABLE 4: AGE AT WHICH RESPONDENTS CHILD STOPPED BREASTFEEDING

AGE IN MONTHS	RESPONDENTS	PERCENTAGE (%)
6 - 18 Months	26	52
19 - 31 Months	20	40
32 - 44 Months	-	-
Does not know	4	8
Total	50	100

The table shows that the majority of respondents' children, 26 (52%), stopped breastfeeding at the age of 6 - 18 months. 20 (40%) stopped breastfeeding at the age of 19 - 31 months while 4 (8%) did not know the age at which the child stopped breastfeeding.

TABLE 5: RESPONDENTS CHILD AGE IN RELATION TO THE AGE AT WHICH CHILD STOPPED BREASTFEEDING

CHILD'S AGE IN MONTHS	AGE (IN MONTHS) AT WHICH CHILD STOPPED BREASTFEEDING					
	6-12	13-19	20-26	27-33	Does not know	Total
6-8	5(10%)	-	-	-	-	5(10%)
19-31	4(8%)	21(42%)	6(12%)	-	-	31(62%)
32-44	1(2%)	1(2%)	(14%)	1(2%)	-	10(20%)
Does not know	-	-	-	-	4(8%)	4(8%)
Total	10(20%)	22(44%)	13(26%)	1(2%)	4(8%)	50(100%)

The table shows that the majority of respondents hospitalised children, 31 (62%) were aged 19 - 31 months. Among these, 21 (42%), stopped breastfeeding at the age between 13 - 19 months.

TABLE 6: NUMBER OF TIMES RESPONDENTS GAVE WEANING FEEDS TO THEIR CHILDREN PER DAY

NUMBER OF TIMES OF FEEDS	RESPONDENTS	PERCENTAGE (%)
2 times	8	16
3 times	31	62
4 times	11	22
Total	50	100

The table shows that the majority of respondents, 31 (62%) gave weaning feeds to their children three (3) times per day.

TABLE 7: NUMBER OF RESPONDENTS CHILDREN WHO HAD DIARRHOEA PRIOR TO ADMISSION

DIARRHOEA	RESPONDENTS	PERCENTAGE (%)
Yes	38	76
No	12	24
Total	50	100

The table shows the majority of respondents' children, 38 (76%) had suffered from diarrhoea prior to admission.

TABLE 8: NUMBER OF RESPONDENTS CHILDREN WHO HAD OTHER INFECTIONS APART FROM DIARRHOEA PRIOR TO ADMISSION

INFECTION	RESPONDENTS	PERCENTAGE (%)
Worms	14	28
Coughing	15	30
Fever	21	42
Total	50	100

The table shows that the majority of respondents children, 21 (42%) had fever prior to admission.

TABLE 9: FAMILY SIZE IN RELATION TO HOUSEHOLD FOOD SECURITY

FAMILY SIZE	FOOD SECURITY		TOTAL
	GOOD (ADEQUATE FOOD)	BAD (INADEQUATE FOOD)	
1-5 members	4(8%)	12(24%)	16(32%)
6-10 members	8(16%)	23(46%)	31(62%)
11 and above	-	3(6%)	3(6%)
Total	12(24%)	38(76%)	50(100%)

The table shows that the majority of respondents, 38 (76%), had bad (inadequate) household food security, out of which 23 (46%) had the family of 6-10 members.

TABLE 10: NUMBER OF RESPONDENTS CHILDREN IN RELATION TO HOUSEHOLD FOOD SECURITY

NUMBER OF CHILDREN	FOOD SECURITY		TOTAL
	GOOD (ADEQUATE)	BAD (INADEQUATE)	
1-4	4(8%)	14(28%)	18(36%)
5-8	6(12%)	21(42%)	27(54%)
9 and above	-	5(10%)	5(10%)
Total	10(20%)	40(80%)	50(100%)

The table shows that the majority of respondents, 40 (80%) had bad (inadequate) household food security, out of which 21 (42%) had 5-8 number of children in their houses.

TABLE 11: FAMILY SIZE IN RELATION TO FAMILY PLANNING PRACTICE

FAMILY SIZE	FAMILY PLANNING		TOTAL
	YES	NO	
1-5 members	7(14%)	8(16%)	15(30%)
6-10 members	11(22%)	24(48%)	35(70%)
11 and above	-	-	-
Total	18(36%)	32(64%)	50(100%)

The table shows that the majority of respondents 32 (64%), did not practice family planning, of those, 24 (48%) had 6-10 members in the family.

TABLE 12: EDUCATIONAL LEVEL IN RELATION TO THE LEVEL OF KNOWLEDGE OF RESPONDENTS ON PREVENTION OF MALNUTRITION

EDUCATIONAL LEVEL	PREVENTION OF MALNUTRITION		TOTAL
	NOT EDUCATED	EDUCATED	
Primary	1(2%)	11(22%)	12(24%)
Secondary	2(4%)	28(56%)	30(60%)
College	-	-	-
None	-	8(16%)	8(16%)
Total	(6%)	47(94%)	50(100%)

The table shows that the majority of respondents, 47 (94%) were knowledgeable about prevention of malnutrition 28(56%) being with secondary education.

TABLE 13: EDUCATIONAL LEVEL IN RELATION TO FAMILY PLANNING PRACTICES

EDUCATION LEVEL	FAMILY PLANNING		TOTAL
	YES	NO	
Primary	11(22%)	6(12%)	17(34%)
Secondary	7(14%)	1(2%)	8(16%)
College	-	-	-
None	7(14%)	18(36%)	25(50%)
Total	25(50%)	25(50%)	50(100%)

he table shows that the majority of respondents 25 (50%) did not have education level. 18 6%) did not practice family planning and 7 (14%) practised family planning.

**TABLE14: AVAILABILITY OF FIELDS FOR GROWING CROPS IN RELATION
TO HOUSEHOLD FOOD SECURITY**

FIELD AVAILABLE	HOUSEHOLD FOOD SECURITY		TOTAL
	GOOD (ADEQUATE)	BAD (INADEQUATE)	
Yes No	9(18%)	25(50%) 16(32%)	34 (64%) 16 (32%)
Total	9(18%)	41(82%)	50 (100%)

he table shows that the majority of respondents 41(82%) had bad food security, out of which 5(50%) had fields for growing crops.

CHAPTER 5

5.0 DISCUSSION OF FINDINGS

5.1 INTRODUCTION

The results of this study are based on the analysis of responses from fifty (50) respondents. That is, forty-five (45) women and five (5) men, with malnourished children aged 0 - 5 years. The aim of the study was to determine factors contributing to the development of malnutrition among children aged 0 - 5 years at Saint Francis Hospital, Katete.

5.2 DISCUSSION OF FINDINGS

The respondents in the study were women (45) and men (5) as shown in Table one. The age range of the majority 17 (34%) was between 21 - 30 years. In our country this age range is claimed to be highly productive and sexually active. (ZDHS, 1996).

Twenty-three, 23(46%) out of fifty, 50(100%) respondents were already married and the majority, 36 (72%) of them were looking after their own children. The cases of malnutrition were high among children aged 19 - 31 months. Most respondents, 31(62%) never obtained attained any educational level at all and the majority, 31(62%) had the family size of 6 - 10 members. 30 (60%) of respondents' occupation was subsistence farming. They mainly grew maize, groundnuts, cotton and tobacco on a small scale.

From these findings, one can conclude that most respondents of malnourished children were illiterate. They might have lacked knowledge on how to look after their own children, especially the knowledge on nutritional issues. Though, they were small scale farmers, the food given to their children was not nutritionally adequate to meet nutritional demands for these children, whose main diet was mainly composed of maize.

According to National Food and Nutrition Commission report (August 1996), it stated that families especially mothers are aware of nutritional demands for their infants. They draw their knowledge on previous experience and on daily contact with their children. It further stated that illiteracy on the mothers would be encountered in all spheres and as such, health workers should be prepared to listen carefully to mothers and take concerns seriously to improve the knowledge of these mothers on nutrition.

In support of these findings by the National Food and Nutrition Commission, health education should be intensified to the mothers or to the community with a high rate of illiteracy, because illiteracy is backed by ignorance. And as such, delivery of health care services would be ineffective (IBFAN Africa, 1994).

Data on breastfeeding and weaning practices (Table 2) revealed that the majority of respondents, 30(60%) gave their children supplementary feeds at the time of weaning them, 22(44%) of respondents stopped breastfeeding their children suddenly, 20(40%) gave their children traditional weaning medicines, while 13(26%) took their children to be looked after by their grandparents, after their children had stopped breastfeeding.

Breastfeeding and weaning practices vary from one family to another and from one community to another. The choice is based on traditional beliefs and practices which according to the researcher's observation, had negative effects on breastfeeding and weaning of children.

WHO (1981) stated that breastfeeding and weaning practices are associated with various factors with consequent problems of malnutrition. It further stated that breastfeeding itself is considered a natural instinct which does not require any learning in the humans. But, for its successful continuation it has to be learned and most mothers need extensive advice and support. But what form this support takes is dependent on mothers social environment and her needs.

According to this statement and the observation shown from most respondents, there was need to educate the respondents on breastfeeding and weaning practices. Active encouragement and participation by mothers would play a good role to discourage negative traditional attitudes exhibited by most respondents.

Though the majority of respondents gave supplementary feeds at weaning stage, to their children, one would conclude that the supplementary feeds were of low nutritional value. The feeds given to these children might have been deficient in nutrients to prevent malnutrition.

In order to prevent malnutrition in children at weaning stage, children must receive sufficient nutrients. This means appropriate diets, exclusive breastfeeding, then continued breastfeeding complemented with other nutritious foods (Ahrtag, 1997). Respondents needed extensive education on patterns of breastfeeding as well.

Table 3 shows data of pregnancy in relation to breastfeeding practices among respondents. The data revealed that a total of 19(36%) of respondents stopped their children from breastfeeding. 5(10%) out of 19(36%) of respondents who stopped their children from breastfeeding were found to be pregnant, while 14(28%) were not pregnant. Experience and observation have shown that most mothers abandon breastfeeding once they discover that they are pregnant, despite the age of a breastfeeding child because of the belief that milk from a pregnant mother causes diarrhoea and subsequent death of a breastfeeding child.

A study conducted by Nyumbu (1979) in a paediatric unit in Zambia revealed that mothers stopped breastfeeding between 7 - 9 months. Most of them stopped because they were pregnant and they were afraid the children might have diarrhoea because the milk of a pregnant mother is considered unclean. In cases where a mother find herself pregnant, she usually stops breastfeeding, immediately. This has adverse effects on the child in that he or she may receive inadequate amounts of appropriate foods. The child is then inclined to refuse the foods and this would result into malnutrition.

Weihenya (1996) reported in Kenya that most children started developing malnutrition after the age of six months when mothers milk became insufficient or when child was suddenly weaned at one year due to mother's pregnancy. What was important was that the foods used to supplement or replace breast milk did not have any energy and protective values.

It is therefore important to convince mothers that there is nothing wrong with breastfeeding the child while the mother is pregnant. Sudden stoppage from breastfeeding an infant or child has a

stopped from breastfeeding. But other respondents had poor yields of groundnuts. These respondents stated that they gave their children plain porridge as supplementary feeds, with salt added to it to make it palatable.

This poor diet, used at weaning stage must have definitely contributed to the development of malnutrition in such cases.

Some respondents stated that their children had stopped breastfeeding because of the death of the mother of the hospitalised children, child being on and off sick, mother had developed breast abscess while others felt that their hospitalised children had grown up.

It was observed during the interviews that a lot of factors bound breastfeeding practices. But what could be borne in mind was that most respondents did not give their children, who had stopped breastfeeding nutritionally adequate feeds.

Table 5 shows the relation of the child's age with the age at which breastfeeding stopped.

Freud and Kalumba (1984) in their study in Luampungu rural, in Zambia found that the average weaning age was 1.3 years. The duration of breastfeeding was short especially where weaning foods were in abundance.

Findings revealed that the majority of the hospitalised children, 31(62%) were aged between 19 - 31 months. Now, 21(42%) of these 31(62%) stopped breastfeeding at the age between 13 - 19 months. These results are similar to the findings of Freud and Kalumba (1984) concerning the average weaning age.

Chipumbu (1997) in her study revealed that most children who stopped breastfeeding, developed malnutrition one year after breastfeeding had been stopped. This survey was conducted at University Teaching Hospital. A Block. Her results supported those conducted by Waihenya (1996) in Kenya who had similar findings also, that showed most children started developing malnutrition at age of six months to one year when mothers milk became insufficient or child weaned off, suddenly.

To justify the results of these findings in which children developed malnutrition at an average age of one year post weaning and breastfeeding, the number of times or frequency of feeds was worth taking note of. Table 6 of the findings revealed that, 31(62%) of the respondents fed their children three (3) times a day. The low socio-economic group in Zambia may have two (2) or three (3) meals per day depending on whether food is available or not.

Observations and experience have shown that the children's feeding patterns are made to fit into adult feeding patterns. In this study, feeding children three (3) times a day was inadequate for a growing child whose stomach requires frequent meals.

Gurney (1993) suggested that frequency of feeding a child should increase rapidly until it is able to take at least five (5) meals a day, in addition to breast milk food should be rich in dietary energy. Snacks such as fruits in between meals should provide extra Vitamins which are necessary to help combat infections. Appetite of a child also plays a role. Ghosh (1985) suggested that small quantities of soft meals should be offered to the child and be persuaded to eat.

Although respondents know that their children should be fed on demand, the need to increase feeds as the child grows, they were unable to do so because of scarcity of foods in most homes of respondents, as revealed by Table 9, 10 and 14. It could be concluded that, the children received less food, both in quality and quantity, and that the frequency of feeds was inappropriate for a growing child.

Table 7 revealed, 38(76%) of respondents children had diarrhoea prior to admission. The conclusion over the cause of that diarrhoea in those admitted was rather a complex one.

Molla et al (1993) reported that weaning is often a protracted process associated with diarrhoea of six (6) to nine (9) episodes per year, between six (6) and thirty-six (36) months of child's age. Children living in poor conditions are prone to have diarrhoea.

He also stated that recurrent diarrhoea and consequential malnutrition occur more commonly where standards of personal hygiene are not maintained.

This suggestion could partly support the revelations of the findings, because observations made

during the interviews showed that the respondents' children developed diarrhoea at the age when weaning foods were being introduced. It could be evident at this stage that preparation and storage of left over weaning foods could have predisposed the children to have diarrhoea. Diarrhoea could have also occurred where children were mobile and active and they ate any food or dirty items they came across.

Chronic diarrhoea would undermine child's health and eventually malnutrition occurs (G.T. Ebrahim, 1995). Most respondents used pit latrines. Experience and observations have shown that most of these pit latrines are a source of diarrhoea diseases, if not properly constructed. Pit latrines can be dangerous to the users, spreading infections through contamination of water and food. Flies from the toilets settle on uncovered food and convey micro-organisms responsible for diarrhoeal diseases. And as such, children suffer from recurrent episodes of diarrhoea.

Health education is the most important instrument for prevention of recurrent diarrhoea and consequent malnutrition (International Children's Centre, 1995).

The respondents and the community at large should be educated on good sanitation of the environment, proper use of pit latrines and proper preparation, handling and storage of water and food.

Table 8 revealed that the majority of respondents' children 21(42%), presented with fever apart from diarrhoea prior to admission. Malarial fever was common among hospitalised children and that could have been attributed to lowered resistance to infection.

Andrew T. Fiona (1979) in his book entitled "Malnutrition and Infection", stated that infections like Broncho pneumonia and Tuberculosis are commonly associated with malnutrition. He further stated that skin infections, oral thrush and other similar forms of localised infections are also common. Diagnosis is made difficult by the absence of normal physiological response to infection.

Similarly, the hospitalised children presented with diarrhoea of varying degrees, scaly skin, coughs and worm infestation, along with fever. Some were being suspected to have HIV infection while others were being suspected to have tuberculosis. But the magnitude of these fevers needed close examinations.

To prevent cross infection in malnourished children whose immunity was lowered, overcrowding was to be avoided, provision of adequate Vitamins was essential in the management of all cases (G.J. Ebrahim, 1995).

It could be concluded that fever in those hospitalised children could have been attributed to localised infections which most of them exhibited.

The percentage of malnutrition was found to be high among those who had bad household food security. The family size was found to be related to malnutrition. This was revealed by the findings on Table 9 which shows that out of 38(76%) respondents who had bad household food security, 23(46%) were found to have the family size of 6 - 10 members.

Table 10, similarly revealed that food was scarce in homes where the number of children was high. Results of this table revealed that 21(42%) out of 40(80%) of respondents had 5 - 8 number of children in their homes. Table 14 data on availability of field for growing crops in relation to food security, also reveals the same sad story. This data sought to determine whether household food insecurity was as a result of non availability of fields. Since most respondents were subsistence farmers. The results revealed that the majority of respondents 41(82%) had bad household food security, 25(50%) of them had fields for growing crops.

One can conclude that bad household food security was directly connected to the development of malnutrition, because observations made during the interviews of food security showed that, generally, most respondents had inadequate food reserves in their homes to last them through out the year.

At the time of the study, most respondents expressed their concern over unavailability of food in their homes. The yields of maize and groundnuts from their fields were poor.

Draught was cited as the major cause of poor yields leading to bad household food security. Other contributory factors of poor yields of most respondents were poor soils in the fields of respondents and lack of fertilisers to improve crop production.

According to Javaheri et al (1997) he pointed out the causes of food insecurity in Zambia as being draught, lack of income, lack of education on importance of quality diet inadequate food consumption patterns with little variety in food preparations and families do not store adequate food for the year round consumption of the whole family. This is so because of either lack of

knowledge of how much food is required and how to calculate it, lack of adequate storage facilities or economic pressures to sell the crop for cash.

His assumption about food insecurity could have been true because of what was observed from most respondents. This observation was revealed by data shown on Table 1 and Table 6. Apart from this, size of the family had a direct link with food insecurity in most homes of respondents.

Food was needed for most of respondents families. There was need to improve food security situation, otherwise cases of malnourished children would keep on increasing.

WHO (1993) stated some measures which are aimed at improvement of food security situations in households. It suggested that factors such as educational campaigns to raise the level of awareness amongst the populations on the importance of a good diet, change of traditional attitudes and social habits brought mostly as a result of social and spiritual education and crop diversification through promotion of food legumes, should be taken into consideration when dealing with food security in families and communities.

Table 11 presents data on size of family in relation with family planning practice. Results revealed that a total of 32(64%) of respondents did not practice family planning, and 24(48%) of these had 6 - 10 members in the family. The fact that most respondents did not practice family planning, one would conclude that this might have contributed to having a lot of children.

Observations over family planning practice showed that though respondents were being educated on family planning at antenatal clinics, they still expressed ignorance about it. One would think that probably the health education given was inadequate and inefficient.

According to the world fertility survey which was conducted in 1981, it revealed that family planning methods in most countries was under spread. One could conclude that, from this survey, most people are aware of the methods of family planning available at all institutions.

Observations during the interviews showed that there was still need to intensify health education on family planning. Most respondents expressed ignorance and their ignorance could have been attributed to lack of proper dissemination of information to eradicate deep rooted traditional beliefs and customs about the use of scientific methods of family planning.

Similarly, Table 13 shows data on educational level in relation with family planning practice. The results revealed that a total of 25(50%) of respondents did not practice family planning, and among these, the majority 18(36%) did not have educational attainment at all.

Queenan and Kamraan (1991) stated that there are a number of factors that may affect the effective use of family planning services. These factors could be limited knowledge, negative attitude of the users, providers negative attitude, non availability and non acceptability of the services.

During the interview what was observed was that though respondents were being educated on

family planning at clinics, hospitals and rural health centres, they never showed any positive attitude towards its practice. This negative attitude needed to be explored further. Most respondents stated that their husbands were not interested in the practice. This could partly explain why the practice was abandoned though they had information.

Hall (1968) stated that even if the wife is knowledgeable about the method, ignorance on the part of the men is likely to lead to non participation at best and opportunity at worst.

Onyango (1984) agreed with Hall by saying that in most societies, the husband is usually the dominant decision maker and the wife is expected to abide to his decision. Certain activities like family planning cannot be used overtime without the consent and co-operation of a man.

Experience and observation have supported Onyango about the attitude of most husbands. Husbands were not interested in the practice and respondents had no choice but to abandon the practice.

Table 12 shows data on level of knowledge on prevention of malnutrition, It was interesting to find that a total of 47(97%) were knowledgeable on prevention and 28(56%) of these were with secondary education.

The problem which was observed was though most of respondents were knowledgeable about malnutrition and its prevention, the knowledge acquired was not put into practice. It could be concluded that this problem was due to poverty and ignorance.

It was observed that most respondents had access to the health services provided by nearby health centres. The hospital visited the rural health centres occasionally during dry seasons, but roads were impassable during rain seasons

5.3 IMPLICATIONS TO HEALTH

The impact of malnutrition on mortality of children is much greater than one can think of. Malnutrition is one of the leading conditions which causes high death rate in children below the age of five years, because it causes continued ill health such that the child fails to develop adequately both physically and mentally.

The Zambian Government through the Ministry of Health, Ministry of Agriculture Food and Fisheries, National Food and Nutrition Commission and non-governmental organisations is much committed to reduce this fast growing rate of malnutrition.

It seems much more is needed. Among other things the government is doing is to give food relief to draught affected areas in the country where starvation has threatened the lives of the people. But it seemed not all are receiving this relief food.

Children are future leaders. A healthy child means a healthy nation. Children need proper nourishment in order for them to develop adequately. A lot of money is being spent by the Zambian government and other organisations to try and combat malnutrition. This money could be used to buy drugs in hospitals, clinics or rural health centres, or be used in other developmental projects.

Children aged between 0 - 5 years are exempted from paying for medical services, this means that they are highly subsidised. The **Zambian** government needs to train more nurses to cater for all children suffering from malnutrition. More **Community Health Nurses** are needed to follow-up and reach out cases in rural areas where services of mother and child care and family planning are lacking. **Community Health Nurses** need to supervise the community they are serving on child care, with special attention to issues pertaining to breastfeeding and weaning practices, good nutrition, prevention and management of diarrhoeal diseases.

Community Health workers also should actively participate in this venture. There is need to train more **Community Health Workers**, whose job is to mobilise and supervise their local people on matters relating to nutrition, environmental health, child care, safe water supply and management of minor illnesses such as diarrhoea.

Health service providers should intensify health education to families on required foods for growing children. They should visit families in their homes to demonstrate food preparation for the children, as well.

Above all, nurses should evaluate periodically the effectiveness of their professional practice.

5.4 **CONCLUSION**

The study sought to determine factors contributing to development of malnutrition among children aged 0 - 5 years at Saint Francis Hospital, Katete, Zambia.

In this study it can be concluded that malnutrition is associated with a number of factors which are closely interrelated.

The direct cause of malnutrition was found to be inadequate food (household food insecurity) in homes of most respondents. This was due to poverty.

In the study the related factors which were found to be associated with this disease entity were low level of education (illiteracy), negative traditional beliefs and practices concerning breastfeeding and weaning practices, for example, to stop the child from breastfeeding when the mother is pregnant, big family sizes due to inadequate family planning practices, little income and diarrhoeal diseases.

Eradication of malnutrition needs community participation because it is a community based problem.

5.5 RECOMMENDATIONS

In view of the findings from the study, I would like to make the following recommendations:

1. The study of this kind should be conducted on a large scale, that is, to cover the whole district or province, for generalisation purposes.
2. Hospital Health Workers should strengthen information education and communication. There should be collaboration with the community in the prevention of malnutrition. Emphasis should be based on exclusive breastfeeding, family planning, discouraging negative traditional attitudes towards breastfeeding, weaning and pregnancy. Hospital outreach services should be expanded to follow-up cases of malnourished children for supervision of their nutritional status growth monitoring and assessment of their development.
3. Village Health Neighbourhood committees should be encourage formation of women clubs where common problems such as malnutrition could be discussed for the benefit of all women in the communities.
4. Villagers (communities) to improve household food security, they should grow draught resistant crops such as cassava, millet and sorghum. Nutritious crops such as soya and beans should be encouraged to be grown. Rearing of chickens should be encouraged. Keeping of farm animals such as goats and pigs should be encouraged. Technical knowledge on new farming methods should be imparted in subsistence farmers.
5. Government should subsidise on fertilisers so that subsistence farmers should afford it. Necessary farming incentives should be provided to subsistence farmers.

6. There is need to increase use of mass media for awareness towards fight against malnutrition.
7. Non-governmental organisation should be involved continuously in the fight against malnutrition.

5.6 LIMITATIONS OF THE STUDY

During the study, several limitations were observed. The study was carried within the busy school calendar of the researcher. This made it difficult to concentrate on the research study at the expense of other courses.

The small sample size of fifty (50) was a result of time limit. Subjects interviewed were only those whose children were admitted with malnutrition. As such, findings could not be generalised to a larger population in Katete District, the whole province or country.

REFERENCES

1. Abdellah, GF, and Levine E, (1965) Better patient care through nursing research. New York McMillan Publishing Company.
2. Andrew T and Fiona W, (1989) Malnutrition and infection, nutrition policy discussion paper No. 5. WHO Geneva.
3. Belldin B et al (1984) Child Health. Kenya. African Medical Research Foundation
4. Bhat. G.J. (1989) Morbidity and mortality among infants and children, National Policy NCDP, Lusaka
5. Chongo D K et al (1993) Africa Nutrition: Nutrition and Health Status of young children in Zambia, NFNC, Lusaka
6. Cooper R H (1985), Control of acute diarrhoeal disease in children, a document for nurses, Social workers and Teachers, Paris, International Children s Centre.
7. Diarrhoea dialogue (1993) Diarrhoea and malnutrition. Ahrtag, London.
8. Ebrahim G J (1985) Paediatric Practice in developing countries, ELBS, London.
9. Ebrahim G J, (1985) Social Community Paediatrics in developing countries. ELBS, London.
10. FAO/WHO (1993), Nutritional issues in food aid; Symposium report, National Policy discussion paper No. 12, UN, Geneva.
11. FAO/WHO, Nutrition and development (1992), A global assessment.
12. Feacham A, (1985) Water, Excreta, behaviour and diarrhoea, Diarrhoea Dialogue. London Ahrtag.
13. Ghoshi S, (1985), Feeding the anorexic child, Diarrhoea Dialogue, London, Ahrtag.
14. Graise, Cross and Nsemukila (1996) ZDHS. Lusaka.
15. Gupta and Mwamba (1976) Study of malnourished children in Tanzania, social and cultural aspects, Journal of Tropical Paediatrics and Environmental Child Health
16. Gurney M, (1981) From Breast to family diet Diarrhoea Dialogue, London Ahrtag
17. Habanyama K et al (1990), Factors contributing to the high rate of malnutrition in age 6-23 months in Mwinilunga district.
18. Handia P, (6th year medical student 1986), A case control study on the causes of malnutrition for children admitted at UTH. Lusaka.

19. International Nutritional Planners forum (1985), Report on Nutrition and Diarrhoeal disease control
20. Javaheri et al (1997) Food legumes for better nutrition, MAFF, Lusaka.
21. Jelliffe D B, (1968), Child health in tropics, 3rd edition, Pan American Health Organisation, Washington DC.
22. John D K (1979), Nutrition Almanac, Mac Graw Hill paper back, Revised Edition.
23. Judith E. and Richard C. (1984) Finding the causes of child malnutrition, A community hand book, task force on world hunger, Atlanta.
24. G H Lowney (1979) Growth and development of children, 7th edition, year book medical publishers, London.
25. Maurice K et al (1997) Medical Care in Developing Countries A Symposium from Makarere, Kenya.
26. Maurice K et al (1979), Nutrition in developing countries, Oxford University, Nairobi.
27. Ministry of Health Reforms (1992), National Health Policies and Strategies, Lusaka.
28. Ministry of Health (1993), Nutritional manual, Nutritional Unit, Lusaka, Zambia
29. Mtey P J B et al (1989), The prevalence and contributing factors and protein energy malnutrition amongst under five, in Sengerema district, Arusha, Tanzania.
30. St Francis Hospital (1996), Annual Report, Katete, Zambia
31. Treece, E.W. and Treece T.W. (1982) Elements of Research in Nursing St. Louis, The C.V. Mosby Company.
32. Thiele Victoria (1976), Clinical Nutrition, the C V Mosby Company, Saint Louis, USA
33. Tropical Journal of Paediatrics (April 1994) Vol 40, London.
34. UNICE/WHO child Health dialogue, International newsletter on Child Health and Disease prevention, Ahrtag, 4th quarter 1997, issue 9
35. WHO (1993), Second Report on the World Nutritional Situation volume II country trends methods and statistics. UN Geneva.
36. WHO/UNICEF (1981) Infants and young child feeding, current issues, Geneva.

CONSENT TO PARTICIPATE IN AN INTERVIEW

Dear Respondent,

I am a fourth year student of Bachelor of Science degree in Nursing in the School of Medicine, department of Post Basic Nursing, University of Zambia.

I am undertaking the study on factors contributing to the development of malnutrition among children aged 0 - 5 years, at St Francis Hospital, Katete. This study is looking at family planning practices, Breast Feeding and weaning practices, food habits at homes (both traditional and religious practices) presence of diseases availability of food in homes as well as availability of food in the homes of the caretaker, and last part asks about availability of Rural Health Centres in the villages.

Any person looking after the child (also called caretaker) is kindly requested to participate (interviewed).

The information required would be collected using a structured questionnaire which is divided into 8 parts. The first part asks for personal details, not your name. The second part asks about your household (family). The third part and 4th parts apply to those mothers looking after their own children, and it is asking about breast feeding, weaning practices and food habits. The fifth part is asking about environmental health, while the sixth part is asking about the knowledge the caretaker have on malnutrition. The seventh part asks about availability of food in the home of the care taker and the last part asks about availability of rural health centres in the villages.

The interview will take about 20 - 30 minutes. You are free to ask the questions of your choice during the interview. You can stop the interview at any point if you wish to do so. The information you will provide is strictly confidential and will be used to make recommendation on how best the problem of malnutrition in children aged between 0 - 5 years can be alleviated.

You are free to choose to participate or not. If you refuse to participate, you will not suffer any penalty or be denied of any hospital services the child is receiving. If you are willing to participate, please read and sign the statement below.

.....

I have read the above statement and have understood the information given. I am willing to participate in the study.

Signature or thumb print:.....

Serial Number of client:.....

(Client Identity Number/questionnaire Number):.....

If there are any further queries you are free to contact the researcher.

David Lubuta, University of Zambia
School of Medicine, Dept of Post Basic Nursing
PO Box 50110, LUSAKA, ZAMBIA

**STRUCTURED INTERVIEW QUESTIONNAIRE FOR DATA COLLECTION ON
FACTORS CONTRIBUTING TO THE DEVELOPMENT OF MALNUTRITION
AMONG CHILDREN AGED 0 - 5 YEARS, AT ST FRANCIS HOSPITAL , KATETE**

Questionnaire No/Clients ID No.:.....
Place of interview:.....
Name of interviewer:.....
Date of interview:...../...../.....

Instructions:

- 1. Please do not write the name of the respondent on the questionnaire.
- 2. For questions without responses, write responses clearly on the space provided.
- 3. For questions with responses, tick () in the box the most appropriate answer.
- 4. Respondents should be free to ask questions during the course of interview.
- 5. All information provided will be held in strict confidence.
- 6. Thank the respondent at the end of each interview.

A. BACKGROUND INFORMATION: (RESPONDENTS IDENTIFICATION)

- 1. Village:.....
- 2. Headman:.....
- 3. Age of caretaker:.....
- 4. Sex: (i) Female () (ii) Male ()
- 5. Marital Status:
 - (a) Single ()
 - (b) Married ()
 - (c) Divorced ()
 - (d) Widow/er ()
- 6. Relationship of caretaker to the child:
 - (a) Mother ()
 - (b) Grandmother ()
 - (c) Father ()
 - (d) Auntie ()
 - (e) Others, Specify:.....
- 7. Educational level attained:
 - (a) Primary ()
 - (b) Secondary ()
 - (c) College ()
 - (d) None ()

8. Occupation of caretaker:
- (a) Subsistence farmer ()
 - (b) Marketeer ()
 - (c) Housewife ()
 - (d) Others, specify:.....

B. HOUSEHOLD INFORMATION:

1. How many children do you have?
2. How many are you in the family?
 - (a) 0 - 4 years ()
 - (b) 5 - 9 years ()
 - (c) 10 - 15 years ()
 - (d) 16 and above ()
3. How old is the youngest child?
4. (i) Do you practice family planning? (a) Yes () (b) No ()
 - (ii) If yes, which one:.....

SECTION C AND D APPLY TO THOSE LOOKING AFTER THEIR OWN CHILDREN

(C) BREAST FEEDING AND WEANING PRACTICES

1. (i) Is the youngest child breast feeding? (a) Yes () (b) No ()
 - (ii) If no, at what age did he/she stop breastfeeding?

2. (i) Are you pregnant now? (a) Yes () (b) No ()
 (ii) If yes, do you stop breastfeeding when you discover that you are pregnant?
 (a) Yes () (b) No ()
3. When weaning the child
 (i) Did you stop breast feeding suddenly? (a) Yes () (b) No ()
 (ii) Did you take your child to the grandparent? (a) Yes () No ()
 (iii) Did you give your child traditional medicine? (a) Yes () No ()
 (iv) Did you give supplement feeds? Yes () No ()
4. If none of the above questions do apply, what do you do when weaning your child?

D. FOOD HABITS: TRADITIONAL AND RELIGIOUS PRACTICES

1. How often is your child being fed at home?
 (a) 2 times () (b) 3 times () (c) 4times ()
 (d) others, specify.....
2. Do you feed your child in between meals? (a) Yes (b) No
3. What type of food do you give your child?
 (a)
 (b)
 (c)

4. How do you ensure that the above food you prepare for your child is well balanced?
 - (a)
 - (b)
 - (c)

5. How do you distribute your food among children?
 - (a) shared in one place for the whole family
 - (b) shared according to age groups
 - (c) Shared individually
 - (d) others, specify

6. (i) Do you have any traditional or religious beliefs which restrict your children to eat certain foods? (a) Yes () (b) No ()
 - (ii) If yes, which ones
 -
 -

E. ENVIRONMENTAL HEALTH

1. What type of toilets do you have?
 - (a) Pit latrine () (b) flushable () (c) None ()

2. How do you dispose the rubbish? (a) Refuse pit () (b) Open air ()

3. What is the source of your drinking water?
 - (a) Well () (b) river () (c) bore hole (d) tap ()
 - (e) others, specify.....

4. (i) Do you take any safety measures to ensure that water for drinking is safe?
 (a) Yes () (b) No ()
 (ii) If yes, which ones

5. Has this child suffer from diarrhoea or any type of disease in the past two weeks prior to admission? (a) Yes () (b) No ()
6. Which of these has the child suffered from, apart from diarrhoea in the past 2 weeks prior to admission?
 (a) worm infestation () (b) coughing () (c) Fever ()
 (d) others, specify.....

F. KNOWLEDGE OF THE CARE TAKER ABOUT MALNUTRITION

1. How can you tell that the child is suffering from malnutrition?

2. How can malnutrition be prevented from occurring in the family?
 a)
 b)
 c)
 d)

G. FOOD AVAILABILITY AND SECURITY IN HOMES OF CARETAKERS

- 1. (i) Do you have a field for growing crops?
(a) Yes ()
(b) No ()

(ii) If yes, what did you grow last season?
(a)
(b)
(c)
(d)

- 2. (i) Did you have enough staple food for this season? (a) Yes () (b) No ()
(ii) If no, what do you think was the cause of your poor harvest?
(a)
(b)
(c)

- 3. What measures has your family undertaken to supplement the effort of having food available at home?
(a)
(b)

H. HEALTH FACILITIES

- 1. How far is the nearest Rural Health Centre from your home?
(a) Near () (b) Far () (c) Very far () (d) Not sure ()

- 2. What means of transport do you use to get to the nearest Rural Health Centre?
(a) Foot () (b) Bicycle () (c) Vehicle ()

(d) Others, specify.....

3. (i) Do you get your children immunised at the Rural Health Centre?

(a) Yes () (b) No ()

(ii) If yes, (interviewer check under-five card).

(iii) If no, explain why.....

.....

.....

(iv) I do not know.

THANK YOU FOR YOUR ANSWERS



ANNEX III

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

Telephone: 252641
211440 (UTH) 254824 (Pre-Clinical) Ridgeway Campus
Telegrams: UNZA, LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260-1-250753

P.O. Box 50110
Lusaka, Zambia

Your Ref:

Our Ref:

21 July, 1998

Dear Sir/Madam,

This is to introduce..... **MR DAVID LUBUTA**....., a Fourth Year BSC (Nursing) Student in the Department of Post Basic Nursing, School of Medicine, University of Zambia. The student is undertaking a Research Study in partial fulfilment of the above mentioned degree.

The Research Program for study is..... **THE STUDY TO DETERMINE FACTORS CONTRIBUTING TO THE DEVELOPMENT OF MALNUTRITION AMONG CHILDREN AGED 0-5 YEARS AT ST. FRANCIS HOSPITAL, KATETE.**

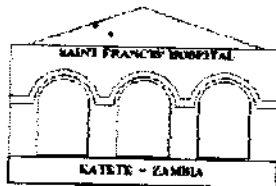
We shall be most grateful if you could access the student to information on the subject or clients and any other assistance the student may require.

Yours faithfully

Lydia Jumbe
COURSE CO-ORDINATOR
DEPARTMENT OF POST BASIC NURSING

JOINT ANGLICAN/CATHOLIC MANAGEMENT BOARD

H A Heij, MD PhD
Medical Superintendent
Z H Makukula, MB BCH MRCOG
Deputy Medical Superintendent
S C Chilangwa, BA Soc.
Manager Administration
Mrs M S Seye, BSc (NEd)
Nurse Advisor



ST FRANCIS' HOSPITAL
PRIVATE BAG 11
KATETE, Zambia

Telephone : 52278 52210 / 52344
Telephone/Fax : 062 52278
EMail link out of use until further notice

1948 = 50 YEARS OF SERVICE = 1998

29th July 1998

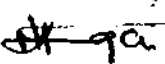
Mr David Lubuta
Department of Post Basic Nursing
University of Zambia
PO Box 50110
LUSAKA

Dear Mr Lubuta,

Your request to do a research on malnutrition at this Hospital has been accepted.

You have been granted permission to go ahead with the study as per your request.

Yours sincerely,

 **Nursing Advisor**
St Francis Hospital
Private Bag
Chambule
Acting Nurse Adviser

*Property of UNZA Library



3 3729 00481 9624