THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF COMMUNITY MEDICINE

A STUDY OF FACTORS CONTRIBUTING TO MOTHERS INTRODUCING FEEDS TO BABIES LESS THAN SIX MONTHS OF AGE IN LUSAKA ZAMBIA

BY
AKALALA MIRIAM CHIMUMBWA (RN, BSc)

A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR MASTERS OF PUBLIC HEALTH DEGREE

MARCH 1999

STATEMENT

I hereby certify that this study is all entirely, the fruit of my own independent investigations.

The various sources to which I am indebted to, are acknowledged in the text, and in the references.

SIGNED BY:.....

Student

DECLARATION

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

SIGNED:.....
(Student)

DATE: 13th APRIL 1999

SIGNED:.....
(Supervising Lecturer)

DATE: 13/04/99

DEDICATION

This study is whole heartedly dedicated to my children Mulenga and Kafula, and husband John, for their love, support, and perseverance during my studies.

APPROVAL

This dissertation of **AKALALA MIRIAM CHIMUMBWA** is approved in partial fulfillment for the requirements for the award of the degree in Master of Public Health by the University of Zambia.

Examiner's Signature:	**Date:**
.....	13 April 1999
.....	.....
.....	.....
.....	.....

ABSTRACT

Breast milk is superior and it is the biological norm for nourishing infants. Both early and more recent studies confirm that, exclusive breast fed infants are less likely to suffer from diarrhoea, malnutrition and acute respiratory infection. Early weaning is highly associated with morbidity and mortality due to diarrhoea, ARI and early malnutrition.

The purpose of this study was to determine factors contributing to mothers introducing feeds to babies less than six months, in Lusaka.

It was a cross-sectional descriptive study conducted in two government clinics and one private clinic, in Lusaka City, and one rural health centre, in Lusaka rural.

The Target population were mother-baby pairs. The babies were between the ages of one month and six months.

A total sample size of 238 mother-baby pairs, was randomly selected using a standard formula. An interview schedule and a questionnaire, were used to collect data from mothers and nurses, respectively.

The questions aimed at eliciting information, on mothers' knowledge, attitude and practices of exclusive breast feeding, baby data on perinatal events, reasons for introducing feeds, intended duration of exclusive breast feeding, and reasons for termination of exclusive breast feeding.

Data was analysed using EPI-INFO statistical package.
The findings in the study suggest that, premature introduction of feeds to babies in Lusaka, is principally determined by personal characteristics of the mother and is conditioned by her knowledge of, affective responses to breast feeding.

Socio-demographic characteristics such as mother's age, educational attainment, occupation, place of residence and household food income levels, were highly significant as to whether one gave feeds or did not give feeds.

Knowledge levels about exclusive breast feeding, are still low and as a result, the exclusive breast feeding rates are low because, only a few mothers practice it.

There seems to be a positive attitude towards exclusive breast feeding in these mothers, thereby creating a knowledge, attitude and practice gap.

Concern about inadequate milk supply, was the major reason given for introducing feeds and terminating exclusive breast feeding. Majority in this study were poor, and maternal undernutrition could be highly associated with inadequate milk supply.

Recommendations have been made in accordance with the findings.

ACKNOWLEDGEMENTS

I specially thank the Ministry of Health, through the Institutional Collaboration (GNC Core-group-SIDA funded) for partially awarding me a scholarship to read for the Master of Public Health degree at the University of Zambia; To my immediate employers the University Teaching Hospital Board of Management, for allowing me study leave.

In the preparation of this dissertation, I am sincerely grateful to my Supervisor, Dr K.S. Baboo, who gave me valuable advice, throughout the project, Professor Peter Simms, Dr Connie Osborne, Dr L Chiwele, and the late Dr Ng'andu, who gave me valuable contributions and shown keen interest in the project, during the protocol preparation.

I am also indebted to the management and institutions which participated in the Study - these include Kanyama Health Centre, Chelston Health Centre, Corpmed (Minbank) Medical Services, and Chalimbana Rural Health Centre, and all their staff, especially the nurses, who assisted in data collection.

To my classmates (MPH '97), who made valuable comments during protocol preparation, and especially to Aaron and Charles, who taught me how to use EPI-INFO and analysis, using a computer.

The Secretarial Services of Mrs J I K Mwanza, cannot be forgotten, without whom the study would not have been presented in this form.

Lastly, but not the least, to the mothers and babies, who willingly participated in the study, without whom the study could not have taken place. And all those not mentioned herein, but contributed in one way or the other, to the project, are gratefully ACKNOWLEDGED.

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

1.	AIDS	Acquired Immuno Deficiency Syndrome
2.	ARI	Acute Respiratory Infection
3.	BAZ	Breast Feeding Association of Zambia
4.	BFHI	Baby Friendly Hospital Initiative
5.	DALYS	Disability Adjusted Life Years
6.	DF	Degrees of Freedom
7.	DPT	Diphtheria, Pertusis, Tetanus
8.	EBF	Exclusive Breast Feeding
9.	GRZ	Government of the Republic of Zambia
10.	HIV	Human Immuno Virus
11.	MSG	Mother Support Group
12.	SD	Standard Deviation
13.	NFNC	National Food & Nutrition Commission
14.	UNICEF	United Nations Children's Fund
15.	UTH	University Teaching Hospital
16.	WHO	World Health Organisation
17.	ZDHS	Zambia Demographic & Health Survey

CHAPTER 1

1.0 INTRODUCTION

1.1 Background Information

Around the world today, people want to lead healthy lives, raise well nourished children and provide them with better opportunities for the future. Governments invest in public health measures and family planning, even when resources are scarce, and demands upon them heavy. (Labbock 1988). Infant feeding practices have varied over the years. Social pressures and advertising, have played a role in shaping women's decisions about feeding their children. So too have professionals, whether by prescribing rigid feeding regimens or more recently, by encouraging a return to feeding on demand (Graffy 1990).

Breast feeding is a natural resource that is known to make a major contribution to the health of not only children, but their mothers as well, by delaying the next pregnancy.

In realising the importance of breast feeding in child nutrition and survival, the World Health Organisation (WHO) in conjunction with the United Nations Children's Fund (UNICEF), produced and adopted the Innocenti declaration in 1990. The Innocenti Initiative declares that, as a global strategy for optimal maternal, child health and nutrition, all women should be enabled to practice exclusive breast feeding, and all infants should be fed exclusively on

breast milk from birth to six months (National Food and Nutrition Commission [NFNC], 1992).

Bearing in mind the superiority of breast milk as the biological norm for nourishing infants, deviation from this norm is associated with increased risk of illness for infants and mothers. (NFNC, 1995).

Both early and more recent studies confirm that breast fed infants are less likely to suffer from diarrhoea, malnutrition and Acute Respiratory Infection (ARI) (Labbock, 1988).

Early weaning or introduction of feeds to infants, is highly associated with morbidity and mortality due to diarrhoea, pneumonia and early malnutrition. This scenario is closely related to poverty and its consequences such as poor housing, poor water and sanitation facilities.

Zambia is one of the poorest countries south of the sub-Sahara. A World Bank Poverty Assessment Report of 1991, indicated that 69 percent of the population were poor, i.e. more than 70 percent of the household expenditure was on food. One can imagine what would happen to other expenditure like education, clothing, transport and health, without which life cannot go on. Planning of budgetary allocation is difficult because the average monthly income is less than K100,000.00.

The manifestations of poverty have grown to such an extent that Zambia can be said to be experiencing a social crisis (GRZ/UN in Zambia, 1996).

In view of the above, the Zambian government, through the National Food and Nutrition Commission (NFNC), in conjunction with UNICEF, WHO and other non-governmental organisations such as La Leche League of Zambia and the Breast Feeding Association of Zambia (BAZ), have conducted a series of seminars and training sessions for health workers and the community, on the role of breast feeding promotion and protection.

So far, over thirty health facilities country wide with maternity care, have been declared "Baby Friendly". The breast feeding policy and the code of marketing breast milk substitute which stipulates all breast feeding practices, have also been put in place.

The University Teaching Hospital (UTH), the country's national referral teaching hospital situated in Lusaka, the capital city of Zambia was also declared "baby friendly" in 1996 (NFNC 1996). This means that mothers and their babies are kept together throughout their stay after delivery. It is believed that rooming in, breast feeding on demand and early initiation of breast feeding (within 1 hour of birth) are factors which help establish lactation (Bradley *et al* 1993).

Lusaka, the capital city of Zambia, has a population projection of 2 million people. It is a cosmopolitan city as it is the centre of most commercial, industrial, political and government activities of the country (GRZ/UN 1996). There are over 50,000 live births in a year in Lusaka (Libetwa 1997). The rural areas of Lusaka consists of mainly peasant farmers with few health facilities. (Zambia Demographic & Health Survey, Central Statistical Office, 1996).

1.2 Statement of the Problem

Mothers presenting at the University Teaching Hospital Diarrhoea Unit have been known to introduce fluids such as water, water sugar solution and tea as early as 24 hours of a baby's life and foods such as cereals, eggs at two weeks or even less (Freund 1992).

The 1992 Zambia demographic & Health Survey (ZDHS) indicated that an average of 11 percent of babies were exclusively breast fed in Zambia. The 1996 ZDHS indicates that only 26.3 percent of babies between 0-3 months are exclusively breast fed while only 4.2 percent of babies 4-6 months were exclusively breast fed. This gives an average of 20 percent exclusive breast feeding rate which is far below what is expected, given that Zambia is a poor country, and food security is a problem for many.

A human baby's gastro-intestinal tract is not that well developed in the first six months, to absorb most feeds other than human breast milk. In addition, its gut is a sterile environment in the first days of its life, without the necessary normal organisms to help food digestion. Introducing feeds other than breast milk, therefore, leads to malabsorption and introduction of harmful microbes leading to increased incidence of diarrhoeas, failure to thrive and risk of death from pure malnutrition and other infectious diseases. Diarrhoea, acute respiratory infections (ARI) and malnutrition, are major childhood killers in Zambia.

The pattern of disease burden expressed in disability adjusted life years (DALYS) shows that ARI accounts for 10.8 percent of DALYS, followed by diarrhoea which accounts for 10.4 percent of DALYS (Hill, 1996). It is also estimated that about 40 percent of Zambian children are stunted as a result of chronic under nutrition over an extended period. (GRZ/UN Report 1996). The factors that contribute to mothers introducing feeds to babies less than six months, are not clear.

Most mothers abandon breast feeding and introduce other feeds when the babies are still very young. Breast feeding is the child's right. The mother is obliged to guarantee this as long as the milk exists. Why then do mothers introduce feeds to babies at such a tender age? Could it

be that mothers have the knowledge but are not convinced or could it be due to some other factors? This study, therefore, sought to explore factors that leads to such behaviour.

1.3 Justification for the Study

This Study has devoted all its investigations to pin point the important reasons for mothers to discontinue exclusive breast feeding and watch their children retard, undernourished, sick and die. Every mother knows that Breast feeding is economic, sanitary and nutritious and has no replacement or substitute.

Proceedings of this study will guarantee safety of the child towards better growth and development by removing indiscriminate attitudes and behaviours, therefore, the justification of this study.

1.4 Definition of Terms

Mother	Any female aged 15 and above bringing a baby to the children's clinic.
Baby	An infant between the age of 1 month to six months.
Feed	Any fluid or solid food given to a baby other than breast milk or prescribed medication.

Exclusive Breast Feeding	Breast feeding on breast milk only.
Partial Exclusive Breast feeding	Breast feeding on breast milk and water only.
Mixed Feeding	Breast feeding and other fluid and solid feeds.
Cereal feeds	Includes all foods made from maize meal as well as artificial cereal.
Professional	Any salaried job with two years or more of formal training including big business ventures.
Non-Professional	Unskilled worker without any formal training.

CHAPTER 2

2.0 OBJECTIVES

2.1 General Objective

The general objective for this study was to determine factors contributing to mothers introducing feeds to babies less than six months in Lusaka.

2.2 Specific Objectives

(i) To determine the mothers' knowledge and attitudes towards exclusive breast feeding.

(ii) To investigate the mothers' intended duration of exclusive breast feeding.

(iii) To find out the socio-economic characteristics of mothers that may influence exclusive breast feeding.

(iv) To outline the mothers' reasons for introdu-cing feeds to babies.

(v) To describe the mothers' reasons for termination of exclusive breast feeding.

(vi) To make recommendations to all organisations that have child health programmes on their agenda.

CHAPTER 3

3.0 LITERATURE REVIEW

The United Nations Children's Fund (UNICEF) estimates that, over one million infant lives could be saved each year by promoting breast feeding. Studies indicate that, infant mortality rates are five times higher for exclusively bottle fed infants and three times higher for mixed fed than for those exclusively breast fed (Wilmoth & Elder, 1995). The well documented nutritional, immunological and contraceptive advantages of breast feeding, have led international organisations to recommend this method of infant feeding in developing countries (Escamilla, 1994).

In the past decade, research has conclusively documented the significance of breast feeding for child survival, maternal health and child spacing. Breast feeding protects infants against disease and death, especially in the first six months of the baby's life. A review of nine studies from five countries in the early part of this century, showed a 9 to 25 percent increased survival rate from diarrhoea for exclusively breast fed infants.

Furthermore, breast milk contains elements that directly fight infection-immunological and other components that coat the lining of the stomach, intestines and lungs, that attack and fight bacteria and viruses (Labbok and Booher, 1988).

Breast feeding also benefits maternal health in that, immediately after delivery of the baby, suckling at the breast may reduce the risk of post-partum haemorrhage, stimulate the release of oxytocin which helps milk release and also causes contraction of the uterus to go back to its normal position.

Breast feeding has also been associated with a lowered risk of ovarian and breast cancer (Gwinn *et al* 1987). The act of feeding a baby at the breast has been documented to assist in the mother-infant bonding, which is a pre-requisite for emotional development of a child.

Hypothermia has also been prevented during the act of breast feeding because of the mother-child skin contact, especially in premature and low birth-weight babies.
Despite all this documented evidence of the benefits of breast feeding in general and exclusive breast feeding in particular, some socio-cultural factors still affect the promotion of exclusive breast feeding.

In a study done by Banapurmath and others in 1995 in India on breast feeding practices in villages of Central Karnataka, all 1,050 infants in the study received pre-lacteal feeds, and colostrum was rejected by 29 percent of the mothers. Only 26.8 percent exclusively breast fed

their infants by the time they were six months old and the bottle-feeding rate was 49.4 percent among infants below 1 year.

Wang and Wu, (1993) in their study of the effects of exclusive breast on development and incidence of infection in infants, demonstrated the beneficial effects of breast feeding on development and resistance of infection. Of the 145 normal full term infants studied during the first year, those exclusively breast fed differed significantly from those not exclusively breast fed in physical, behavioural development and resistance to infection. At four months, the mean weight for the exclusive breast fed was higher ($p<0.05$).

Bhatnagar, Jain and Tiwari of India (1996) in another study of the cost of infant feeding in exclusive and partially breast fed infants showed that the mean cost of infant feeding was substantially higher in partially breast fed infants. The increased cost was largely attributed to supplementary foods and the cost of feeding bottles and other apparatus used in the preparation of the supplements.

However, breast milk like any other body fluid can carry HIV, the virus that causes AIDS. There is some evidence, therefore, that HIV can be transmitted through breast feeding. Various studies conducted to-date indicate that between one quarter and one third of infants born world

wide to women infected with HIV become infected with the virus. In most cases, transmission occurs during late pregnancy and delivery but some studies have indicated that more than one third of infected infants are infected through breast feeding. These studies suggest an average risk of HIV transmission through breast feeding of one in seven infants born to and breast fed by a woman infected with HIV. However, additional data are needed to identify precisely the timing of transmission through breast feeding in order to provide mothers living with HIV with better information about the risks and benefits of breast feeding (NFNC Policy Framework, 1998). In the same policy framework, it is stated that parents with known HIV/AIDS status should be counselled on both breast feeding and alternative methods of infant feeding in order to enable them to make an informed choice. It also discourages women with full blown AIDS from breast feeding.

In sub-Saharan Africa, about 96 percent +/- of women breast feed their infants, but some socio-cultural factors associated with breast feeding, affect the promotion of exclusive breast feeding. This is well demonstrated in a study by Adetugbo Davies (1996), in rural Yoruba communities in Nigeria. All women in the study, breast fed their infants on demand, but gave water to the baby in order to quench its thirst. The mothers also gave herbal teas as food and medicine to promote normal growth and development. The colostrum was discarded because it was

considered dirty "like pus", therefore, potentially harmful to the infant. Expressed breast milk was suspect as it could get contaminated, poisoned or bewitched. Complimentary foods were given as early as two months because of perceived lactation insufficiency. The commonest supplement they used was watery maize porridge of low nutritional density.

There is also strong evidence to show a difference in breast feeding patterns in urban and rural areas of sub-Saharan Africa. While the trends show a downward percentage in urban areas, rural communities are still relatively stable. The mean duration of breast feeding is about 19.3 +/- 2.7 months. An important difference associated with such patterns is the degree of socio-economic development and in particular, urbanisation. Several multi-country studies and literature reviews have consistently reported that, components of urban life such as maternal employment, lack of support networks, modern health systems and exposure to marketing strategies by infant formula companies, are likely to be related to poor lactation performances (Ibid Escamilla, 1994).

In Zambia, breast feeding is still highly valued as many mothers still continue to breast feed up to 18 months or more. However, the 1992 Zambia Demographic and Health Survey indicated that only 11 percent of mothers breast fed their infants exclusively. Babies are given supplementary

feeds as early as 1 week as most mothers feel they cannot produce enough milk. Other factors associated with early weaning include influence from older relatives, mothers' employment status, and probably death of mother. Nutritional factors and multi-parity also play a major role (Baboo 1996).

A study done by the National Food and Nutrition Commission in 1991, revealed that, in both rural and urban settings, infants were given supplementary feeds before the age of six months. The percentage of infant supplementation was higher in peri-urban settings than in rural settings. For example, in Kanyama township of Lusaka, about 58 percent of infants 0-3 months had been given feeds compared to 20 percent of the rural sample.

Nutritional requirements during lactation vary widely. Energy is needed to cover the energy content of milk secreted plus the energy required to produce it. The nutritional cost to the mother in protein, vitamins and minerals is considerable and unless these additional energy and nutrient requirements are met, lactation will take place at the expense of the maternal tissues. However, there do seem to be a number of compensatory mechanisms that allow for lactation to continue with much lower energy nutrients or caloric increase.

This does not mean that lactating women do not need to increase their food intake. Rather, it suggests that nutritional status before, during pregnancy and lactation plays an important role in good lactation performance (Akred 1989).

CHAPTER 4

4.0 METHODOLOGY

4.1 Research Setting

The study was carried in Lusaka at two urban government clinics: i.e. Chelston and Kanyama, one private practice - Corpmed Medical Services (Minbank) and a government rural health centre - Chalimbana Rural Health Centre. These clinics were randomly selected using the lottery technique after stratifying them into government urban, government rural and private practice. The clinics were put into these strata in order to get a representation of categories of mother-baby pairs.

4.2 Study Type

A descriptive cross sectional study design was used to describe some of the factors that may contribute to mothers introducing feeds to babies early. In this way, the magnitude of the problem regarding early weaning can be established and can be used as background data for planning and organising strategies on exclusive breast feeding.

4.3 Study Population

The study population consisted of mothers-baby pairs. Babies were between the ages of one month and six months. These constituted the main study population and provided

the bulk of the data. Criteria for selection included babies between 1-6 months brought to Under Five Clinic i.e. well babies. The nurses who worked in the maternal and child health section of the selected clinics also provided some supplementary data.

4.4 Sample Size

The sample size was determined using the standard formula. Information from the 1996, Zambia Demographic and Health Survey indicated that the rate of exclusive breast feeding is around 20 percent. This study was willing to tolerate an absolute sampling error of up to 5 percent while the power of the study is 95 percent.

The formula was thus as follows:

$$n = \frac{Z^2 P(100-P)}{d^2}$$

Z = 1.96, the factor from the normal distribution
P = Estimates period prevalence
d = absolute sampling error

$$n = \frac{(1.96)^2 \, 20(100-20)}{5^2}$$

$$n = \frac{3.84 \times 20 \times 80}{5^2} = \frac{6144}{25} = 245$$

The total sample size for the survey was therefore, 245 mother-baby pairs.

Table 1 below shows the sample size from each of the four clinics that participated in the study.

Table 1. Number of Mother-Baby Pairs selected in the study

Clinic	Sample Size	Actual Interviewed
Kanyama	100	99
Chelston	75	75
Chalimbana	50	50
Minbank	20	14
Total	**245**	**238**

Source: Field data

A total of seven mothers i.e. one from Kanyama and six from Minbank, refused to participate in the study, giving a 97 percent response rate. The mother-baby pairs were systematically selected each day as they came to the children's clinic. The first mother was randomly selected between numbers 1 and 5 and then every fifth mother-baby pair was included in the study, i.e. babies between 1-6 months of age.

4.5 Data collection techniques

4.5.1 Data collection instruments

Two data collection instruments were used in this study: the main instrument that provided the bulk of the data was a semi-structured interview schedule with both close and open ended questions. This was administered to the mothers by four trained Research Assistants. An interview schedule was chosen for mothers because it was assumed that mothers may not have the time to sit, read and write up the

responses. The other reason was that, the majority of the mothers may not be able to read and write. The researcher also felt that a face to face interview may improve the response rate, and the investigator may probe a bit more while the respondent may ask for clarification if a question is not clear.

The other two instruments were a questionnaire for the nurses working in the Maternal and Child Health section of the selected clinics and a focus group discussion guide which was used as a pre-requisite before the final interview schedule was designed.

4.5.2 Pre-test

The interview schedule for mothers and questionnaires for nurses, were pre-tested at the University Teaching Hospital Children's Clinic in D-block. A total of ten mothers and two nurses were interviewed to determine the appropriateness of the instruments. A focus group discussion was also done to elicit some more data to be included in the interview schedule. The interviews were done by the investigator with the help of one Research Assistant. Some of the questions which were not very clear were changed and a translation into Nyanja was needed for most of the mothers. This meant that the investigator had to choose Research Assistants who were very conversant in "Nyanja". Some changes were done after the focus group discussion on the sequencing of the interview schedule.

4.6 Ethical Consideration

Ethical clearance was obtained from the University of Zambia, School of Medicine, Research Ethics Committee. There were no ethical issues that were raised (see Appendix 3). Written permission was also sought from Chongwe District Health Board, Lusaka District Health Board, and Corpmed Medical Services (Appendix 4). An informed consent was also obtained and confidentiality was maintained by annonymity.

4.7 Data Analysis

This was done using the **EPI-INFO** Version 6 Statistical package. The interview schedules were given identification numbers serially. The open ended questions were pre-coded by assigning a number to a category of responses. The analysis consisted mainly of running frequencies and cross tabulations.

4.8 Limitations of the Study

The main limitation of the study was funding.

The success of this study was dependent on travel to acquire information from different sectors. Non-availability of funds was a logistic, very difficult to compromise.

The study of this magnitude which involved interviewing mother-baby pairs, required a lot of time and patience. Mothers could not be rushed to give answers to sensitive matters. Information was only collected when they understood the nature of the study, and were comfortable.

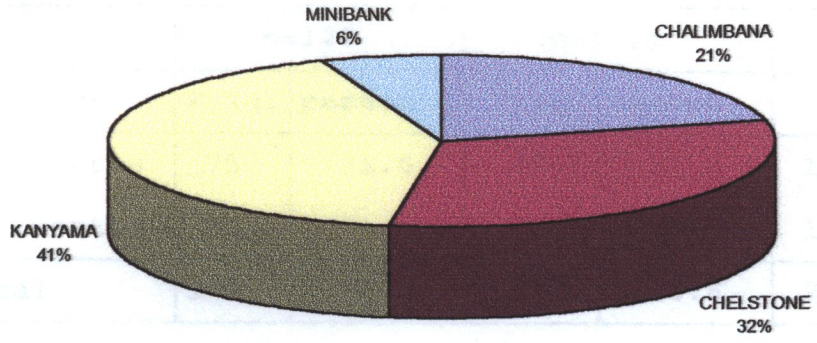
The time required for successful completion of the interviews, was also very short and, non-availability of computer services in the department of Community Medicine, was also a limiting factor. Data had to be analysed elsewhere along with the printing.

CHAPTER 5

5.0 PRESENTATION OF FINDINGS

This chapter is a presentation of the findings as obtained from the field. The findings are presented in frequency tables and cross tabulations to test for significance. Data was collected from 24th February to 24th April, 1998, from Kanyama, Chelston, Minbank (Corpmed) and Chalimbana Rural Health Centre. The total number of respondents was 238 out of the planned 245 mother-baby pairs. This gave a 97 percent response rate. A total of ten nurses also answered a questionnaire to supplement the information from the mothers.

Figure 1. Pie chart showing the number of respondents from each of the participating Health Centres



5.1 Baby Data

Out of the total of 238 babies surveyed, 53.4 percent (127) were male and 46.6 percent (111) were female. The baby age ranged from one month to six months with a mean age of 3.37 months, median age of 3 months and modal age of 2 months.

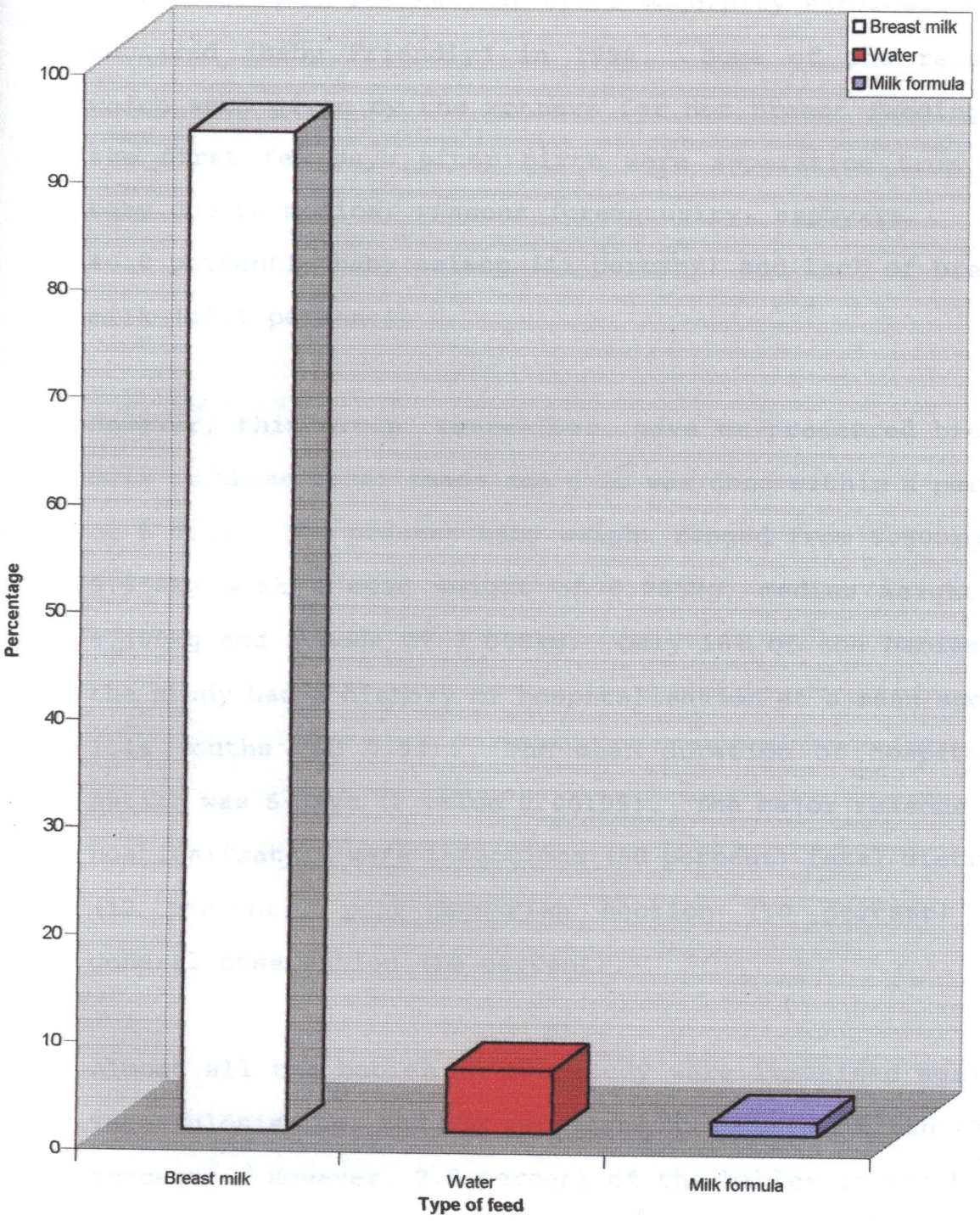
Table 1: Baby's age in relation to their sex

BABY SEX					
	Male		Female		
	n=127		(n=111)		
Baby age	**Freq.**	**percent**	**Freq.**	**percent**	**Total**
1-3 months	75	31.6	52	21.8	127 53.4
4-6 months	52	21.8	59	24.8	111 46.6
Total	**127**	**53.4**	**111**	**46.6**	**238 (100)**

The majority of the babies were born as full-term babies (94.1 percent) while only a few born prematurely (5.9 percent). The mode of delivery was mostly spontaneous vaginal delivery (SVD - 95.4 percent) a few were born either by caesarean or other types of instrumental delivery (4.6 percent).

Most of the babies were given the first feed within 30-59 minutes after birth (71 percent) while 19.7 percent were fed within one to three hours after birth and 9.2 percent were fed after more than three hours.

Figure 2. First Feeds given to babies immediately after birth



The above findings are quite encouraging considering that most clinics in Lusaka that offer maternity services, were declared "Baby Friendly" in 1996. Some of the reasons which were given by the mothers for not breast feeding in the first few days after birth were separation from the baby due to medical reasons (prematurity, asphyxia - 40.0 percent), baby asleep (11 percent) and lack of breast milk (48.1 percent).

However, this group, thereafter, gave or preferred breast milk to these other feeds and this was done within a period of 5 days. The present baby weight ranged from 3.500kg to 9.650kg with a mean weight of 6.285kg, median weight of 6.400kg and a mode of 7.000kg. Only 18% of the babies in the study had a history of hospitalisation at a mean age of 1.44 months (SD 0.92). The mean duration of hospitalisation was 5 days (P value 0.00125). The major reasons for hospitalisation were infections (50 percent) fetal distress (12 percent), post-caesarian section (10 percent) and general observation (10 percent).

Almost all the babies in the study were immunised against Tuberculosis i.e. had BCG vaccination, given at birth (97.1 percent). However, 2.9 percent of the babies in the study did not get BCG vaccination. The other immunisation were i.e. Polio I and first DPT (64.7 percent), Polio II and second DPT (38.7 percent), and Polio III and third DPT (19.8 percent).

The above results show a gradual fall in the immunisation levels. It has been observed that fall in immunisation levels, has been consistent in the last four years. However, in this study, the modal age is two months, which means majority are still too young to get the later vaccinations.

5.2 Data on Feeds

More than half of the babies in the study were not exclusively breast fed (51.5 percent) while almost half (48.5 percent) were exclusively breast fed. The table below shows the number of babies given water in the study.

Table 2: Number of Babies who were given water

		Frequency	Percentage
Water	No	115	48.5
	Yes	123	51.5
	Total	**238**	**100**

Mothers still feel babies need extra water, hence they give the babies water. It is, however, interesting to note that most babies in the study were not given milk formular as can be seen from the next table.

Table 3: **Number of Babies who were given Milk Formula**

		Frequency	Percentage
Milk Formula	Yes No	16 222	6.7 93.3
	Total	**238**	**100**

The above trend is highly significant by student 't' test (P value 0.00025) and can possibly be attributed to the high cost of milk formulas which range from K8,000 to K20,000 and possibly the introduction of Baby Friendly Hospital Initiative (BFHI) in Lusaka maternity units.
Some of the babies were introduced to cereals before the age of 3 months (40.5 percent), while 59.5 percent were not.

The major reasons which were given by mothers for introducing babies to feeds, were as shown in the next table.

Table 4: Major reasons given by mothers for introducing feeds

Reason	Frequency	Percentage
Not enough milk	110	46.2
Had to go back for work	14	5.9
Influenced by relative	16	6.7
Introduced in hospital/clinic	6	2.6
Other reasons	20	8.4
No reason	72	30.2
Total	**238**	**100**

Table 4 shows (46.2) majority of the mothers introduced feeds because they did not have enough milk. A number of mothers (8.4 percent) gave a variety of reasons such as maternal illness or death and, traditional beliefs. while a good number (30.2 percent) could not give a reason why they give feeds.

5.3 Mother Data

Mothers' age ranged from 15 years to 42 years, with a mean age of 24.5 years, a median age of 24 years and a mode age of 21 years (SD 5.57).

Table 5: below shows the Socio-demographic characteristics of the Mothers

Characteristic	Frequency	Percentage
Age		
15-24 years	134	56.30
25-34 years	83	34.87
35-44 years	21	8.82
Total	**238**	**100**

Marital status	Frequency	Percentage
Married	220	92.4
Single	17	6.6
Divorced	1	1.1
Total	**238**	**100**

Educational level	Frequency	Percentage
None	17	7.1
Primary	126	52.9
Secondary	74	31.1
College/University	21	8.8
Total	**238**	**100**

Occupational Status	Frequency	Percentage
Housewife	174	73.1
Professional	21	8.8
Non-Professional	35	14.7
Dependant	8	3.4
Total	**238**	**100**

Residence	Frequency	Percentage
Low density	28	11.8
Medium density	43	18.1
High density	119	50.0
Village	48	20.2
Total	**238**	**100**

Nationality	Frequency	Percentage
Zambian	227	95.4
Non-Zambian	11	4.6
Total	**238**	**100**

Household Size	Frequency	Percentage
1-5	144	60.5
6-10	88	36.9
11-15	6	2.6
Total	**238**	**100**

Number of Children	Frequency	Percentage
1-5	213	89.5
6-10	25	10.5
Total	**238**	**100**

Religion	Frequency	Percentage
None	10	4.2
Catholic	78	32.2
Muslim	4	1.7
Pentecostal/Evangelical	76	31.9
Other	70	29.4
Total	**238**	**100**

Household Food Income/ Month (ZK)	Frequency	Percentage
Less than - 50,000	95	39.9
51,000 - 100,000	98	41.1
101,000 - 400,000	31	13.1
401,000 - 500,000	8	3.4
501,000 - 1,000,000	6	2.5
Total	**238**	**100**

Most of the mothers in the study were married 220(92.4 percent) while 17(6.6 percent) were single and only one (1.7 percent) were divorced. (Table 5).

More than half of the mothers in the study had primary education 126(52.9 percent) while 74(31.1 percent) had secondary education and 21(8.8 percent) had tertiary or college or university. Seventeen (7.1 percent) mother had no formal education at all. From the above data, it seems the majority are of low educational level 133(60 percent). (Table 5).

The majority of the mothers interviewed were housewives 174(73.1 percent) while 35(14.7 percent) had non-professional jobs like street vending, marketeering, casual work, etc. There were only 21(8.8 percent) mothers who had professional jobs. Surprisingly, 8(3.4 percent) mothers were still dependants. Half of the mothers 119(50 percent) in the study lived in high density areas, commonly known as Shanty compounds, while 48(20.2 percent) of the mothers stay in the village. 48(18.1 percent) resided in medium density areas and only 28(11.8 percent) lived in low density areas.

This is expected because a larger number of the sample came from a clinic which is situated in the high density area. The other factor which could lead to this finding is that, the majority of the mothers (60 percent) were of low educational level, and, therefore, do not aspire to find better living quarters, and marry men of their level of

education. Almost all the mothers in the study were Zambians 227(95.3 percent) while only 11(4.7 percent) were non-Zambian.

Many mothers in the study had children in the range of 1-5, 213 (89.5 percent) while only 25(10.5 percent) had children in the range of 6-10. However, the mean number of children was 2.769 (SD 1.890). More than half of the mothers had a household size in the range of 1-5 people, 144(60.5 percent) while less than half, 88(36.9 percent) had a household size in the range of 6-10 people and 6(2.6 percent) in the range of 11-15 people. The mean household size for this study was 5.429 people (SD 2.149). This finding is however, not surprising, considering that many Zambians live in extended families and have a high fertility rate of 5.2 children per woman.

Almost all mothers affiliated themselves to a religion and a good number were Catholic 78(32.2 percent) while 76(31.9 percent) were Evangelical and 70(29.4 percent) were pure Protestants. Only 10(4.2 percent) of the mothers said they did not go to church, and 4(1.7 percent) were Muslim.
Many mothers 98(41.1 percent) in the study had a household food income in the range of K51,000 to K100,000 per month, while a good number 95(39.9 percent) had a food income of less than K50,000 per month. Only 31(13.1 percent) of mothers spent between K101,000 to K400,000 on food per

month. A few mothers 8(3.4 percent) spent between K401,000 to K500,000 per month, while very few mothers 6(2.5 percent) spent over K500,000 in a month on household food. The above finding suggests that the majority of the households in the study spent less than K100,000 per month of food items, meaning that many families struggle to buy food.

5.4 Data On Exclusive Breast Feeding

The table below shows the relationship between the mothers' educational level and knowledge of exclusive breast feeding.

Table 6: Mothers' Educational Level in Relation to their Knowledge to Exclusive Breast Feeding (EBF)

	KNOWLEDGE OF EBF		
Educational Level	**Correct (%)**	**Not correct (%)**	**Total**
None	8(3.4)	9(3.8)	17(7.1%)
Primary	35(14.7)	91(38.2)	126(52.9)
Secondary	43(18.0)	31(13.0)	74(31.1)
College/University	19(7.9)	2(0.84)	21(8.8)
Total	**105(44.1)**	**133(55.9)**	**238(60)**

X^2 = 37.89 Degrees of freedom = 3 P Value = 0.00000003

More than half 133(55.9 percent) mothers did not have the correct knowledge of exclusive breast feeding and only 105(44.1 percent) had the correct knowledge. However, education does significantly have an influence on the

knowledge of exclusive breast feeding (P value = 0.00000003). This is despite the fact that 129(54.2 percent) had heard about exclusive breast feeding and 109(45.8 percent) had never heard about exclusive breast feeding. However, mothers gave a mean duration for exclusive breast feeding at six months.

The majority of the mothers in the study 174(73.1 percent) had a positive attitude towards exclusive breast feeding because they thought it was not appropriate to give feeds to a baby less than six months. A good number 64(26.9 percent) still had a negative attitude towards Exclusive Breast Feeding.

The table below shows the odds of having heard about exclusive breast feeding and mothers' attitude.

Table 7

	HEARD ABOUT EBF		
	Yes (%)	**No (%)**	**Total**
Attitude +	96(40.3)	78(32.7)	174(73.1)
-	33(13.8)	31(13)	64(26.9)
Total	**129(54.1)**	**109(45.7)**	**238(100)**

Odds ratio 0.86 96 percent confidence limits 0.47<OR<1.61

From the above table, the mothers who have heard about exclusive breast feeding were 0.86 or 86 percent likely to have a positive attitude towards EBF. Knowledge does seem to have an influence on one's attitude.

Table 8: Selected Socio-demographic Characteristics of mothers who gave feeds compared to those who did not give feeds

Characteristic	Gave n=143	Did not Give n=95	X^2	P Value
Mean age	24 (SD 5.57)	24 (SD 5.57)	91.25 DF=104	0.0000
Educational Level				
None	6(2.5%)	10(4.2%)	50.34	0.0000
Primary	82(34%)	45(18.9%)	DF=12	
Secondary	39(16.3%)	35(14.7%)		
College/ University	16(6.7%)	5(2.1%)		
Occupation				
Full time housewife	109(45.3%)	76(31.9%)	61.29	0.0000
Working mother	28(11.7%)	17(7.1%)	DF=8	
Dependant	6(2.5%)	2(0.8%)		
Residence				
Low density	15(6.3%)	13(5.4%)	23.57	0.023247
Medium	25(10.5%)	18(7.5%)	DF=12	
High	66(27.7%)	53(22.2%)		
Village	37(15.5%)	11(4.6%)		
Household Food Income			199.69	0.00000000
Less than K100,000	100(42%)	82(34.4%)	DF=136	
101,000-500,000	40(16.8%)	10(4.2%)		
501,000 +	3(1.2%)	3(1.2%)		

From the above table, the mean age of mothers in the study is 24 years. This is a group of young mothers without much experience. Mother's age is highly significant as to whether they would give feeds to babies or not. The younger the mother, the more likely that they will give feeds (P value 0.00000).

Education of the mother also does significantly influence exclusive breast feeding. Many mothers are of low educational level (60 percent) which means that the lower the educational level, the more likely they will give feeds to a baby (P value 0.00000). Occupation of the mother seem to significantly influence EBF. However, surprisingly, the majority of the mothers in the study, are housewives. The mothers who are housewives stay at home most of the time, and one would expect them to exclusively breast feed. The area of residence was also found to be a significant factor. Majority of mothers lived in high density areas while a few lived in medium density and village. Very few mothers lived in low density areas.

Mothers in high density areas and village, generally interact most of the time. Their houses are close to each other i.e. they highly influence each other socially than mothers in medium and low density areas.

The amount of money spent on food, had a significant influence on exclusive breast feeding. Many mothers spent less than K100,000 per month on food (P value 0.00000000). Consequently, the majority of the mothers in the study, got information on breast feeding from health workers 193(81 percent) most of the time, and 33(13.8 percent) got their information from the community who include relatives, friends, elders, church members and more recently, a group called "Mothers' support Group [MSG]". Only 12(5 percent) got their information from the media (Books, Posters, Radio).

The table below shows the frequency of mothers and where they get their advice/information

Table 9: Sources of breast feeding advice/information for mothers

SOURCE	Frequency	Percentage
Health Worker/Clinic	193	81
Community	33	13.8
Media	12	5
Total	**238**	**100**

The majority of the mothers in the study thought they would terminate exclusive breast feeding completely just before six months because the baby will be big enough to eat other foods 219(92 percent), while others 19(8 percent) felt the breast milk may have completely dried up. However, most mothers said they would not discontinue or terminate breast

feeding and intended to breast feed for a mean duration of 21.483 months, median duration of 25 months and mode of 24 months.

5.5 Data on Staff

A total number of 10 nurses answered the questionnaire for staff. There were six enrolled nurses and four registered nurses from Chelston (4) Kanyama (3) and another (3) from Chalimbana. There was none from Minbank clinic because the nurse who worked in the Children's clinic was the Research Assistant. Generally there was some very good knowledge of exclusive breast feeding from almost all the respondents 8(80 percent). The other 2(20 percent) had ideas about exclusive breast feeding which were not very adequate.

The nurses who had very good knowledge, had some form of lactation management training, ranging from one day to two weeks. The other two nurses just heard about lactation management from other sources like friends, workmates, media, etc, i.e. they never had a formal training in lactation management. However, all the nurses recommended breast feeding as a biological norm for nurturing infants. The nurses also recommended that all practicing nurses must be trained in lactation management, in order to enhance their levels of knowledge of exclusive breast feeding. They also recommended that exclusive breast feeding should be emphasized in nursing and midwifery curriculum.

CHAPTER 6

6.0 DISCUSSION OF FINDINGS

6.1 Introduction

This chapter presents the discussion of the main findings from the study. The study identified a number of factors which may contribute to mothers introducing feeds to babies early i.e. less than six months. The study was a cross sectional survey of mother-baby pairs in Lusaka, Zambia.

The information obtained include socio-demographic data of mother and baby, mother's knowledge of exclusive breast feeding as regards to definition, benefits, intended duration of exclusive breast feeding, mother's attitude towards exclusive breast feeding, and the main reasons for introducing feeds. This data was collected through an interview schedule. Supplementary information from nurses was also obtained through a questionnaire.

6.2 Socio-demographic Characteristics

Most mothers in this study were still breast feeding their babies at six months and intended to do so for at least 18 months (Goma 1983), but far below half, continued to do so exclusively (39.9 percent).

This study highlights the importance of some socio-demographic variables as opposed to perinatal events in the sustenance of exclusive breast feeding.

While perinatal events such as delayed first breast feeds and separation e.g. due to fetal distress or post-caesarian section, appear not to be significant, these could still be improved upon in order to fully implement the Baby Friendly Hospital Initiative (BFHI) Policy in health facilities. Mother's age was an important significant factor in introduction of feeds in this study (mean age 24 years). This is consistent with other studies (Wright and Walker, 1983; Chye *et al* 1997; Graffy 1992). This could be attributed to a higher proportion of first time mothers in this subgroup, who are usually inexperienced (X^2 = 91.25 DF = 104 P value 0.00000).

Educational attainment of the mother was found to be a significant factor. The majority of the mothers were of low educational level i.e. no education or up to primary school level (60 percent) only. This finding is in line with the levels of knowledge of exclusive breast feeding, which were quite low (55.9 percent did not have correct knowledge and only 44.1 percent had the correct knowledge). It is common belief that the higher one goes in education, the more knowledgeable one is in most aspects of life. This may not necessarily be true, but this study has proved this finding to be so (X^2 = 37.89, P value = 0.00000003). Young mothers who have left school early, are at greatest risk (Wright and Walter 1983). These findings may be attributed to the fact that women who are less educated, have little access to literature and other forms of

information than their educated counterparts who have more access to scientific and correct information. In line with the educational attainment of the mother, the occupational status of the mother was found to be a highly significant factor in influencing exclusive breast feeding. Surprisingly, the majority of mothers in this study were housewives (73.2 percent) while only 18.8 percent are working mothers, and only 89 percent are dependants. The mothers who are full time housewives, stay at home most of the time and one would expect that they have all the time to exclusively breast feed their babies. This finding is in contrast with a study which suggested that maternal paid employment in the post-partum period, is a well known factor for early introduction to feeds (Chye *et al* 1997).

However, Wright and Walker 1983, also indicated that maternal intention to return to work, was not significantly associated with duration of breast feeding. In relation to maternal occupation, the place of residence was also significant. Half (50 percent) of mothers in the study, reside in high density areas, while 20 percent sty in the village, 18.1 percent in medium density areas, and only 11.8 percent in low density areas. Mothers who stay in high density areas, share a lot of information among themselves. They have certain norms which everyone has to follow. The mothers in high density areas interact and influence each other greatly, than mothers in medium and low density areas, who share very little.

Another factor which was found to be significant in this study, was the amount of money spent on food per month in a household. The majority of the mothers (76.4 percent) spend less than K100,000 per month on food (X^2 = 199.69, P value = 0.00000000). This is similar with the findings of Baboo *et al* (1998), who have shown average income of people in George compound to be K100,000 per month. This is far below the poverty datum line. One wonders what type of food these mothers buy from this amount of money, to sustain a family with a mean number of people of 5.429 persons (SD = 2.149). Considering that these mothers are still breast feeding and, therefore, need to eat quality food in order to produce quality milk in terms of amount and constituents, the amount spent on food is far from adequate. This finding is further confirmed by a World Bank Poverty Assessment Report of 1991, which indicated that, more than 69 percent of the Zambian population, lived well below the poverty datum line i.e. they spend over 70 percent of their earnings on food.

6.3 Reasons for introducing feeds

Most of the reasons for introducing feeds to babies may not have statistical significance but because of their qualitative nature, they have been discussed thoroughly in this sub-section.

The major reasons which were given by mothers for introducing feeds or would introduce feeds, were as follows:-

not enough milk (46.2 percent), no reason (30.2 percent), had to go back to work (5.9 percent), influenced by relatives (6.7 percent), introduced in hospital (2.6 percent) or other reasons (8.4 percent), which included planning for another baby, mother is sick or dead, mother is actually pregnant, breast problems, and baby is sick.

As reported in several other studies (Chye *et al* 1997, Graffy 1992, and Newson and Newson 1962), "Not enough milk" has been a major reason for introducing feeds to babies. Most mothers believe they do not have enough milk to establish or continue exclusive breast feeding. However, this problem is common in the first few days after delivery, and more so if the baby is not put on the breast to initiate the "let down" reflex. The mothers in this study appeared to become concerned because their babies cried a lot, unsettled and, therefore, felt the baby was hungry and very thirsty. This is not necessarily a sign of hunger because, a baby may cry due to several other reasons. More controversially, Newson and Newson (1962) have suggested that mothers sometimes gave physical reasons as a justification for introducing feeds and stopping exclusive breast feeding, when the underlying reason was due to their ambivalence about breast feeding.

In physiological terms, as already stated, lactation is stimulated by the infant sucking at the breast: if the baby sucks longer, the breast is emptied more effectively; more oxytocin will be released and more milk will be produced. This concept may be the most important for health professionals to convey to mothers (Graffy 1992).

Maternal nutrition during lactation, cannot be over-emphasized. Milk is produced from the food which the mother eats, and from the maternal reserves acquired during pregnancy. Therefore, good nutrition during pregnancy and lactation, are essential factors for good lactation performances (Ackre 1989). From this study, it is unlikely that the majority of mothers have adequate nutrition during pregnancy and lactation, due to economic hardships being faced by the country as a whole, and women and children in particular.

The mothers in this study were asked where they got their advise from on breast feeding in general, and insufficient milk in particular. The majority of the mothers (81 percent) got their advice from the health workers most of the time; 13.8 percent got their advice from the community, who include relatives, friends, elders, church members, and Mother support groups, and 5 percent got their information from media, which include books, radio, magazines. The advice they received on insufficient milk supply was: to

continue breast feeding and feed more often; to rest and drink and eat more food; give sugar water or milk formula and improve on breast feeding technique.

This finding suggests that health worker's correct knowledge of lactation management and correct information on perceived insufficient milk supply is of utmost importance because, many mothers turn to them for advice. A good number of mothers (30.2 percent) had no reason at all for introducing feeds. Most of them said they thought that was the normal way of feeding a baby. Again, the importance of teaching mothers correct information, should be emphasized.

Maternal employment during the post-partum period is a well known factor for early weaning practices. In this study, only 5.9 percent indicated this as a reason for introduction of feeds. This finding, suggests that, maternal intention to return to work, was not significantly associated with introducing feeds to babies (student test 't' P value = 0.36740). It seems, therefore, that mothers intend to introduce feeds well before their intention to go back for work.

Immediate family members, friends and the community as a whole, were attributed to having an influence in introducing feeds by 6.7 percent of the mothers in the study. This was due to the underlying milk insufficiency

problem. Other reasons which were cited in this study were the fact that a mother was planning for another baby, or actually pregnant. This reason, though not statistically significant, poses a serious implication on family planning issue. This finding is an issue for clarification in future studies as the question of why and how a woman can plan for another baby within six months (or mean age 3 months), cannot be answered in this study. However, it is widely believed traditionally that, a woman who is pregnant, cannot breast feed a baby because the milk will make the baby sick, as the milk is sour. Health workers, therefore, have a big task in dispelling these rumours, beliefs and myths about pregnancy and breast feeding.

Maternal illness or infant illness was also cited as a reason for introducing feeds by a few mothers. The most common illness mothers cited was HIV/AIDS and tuberculosis. According to WHO (1992) Annex to the global criteria for the Baby Friendly Hospital Initiative, acceptable medical reasons for supplementation include a mother who is severely ill, such as acute psychosis, eclampsia, fully blown AIDS and acute shock. For most infections which are non-life threatening, the infected mother provides antibodies through continued breast feeding. As for active tuberculosis, recommendations are contradictory. For example, Lawrence (1989) recommends discontinuation of breast feeding if the infant has access to good alternative

nutrition. However, this same author notes that, if it is safe for the mother to be with the baby, then it is safe for her to breast feed. (Riordan and Auerbach 1993).

In Zambia, HIV/AIDS and Tuberculosis, are still a major debate at policy/guideline levels. It is a known fact that HIV is transmitted through breast milk. The risk of HIV trans-mission through breast feeding and how these compare with risks of morbidity and mortality from not breast feeding in poor and low socio-economic settings, is not yet known. However, it is important that women are provided with correct information and counselled in an appropriate manner, to enable them make an informed choice on how to feed their infants (National Policy Frame-work on Infant Feeding Practices and HIV/AIDS 1998). World-wide statistics have shown that, the effects of not breast feeding in developing countries due to fear of transmitting infection to the child, are far fetched than the infection itself. So, it is advisable that women should still continue to feed rather than starve their children.

According to WHO (1992), some of the acceptable medical reasons for supplementation in infants, include small for gestational age, with potentially severe hypoglycaemia, inborn errors of metabolism such as galactosaemia, and phenylketonuria. The mother's milk should also be available during supplementation.

6.4 Mother's knowledge and attitude towards exclusive breast feeding

More than half (55.9 percent) of the mothers in the study, did not have correct knowledge about exclusive breast feeding and its benefits and only 44.1 percent had the correct knowledge about Exclusive Breast Feeding. Mothers in this study had low educational attainment i.e. none or up to primary school level only (60 percent). Statistically, this had a significant influence on the knowledge of exclusive breast feeding. This is despite the fact that 54.2 percent of the mothers had heard about exclusive breast feeding from some source (mostly health workers) and 43.8 percent had not heard about it.

Knowledge is heavily influenced by one's socio-economic background. Mothers who are highly educated, are more likely to have access to information which has scientific validity while information shared by mothers of low socio-economic background, is usually based on myths, rumours and unfounded beliefs. However, this does not mean these mothers cannot learn new concepts. This is well demonstrated by 73.1 percent of mothers who gave a mean duration of exclusive breast feeding at six months and had strongly agreed that it was not appropriate to give feeds to a baby who is still "small", i.e. less than six months. A good number (26.9 percent) still felt it was okey to introduce feeds to babies less than six months because the breast milk is never enough.

The mothers who had heard about exclusive breast feeding were 0.86 likely to have a positive attitude towards exclusive breast feeding than those who have never heard about it. Knowledge, therefore, does influence one's attitude to a certain extent. Most mothers have acknowledged that breast milk is the ideal food for their babies, but there seems to be a serious discrepancy between knowledge, attitude and practices among the mothers in this study. It appears that women still need to be convinced regarding the importance of exclusive breast feeding.

6.5 Health Workers' Knowledge

Good knowledge about breast feeding and lactation management by health workers, is of utmost importance. This is so because, in many parts of the world today, an increasing number of women, are delivering in hospitals, and so, turn for advice and support to medical and nursing staff. The role of the health worker is, therefore, crucial in helping to make the first days of breast feeding, as positive as possible. (Bradley and Meme, 1992).

Due to small numbers of respondents in this study, concrete valid conclusions could not be made. A nation-wide in-depth study on health workers' knowledge, attitude and practices, is therefore, warranted. Although the

respondents were very few, we can still see a trend of health worker training in lactation management increasing, compared to the pre-BFHI period. This, also, is a positive step towards the improvement of breast feeding practices and should be continued nationwide.

CHAPTER 7

7.0 CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This study has revealed some of the hindrances to breast feeding that exist in the community. The recent changes brought about the Baby Friendly Hospital Initiative (BFHI), are positive steps towards improving the practices of exclusive breast feeding as evidenced by a majority of babies (92.7 percent) in this study, who received breast milk/colostrum, as their first feed as compared to 5.9 percent who got water and 1.2 percent who got milk formula.

The findings of this study suggest that, premature introduction of feeds to babies less than six months in Lusaka, is principally determined by personal characteristics of the mother and is conditioned by her knowledge of, affective responses to breast feeding. The study also suggests that mothers are not yet convinced that, exclusive breast feeding is enough for their babies.

Socio-demographic factors such as mother's age, educational level, occupation, place of residence and household food income levels, appeared to exert a greater influence on decisions about exclusive breast feeding. Although most mothers have acknowledged breast milk as the ideal food for

their infants, only a few in the study practice exclusive breast feeding i.e. the exclusive breast feeding rates are still low in Lusaka at the mean baby age of three months. Similarly, the knowledge levels about exclusive breast feeding is still low, though mother's attitude seems to be positive. There seems to be a gap of knowledge, attitude and practice in this group of women in Lusaka.

Concern about inadequate milk supply, was the commonest reason given for introducing feeds. Precise reasons for this phenomenon are not very clear although in this study, poor maternal nutrition, could be highly associated with inadequate milk supply, due to poor socio-economic status of most mothers. Although this study was done in Lusaka where Baby Friendly Hospital Initiatives were started, the complex of personal, socio-economic and cultural factors, must be understood and addressed first, if exclusive breast feeding programmes are to be effective. It is, therefore, strongly felt that the issue of poverty reduction, is of paramount importance, in addressing effective exclusive breast feeding programmes.

The success of Exclusive Breast Feeding, depends on the welfare of the mother and child. This is why UNICEF puts maternal and child health as one package. Any woman who intends to exclusively breast feed, should be in a complete state of mental, physical and social wellbeing. It is only a healthy mother from a good socio-economic background, who

is likely to breast feed successfully. A healthy mother promotes better feeding practices for the future of her own child ("K.S.B.").

7.2 Recommendations

Based on the findings of this study, the following recommendations are made:-

a) Short-term

i) A similar study at national level is strongly recommended in order to compare variations within the provinces.

ii) Regular programmes for continuing education on lactation management to health workers, community as a whole, and the church.

iii) Intensify campaign on exclusive breast feeding to cover the whole country.

iv) Reassessment of Baby Friendly Hospital Initiative activities quarterly in order to monitor the standards in the baby friendly hospital and maternity facilities.

v) Strengthen the mother support group (MSG) by re-emphasizing their role through good record keeping and motivation.

b) Long-term

i) A cohort study of breast feeding on HIV positive mothers, to compare the benefits of exclusive breast feeding against supplementation.

ii) Empowerment of the girl-child through free education and through literacy classes in the community.

iii) Promotion of small scale business ventures through community involvement in order to reduce poverty levels.

REFERENCES

1. Akre James, ed (1989). Infant feeding: the physiological basis. **WHO Bulletin. Vol 67 pp 32-34.**

2. Baboo K.S. (1994). Weaning practices among Zambian Women **(unpublished).**

3. Baboo K.S., Luo N.P. *et al* (1998). Human Immunodeficiency Virus Type-1 Seroprevalence in Zambian patients with Acute Diarrhoea. A Community Based Study. **Journal of AIDS and Retrovirology, Vol. 10, pp 313-319.**

4. Bana Purmath C.R. *et al* (1995). Breast feeding practices in villages of central Karnataka, India. **Paediatric Journal, Vol. 33 No. 6. pp 477-479.**

5. Bhatnagar S., Jain N.P. Tiwani C. (1996). Cost of infant feeding in exclusive and partially fed infants. **Indian Paediatric Journal,** Vol. **33 No. 8, pp 655-658.**

6. Bradley J. and Meme J (1992). Breast feeding promotion in Kenya: Challenges in health worker's knowledge, attitude and practices. 1982-89. **Journal of Tropical Paediatrics, Vol. 38, pp 228-233.**

7. Chye J.K., Zain Z. *et al* (1989). Breast feeding at six weeks and predictive factors. **Journal of tropical Paediatrics, Vol. 43, pp 287-292.**

8. Davies-Adetugbo A.A. (1995). Socio-cultural factors and the promotion of exclusive breast feeding in rural Yoruba communities of Osun State, Nigeria. **Social Sciences Medicine Vol. 45, No. 1, pp 113-125.**

9. Escamilla Perez (1994). Breast feeding in Africa, Latin America and Caribbean regions: The potential role of urbanisation. **Journal of Tropical Paediatrics Vol. 40, pp 137-139.**

10. Freud Paul (1992). Breast feeding KAP. Survey analysis of results Report in Zambia. **Prittech Report (unpublished).**

11. Goma s. (1983). Breast feeding and bottle feeding patterns in Zambia. **UNICEF Report (unpublished).**

12. Graffy J. (1992). Mother's attitudes to and experience of breast feeding: A primary care study. **British Journal of General practice, Vol. 42, pp 61-64.**

13. Gwinn M. *et al* (1987). The effects of pregnancy, breast feeding and oral contraceptive use on the risk of epithelial ovarian cancer. **Atlanta, Georgia Publication, Vol. 10, pp 105-107.**

14. Hill J. *et al* (1996). Malaria initiative in developing countries: Malaria consortium.

15. Labbok M. and Booher K.P. (1985). Breast feeding: Protecting a natural resource. **USAID in conjunction with Georgetown University, pp 15-30.**

16. Libetwa M.C. (1997). A study on the KAP of midwives on infection control in maternity units in Lusaka urban clinics, **MPH thesis, UNZA.**

17. National Food and Nutrition Commission. A Draft plan of Action on Protecting, Promoting and Supporting breast feeding, October, 1992.

18. National Food and Nutrition Commission. Country Report on Breast feeding substitutes. December 1994 - May 1995.

19. National Food and Nutrition Commission. Child care and feeding patterns in Zambian Children, 1990.

20. National Policy on infant feeding practices. NFNC/MoH/1992.

21. Newson J and Newson E. (1962). Breast feeding in decline. **British Medical Journal, Vol. 56, pp 1744-1745.**

22. Prospects for sustainable human development in Zambia: more choices for our people. **UN/GRZ 1996.**

23. Riodan J. and Auerbach K.G. (1993). **Breast feeding and human lactation.** Jones and Bartlett Publishers Sudburry.

24. Wang Y.S., Wu S.Y. (1994). The effects of exclusive breast feeding on development and incidence of infection in infants. **Journal of Human lactation pp 27-30.**

25. Wilmoth T.T. & Elder T. (1994). An assessment of research on breast feeding promotion strategies in developing countries. **Social Science Medicine Vol 41, No. 4, pp 579-594.**

26. Wright H.J. & Walker P. (1983). Prediction of duration of breast feeding in primiparas. **Journal of Epidemiology and Community Health, Vol. 37, pp. 89-94.**

27. Zambia Demographic and Health Survey, 1992, **Central Statistical Office.**

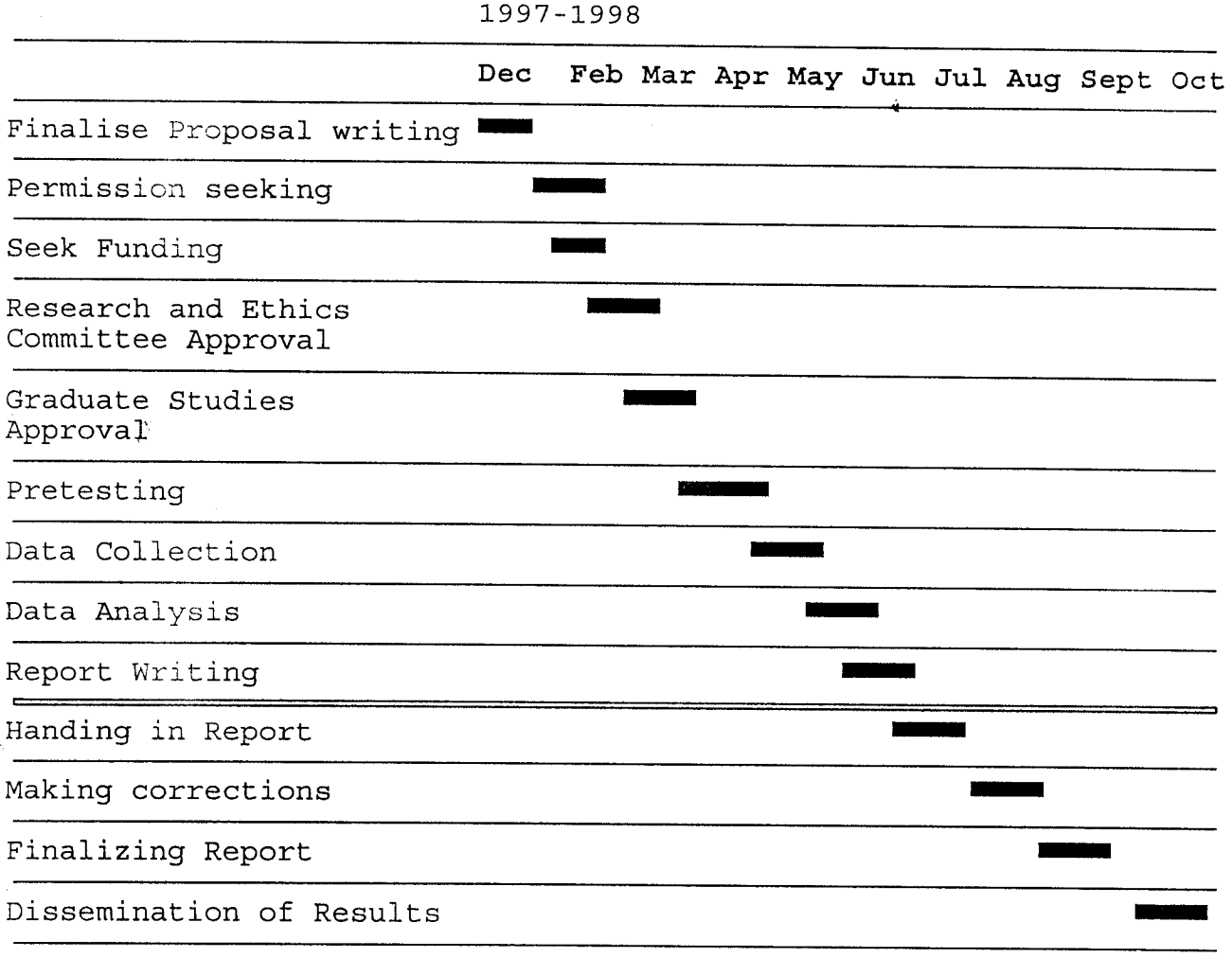
28. Zambia Demographic and Health Survey, 1996, **Central Statistical Office.**

29. Zambia National Policy Framework on infant feeding practices and HIV/AIDS transmission from mother to child. **NFNC/CBoH/MoH 1998.**

APPENDIX 1

WORK-PLAN 1997 - 1998

1997 - 1998



APPENDIX 2

ESTIMATED BUDGET

		Quantity	Cost
1.	**Personnel**		
	-Secretarial services	K1,000 x 350 pages	K350,000.00
	-Photocopying services	K100 x 1,115 pages	K115,000.00
	-Statistician	K100,000 x 2 days	K200,000.00
	-Research Assistant	K5,000 x 30 days x 4	K600,000.00
	-Computer Programmer	K50,000 x 2 days	K100,000.00
2.	**Field Service**		
	-Transport money (P.I)	K20,000 x 10 days	K200,000.00
	-Transport money (R.A.) to come for training	K10,000 x 4	K40,000.00
	-Training of Research Assistants	K50,000 x 1 days	K50,000.00
3.	Stationery		
	-Computer paper	K15,000 x 5 reams	K75,000.00
	-Computer Ribbon	K25,000 x 1	K25,000.00
	-Computer Diskettes	K25,000 x 1 box	K25,000.00
	-Research Assistance	K10,000 x 5	K50,000.00
	-Clip folders	5 folders	
	-Scientific Calculator	K30,000 x 1	K30,000.00
	-A4 Envelopes	K2,500 x 10	K25,000.00
	-Tippex correcting fluid	K5,000 x 2 sets	K10,000.00
	-Erasers	K750 x 5	K3,750.00
	-Pens	K300 x 10	K3,000.00
	-Pencils	K200 x 10	K2,000.00
	-Spring Binding	K5,000 x 6	K30,000.00
	-Hard cover binding	K30,000 x 6	K180,000.00
	Sub-Total		**K2,113,750.00**
	10% Contingency		211,375.00
	GRAND TOTAL		**K2,325,125.00**

APPENDIX 3

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE

Department of Paediatrics/Child Health
P.O. Box 50110
Lusaka, Zambia

hone: 252641
40 (UTH) 254824 (Pre-Clinical) Ridgeway Campus
grams: UNZA, LUSAKA
x: UNZALU ZA 44370
+ 260-1-250753

Your Ref:

Our Ref:

5th January, 1998

Mrs. Akalala M. Chimumbwa
Dept of Community Medicine
LUSAKA

Dear Mrs. Chimumbwa

RE: FACTORS CONTRIBUTING TO MOTHERS INTRODUCING FEEDS TO BABIES LESS THAN SIX MONTHS IN LUSAKA, ZAMBIA

On behalf of the Research Ethics Committee I wish to inform you that your Research Proposal was discussed at the Research Ethics Committee Meeting of 29th October, 1997 and approval was given as no ethical issues were raised.

Yours sincerely

Dr E.M. Chomba
SECRETARY - RESEARCH ETHICS COMMITTEE

APPENDIX 4

Mrs. Mirriam A. Chimumbwa,
University of Zambia,
School of Medicine,
Dep. of Community Medicine.
P. O. Box 50110,
LUSAKA.

16th December, 1997.

The Medical officer In Charge,
Anglo American Clinic,
LUSAKA.

Dear Sir,

RE: PERMISSION TO CARRY OUT A STUDY AT YOUR PRACTICE

I am a Part II Master of Public Health student in the Department of Community Medicine.

I am hereby seeking permission to carry out a study entitled **FACTORS CONTRIBUTING TO MOTHERS INTRODUCING FEEDS TO BABIES LESS THAN SIX MONTHS,** at your practice which was randomly selected among the High Cost clinics. The study protocol has already been approved by the Research and Ethics Committee and the Board of Studies. Data collection will involve interviewing twenty five (25) mothers for 10-15 minutes at the most, who bring babies to the children's clinic. A questionnaire will also be administered to staff working in the Maternal & Child Health section. This will be done from the 2nd to 31st January, 1998.

A Research Assistant preferably RN/RM will be recruited to do the interviews under the guidance of the principal Investigator.

Hoping to hear from you soon.

Yours faithfully,

Mirriam A. Chimumbwa (Mrs)
RN, BSC-MPH STUDENT

APPENDIX 5

P.O. Box 30789
Lusaka
Tel: 252480 (Temporary)
Telex:.....

In reply please quote
No. .....

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

LUSAKA URBAN DISTRICT HEALTH MANAGEMENT TEAM

29th December 1997

Mrs. Mirriam A. Chimubwa
University of Zambia
School of Medicine
Department of Community Medicine
P.O. Box 50110
Lusaka

Dear Madam,

Re: *PERMISSION TO CARRY OUT A STUDY AT CHELSTONE AND KANYAMA HEALTH CENTRE.*

Permission is here by granted for you to carry out a study (MPH dissertation) entitled factors contributing to mother introducing feeds to babies less than six months in Lusaka, Zambia, at Chelston and Kanyama Health Centres.

After completing do avail your results to the district office.

Wishing you success.

Mlaya

Dr. S. Bvulani Malumo
Manager Planning Development
For/DISTRICT DIRECTOR OF HEALTH-LUSAKA

c.c. *Sister In Charge*
Kanyama Health Centre
Lusaka

c.c. Sister In-Charge
Chelstone Health Centre
Lusaka

APPENDIX 6

THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF COMMUNITY MEDICINE

TITLE: **Factors contributing to mothers introducing feeds to babies less than six months in Lusaka, Zambia.**

DATE:..... SERIAL NO:.....

CLINIC:.....

INTRODUCTION:

1. We are carrying out an interview in which we are interested to know what mothers give to their babies in the first six months.

2. All information is confidential and no names will be written down anywhere.

(RA to tick, circle or write response where applicable.)

SECTION A: **BABY DATA** (RA to countercheck with Under 5 Card)

1. How old is the baby? .....

2. What is the sex of your baby? (1) Male
(2) Female

3. How much did the baby weigh at birth? .....

4. Were you full term when baby was born?

(1) Yes (2) No

5. If 'no' to question 4, how big was the pregnancy?

.....

6. Was the baby born normally? (1) Yes (2) No

7. If 'no' to question 6, specify .....

.....

8. Was the baby well soon after delivery or did it have to be kept in a special baby care unit?

(1) Was well
(2) Was not well

9. Immediately after delivery, when did you give the first feed to the baby?

   (1) Within 30 minutes
   (2) Within 1-3 hours
   (3) More than 3 hours

10. What was it that you gave to the baby? .....

    .....

11. If answer is (3) in question 9, give one major reason

    .....

    .....

12. If the feed was not breast, when did you give the first breastfeed? (Specify time)

    .....

13. Has the baby been weighed today? (1) Yes (2) No

14. If 'yes', what was the weight? .....
    If 'no', we shall weigh the baby after the interview.
    (Can I have a look at the Under 5 Card?)

15. Your baby seems to be growing well, what do you think? (RA checks Under 5 Card to see if baby is:-)

    (1) growing
    (2) static
    (3) going down

16. Immunization status of the baby (List vaccinations given)
    .....

    .....

    .....

    .....

17. Has your baby been hospitalised before? (1) Yes (2) No

18. If 'yes' to question 17,

    (1) when (specify age and days) .....
    (2) for how long? .....

19. What was the **main** reason for admission?

    (specify).....

    .....

20. How was the baby fed while in hospital?

(1) Bottle fed
(2) Mother's breast
(3) Other (specify) .....

21. How are you feeding the baby now? .....

.....

22. At what age (months) did you introduce the following to your baby?

(1) Water .....
(2) Formula or other milk .....
(3) Juices .....
(4) vitamin syrup .....
(5) Porridge (cereal) .....
(6) Any other food (specify) .....

23. What was the **main** reason for introducing any of the above?

.....

.....

SECTION B: MOTHER AND EXCLUSIVE BREASTFEEDING DATA

24. If you do not mind, how old are you? .....

(RA estimate [ES] age if she does not want to give or doesn't know, specifying that age was just estimated)

25. How far did you go in your education?

(1) None (3) Secondary
(3) Primary (4) College/University

26. What do you do for a living?

(1) Full time housewife
(2) Professional (specify) .....
(3) None professional (specify) .....

27. Where do you live?

(1) Low density (specify) .....
(2) Medium density (specify) .....
(3) High density (specify) .....
(4) Village .....

28. What is your nationality?

(1) Zambian (2) Non Zambian

29. If you are Zambian, what is your tribe:

(1) Bemba (2) Nyanja (3) Tonga
(4) Lozi (5) Lunda, Luvale, Kaonde
(6) Other (specify) .....

30. Are you married? (1) Yes (2) No

31. If 'no' specify marital status

(1) Single (2) Divorced (3) Widowed
(4) Other (specify) .....

32. How many children have you given birth to? .....

33. Did you lose any pregnancies? (1) Yes (2) No

(give number) .....

34. How many people are in your household? .....

35. What religion are you? .....

(1) Catholic (2) Evangelical (3) Muslim
(4) Other (specify) .....

36. Roughly, how much money do you spend just on food in a month? K.....

37. When you were pregnant for this baby, roughly how many times did you attend Ante-natal clinic? .....

38. Have you heard of Exclusive Breastfeeding? (1) Yes (2) No

39. (a) If 'yes', explain what it means in your own words

.....

.....

(b) If 'no', RA to explain what Exclusive Breastfeeding (EBF) is and move to question 41.

40. Did you receive any education on the advantage of exclusive breastfeeding during antenatal period? (1) Yes (2) No

41. Do you think it is appropriate to give non breast milk food or milk to a baby less than six (6) months? (1) Yes (2) No

42. Give one **major reason** for your answer .....

.....

43. When you need infant feeding advice, where do you get if from?

.....

44. (For matters who are exclusive breastfeeding or partially exclusive breastfeeding) For how long do you intend to exclusively breastfeed (EBF)?

.....

45. What is **the main reason** for the chosen duration?

.....

.....

46. Has your baby had any diarrhoea, cough or sneezing episode in the last 2 weeks? (1) Yes (2) No

47. When do you intend to **stop** breastfeeding **completely**?

.....

48. What is the **main reason** for the chosen stopping time?

.....

.....

.....

End of interview
Thank you for participating

Researchers

APPENDIX 7

UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF COMMUNITY MEDICINE

DATE:..... SERIAL.....

CLINIC.....

Questionnaire for Health Workers at the MCH in a study of **Factors Contributing to Mother Introducing Feeds to Babies Less Than 6 Months.**

Instructions: Dear respondent,

1. Please do not write your name as all information is confidential. Please answer all questions.

2. Tick ( ) or circle the appropriate response.

SECTION A. BASIC INFORMATION

1. Age (Yrs).....Date of Birth...../..../....

2. Highest educational level attained
   a) None
   b) Primary
   c) Secondary
   d) College/University

3. Highest professional qualification
   a) Enrolled nurse
   b) Enrolled midwife
   c) Registered nurse

d) Registered midwife

e) Other (specify).....

4. Nationality

a) Zambian

b) None Zambian

5. Religion

a) Catholic

b) Non Catholic

c) Muslim

d) Other (specify).....

6 Marital status

a) Single

b) Married

c) Divorced

d) Widowed

e) Other (specify)

7. Parity (No. Of children).....

SECTION B. DATA ON LACTATION MANAGEMENT

8. Have you been trained in lactation management

a) Yes

b) No

9. If yes for how long?.....days

.....weeks

.....months

10. Do you know if your health centre is baby friendly?

a) Yes

b) No

c) Don't know

11. When do you start educating a mother about breast feeding?

a) Antenatal period
b) During labour
c) Post natal period
d) During children's clinic

12. How often are breastfeeding talks given at your clinic?

a) Sometimes 2 - 3 times in a week
b) Always (everyday)
c) Never

13. Who do you think mostly influences a mother to breastfeed?

a) Husband/partner
b) Health workers
c) Relatives
d) Other (specify).....

14. Are you as a health worker convinced that a mother can breastfeed exclusively without any problems?

a) Yes
b) No
c) Not sure

15. If you have a baby yourself would you opt to breastfeed the baby exclusively?

a) Yes
b) No

16. Give one reason for your answer

.....

17. Why do you think a mother would give feeds to a baby less than six months? Give one major reason.
.....

18. For how long do you think a mother can <u>reasonably</u> practice exclusive breastfeeding?
.....weeks
.....months

19. Give <u>one</u> suggestion on how we can help mothers improve on exclusive breastfeeding.
.....

20. Would you recommend lactation management as a course in nursing curriculum
a) Yes
b) No

21. Give one major reason for your answer.
.....
.....

Thank you for your participation

RESEARCHER

INNOCENTI DECLARATION

On the Protection, Promotion and Support of Breastfeeding

RECOGNISING that

Breastfeeding is a unique process that:

- provides ideal nutrition for infants and contributes to their healthy growth and development;
- reduces incidence and severity of infectious diseases, thereby lowering infant morbidity and mortality;
- contributes to women's health by reducing the risk of breast and ovarian cancer, and by increasing the spacing between pregnancies;
- provides social and economic benefits to the family and the nation;
- provides most women with a sense of satisfaction when successfully carried out; and that

Recent research has found that:

- these benefits increase with increased exclusiveness[1] of breastfeeding during the first six months of life, and thereafter with increased duration of breastfeeding with complementary foods, and
- programme interventions can result in positive changes in breastfeeding behaviour;

The Innocenti Declaration was produced and adopted by participants at the WHO/UNICEF policymakers' meeting on "Breastfeeding in the 1990s: A Global Initiative", co-sponsored by the United States Agency for International Development (A.I.D.) and the Swedish International Development Authority (SIDA), held at the Spedale degli Innocenti, Florence, Italy, on 30 July - 1 August 1990. The Declaration reflects the content of the original background document for the meeting and the views expressed in group and plenary sessions.

WE THEREFORE DECLARE that

As a global goal for optimal maternal and child health and nutrition, all women should be enabled to practise exclusive breastfeeding and all infants should be fed exclusively on breast milk from birth to [illegible]-6 months of age. Thereafter, children should continue to be breastfed, while receiving appropriate and adequate complementary foods, for up to two years of age or beyond. This child-feeding ideal is to be achieved by creating an appropriate environment of awareness and support so that women can breastfeed in this manner.

Attainment of the goal requires, in many countries, the reinforcement of a "breastfeeding culture" and its vigorous defence against incursions of a "bottle-feeding culture." This requires commitment and advocacy for social mobilization, utilizing to the full the prestige and authority of acknowledged leaders of society in all walks of life.

Efforts should be made to increase women's confidence in their ability to breastfeed. Such empowerment involves the removal of constraints and influences that manipulate perceptions and behaviour towards breastfeeding, often by subtle and indirect means. This requires sensitivity, continued vigilance, and a responsive and comprehensive communications strategy involving all media and addressed to all levels of society. Furthermore, obstacles to breastfeeding within the health system, the workplace and the community must be eliminated.

Measures should be taken to ensure that women are adequately nourished for their optimal health and that of their families. Furthermore, ensuring that all women also have access to family planning information and services allows them to sustain breastfeeding and avoid shortened birth intervals that may compromise their health and nutritional status, and that of their children.

All governments should develop national breastfeeding policies and set appropriate national targets for the 1990s. They should establish a national system for monitoring the attainment of their targets, and they should develop indicators such as the prevalence of exclusively breastfed infants at discharge from maternity services, and the prevalence of exclusively breastfed infants at four months of age.

National authorities are further urged to integrate their breastfeeding policies into their overall health and development policies. In so doing they should reinforce all actions that protect, promote and support breastfeeding within complementary programmes such as prenatal and perinatal care, nutrition, family planning services, and prevention and treatment of common maternal and childhood diseases. All healthcare staff should be trained in the skills necessary to implement these breastfeeding policies.

[1] Exclusive breastfeeding means that no other drink or food is given to the infant; the infant should feed frequently and for unrestricted periods.

[2] World Health Organization, Geneva, 1989.

OPERATIONAL TARGETS:
All governments by the year 1995 should have:

- appointed a national breastfeeding coordinator of appropriate authority, and established a multisectoral national breastfeeding committee composed of representatives from relevant government departments, non-governmental organizations, and health professional associations;
- ensured that every facility providing maternity services fully practises all ten of the *Ten Steps to Successful Breastfeeding* set out in the joint WHO/UNICEF statement[2] "Protecting, promoting and supporting breast-feeding: the special role of maternity services";
- taken action to give effect to the principles and aim of all Articles of the International Code of Marketing of Breast-milk Substitutes and subsequent relevant World Health Assembly resolutions in their entirety; and
- enacted imaginative legislation protecting the breastfeeding rights of working women and established means for its enforcement.

We also call upon international organizations to:

- draw up action strategies for protecting, promoting and supporting breastfeeding, including global monitoring and evaluation of their strategies;
- support national situation analyses and surveys and the development of national goals and targets for action; and
- encourage and support national authorities in planning, implementing, monitoring and evaluating their breastfeeding policies.

APPENDIX 9

TEN STEPS TO SUCCESSFUL BREAST-FEEDING

Every facility providing maternity services and care for newborn infants should:

1. Have a written breast-feeding policy that is routinely communicated to all health care staff.

2. Train all health care staff in skills necessary to implement this policy.

3. Inform all pregnant women about the benefits and management of breast-feeding.

4. Help mothers initiate breast-feeding within a half-hour of birth.

5. Show mothers how to breast-feed, and how to maintain lactation even if they should be separated from their infants.

6. Give newborn infants no food or drink other than breast milk, unless medically indicated.

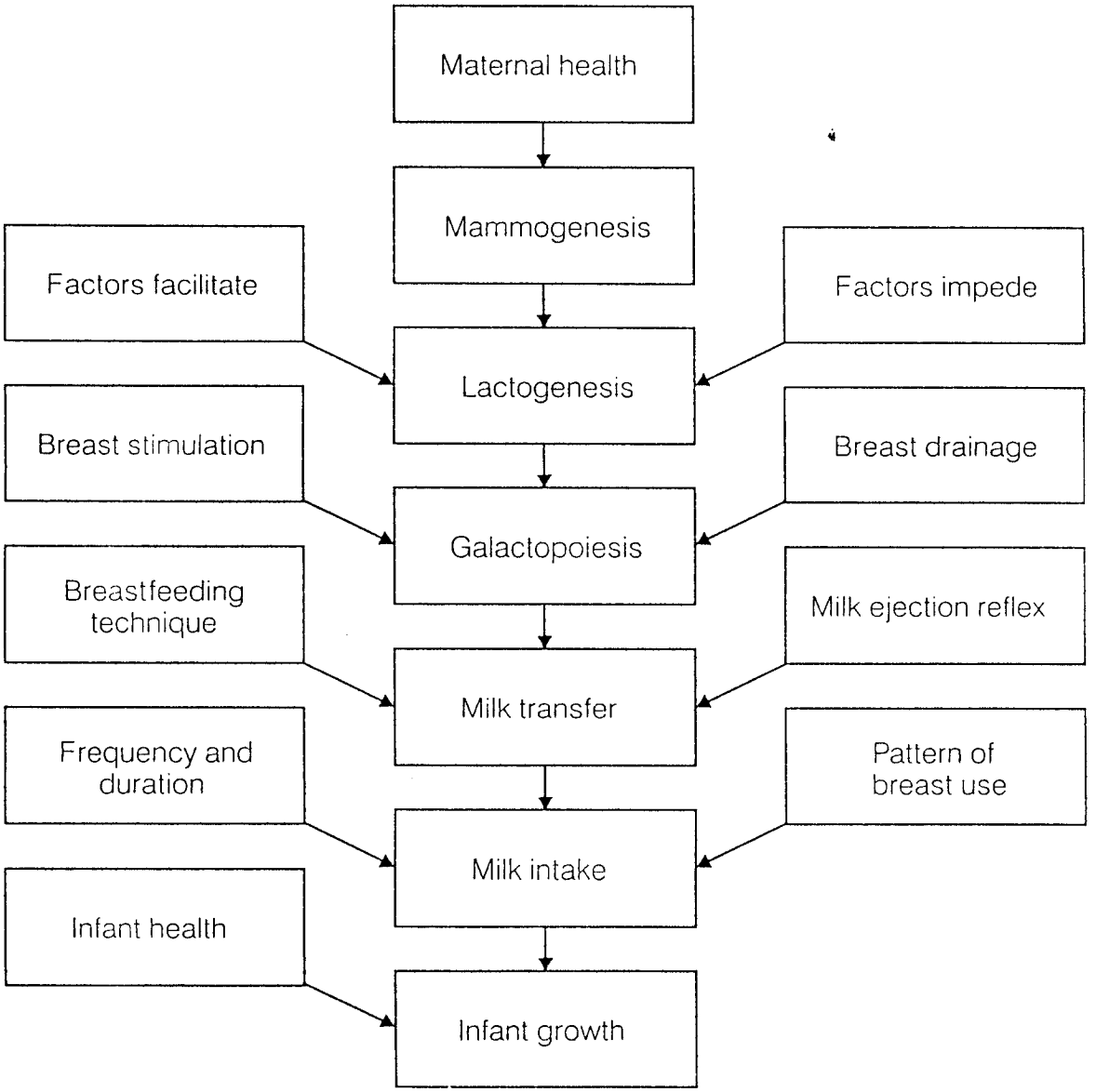
7. Practice rooming-in - allow mothers and infants to remain together - 24 hours a day.

8. Encourage breast-feeding on demand.

9. Give no artificial teats or pacifiers (also called dummies or soothers) to breast-feeding infants.

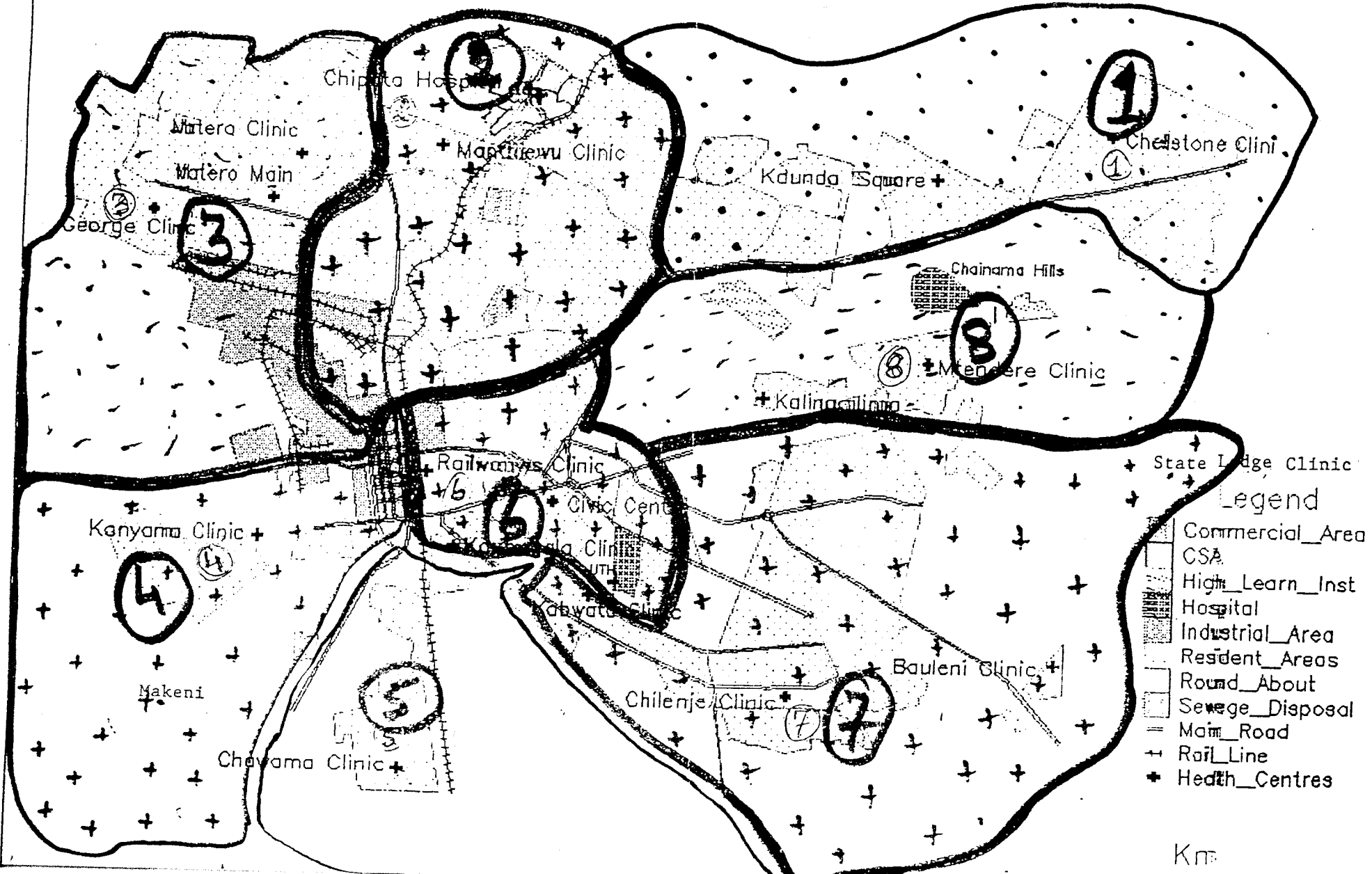
10. Foster the establishment of breast-feeding support groups and refer mothers to them on discharge from the hospital or clinic.

BREASTFEEDING KINETICS



Source: Livingstone, V.: Problem-Solving Formula for Failure to Thrive in Breast-fed Infants, *Canadian Family Physician* 36:1542, 1990.

City Of Lusaka:Health Centres



APPENDIX 12

THE UNIVERSITY OF ZAMBIA

DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

Telephone: 252514/292884
Telegrams: UNZA LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260-1-253952

PO BOX 32379
Lusaka Zambia

23rd February 1998

Your Ref:

Our Ref:

Ms Akalala M Chimumbwa
Department of Community Medicine
School of Medicine
U T H

Dear Ms Akalala

MASTER OF PUBLIC HEALTH PART I FINAL EXAMINATION RESULTS 1997/98

On behalf of the Board of Graduate Studies of the Directorate of Research and Graduate Studies, I am pleased to inform you that you have satisfied the examiners for the requirements of Part I of Master of Public Health.

You can now proceed on to Part II of your programme.

CONGRATULATIONS

Yours sincerely

Geoffrey Lungwangwa (Dr)
D I R E C T O R

cc Assistant Dean (Postgraduate) - School of Medicine
Head - Department of Community Medicine

The University of Zambia

DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

Telephone: 292884/290258
Telegrams: UNZA LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260 - 1 - 253952/290258
E-mail DirectorPostgrad@postgrad.unza.zm

P O Box 32379
Lusaka Zambia

Your Ref:
Our Ref:

th March 1999

Ms Akalala Miriam Chimumbwa
C/o Department of Community Medicine
School of Medicine
UNZA

Dear Ms Chimumbwa

RE: **MPH DISSERTATION RESULTS**

I am writing on behalf of the Board of Graduate Studies to inform you that the examination results of your dissertation entitled "*A Study of Factors Contributing to Mothers Introducing Feeds to Babies Less Than Six Months, in Lusaka, Zambia*" were discussed at the 37th meeting of the Board held on 8th March 1999.

Your dissertation was awarded an **OUTRIGHT PASS.** **CONGRATULATIONS!** You will be recommended to Senate for the award of the Master of Public Health degree after you forward four bound copies of your dissertation to this office.

Yours faithfully

GEOFFREY LUNGWANGWA (PH.D)
DIRECTOR

c Dean - School of Medicine
Assistant Dean (PG) - Medicine
Head - Department of Community Medicine